THE TAMIL NADU FACTORIES RULES, 1950

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THE TAMIL NADU FACTORIES RULES, 1950

[GO. No. 1041, Development. 15th March, 1950]

In exercise of the powers conferred by section 112 of the Factories Act, 1948 (Central Act LXIII of 1948), His Excellency the Governor of Madras hereby makes the following rules, the same having been previously published as required under section 115 of the said Act.

CHAPTER I

PRELIMINARY

1. Short title, extent and commencement

(1) These rules may be cited as the Tamil Nadu Factories Rules, 1950.

(2) These rules shall extend to the whole of State of Tamil Nadu including the Kanyakumari district, the Shencottah taluk of the Tirunelveli district and the territories specified in the Second Schedule to the Andhra Pradesh and Madras (Alteration of Boundaries) Act, 1959 (Central Act 56 of 1959).

(3) These rules except rules 29 to 33, 53, 62, 64 to 71 and 95 shall come into force at once and rules 29 to 33, 53, 62, 64 to 71 and 95 shall come into force on such dates as may be specified there under.

2. Definitions

In these rules, unless there is anything repugnant in the subject or context

(a) “Act " means the Factories Act, 1948.

(b) "Appendix” means an appendix appended to these rules.

(c) "Artificial humidification” means the introduction of moisture into the air of a room by any artificial means whatsoever, except the unavoidable escape of steam or water vapor into the atmosphere directly due to a manufacturing process.

Provided that the introduction of air directly from outside through moistened mats or screens placed in openings at times when the temperature of the room is [1][26.7 degrees] or more, shall not be deemed to be artificial humidification.

(d) “Belt" includes any driving strap or rope.

(e) “Degree " (of temperature) means degree on the [2][Celsius scale]

(f) "District Magistrate” includes the Additional District Magistrate and any other officer appointed by the State Government in that behalf and in a Presidency town or its suburbs, shall mean the Commissioner of Police.

(g) "Family" means the wife, son, daughter, father, mother, brother or sister of the owner of any place wherein a manufacturing process is carried on who lives with or is dependent on, such owner.

(h) "Fume" includes gas or vapour.

(i) "Health Officer" means the Municipal Health Officer in a municipality or corporation, the District Health Officer concerned in any area within the jurisdiction of a district board or panchayat or such other officer as may be appointed by the State Government for any area in that behalf irrespective of whether such area is within the limits of a municipality or the jurisdiction of a district board or panchayat.

(j) "Hygrometer" means an accurate wet and dry bulb hygrometer conforming to the prescribed conditions as regards construction and maintenance.

(k) [3] [* * *]

(l) "Maintained" means maintained in an efficient state, in efficient working order and in good repair

(m) "Manager" means a person nominated or appointed as such by the occupier of the factory under section 7 for the purposes of the Act.

(n) Local Authority" means the commissioner in the case of an area within the limits of a Municipality or Corporation, the executive officer in the case of an area within the jurisdiction of a panchayat, and the president of a district board in the case of any other area.

(o) ”Public Health Authority" means the local Health Officer having jurisdiction over the area.

2-A. [4][Competent person]

(1) The Chief Inspector may recognize any person as a 'Competent person' within such area and for such period as may he specified for the purposes of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, confined space ventilation system and such other process or plant and equipment as stipulated in the Act and the rules made thereunder located in a factory, if such a person possesses the qualifications, experience and other requirements asset out in the Schedule annexed to this rule:

Provided that the Chief Inspector may relax the requirements of qualifications in respect of a `competent person' if such a person is exceptionally experienced and knowledgeable, but not the requirements in respect of the facilities at his command.

Provided further that where it is proposed to recognize a person employed under the Chief Inspector as a 'Competent person' concurrence of the State Government shall be taken and such a person after being so recognised shall not have powers of an ‘Inspector’:

Provided also that the 'Competent person' recognised under this provision shall not be above the age of sixty-two and shall be physically fit for the purpose of carrying out the tests, examinations and inspections.

(2) The Chief Inspector may recognize an institution of repute having persons possessing qualifications and experience as set out in the Schedule annexed to this rule for the purpose of carrying out tests, examination, inspections, and certification for building, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, confined space ventilation system and such other process or plant and equipment as stipulated in the Act and the rules made thereunder, as a 'Competent person' within such area and for such period as may be specified.

(3) The Chief Inspector on receipt of an application in the prescribed form from a person or an institution intending to be recognised as a 'Competent person' for the purposes of this Act and the rules made thereunder shall register such application and within a period of sixty days of the date of receipt of application either after having satisfied himself as regards competence and facilities available at the disposal of the applicant, recognize the applicant as a 'Competent person' and issue

a certificate of competency in the prescribed form or reject the application specifying the reasons therefor.

(4) The Chief Inspector may after giving an opportunity to the competent person of being heard, revoke the certificate of competency,

(i) if he has reason to believe that a competent person

(a) has violated any condition stipulated in the certificate of competency; (or)

(b) has carried out a test examination and inspection or

(c) has acted in a manner inconsistent with the intent or the purpose of this Act or the rules made thereunder ; or

(d) has omitted to act as required under the Act and rules made thereunder

(ii) for any other reason to be recorded in writing

Explanation: For the purpose of this rule, an institution includes an organization.

(5) The Chief Inspector may, for reasons to be recorded in writing, require certification of lifting machines, lifting tackles, or ventilation system, as the case may be which has been certified by a competent person outside the State.

(Forms and schedule to Rule 2A provided in Appendix 1)

3. [5][Approval of site, construction or extension of a factory

(1)

(a) [6][[7][No site shall be used for the location of a factory or no building in a factory be constructed, reconstructed extended or taken into use as a factory or part of a factory, or no installation of plant or machinery carried out in a factory without the previous permission in writing of the [8][Chief Inspector or Deputy Chief Inspector as the case may be]. The previous permission of the *[Chief Inspector or Deputy Chief Inspector as the case may be] shall also be obtained for the installation of additional machinery or for the installation of prime movers exceeding the horse-powers already installed in the factory.]

(b) The [9][Chief Inspector or Deputy Chief Inspector as the case may be] may require, for the purpose of the Act, submission of plans of any factory which was either in existence on the date of commencement of the Act or which has not been constructed or extended since then.]

(2) [10] [Application for such permission or submission of plans shall be made in Form No.1 in triplicate.] It shall be accompanied by the following documents, namely:

(a) [11] [a flow chart of the manufacturing, process supplemented by a brief description of the process in its various stages, including the chemicals used, if any, in the various stages of the process and the steps proposed to be taken for effective removal of dust, fumes, gases and regarding the proper and effective disposal of trade wastes and effluents;

(b) plans in triplicate drawn to scale showing-

(i) the site of the factory and immediate surroundings including adjacent buildings and other structures, roads, drains, and the like ; and

(ii) the plan elevation and necessary cross sections of various buildings indicating all relevant details relating to natural lighting, ventilation and means of escape in case of fire. The plans shall also clearly indicate the position of the plant and machinery, aisles and Passageways.

[12][***]

(c) [13][Omitted]

(d) [14][a certificate from the [15][Tamil Nadu Pollution Control Board, Madras], to the effect that the arrangements made for disposal of industrial liquid wastes, effluents and air pollutants in the case of complex chemical factories and regarding the steps taken for proper disposal of wastes and effluents are effective;

(e) [16][such other particulars as the [17][Chief Inspector or Deputy Chief Inspector, as the case may be] may require.

[18][Provided that where an application for such permission has been made in the common application form for single window clearance approved in GO. Ms. No. 203, Industries (MIB-1) Department, dated 24th December, 2001 then making of an application in Form No.1 is not necessary.).

(3) After examination of the documents referred to in sub-rule (2), the [19] [Chief Inspector or Deputy Chief Inspector, as the case may be] may accord the permission applied for:

Provided that the [20] [Chief Inspector or Deputy Chief Inspector as the case may be] may call for such other particulars as he may require before according such permission:

Provided further that the [21] [Chief Inspector or Deputy Chief Inspector, as the case may be] may accord such permission subject to such conditions as he may consider necessary.

(4) The fact that the permission applied for is accorded shall be noted on the plans and specifications and shall be signed by the *[Chief Inspector or Deputy Chief Inspector, as the case may be]. One copy of each of the said plans and specifications shall be returned to the applicant.

(5)

(a) A factory or part of a factory constructed, reconstructed, extended or taken into use, shall be in accordance with the plans approved by the *(Chief Inspector or Deputy Chief Inspector, as the case may be] and shall satisfy the conditions subject to which the plans have been approved.

(b) No machine or prime mover or a permanent fixture not shown in the plans approved by the Chief Inspector or Deputy Chief Inspector, as the case may be] shall be installed, fixed or used in any factory except in replacement of any machine, prime mover or a permanent fixture not occupying more floor area than that already shown in the approved plans.

4. Registration and grant of licence for a factory

(1) No premises shall be used as factory nor any manufacturing process carried on in any factory except under, and in accordance with, the registration and licence granted under these rules.

(2) An application for the registration of a factory and grant of a licence to it shall he submitted to the Chief Inspector in Form No. 2 in triplicate.

(3) The fees payable for the registration and grant of a licence to a factory shall be as specified in the schedule hereto. The application in Form No. 2 shall be accompanied [22][by a [23][treasury receipt or by crossed demand draft) drawn in any branch of a Nationalized Bank in favour of the Deputy Chief Inspector of Factories of the region] evidencing payment of the appropriate fee specified in the schedule hereto.

(4) Every application received by the Chief Inspector shall be registered in Form No. 3

(5) No licence shall be granted until the notice specified in section 7 has been received in triplicate in Form No. 2 by the Chief Inspector.

(6) If the Chief Inspector is satisfied that the registration and licence may be granted, such registration and licence shall be issued in Form No. 4:

Provided that the Chief Inspector may call for such other particulars as he may require before registration or grant of such licence:

Provided further that the Chief Inspector may register and grant license subject to such conditions as he may consider necessary and which shall be specified in the licence.

(6-A) [24][The Occupier of a factory may opt to remit the licence fees for obtaining initial licence or renewal of licence for a period up to five consecutive calendar years, instead of getting it renewed for every calendar year. Occupier shall make a specific request in Form No. 2 indicating the number of years for which licence is sought for. In such cases the fees payable for the grant or renewal of licence to a factory shall be proportionate to the annual fees as per the Schedule multiplied by the number of years for which the licence is sought for.]

(7) Except as provided in [25][rule 7AA or 109] every licence granted or renewed under this chapter shall remain in force up to and inclusive of the 31st December of the year for which the licence is granted or renewed.]

Total Horse Power Installed inclusive of Mobile equipment	Maximum number of persons to be employed on any day during the year (FEE PAYABLE IN RUPEES)										
	9	20	50	100	250	500	1000	2000	5000	10000	Above 10,000
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

Nil Horse Power	400	800	1200	1600	3600	5400	12000	18000	33000	48000	60000
Upton 10 Horse Power	800	1200	1600	2400	5400	9000	24000	36000	54000	72000	90000
Above 10 Horse Power up to 50 Horse Power	1200	1600	2400	3600	9000	14,400	36000	54000	72000	90000	108000
Above 50 Horse Power up to 129 Horse Power	1600	2400	3600	6000	14400	24000	54000	72000	90000	108000	120000
Above 129 Horse Power up to 250 Horse Power	2400	3600	6000	9600	24000	36000	72000	90000	108000	120000	132000
Above 250 Horse Power up to 500 Horse Power	3600	6000	8000	12800	36000	48000	90000	108000	120000	132000	144000
Above 500 Horse Power up to 1,000 Horse Power	6000	6400	12800	24000	48000	60000	108000	120000	132000	144000	156000
Above 1,000 Horse Power up to 2,000 Horse Power	6400	12800	24000	32000	60000	72000	120000	132000	144000	156000	168000
Above 2,000 Horse Power up to 5,000 Horse Power	12800	24000	32000	40000	72000	84000	132000	144000	156000	168000	180000
Above 5,000 Horse Power up to 7,500 Horse Power	24000	32000	40000	48000	84000	96000	144000	156000	168000	180000	192000
Above 7,500 Horse Power up to 10,000 Horse Power	32000	40000	48000	56000	96000	108000	156000	168000	180000	192000	204000
Above 10,000 Horse power	40000	48000	56000	64000	108000	120000	168000	180000	192000	204000	216000

5. [Omitted]

6. Amendment of licence

(1) The limits specified in the licence granted to a factory in regard to home power or the number of persons employed shall not be altered or the name of the factory

changed unless the licence has been amended by the [26][Deputy Chief Inspector of Factories] having jurisdiction over the area where the factory is situated.

(2) An application for the amendment of a licence granted to a factory shall be submitted to the [27] [Deputy Chief Inspector of Factories] having jurisdiction over the area where the factory is situated, specifying the nature of the amendment sought and the reasons therefor, at least fifteen days prior to the date on which the applicant desires the amendment to take effect. The application shall be accompanied by the original licence, if it is not already available with the [28] [Deputy Chief Inspector of Factories, and [29][treasury receipt or a crossed demand draft] of any brunch of a Nationalized Bank drawn in favour of the Deputy Chief Inspector of Factories of the region] [***]

(3) The fee for the amendment of a licence shall be [30][fifty rupees] plus the amount, if any, by which the fee that would have been payable if the licence had originally been issued in the form exceeds the fee originally paid for the licence.

(4) On the receipt of such application together with the fee prescribed, the [Deputy Chief Inspector of Factories] may amend the licence suitably:

Provided the *[Deputy Chief Inspector of Factories] may call for such other particulars as he may require before amending the licence:

Provided further that the *[Deputy Chief Inspector of Factories] may amend the licence subject to such conditions as he may consider necessary and which shall be specified in the license.

(5) The amendment made shall be incorporated in the licence and the Register of Factories.

(6) [31][No fee for the amendment of a licence shall be payable when the amendments are proposed simultaneously with the application for the renewal of the licence.

7. Renewal of licence

(1) No premises shall be used as a factory nor any manufacturing process carried on in any factory except under, and in accordance with, the licence renewed under these rules.

(2) The occupier of every factory licensed under rule 4, shall submit to the [32][Deputy Chief Inspector of Factories] having jurisdiction over the area where the factory is situated, an application in Form No.2 in triplicate, for the renewal of the licence. The application for such renewal shall be made so as to be received in the office of the [33][Deputy Chief Inspector of Factories], not less than two months before the date on which the licence expires and it shall be accompanied by the original licence if it is not already available with the [34] [Deputy Chief Inspector of Factories].

(3) [35][The same fee shall be charged for the renewal of a licence as for the grant thereof

Provided that if the application for renewal is not received within the time specified in sub-rule (2), the licence shall be renewed only on payment of an additional fee of

(1) ten percentum of the fee payable, if the application for the renewal is received in the month of November of the year for which the licence is granted or renewed.

(2) twenty percentum of the fee payable, if the application for renewal is received in the month of December of the year for which the licence is granted or renewed.

(3) thirty percentum of the fee payable, if the application for renewal is received after the expiry of the licence.

[36][***]

[37][Provided further that] if the occupier of the factory opts to remit the fee for the renewal of licence for a period up to five consecutive calendar years instead of getting it renewed for every calendar year he shall indicate in Form No.2, the number of years for which renewal of licence is required.]

(4) If the application has been made in accordance with this rule, the premises shall be held to be duly licensed until such date as the [38] [Deputy Chief Inspector of Factories] may pass orders on the application for the renewal.

(5) The [39] [Deputy Chief Inspector of Factories] may renew the licence:

Provided that the [40] [Deputy Chief Inspector of Factories] may call for such other particulars as he may require before renewing the licence:

Provided further that the [41] [Deputy Chief Inspector of Factories] may renew the licence subject to such conditions as he may consider necessary and which shall be specified in the licence.

(6) Suitable entry shall also be made in the Register of Factories regarding the renewal of the licence.

7A. Refusal to register and grant a licence or to renew licence in certain cases

(1) Subject to the provisions of sub-section (3) of section 6 of the Act, the Chief Inspector may refuse to register a factory and grant or renew a licence if he is satisfied

(i) that an application is not accompanied by the documents referred to in sub-rule (2) of rule 3 ; or

(ii) that the conditions subject to which permission was accorded under rule 3 have not been complied with ; or

(iii) that there is imminent danger to human life in the factory due to explosive or inflammable dust, gas or fumes and effective measures, in his opinion, have not been taken to remove such danger ; or

(iv) that there is imminent danger to human life due to the building or the entrances thereto or exists there from being in a dangerous or structurally unsound condition, and effective measures in his opinion, have not been taken to remove the danger:

[42][Provided that in the case of refusal to grant or renew a licence, the Chief Inspector shall record in writing the reasons for such refusal and communicate the same to the occupier.]

(2) The State Government or subject to the control of the State Government, the Chief Inspector may, by written order, how-ever, waive either in full or in part the surcharge so payable which shall not exceed Rs. 2000 (Rupees two thousand only).

(3) [43][Where a Deputy Chief Inspector of Factories is of opinion that there is prima facie case to refuse to grant or to renew a licence for all or any of the reasons stated in sub-rule (I), he shall forward to the Chief Inspector the application for grant or for renewal of licence received from an occupier of the factory and the original licence granted to it to pass such orders as he deems fit.]

7-AA. Revocation and suspension of licence in certain cases

[44][Subject to the provision of sub-section (3) of section 6 of the Act, the Chief Inspector of Factories the Joint Chief Inspector of Factories may, after giving the occupier of the Factory an opportunity of making his representation, revoke or suspend the licence at any point of time during the period in which the licence is in operation, if he is satisfied

(i) that the conditions subject to which permissible was accorded under rule 3 have not been complied with; or

(ii) that the conditions subject to which licence was granted under rule 4 or renewed under rule 7 have not been complied with.]

7B Adjustment of excess payment of licence fee

Where the amount is paid in excess of the prescribed lee for the grant of licence or for the renewal of licence, the excess amount so paid may be adjusted towards the fee payable for renewal of licence for the subsequent year [45][or years], by the [46][Deputy Chief Inspector of Factories], on request from the occupier.

8. Transfer of licence

(1) The holder of a licence or in the event of his death, any person carrying on the business of such licensee may, at any time, before the expiry of the licence, apply for permission to transfer the licence to another person or to himself.

(2) Such application for transfer shall be made to the [47] [Deputy Chief Inspector of Factories] concerned and accompanied by a fee of [48][fifty rupees] for each such application.

(3) The [49] [Deputy Chief Inspector of Factories] concerned, if he approves of the transfer, enter upon the licence under his signature, an endorsement to the effect that the licence has been transferred to the person named:

Provided that the [50] [Deputy Chief Inspector of Factories] concerned may call for such other particulars as he may require before effecting the transfer:

Provided further that the [51] [Deputy Chief Inspector of Factories] concerned may effect such transfer subject to such conditions as he may consider necessary and which shall be specified in the licence.

(4) Suitable entry shall also be made in the Register of Factories regarding the transfer.

9. Procedure on death or disability of licensee

If a licensee dies or becomes insolvent, the person carrying on the business of such licensee shall not be liable to any penalty under the Act for exercising the powers granted to the licensee by the licence during such time as may reasonably be required to allow him to make an application for the transfer of the licence under rule 8 in his own name for the unexpired portion of the original licence

10. Loss of licence

Where a licence granted under these rules is lost or accidentally destroyed, a duplicate may be granted by the [52][Deputy Chief Inspector of Factories] having jurisdiction over the area on payment of a fee of [53][fifty rupees].

11. Payment offees

(1) [54][Every application relating to grant, renewal, transfer and amendment of licence under these rules shall be accompanied by a [55][treasury receipt or by a crossed demand draft) of any branch of a Nationalized Bank drawn in favour of the Deputy Chief Inspector of Factories of the region

[56][***]

(2) If an application for the grant or renewal of a licence is refused, the fee paid shall be refunded to the applicant by the Chief Inspector.

(3) If the Chief Inspector is satisfied that a factory has not worked even on a single day during the period of licence, he may order the refund of the licence fee collected for that period.

[57] [Provided that where the licence is issued or renewed for more than one calendar year, the refund shall be made only in respect of that calendar year in which the factory has not worked even on a single day]

12. Notice of occupation

The notice of occupation shall be in Form No. 2.

12A Notice of change of manager

The notice of change of manager shall be in Form. No. 3A.

12B Plans and licence

(1) The plans approved by the [58][Chief Inspector or Deputy Chief Inspector, as the case may be] under rule 3 and the licence granted for a factory under rule 4 shall be

readily available in the factory for inspection by the Inspectors and additional Inspectors appointed under section 8 of the Act.

(2) The plans and layouts or factory buildings sent to the [59] [Chief Inspector or Deputy Chief Inspector, as the case may be] for approval under rule 3 shall be prepared by a person possessing a diploma or degree in Engineering or pass in the examination prescribed for the Engineering Subordinate or the Overseer class or the Draftsman class in the College of Engineering, Guindy.

(3) After the date of the commencement of the Act, no manufacturing process shall be carried on in any factory constructed, extended or taken into use as a factory or part of a factory until a certificate of stability in respect of the buildings in the form below has been sent by the occupier or management of the factory to the Inspector.

Provided that the certificate of stability sent by the occupier or management of the factory to the Inspector as required in this rule shall be valid only for a period of three years from the date of its issue and within thirty days after the expiry of the said period, a fresh certificate of stability shall be sent to the Inspector.

Form of Certificate of Stability

(1) Name of the factory

(2) Village, town and district in which the factory is situated

(3) Full postal address of the factory

(4) Name of the occupier of the factory

(5) Nature of manufacturing process to be carried on in the factory

(6) Number of floors on which workers will be employed.

I certify that I have inspected the building on the.....in which..... is housed and examined the various parts including the foundations as shown in the complete plans approved by the Chief Inspector in his letter No...dated...with special reference to the machinery, plant, etc.. that have been installed. I am of opinion that the building has been constructed/extended in accordance with the plans approved by the Chief Inspector in his Letter No...dated... that it is structurally sound and that its stability will not be endangered by its use as a factory for the manufacture of...for which the machinery, plant, etc., installed are intended.

Place: (Signature)

Date : Name, designation and qualifications.

Note: No certificate of stability is necessary in the case of existing buildings for which no plans have been approved prior to 1948.

(4) [60] [The certificate of stability referred to in sub-rule (3) shall be signed by a competent person recognized by the Chief Inspector under rule 2-A for that purpose.

(5) [61][An occupier shall not use any premises as a factory or carry on any manufacturing process in a factory unless a licence has been issued in respect of such premises and is in force for the time being]

[62][Provided that if a valid application for grant or renewal of licence has been submitted and the required fee has been paid, the premises shall be deemed to be fully licensed until such date as the Chief Inspector grants or refuses in writing to grant or renew the licence, or the Superintending Inspector having jurisdiction over the area where the factory is situated, renews the licence.]

12-C. Guidelines, instructions and records

(1) [63][Without prejudice to the general responsibility of the occupier to comply with the provisions of Section7-A, the Chief Inspector may, from time to time issue guidelines and instructions regarding the general duties of the occupier relating to health and safety and welfare of all workers while they are at work in the factory.

(2) The occupier shall maintain such records, as may be prescribed by the Chief Inspector, in respect of monitoring of working environment in the factory.]

CHAPTER 11

THE INSPECTING STAFF

13. Appointment of Inspectors

(1) No person shall be appointed as Inspector for the purposes of the Act, unless he possesses the qualifications prescribed for such Inspectors in the Special Rules for the Tamil Nadu Factory Service at the time of his appointment.

(2) No person shall be appointed as Medical Inspector unless he possesses a degree in the branch of Medicine:

Provided that preference shall be given in the case of appointment to the post of Medical Inspector to a person who possesses the experience in a public hospital or factory medical department for a period of not less than two years or a diploma in Industrial Medicine.

(3) Where for particular post specialized knowledge to deal with special problems is required, the State Government may, in addition to the qualifications mentioned in sub-rule (1) specify such other qualifications for such post as they deem fit.]

13A. Powers of Inspectors

An Inspector shall, for the purpose of the execution of the Act, have power to do all or any of the following things, that is to say

(a) to photograph any worker, to inspect, examine, measure, copy, photograph, sketch or test, as the case may be, any building or room, any plant, machinery, appliance or apparatus any register or document or anything provided for the purpose of securing the health, safety or welfare of the workers employed in a factory;

[64][(aa)] to seize or take copies of such registers/records or other documents or portions thereof, as he may consider relevant in respect of an offence under this Act, which he has reason to believe has been com-mitted by the occupier or the manager ;)

(b) in the case of an Inspector who is a duly qualified medical practitioner, to carry out such medical examinations as may be necessary for the purposes of his duties under the Act;

(c) to prosecute, conduct or defend before a Court any complaint or other proceeding arising under the Act or in discharge of his duties as an Inspector :

Provided that the powers of the District Magistrates and of the Additional Inspectors appointed under sub-section (5) of section 8 shall be limited to the inspection of factories in respect of the following matters, namely:

Section 6 (1) (d) and (e) (Licence).

Section 9 (Posters of Inspectors).

Sections 11 to 20 (Health).

Section 23 (Employment of young person's on dangerous machines).

Section 27 (Prohibition of employment of women and children near cotton openers).

Sections 32 to 40 (Safety precautions).

Sections 42 to 48 (Welfare).

Sections SI to 63 (Working hours of adults).

Section 66 (Restrictions of employment of women during nights).

Sections 67 to 75 (Employment of young person's).

Sections 78 to 83 (Leave with wages), section 87 (dangerous operations).

Section 91 (Power to take samples).

Section 108 (Display of notices).

Rules 102 to 108 framed under Section 112.

14. Duties of Certifying Surgeon

(1) For purposes of the examination and certification of young persons who wish to obtain certificates of fitness, the Certifying Surgeon shall arrange a suitable time and place for the attendance of such persons, and shall give previous notice in writing of such arrangement to the managers of factories situated within the local limits assigned to him.

(2) The Certifying Surgeon shall issue his certificates in Form No. 5. The foil and counterfoil shall be filled in and the left thumb mark of the person in whose name the certificate is granted shall be taken on them. On being satisfied as to the correctness of the entries made therein and of the fitness of the person examined,

he shall sign the foil and initial the counterfoil and shall deliver the foil to the person in whose name the certificate is granted. The foil so delivered shall be the certificate of fitness panted under section 69. All counterfoils shall be kept by the Certifying Surgeon for a period of at least two years after the issue of the certificate.

(3) The Certifying Surgeon shall, upon request by the Chief Inspector, carry out such examination and furnish him with such report as he may indicate, for any factory or class or description of factories where

(a) cases of illness have occurred which it is reasonable to believe are due to the nature of the manufacturing process carried on, or other conditions of work prevailing therein, or

(b) by reason of any change in the manufacturing process carried on, or in the substances used therein, or by reason of the adoption of any new manufacturing process or of any new substance for use in a manufacturing process, there is likelihood of injury to the health of workers employed in that manufacturing process, or

(c) young persons are, or are about to be, employed in any work which is likely to cause injury to their health.

(4) For the purpose of the examination of persons employed in processes covered by the rules relating to dangerous operations, the Certifying Surgeon shall visit the factories within the local limits assigned to him at such intervals as are prescribed by the rules relating to such dangerous operations.

(5) [65][At such visits, the Certifying Surgeon after examining a worker shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be kept in custody of the Manager of the factory. The record of each examination carried out under sub-rules (I) and (2) including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form No. 17].

(6) If the Certifying Surgeon finds as a result of his examination that any person employed in such process is no longer fit for medical reasons to work in that process, he shall suspend such person from working in that process, for such time as he may think fit and no person after suspension shall be employed in that process without the written sanction of the Certifying Surgeon in the Health Register.

(7) The manager of a factory shall afford to the Certifying Surgeon. Facilities to inspect any process in which any person is employed or is likely to be employed.

(8) The manager of a factory shall provide for the purpose of any medical examination which the Certifying Surgeon wishes so 'conduct at the factory (for his exclusive use on the occasion of an examination) a room which shall be properly cleaned and adequately ventilated and lighted and furnished with a screen, a table (with writing materials) and chairs.

CHAPTER III

HEALTH

15. [66][Cleanliness of walls and ceilings

(1) The provision of clause (d) of sub-section (I) of section I of the Act shall not apply to the classes of factories or descriptions of factories or parts thereof specified in the Schedule below:

Provided that they are kept in a clean state by washing, sweeping, brushing, dusting, vacuum-cleaning or other effective means:

Provided further that the said clause (d) shall continue to apply

(i) in respect of factories or parts of factories specified in Part A of the schedule, to workrooms in which the amount of cubic space allowed for every person employed in the room is less than 500 cubic feet;

(ii) in respect of factories or parts of factories specified in Part B of the schedule, to workrooms in which the amount of cubic space allowed for every person employed in the room is less than 2,500 cubic feet;

(iii) to engine houses, fitting shops, lunch rooms, canteens, shelters, crèches, cloak rooms, rest rooms, and wash places; and

(iv) to such parts of walls, sides and tops of passages and staircases as are less than 20 feet above the floor or stair.]

(2) If it appears to the Chief Inspector that any part of a factory, to which by virtue of sub-rule (I) any of the provisions of the said clause (d) do not apply, is not being kept in a clean state, he may by written notice require the occupier to whitewash or colour wash, wash, paint or varnish the same, and in the event of the occupier failing to comply with such requisition within two months from the date of the notice, sub-rule (I) shall cease to apply to such part of a factory, unless the Chief Inspector otherwise determines.

[67][THE SCHEDULE

(1) Blast furnaces.

(2) Brick and tile works in which unglazed bricks or tiles are made.

(3) Cement works.

(4) Chemical works.

(5) Copper mills.

(6) Gas works.

(7) Iron and steel mills.

(8) Stone, slate and marble works.

(9) The following parts of factories:

(a) Rooms used only for the storage of articles.

(b) Rooms in which the walk of ceilings consist of galvanized iron, glazed bricks. glass, slate, asbestos, bamboo thatch.

(c) Parts in which dense steam is continuously evolved in the process.

(d) Parts in which pitch, tar or like material is menu-factored or is used to a substantial extent, except in brush works. The parts of a glass factory known as the glass house. Rooms in which graphite is manufactured or is used to a substantial extent in any process.

(e) Parts in which coal, coke, oxide of iron, ochre, lime or stone is crushed or ground.

(f) Parts of walls, partitions, ceilings or tops of rooms which are at least 20 feet above the floor.

(g) Ceiling or tops of rooms in print works bleach works or dye works. with the exception of finishing rooms or warehouses.

(h) Inside walls of oil mills below a height of 5 feet from the ground floor level.

(i) Inside walls in tanneries below a height of 5 feet from the ground floor level where a wet process is carried on.

Part B

(1) Coach and motor body work.

(2) Electric generating or transforming stations.

(3) Engineering works.

(4) Factories in which sugar is refined or manufactured.

(5) Foundries other than foundries in which brass casting is carried on.

(6) Gun factories.

(7) Shipbuilding works.

(8) Those parts of factories where unpainted or unvarnished wood is manufactured.]

16. Record of whitewashing, etc.

The record of dates on which whitewashing, colour-washing, varnishing, are carried out shall be entered in a register maintained in Form No. 7.

17. [68][Disposal of trade wastes and effluents

In every factory, effective arrangements shall be made for the treatment of wastes and effluents due to the manufacturing processes carried on therein and the arrangements so made shall be in accordance with those approved by the relevant authorities of Tamil Nadu Pollution Control Board appointed under the Water (Prevention and Control of

Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 and the authorities of Department of Environment.)

17A Ventilation and temperature

1. Limits of temperature and air movement

In any factory the maximum wet bulb temperature of air in a workroom at a height of 1.5 meters (5 feet) above the floor level shall not exceed 30°C (86F) and adequate air movement of at least 30 meters per minute (100 feet per minute) shall be provided ; and in relation to dry bulb temperature the wet bulb temperature in the workroom at the said height shall not exceed that shown in the Schedule, or as regards a dry bulb reading intermediate between the two dry bulb readings that specified in relation to the higher of these two dry bulb readings.

THE SCHEDULE

Dry Bulb Temperatures		Wet Bulb Temperature	
(°C)	(°F)	(°C)	(°F)
30	(86)	29.0	(84.2)
31	(87.8)	28.9	(84.0)
32	(89.6)	28.8	(83.8)
33	(91.4)	28.7	(83.6)
34	(93.2)	28.6	(83.5)
35	(95)	28.5	(83.4)
36	(96.8)	28.4	(83.2)
37	(98.6)	28.3	(83.0)
38	(100.4)	28.2	(82.7)
39	(102.2)	28.1	(82.6)
40	(104)	28.0	(82.5)
41	(105.8)	27.9	(82.3)
42	(107.6)	27.8	(82.1)
43	(109.4)	27.7	(81.9)
44	(111.2)	27.6	(81.7)
45	(113)	27.5	(81.5)
46	(114.8)	27.4	(81.3)

47	(116.6)	27.3	(81.1)

Provided that if the temperature measured with a thermometer inserted in a hollow globe of 15 c.m. (6 inches) dia, coated mat black outside and kept in the environment for not less than 20 minutes exceeds the dry bulb temperature of air, the temperature so recorded by the globe thermometer shall be taken in place of the dry bulb temperature :

Provided further that when the reading of the wet bulb temperature outside in the shade exceeds 27°C (80.6°F) the value of the wet bulb temperature allowed in the Schedule for a given dry bulb temperature may be correspondingly exceeded to the same extent:

Provided also that this requirement shall not apply in respect of factories covered by section 15 and in respect of factories where the nature of work carried on involves production of excessively high temperatures referred to in clause (ii) of sub-section (I) to which workers are exposed for short periods of time not exceeding one hour followed by an interval of sufficient duration in thermal environments not exceeding those otherwise laid down in this rule:

Provided also that, the Chief Inspector having due regard to the health of the worker may in special and exceptional circum-stances, by an order in writing, exempt any factory or part of a factory from the foregoing requirement, in so far as restricting the thermal conditions within the limits laid down in the Schedule are concerned, to the extent that he may consider necessary, subject to such conditions as he may specify.

2. Provision of Thermometers

(1) If it appears to the Inspector that in any factory, the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in rule (1) he may serve on the manager of the factory an order requiring him to provide sufficient number of whirling hygrometers or any other type of hygrometers and direct that the dry bulb and wet bulb readings in each such workroom shall be recorded at such positions as approved by the Inspector twice during each working shift by a person especially nominated for the purpose by the manager and approved by the Inspector.

(2) If the Inspector has reason to believe that a substantial amount of heat is added inside the environment of a workroom by radiation from walls, roof or other solid surroundings, he may serve on the manager of the factory an order requiring him to provide one or more globe thermometers referred to in the first proviso in rule (I) and further requiring him to place the globe thermometers at places specified by him and keen a record of the temperatures in a suitable register.

3. Ventilation

(1) In every factory the amount of ventilating openings in a workroom below the caves shall, except where mechanical means of ventilation as required by sub-rule (2) are provided, be of as aggregate area of not less than 15 per cent of the floor area and so located as to afford a continued supply of fresh air:

Provided that the Chief Inspector may relax the requirements regarding the amount of ventilating openings if he is satisfied that having regard to the location of the factory, orientation of the workroom, prevailing winds, roofs height and the nature of manufacturing process carried on, sufficient supply of fresh air into the workroom is afforded during most part of the working time:

Provided further that these requirements shall not apply in respect of workrooms of factories

(i) Covered by section 15; or

(ii) in which temperature and humidity are controlled by refrigeration.

(2) Where in any factory owing to special circumstances such a situation with respect to adjacent buildings and height of the building with respect to floor space, the requirements of ventilation openings under sub-rule (1) cannot be complied with or in the opinion of the Inspector the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in sub-rule (I), he may serve on the manager of the factory an order requiring him to provide additional ventilation either by means of roof ventilators or by mechanical means.

(3) The amount of fresh air supplied by mechanical means of ventilation in an hour shall be equivalent to at least six times the cubic capacity of the workroom and shall be distributed evenly throughout the workroom without dead air pockets or undue draughts caused by high inlet velocities.

(4) In regions where in summer (15th March-15th July) dry bulb temperatures of outside air in the shade during most part of the day exceed 35°C (95°F) and simultaneous wet bulb temperatures are 25°C (67°F) or below and in the opinion of the Inspector the manufacturing process carried on in the workroom of a factory permits thermal environments with relative humidity of 50 per cent or more, the Inspector may serve on the manager of the factory an order to have sufficient supply of outside air for ventilation cooled by passing it through water sprays either by means of unit type of evaporative air coolers (desert coolers) or, where supply of outside air is provided by mechanical means through ducts in a plenum system, by means of central air washing plants.

18. When artificial humidification not allowed

There shall be no artificial humidification in any room of a cotton spinning or weaving factory

(a) By the use of steam during any period, when the dry bulb temperature of that room exceeds [85°F or 29.5°C][69]

(b) At any time when the wet bulb reading of the hygrometer in higher than that specified in the following schedule in relation to the dry bulb reading of the hygrometer at the time; or as regards a dry bulb reading intermediate between any

two dry bulb reading indicated consecutively in the schedule, when the wet bulb reading is higher than that specified in relation to the higher of these two dry bulb readings:

***[THE SCHEDULE**

Dry Bulb Temperatures		Wet Bulb Temperature	
(^{o}F)	(^{o}C)	(^{o}F)	(^{o}C)
60.0	15.5	58.0	14.5
61.0	16.0	59.0	15.0
62.0	16.5	60.0	15.5
63.0	17.0	61.0	16.0
64.0	18.0	62.0	16.5
65.0	18.5	63.0	17.0
66.0	19.0	64.0	18.0
67.0	19.5	65.0	18.5
68.0	20.0	66.0	19.0
69.0	20.5	67.0	19.5
70.0	21.0	68.0	20.0
71.0	21.5	69.0	20.5
72.0	22.0	70.0	21.0
73.0	23.0	71.0	21.5
74.0	23.5	72.0	22.0
75.0	24.0	73.0	23.0
76.0	24.5	74.0	23.5
77.0	25.0	75.0	24.0
78.0	25.5	76.0	24.5
79.0	26.0	77.0	25.0
80.0	26.5	78.0	25.5
81.0	27.0	79.0	26.0
82.0	28.0	80.0	26.5
83.0	28.5	80.5	27.0

84.0	29.0	81.0	27.5
85.0	29.5	82.0	28.0
86.0	30.0	82.5	28.0
87.0	30.5	83.0	28.5
88.0	31.0	83.5	28.5
89.0	31.5	84	29.0
90.0	32.0	84.5	29.0
91.0	33.0	85.0	29.5
92.0	33.5	85.5	30.0
93.0	34.0	86.0	30.0
94.0	34.5	86.0	30.0
95.0	35.0	87.0	60.5
96.0	35.5	87.5	31.0
97.0	36.0	88.0	31.0
98.0	37.0	88.5	31.5
99.0	37.5	89.0	32.0
100.0	38.0	89.5	32.0
101.0	38.5	90.0	32.5
102.0	39.0	90.0	32.5
103.0	39.5	90.5	32.5
104.0	40.0	90.5	32.5
105.0	40.5	91.0	33.0
106.0	41.0	91.0	33.0
107.0	41.5	91.0	33.0
108.0	42.0	91.5	33.0
109.0	43.0	92.0	33.5
110.0	43.5	92.0	33.5

Provided, however, that clause (b) shall not apply when the difference between the wet bulb temperature as indicated by the hygrometer in the department concerned and the

wet bulb temperature taken with a hygrometer outside in the shade is less than [35°F or 2^0C];

Provided further that when the reading of the wet bulb temperature outside in the shade exceeds [80^0F or 27^0 C], the value of the web bulb temperature allowed in the schedule for a given dry bulb temperature may be correspondingly exceeded to the same extent.

19. Provision of hygrometer

In all departments of cotton spinning and weaving mills wherein artificial humidification is adopted, hygrometers shall be provided and maintained in such positions as are approved by the Inspector. The number of hygrometers shall be regulated according to the following scale:

(a) Weaving Department: One hygrometer for departments with less than 500 looms, and one additional hygrometer for every 500 or part of 500 looms in excess of 500.

(b) Other Departments**:** One hygrometer for each room of less than 8,495 cubic meters capacity and one extra hygrometer for each 5,663.4 cubic meters or part thereof, in excess of this.

(c) One additional hygrometer shall be provided and maintained outside each cotton spinning and weaving factory wherein artificial humidification is adopted and in a position approved by the Inspector, for taking hygrometer shade readings.

20. Exemption from maintenance of hygrometers

When the Inspector is satisfied that the limits of humidity allowed by the schedule to rule 18 are never exceeded, he may, for any department other than the weaving department, grant exemption from the maintenance of the hygrometer. The Inspector shall record such exemption in writing.

21. Copy of schedule to rule 18 to be affixed near every hygrometer

A legible copy of the schedule to rule 18 shall be affixed near each hygrometer.

22. Temperature to be recorded at each hygrometer

At each hygrometer maintained in accordance with rule 19, correct wet and dry bulb temperatures shall be recorded thrice daily during each working day by competent persons nominated by the manager and approved by the Inspector. The temperature shall be taken between 7 a.m. and 9 a.m., between 11 a.m. and 2 p.m. (but not in the rest interval) and between4 p.m. and 5.30 p.m. In exceptional circumstances, such additional readings and between such hours, as the Inspector may specify, shall be taken. The temperatures shall be entered in a Humidity Register in the prescribed Form No. 6, maintained in the factory. At the end of each month, the pet sons who have taken the readings shall sign the register and certify the correctness of the entries. The register shall always be available fen inspection by the Inspector.

23. Specifications of hygrometer

(1) Each hygrometer shall comprise two mercurial thermometers of wet bulb and dry bulb of similar construction, and equal in dimensions, scale and divisions of scale. They shall be mounted on a frame with a suitable reservoir containing water.

(2) The wet bulb shall be closely covered with a single layer of muslin, kept by means of a wick attached to it and dropping into the water in the reservoir. The muslin covering and the wick shall be suitable for the purpose, clean and free from size or grease.

(3) No part of the wet bulb shall be within 7.6 centimeters from the dry bulb or less than 2.5 centimeters from the surface of the water in the reservoir and the water reservoir shall be below it, or the side of it away from the dry bulb.

(4) The bulb shall be spherical and of suitable dimensions and shall be freely exposed on all sides to the air of the room.

(5) The bores of the stems shall be such that the position of the top of the mercury column shall be readily distinguishable at a distance of 61 centimeters.

(6) Each thermometer shall be graduated so that accurate readings may be taken between [10 and 48.9 degrees].

(7) Every degree from [70][10 degree up to 48.9 degrees] shall be clearly marked by horizontal lines on the stem each fifth and tenth degree shall be marked by longer marks than the intermediate degrees and the temperature marked opposite each tenth degree, [71] [10, 15.6, 21.1, 26.7, 32.2,37.8, 43.3 and 48.9].

(8) The markings as above shall be accurate, that is to say, at no temperature between [72] [I0 and 48.9 degrees] shall the indicated readings be in error by more than two-tenths of a degree.

(9) A distinctive number shall be indelibly marked upon the thermometer.

(10) The accuracy of each thermometer shall be certified by the National Physical Laboratory, London, or some competent authority appointed by the Chief Inspector and such certificate shall be attached to the Humidity Register.

24. Thermometers to be maintained In efficient order

Each thermometer shall be maintained at all times during the period of employment in efficient working order so as to give accurate indications and in particular

(a) the wick and the muslin covering of the wet bulb shall be renewed once a week;

(b) the reservoir shall be filled with water which shall be completely renewed once a day. The Chief Inspector may direct the use of distilled water or pure rain water in any particular mill or mills in certain localities;

(c) no water shall be applied directly to the wick or covering during the period of employment.

25. An inaccurate thermometer not to be used without fresh certificate

If an Inspector gives notice in writing that a thermometer is not accurate, it shall not, after one month from the date of such notice, be deemed to be accurate unless until it has been re-examined at prescribed and a fresh certificate obtained which certificate shall be kept attached to the Humidity register.

26. Hygrometer not to be affixed to wall etc.. unless protected by wood

(1) No hygrometer shall be affixed to a wall pillar, or other surface unless protected there from by wood or other non-conducting material at least 12.7 millimeters in thickness and distant at least 2.5 centimeters from the bulb of each thermometer.

(2) No hygrometer shall be fixed at a height of more than 1.7 meters from the floor to the top of thermometer stem or in the direct draughts from a fan, window, or ventilating opening.

27. No reading to be taken within 15 minutes of renewal of water

No leading shall be taken for record on any hygrometer within 15 minutes of the renewal of water in the reservoir.

28. How to introduce steam for humidification

In any room in which steam pipe are used for the introduction of steam for the purpose of artificial humidification of the air, the following provisions shall apply

(a) The diameter of such pipe shill not exceed 5.1 centimeters and in the case of pipes are installed after 1st day of April, 1949, the diameter shall not exceed 2.5 centimeters.

(b) Such pipes shall be as short as is reasonably practicable.

(c) All hangers supporting such pipes shall be separated from the bare pipes by an efficient insulator not less than 12.7 millimeters in thickness.

(d) No unrecovered jet from such pipe shall project more than 11.5 centimeters beyond the outer surface of any cover.

(e) The steam pressure shall be as low as practicable and shall not exceed 31.8 kg. per square centimeter.

(f) The pipe employed for the introduction of steam into the air in a department shall be effectively covered with such non-conducting material, as may be approved by the Inspector in order to minimize the amount of heat radiated by them into the department.

29. Lighting Application and commencement

(1) Subject as in these rules provided, rules 29 to 33 shall apply to factories in which persons are being regularly employed in a manufacturing process or processes for more than 48 hours a week, or in shifts, provided that nothing in these rules shall be deemed to require the provision of lighting of a specified standard in any building or structure so constructed that, in the opinion of the Chief Inspector, it would not be reasonably practicable to comply with such requirement.

(2) Rules 29 to 33 shall come into force, in respect of any class or description of factories, on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.

30. Lighting of interior parts

(1) The general illumination over those interior parts of a factory where persons are regularly employed shall he not less than [73][65 lux] measured in the horizontal plane at a level of 91.4 centimeters above the floor:

Provided that in any such parts in which the mounting height of the light source for general illumination necessarily exceeds 7.6 meters measured from the floor or where the structure of the room or the position or construction of the fixed machinery or plant prevents the uniform attainment of this standard, the general illumination at the said level shall be not less than [74][22 lux] and where work is actually being done the illumination shall be not less than [75][65 lux).

(2) The illumination over all other interior parts of the factory over which persons employed pass, shall, when and where a person is passing, be not less than [76][5.5 lux] at floor level.

(3) The standard specified in this rule shall be without prejudice to the provision of any additional illumination required to render the lighting sufficient and suitable for the nature of the work.

31. Prevention of glare

(1) Where any source of artificial light in the factor is less than 4.9 meters above floor level, no part of the light source or of the lighting fitting having a brightness greater than 15 candles per square centimeters shall be visible to persons whilst normally employed within 30.5 meters of the source except where the angle of elevation from the eye to the source or part of the fitting as the case may be exceeds 20^0

(2) Any local light, that is to say. an artificial light designed to illuminate particularly the area or part of the area of work of a single operative or small group of operatives working near each other, shall be provided with a suitable shade of opaque material to prevent glare or with other effective means by which the tight source is completely screened from the eyes of every person employed at a normal working place, or shall be so placed that no such person is exposed to glare there from.

32. Power of Chief Inspector to exempt

Where the Chief Inspector is satisfied in respect of any particular factory or part thereof or in respect of any description of workroom or process that any requirement of rules 29 to 31 is inappropriate or is not reason-ably practicable, he may, by order in writing, exempt the factory or part thereof, or description of workroom or process from such requirement to such extent and subject to such conditions as he may specify.

33. Exemption from rule 30

(1) Nothing in rule 30 shall apply to the parts of factories specified in Part I of the Schedule annexed hereto.

(2) Nothing in sub-rule (1) of rule 30 shall apply to the factories or parts of factories respectively specified in Part II of the said Schedule.

SCHEDULE

PART I

Parts of factories in which light sensitive photographic materials are made or used in an exposed condition.

Part II

Cement works.

Works for the crushing and grinding of limestone.

Gas works.

Coke oven works.

Electrical stations.

Flour mills.

Malting and breweries.

Parts of factories in which the following processes are carried on.

Concrete or artificial stone-making.

Conversion of iron into steel.

Smelting of iron ore Iron or steel rolling.

Hot rolling or forging, tempering or annealing of metals.

Glass blowing and other working in molten glass.

Tar distilling.

Petroleum refining and blending.

34. Quantity of drinking water

The quantity of drinking water to be provided for the workers in every factory shall be at least 4.5 liters per day per worker and such drinking water shall be readily available at all times during working hours.

35. Source of supply

The water provided for drinking shall be supplied

(a) from a public water supply system, or

(b) from any other source approved in writing by the Health Officer.

36. Means of supply

If drinking water is not supplied directly from taps either connected with public water-supply system or any other water supply system of the factory approved by the Health Officer, it shall be kept in suitable vessels, receptacles or tanks fitted with taps, and having dust proof covers placed on raised stands or platforms in shade and having suitable arrangements of drainage to carry away spilt water. Such vessels or receptacles and tanks shall be kept clean and the water renewed at least once every day. All practicable measures shall be taken to ensure that the water is free from contamination.

37. Cleanliness of well or reservoir

(1) Drinking water shall not be supplied from any open well or reservoir unless it is constructed, situated, protected and maintained as to be free from the possibility of pollution by chemical or bacterial and extraneous impurities.

(2) Where drinking water is supplied from such well or reservoir the water in it shall be sterilized once a week or more frequently if the Inspector, by written order, so requires, and the date on which sterilizing is carried out shall be recorded :

Provided that this requirement shall not apply to any such well or reservoir if the water therein is filtered and treated to the satisfaction of the Health Officer before it is supplied for consumption.

38. Report from Health Officer

The Inspector may, by order in writing, direct the Manager to obtain, at such time or at such intervals as he may direct, a report from the Health Officer as to the fitness for human consumption of the water supplied to the workers, and in every ease to submit to the Inspector a copy of such report as soon as it is received from the Health Officer.

39. Cooling of water

In every factory wherein more than two hundred and fifty workers are ordinarily employed

(a) the drinking water supplied to the workers shall, during hot weather, be cooled by ice or other effective method:

Provided that, if ice is placed in the drinking water, the ice shall be clean and wholesome and shall be obtained only from a source approved in writing by the Health Officer;

(b) the cooled drinking water shall be supplied in every can-teen, lunch-room and rest-room and also at conveniently accessible points throughout the factory which fur the purpose of these rules shall be called "Water Centers";

(c) the water centers shall be sheltered from the weather and adequately drained;

(d) the number of water centers to be provided shall be one "centre" for every 150 persons employed at any one lime in the factory.

Provided that in the case of a factory where the number of persons employed exceeds 500, it shall be sufficient if there is one such "centre" as aforesaid for every 150 persons up to the first 500 and one for every 500 persons thereafter.;

[77][Provided further that the distance between the places of work of any worker shall not be more than fifty meters from the nearest water centre or any distance as may be specified by the Inspector.]

(e) every water centre shall be maintained in a clean and orderly condition;

(f) every water centre shall be in charge of a suitable person who shall distribute the water. Such person shall be provided with clean clothes while on duty:

Provided that, the Chief Inspector may exempt any "water centre" from the requirements of this clause.

Clause (f) shall not apply to any factory in which suitable mechanically operated drinking water refrigerating units are installed to the satisfaction of the Chief Inspector.

40. Latrine Accommodation

Latrine accommodation shall be provided in every factory on the following scale:

(a) Where women are employed, there shall be at least one latrine seat for every 20 women;

(b) Where males are employed, there shall be at least one latrine scat for every 20 males:

Provided that, where the number of males employed exceeds 100, it shall be sufficient if there is one latrine scat for every 20 males up to the first 100, and one for every 50 thereafter.

In calculating the number of seats required under this rule, any odd number of workers less than 20 or 50, as the case may be, shall be reckoned as 20 or 50 and the maximum number of persons working in the factory at any time and not the total number of persons employed in the factory, shall be taken into account.

41. Latrines to conform to public health requirements

Latrines other than those connected with an efficient water-home sewage system, shall comply with the requirements of the Public Health authorities.

42. Privacy of latrines

Every latrine shall be under cover and every seat in the latrine shall be so partitioned off as to secure privacy and each partition shall have a proper door and fastenings.

43. Signboards to be displayed

Where workers of both sexes are employed there shall be displayed outside each latrine block a notice in the language understood by the majority of the workers "For Men only— or "For Women only", as the case may be. The notice shall also bear the figure of "a man" or of "a woman", as the case may be.

44. Urinal accommodation

(1) Urinal accommodation shall be provided for the use of workers and shall not be less than 61 centimeters in length for every 50 workers: provided that, where the number of workers employed exceeds 500, it shall be sufficient if there is one urinal for every 50 workers up to the first 50X) employed and one for every 100 thereafter. Where women are employed, separate urinal accommodation shall he provided for them on the same scale as mentioned above:

Provided further that the Chief Inspector of Factories may by order in writing exempt. subject to such conditions as he may think fit to impose, small factories employing less than 20 'workers from the provision of separate urinal accommodation if he is satisfied that the latrine accommodation in such factories is sufficient and suitable.

(2) In calculating the urinal accommodation required under sub-rule (1), any odd number of workers less than 50 or 100, as the case may be, shall be reckoned as 50 or 100, and the maximum number of persons working in the factory, at any time and not the total number of persons employed in the factory, shall be taken into account.

45. Urinals to conform to public health requirements

Urinals other than those connected with efficient water borne sewage system, and urinals in a factory wherein more than two hundred and fifty workers are ordinarily employed shall comply with the requirements of the Public Health authorities.

46. Certain latrines and urinals to be connected to sewage system

When any general system of underground sewerage with an assured water-supply for any particular locality is provided in a municipality all latrines and urinals other than septic tank latrines and any other type of latrines and urinals to be approved for this purpose by the Public Health authority, of a factory situated in such locality shall, if the factory is situated within 30.5 meters of an existing sewer, be connected with that sewage system.

47. Whitewashing and colourwashing of latrines and urinals

The walls, ceilings and partitions of every latrine and urinal shall be white-washed or colourwashed and the whitewashing or colourwashing shall be repeated at least once in every period of four months. The dates on which the whitewashing or colour washing is carried out shall be entered in the prescribed register (Form No. 7):

Provided that this rule shall not apply to latrines and urinals, the walls, ceiling, or partitions of which are laid in glazed tiles or otherwise finished to provide a smooth polished impervious surface and that they are washed with suitable detergents and disinfectants at least once in every period of four months.

48. Construction and maintenance of drains

All drains carrying waste or spoilage water shall be constructed in masonry or other impermeable materials and shall be regularly flushed and effluent disposed of by connecting such drains with a suitable drainage line:

Provided that, where there is no such drainage line, the effluent shall be deodorized and rendered innocuous and then disposed off in suitable manner to the satisfaction of the Health Officer.

49. Water taps in latrines

Where piped water-supply is available a sufficient number of water taps, conveniently access shall be provided in or near such latrine accommodation. Where there is no continuous supply of water, water cisterns with cans should be provided for washing purposes.

50. Number and location of spittoons

The number and location of the spittoons to be provided shall be to the satisfaction of the Inspector.

51. Type of spittoons

The spittoons shall be of either of the following types:

(a) A galvanized iron container with a conical funnel shaped cover. A layer of suitable disinfectant liquid shall always be maintained in the container, or

(b) a container filled with dry clean sand and covered with a layer of bleaching powder, or

(c) any other type approved by the Chief Inspector.

52. Cleaning of spittoons

The spittoons mentioned in clause (a) of rule 51 shall be emptied, cleaned and disinfected at least once every day and the spittoon mentioned in clause (b) of rule 51 shall be cleaned by scrapping out the top layer of sand as often as necessary or at least once every day.

52-A Planting of trees

[78][The occupier of every factory employing one hundred or more workers shall plant and maintain trees within the premises of the factory. The number, type and layout of trees shall be approved by the District Agricultural Officer concerned:

Provided that if it is not possible to plant trees due to non-availability of space in any factory or class of factories, the District Agricultural Officer may recommend to the Government for grant of exemption to such factory or class of factories from the provisions of this rule.]

CHAPTER IV

SAFETY

53. Further safety precautions

(1) Without prejudice to the provisions of sub-section (1) of section 21 in regard to the fencing of machines, the further precautions specified in the schedules annexed hereto shall apply to the machines noted in each schedule.

(2) This rule shall come into force, in respect of any class or description of factories. where machines noted In the said schedules are in use, on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.

(3) [79][Register prescribed under section 22(1): Register to record the names of specially trained adult workers shall be in Form No. 35 and this register shall be made available for inspection at all times and produced on demand during working hours or when any work is being carried on in the factory.]

[80][SCHEDULE I

Textile Machinery except Machinery used in Jute Mills

1. Application

The requirements of this schedule shall apply to machinery in factories engaged in the manufacture or processing of textiles other than jute textiles. The schedule would not apply to machinery in factories engaged exclusively in the manufacture of synthetic fibers.

2. Definitions

For the purposes of this schedule --

(a) "Calendar" means a set of heavy rollers mounted on vertical side frames and arranged to pass cloth between them. Calendars may have two to ten rollers, or bowls, some of which can be heated.

(b) "Embossing calendar" means a calendar with two or more tolls, one of which is engraved for producing figure effects of various kinds on a fabric.

(c) "card" means a machine consisting of cylinders of various sizes and in certain cases fiats covered with card clothing and set in relation to each other so that fibers to staple form may be separated into individual relationship. The speed of the cylinders and their direction of rotation varies. The finished pro-duct is delivered as a sliver. Cards of different types are: the revolving flat card, the roller and clearer card, etc.

(d) "card clothing" means the material with which the surfaces of the cylinder. duffer, fiats, etc , of a card are covered and consists of a thick foundation material made of, either textile fabrics through which are pressed many fine closely spaced specially bent wires, or mounted saw toothed wire.

(e) "Comber" means a machine for combing fibers of cotton, wool, etc. The essential parts are device for feeding forward a fringe of fibers at regular intervals and an arrangement of combs or pins. Which, at the right time pass through the fringe. All tangled fibers, shore fibers, and nibs are removed and the long fibers are laid parallel.

(f) "combined machinery" means a general classification of machinery including combers sliver lab machines, ribbon lab machines and gill boxes, but excluding cards.

(g) "Rotary staple cutter" means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibers into staple lengths.

(h) "Garnett machine " means any of a number of types of machines for opening hard twisted waste of wool, cotton, silk, etc Essentially, such machines consist of a licker-in ; one or more cylinders, each having a complement worker and stripper rolls ; and a fancy roll and doffer. The action of such machines is some-what like that of a wool card, but it is much more severe in that the various rolls are covered with garnet wire instead of clothing.

(i) "Gill box" means a machine used in the worsted system of manufacturing yarns. Its function is to arrange fibers in parallel order. Essentially, it consists of a pair of feed rolls and a series of followers where the followers move at a faster surface speed and perform a combing action.

(j) “In-running rolls" means any pair of rolls or drums between which there is a " nip ".

(k) “Interlocking arrangement " means a device that prevents the setting in motion of a dangerous part of a machine or the machine itself while the guard cover or door provided to safeguard against danger is open or unlocked, and which will also hold the guard cover or door closed and locked while the machine or the dangerous part is in motion.

(l) "Kier" means a large metal vat, usually a pressure type, in which fabrics may be boiled out, bleached, etc.

(m) "Ribbon lapper" means a machine or a part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibers have been straightened as much as possible.

(n) “Silver Lapper" means a machine or a part of a machine in which a number of parallel card covers are drafted slightly, laid side by side in a compact sheet and wound into a cylindrical package.

(o) "Loom" means a machine for effecting the inter-locking of two series of yarns crossing one another at right angles. The warp yarns are wound on a warp beam and pass through beadles and reeds. The filing it shot across in a shuttle and settled in place by reeds and slay, and the fabric is wound on a cloth beam.

(p) "Starch mangle" means a mangle that is used specifically for starching cotton goods. It commonly consists 'of two large rolls and a shallow open vat with several immersion rolls. The vat contains the starch solution.

(q) "Water mangle" means a calendar having two or more rolls used for squeezing water from fabrics before drying. Water mangles also may be used in other ways during the finishing of various fabrics

(r) "Mule" means a type of spinning frame having a bead stock and a carriage as its two main sections. The head stock is stationary. The carriage is movable and it carries the spindles which draft, and spin the ravine into yarn. The carriage extends over the whole width of the machine and moves slowly towards and sway from the head stock during the spinning operation.

(s) "Nip" is the danger zone between two rolls or &Urns which by virtue of their positioning and movement create a nipping hazard.

(t) "Openers and pickers" means a general classification of machinery which includes breaker pickers, intermediate pickers, finisher pickers, single process pickers, multiple process pickers, willow machines card and picker waste cleaners, thread extractors, shredding machines, roving waste openers, shoddy pickers, bale breakers, feeders, vertical openers, lattice cleaners, horizontal cleaners and any similar machinery equipped with either cylinders screen section, calendar section, rolls, or beaters used for the preparation of stuck fur further processing.

(u) "Paddler" means a trough for a solution and two or more squeeze rolls between which cloth passes after being passed through a mordant or dye bath.

(v) "Plaiting machine" means machine used to lay cloth into floods or regular length for convenience or subsequent process or use.

(w) "Roller printing machine" means a machine consisting of a large central cylinder or pressure bowl, around the lower part of the perimeter of which is placed a series of engraved color rollers (each having a color through), a furnisher roller, doctor blades, and tic. The machine is used for printing fabrics.

(x) "Continuous bleaching range" means a machine for bleaching of cloth in rope or open-width form with the following arrangement. The cloth after wetting out pass through a squeeze roll into a saturator containing solution of caustic soda and then to an enclosed 1-Box. A V-shaped arrangement is attached to the front part of the J-Box for uniform and rapid saturation of the cloth with steam before it is packed down in the J-Box. The cloth, in a single strand rope form passes over a guide roll down the first arm of the 'V' and up the second. Steam is injected into the ‘V' at the upper end of the second arm so that the cloth is rapidly saturated with steam at this point. The J-Box capacity is such that cloth will remain hot for a sufficient time to complete the scouring action. It then passes a series of washers with a squeeze roll in-between. The cloth then passes through a second set of saturator, J-Box, and washer, where it is treated with the peroxide solution. By slight modification of the form of the unit, the same process can be applied to open-width cloth.

(y) "Mercerizing range" means a 3-bowl mangle, a tentee frame, and a number or boxes for washing and scourging. The whole set up is in a straight line and all parts operate continuously. The combination is used to saturate the cloth with

sodium hydroxide, stretch it while saturated, and washing out most of the caustic before releasing tension.

(z) "Sanforizing machine" means a machine consisting of a large steam-heated cylinder, and endless, thick, woolen felt blanket which is in close contact with the cylinder for most of its perimeter, and an electrically heated shoe which presses the cloth against the blanket while the latter is in a stretched condition as it curves around feed-in roll,

(aa) "Shearing machine" means a machine used for shearing cloth. Cutting action is provided by a number of steel blades spirally mounted on a roller. The roller rotates in close contact with a fixed ledger blade. There may be from one to six such rollers on a machine.

(bb) "Sinning machine" means a machine which comprises of a heated roller, plate, or an open gas flame. The cloth or yarn is rapidly passed over the roller or the plate or through the open gas flame to remove fun or hairiness by burning.

(cc) "Slasher" means a machine used for applying a size mixture to warp yarns. Essentially, it consists of a stand for holding section beams, a size box, one or more cylindrical dryers or an enclosed hot air dryer, and a beaming end for winding the yarn on the loom beams.

(dd) "Tenter frame" means a mashing for drying cloth under tension. It essentially consists of a pair of endless travelling chains fitted with clips of fin pins and carried on tracks. The cloth is firmly held at the selvages by the two chains which diverge as they move forward so that the cloth is brought to the desired width.

(ee) "Wrapper" means a machine for preparing and arranging the yarns intended for the warp of a fabric specifically a beam warped.

3. General safety requirements

(1) Every textile machine shall be provided with individual mechanical or electrical means for starting and stopping such machines. Belt shifter on machines driven by belts and shifting should be provided with a belt shifter lock or an equivalent positive locking device.

(2) Stopping and starting handles or other controls shall be of such design and so positioned as to prevent the operator's hand or fingers from striking against any moving part or any other part of the machine.

(3) All belts, pulleys, gears, chains, sprocket wheels, and other dangerous moving parts of machinery which either form part of the machinery or arc used in association with it, shall be securely guarded.

4. Openers and pickers

(1) In all opening or picker machinery, beaters and other dangerous parts shall be securely fenced by suitable guards so as to prevent contact with them. Such

guards and doors or covers of openings giving access to soy dangerous part of the machinery shall be provided with interlocking arrangement;

Provided that in the case of doors or covers of openings giving access to any dangerous part other than heater covers, instead of the interlocking arrangement, such openings may be so fenced by guards which prevent access to any such dangerous part and which is either kept positively locked in position or fixed in such a manner that it cannot be removed without the use of hand tools.

(2) The feed rolls on all opening and picking machinery shall be covered with a guard designed to prevent the operator from reaching the nip while the machinery is in operation.

(3) The lap forming roller shall be fitted with a guard or cover which shall prevent access to the nip at the intake of the lap roller and fluted roller as long as, the weighted rack is down. The guard or cover shall be so locked that it cannot be raised until the machine is stopped, and the machine cannot be started until the cover or guard is closed:

Provided that the foregoing provision shall not apply to the machines equipped with automatic lap forming devices:

Provided further that any such machine equipped with an automatic lap forming device shall not be used unless the automatic lap forming device is in efficient working order.

5. Cotton cards

(1) All cylinder doors shall be secured by an interlocking arrangement which shall prevent the door being opened until the cylinder has ceased to revolve and shall render it impossible to restart the machine until the door has been closed

Provided that the latter requirement in respect of the automatic locking device shall not apply while stripping or grinding operations are carried out:

Provided further that stripping or grinding operations shall be carried out only by specially trained adult workers wearing tight fitting clothing whose names have been recorded in the register prescribed in this behalf as required in sub-section (I) of section 22.

(2) The licker-in shall be guarded so as to prevent access to the dangerous parts.

(3) Every card shall be equipped with an arrangement that would enable the card cylinder to be driven by power during stripping/grinding operations without having to either shift the main belt to the fast pulleys of the machine or to dismantle the interlocking mechanism. Such an arrangement shall be used only for stripping or grinding operations.

6. Garnett machines

(1) Garnett licker-ins shall be enclosed.

(2) Garnett fancy rolls shall be enclosed by guards. These shall be installed in a way that keep worker relic reasonably accessible for removal or adjustment.

(3) The underside of the garnets shall be guarded by a screen mesh or other form of enclosures to prevent access.

7. Gill boxes

(1) The feed end shall be guarded so as to prevent fingers being caught in the pins of the intersecting falters.

(2) All nips of in-running rolls shall be guarded by suitable nip guards conforming to the following specifications:

Any opening which the guard may permit when fitted in position shall be so restricted with respect to the distance of the opening from any nip point through that opening and in any circumstances, the maximum width of the opening shall not exceed the following:

Distance of opening from nip point	Maximum width from of opening
0 to 38 mm	6 mm
39 to 63 mm	10 mm
64 to 88 mm	13 mm
89 to 140 mm	15 mm
141 to 165 mm	19 mm
166 to 190 mm	22 mm
191 to 219 mm	32 mm

8. Silver and ribbon tappers (cotton)

The calendar drums and the lap spool shall be provided with a guard to prevent access to the nip between the in-running rolls.

9. Speed frames

Jack box wheels at the head stock shall be guarded and the guard shall have interlocking arrangement.

10. Spinning mules

Wheels on spinning mule carriages shall be provided with substantial wheel guards, extending to within 6mm of the rails

11. Warpers

Swiveled double-bar gates shall be installed on all warpers operating in excess of 410 meters/min. These gates shall have interlocking arrangement, except for the purpose of inching or jogging: Provided that the top and bottom ban of the gate shall be at least 1.05 and 0.53 meters high from the floor or working platform, and the gate shall be located 38 mm from the vertifial tangement to the beam head.

12. Slashers

(1) Cylinder Dryers.

(a) All open nipe of in-running rolls shall be guarded by nip guards conforming to the requirements in paragraph 2.

(b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm. above the floor to control the operation from any point.

(c) Slashers operated by push button control shall have stop and start buttons located at each end of the machine and additional buttons located on both sides of the machine at the size box and the delivery end. If calendar rolls are used, additional buttons shall be provided at both sides of the machine at points near the nips, except when slashers are equipped with an enclosed dryer as in paragraph (b)

(2) Enclosed hot air dryer

(a) All open nips of the top squeezing rollers shall be guarded by nip guards conforming to the requirements in paragraph 7 (2).

(b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm. above the floor to control the operation from any point.

(c) Slashers operated by push button control shall have stop and start buttons located at each end of the machine and additional stop and start buttons located on both sides of the machine at intervals spaced not more than 1.83 meters on centers.

13. Looms

(1) [81][Each loom shall be equipped with suitable guards designed to minimize the danger from flying shuttles.

(2) [82][Beam weights for tension in beam shall be of such construction so as to prevent it falling during its adjustment.)

14. Valves of triers, tanks and other containers

(1) Each valve controlling the flow of steam, injurious gases or liquids into a kier or any other tank or container into which a person is likely to enter in connection with a process, operation, maintenance or for any other purpose, shall be presided with a suitable locking arrangement to enable the said person to lock

the valve securely in the closed position and retain the key with him before entering the lcier, tank or container.

(2) Wherever boiling tanks, caustic tanks and any other containers from which liquids which are hot; corrosive or toxic may overflow or splash, are so located that the operator cannot see the contents from the floor or working area emergency shut off valves which can be controlled from a point not subject to danger or splash shall be provided to prevent danger.

15. Shearing machines

All revolving blade on shearing machine shall be guarded so that the opening between the cloth surface and the bottom of the guard will not exceed 10 mm.

16. Continuous bleaching range (Cotton and rayon's)

The nip of all in-running rolls on open-width bleaching machine rolls shall be protected with a guard to prevent the worker from being caught at the nip. The guard shall extend across the entire length of the nip.

17. Mercerizing range (piece goods)

(1) A stopping device shall be provided at each end of the machine.

(2) A guard shall be provided attach end of the frame between the in-running chain and the dip opener.

(3) A nip guard shall be provided for the in-running rolls of the mangle and washers and the guard shall conform to the requirements in paragraph 7 (2).

18. Tenter frame

(1) A stopping device shall be provided at each end of the machine.

(2) A guard shall be provided at each end of the machine frame at the in-running chain and the clip opener.

19. Paddels

Suitable nip guard conforming to the requirement in paragraph 7 (2) Shall be provided to all dangerous in-running rolls.

20. Centrifugal extractors

(1) Each extractor shall be provided with a guard for the basket and the guard shall have inter-locking arrangement.

(2) Each extractor shall be equipped with a mechanically or electrically operated brake to quickly stop the basket when the power driving the basket is shut off.

21. Squeezer or wringer extractor water mangle, starch mangle, backwasher (worsted yarn crabbing machines, and decating machines)

All in-running rolls shall be guarded with nip guards conforming to the requirements in paragraph 7 (2).

22. Sanforizing and palmer machines

(1) Nip guards shall be provided on all accessible in-running rolls and these shall conform to the requirements in paragraph 7 (2).

(2) Access from the sides to the nips of in-running rolls should be fenced by suitable side guards.

(3) A safety trip rod cable or wire centre cord shall be provided across the front and back of all palmer cylinders extending the length of the fact of the cylinder. It shall operate readily whether pushed or pulled. The safety trip shall not be more than 170 cm above the level at which (sic) the from splashing the operator, the floor or working surface.

23. Rope washers

(1) Splash guards shall be installed on all rope washers unless the machine is so designed as to prevent the water or liquid from splashing the operator, the floor, or working surface.

(2) A safety rip rod, cable or wire centre cord shall be provided across the front and the back of all rope washers extending the length of the face of the washer. It shall operate readily whether pushed or pulled. This safety trip shall be not more than 170 cm. above the level on which the operator stands and shall be readily accessible.

24. Laundry washer, tumbler or shaker

(1) Each drying tumbler, each double cylinder shaker or clothes tumbler, and each washing machine shall be equipped with an inter-locking arrangement which will prevent the power operation of the inside cylinder when the outer door on the case or shell is open, and which will also prevent the outer door on the case or shell from being opened, without shutting off the power and the cylinder coming to a stop. This should not prevent the movement of the inner cylinder by means of a hand operated mechanism or an inching device.

(2) Each closed barrel shall also be equipped with adequate means for holding open the doors or covers of the inner and outer cylinders or shells while it is being loaded or unloaded.

25. Printing machine (Roller type)

(1) All in-running rolls shall be guarded by nip guards conforming to the requirement in paragraph 7 (2).

(2) The engraved roller gears and the large crown wheel shall be guarded.

26. Calendars

The nip at the in-running side of the rolls shall be provided with a guard extending across the entire length of the nip and arranged to prevent the fingers of the workers from being pulled in between the rolls or between the guard and the rolls, and so constructed that the cloth can be fed into the rolls safely.

27. Roary staple cutters

The cutter shall be protected by a guard to prevent hands reaching the cutting zone.

28. Plating machines

Access to the trip between the knife and card bar shall be prevented by a guard.

29. Hand baling machine

An angle iron handle-stop guard shall be installed at right angle to the frame of the machine. The stop guard shall be so designed and so located that it will prevent the handle from travelling beyond the vertical position should the handle slip from the operator's hand when the pawl has been released from the teeth of the take up gear.

30. Flat work ironer

Each flat-work or collar ironer shall be equipped with a safety bar or other guard across the entire front of the seed or first pressure rolls, so arranged that the striking of the bar or guard by the-hand of the operator or other person will stop the machine. The guard shall be such that the operator or other person cannot reach into the rolls without removing the guard. This may be either a vertical guard on all sides or a complete cover. If a vertical guard is used, the distance from the floor or working platform to the top of guard shall be not less than 1.83 meters.

SCHEDULE II

COTTON GINNING

Line shaft

The line shaft or second motion in cotton ginning factories, when below floor level, shall be completely enclosed by a continuous wall or un climbable fencing with only so many openings as are necessary for access to the shaft for removing cotton seed, cleaning and oiling, and such openings shall be provided with gates or doors which shall be kept closed and locked.

SCHEDULE III

WOOD-WORKING MACHINERY

1. Definitions

For the purposes of this schedule

(a) Wood working machine means a circular saw, band saw, planning machine, chain mortising machine or vertical spindle moulding machine operating on wood or cork.

(b) Circular saw means circular saw working in a bench (including a rack bench) but does not include a pendulum or similar saw which is moved towards the wood for the purpose of cutting operation.

(c) Band saw means a band saw, the cutting portion of which runs in a vertical direction but does not include a log saw or band resawing machine.

(d) Planning machine means machine for overhand planning or for thicknessing or for both operations.

2. Stopping and starting device

An efficient stopping and starting device shall be provided on every wood working machine. The control of-this device shall be of such a position as to be readily and conveniently Operated by the person in charge in the machine.

3. Space around machines

The space surrounding every wood-working machine in motion shall be kept free from obstruction.

4. Floors

The floor surrounding every wood-working machine shall be maintained in good and level condition, and shall not be allowed to become slippery, and, as far as practicable, shall be kept free from chips or other loose material.

5. Training and supervision

(1) No person shall be employed at a wood-working machine unless he has been sufficiently trained to work that class of machine, or unless he works under the adequate supervision of a person who has a thorough knowledge of the working of the machine.

(2) A person who is being trained to work a woodworking machine shall be fully and carefully instructed as to the dangers of the machine and the precautions to be observed to secure safe working of the machine.

6. Circular saws

Every circular saw shall be fenced as follows:

(a) Behind and in direct line with the saw there shall be a riving knife, which shall have a smooth surface, shall be strong. rigid and easily adjustable, and shall also conform to the following conditions:

(i) The edge of the knife nearer the saw shall form an arc of a circle having a radius not exceeding the radius of the largest saw used on the bench.

(ii) The knife shall be maintained as close as practicable to the saw, having regard to the nature of the work being done at the time, and, at the level of the bench table, the distance between the front edge of the knife and the teeth of the saw shall not exceed 12.7 millimeters.

(iii) For a saw of a diameter of less than 61 centimeters, the knife shall extend upwards from the bench table to within 2.5 centimeters of the top of the saw, and for a saw of a diameter of 61 centimeters or over shall extend upwards from the bench table to a height of at least 22.9 centimeters.

(b) The top of the saw shall be covered by a strong and easily adjustable guard, within a flange at the side of the saw farthest from the fence. The guard shall be kept so adjusted that the said flange shall extend below the roots of the teeth of the saw, The guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw.

(c) The part of the saw below the bench table shall be protected by two plates of metal or other suitable material one on each side of the saw; such plates shall not be more than 15.2 centimeters apart, and shall extend from the axis of the saw outwards to a distance of not less than 5.1 centimeters beyond the teeth of the saw. Metal plates, if not beaded, shall be of a thickness of at least 3 millimeters or, if beaded, be of a thickness of at least 3 millimeters.

7. Push sticks

A push stick or other suitable appliance shall be provided for use at every circular saw and at every vertical spindle moulding machine to enable the work to be done without unnecessary risk.

8. Band saws

Every band saw shall be guarded as follows:

(a) Both sides of the bottom pulley shall be completely encased by sheet or expanded metal or other suitable materials.

(b) The front of the top pulley shall be covered with sheet or expanded metal or other suitable materials.

(c) All portions of the blade shall be enclosed or otherwise securely guarded except the portion of the blade between the bench table and the top guide.

9. Planning machines

(1) A planning machine (other than planning machine which is mechanically fed) shall not be used for overhand planning unless it is fitted with a cylindrical cutter block.

(2) Every planning machine used for overhand planning shall be provided with a "bridge" guard capable of covering the full length and breadth of the cutting slot in the bench, and so constructed as to be easily adjusted both in a vertical and horizontal direction.

(3) The feed roller of every planning machine used for thicknessing, except the combined machine for overhand planning and thicknessing, shall be provided with an efficient guard.

10. Vertical spindle moulding machines

(1) The cutter of every vertical spindle moulding machine shall be guarded by the most efficient guard having regard to the nature of the work being performed.

(2) The wood being moulded at a vertical spindle moulding machine shall, if practicable, be held in a jig or holder of such construction as to reduce, as far as possible, the risk of accident to the worker.

11. Chain mortising machines

The chain of every chain mortising machine shall be provided with a guard which shall enclose the cutters as far as practicable.

12. Adjustment and maintenance of guards

The guards and other appliances required under this schedule shall be

(a) Maintained in an efficient state,

(b) constantly kept in position while the machinery is in motion, and

(c) so adjusted as to enable the work to be done without unnecessary risk.

13. Exemptions

Paragraph 6, 8, 9 and 10 shall not apply to any wood-working machine in respect of which it can be proved that other safeguards are provided, maintained and used which render the machine as safe as it would be if guarded in the manner prescribed in this schedule.

SCHEDULE IV

RUBBER MILLS

1. Installation of machines

Mills for breaking down, cracking, grating, mixing, refining and warming rubber or rubber compounds shall be so installed that the top of the front roll is not less than 1.2 meters above the floor or working level: Provided that in existing installations where the top of the front roll is below this height, a strong rigid distance bar guards shall be fitted across the front of the machine In such position that the operator cannot reach the nip of the rolls.

2. Safety devices

(1) Rubber mills shall be equipped with-

(a) hoppers so constructed or guarded that it is impossible for the operators to come into contact in any manner with the nip of the rolls;

(b) horizontal safety-trip rods or tight wire cables across both front and rear, which will, when pushed or pulled, operate instantly to disconnect the power and apply the brakes, or to reverse the roils:

(2) Safety-trip rods or tight wire cables on rubber mills shall extend across the entire length of the face of the rolls and shall be located not more than 1.8 meters above the floor or working level.

(3) Safety-trip rods and tight wire cables on all rubber mills shall be examined and tested daily in the presence of the Manager or other responsible person and, if any defect is disclosed by such examination and test, the mill shall not be used until such defect has been remedied.

SCHEDULE V

1. Special rule for printing presses

In printing works, every platen machine driven by power shall be fitted with an efficient, finger-guard and every guillotine machine, driven by power, with an efficient knife-guard.

2. Special rule for jute mills

In Jute mills-

(a) the feed table of every softener machine shall, as far as practicable, be not less than 1.5 meters in length;

(b) the feed table of such softener machine shall be provided with an automatic knocking off device which shall stop the machine in case the worker's band is drawn in and prevent the hand from reaching the spiked rollers; and

(c) the automatic device mentioned in clause (b) shall be maintained in an efficient state and be kept in position whenever the machinery is working.

3. Special rule for tea factories

In tea factories, the roll table shall be fenced to the satisfaction of the Inspector and brushes shall be provided to the workers for the purposes of sweeping the roll table.

4. Special rule for bricks and tiles works

In brick and tile works, a finger-guard shall be fitted at the feed end to the full length of the mould of every revolving press.

5. Special rule for decorticating factories

In decorticating factories, the beater arms and the feed mouth of the decorticator shall, as far as practicable, be guarded as follows:

A grating of 19 millimeters diameter wrought iron rods spaced 64 millimeters apart and supported by iron stiffeners 5.1 centimeters by 6 millimeters thick shall be fixed at a height of 15.2 centimeters above the tip of the beater arms. A strong wooden plank 38 millimeters thick and iron plated on the underside shall be clamped with bolts and nuts over this grating leaving a space of 20.3 centimeters wide for the feeding of groundnuts. A grating of 2.5 centimeters diameter wrought iron rods spaced 38 millimeters apart shall be fixed at a height of 12.7 centimeters just above the feed mouth and another wooden

plank 22.9 centimeters wide shall be fixed over the full length of the decorticator platform.

6. Special rules for factories in which polishing and grinding machinery are in use

Safety devices

(a) All collars, set screws, shafts, couplings, clutches, keys, pulleys, keys and belts in polishing and grinding machines shall be effectively guarded.

(b)

(i) Defective wheels shall not be used.

(ii) Grinding wheels shall fit freely on their spindles. They shall never be forced on, nor shall they be let loose on spindles.

(iii) The soft metal bushings at the centre shall not extend beyond the sides of the wheels. Wheels shall be kept as true as practicable and work rests shall be kept adjusted close to wheels.

(iv) Wherever possible. a compressible medium, such as blotting paper, rubber or similar material, at least as large III diameter as that of the flanges, shall be fitted between a wheel and each of its flanges.

(v) Projecting arbor ends of grinding and polishing wheels shall be effectively guarded.

(c) Except with the written permission of the Chief Inspector no emery or abrasive wheel shall be kept unprovided with a strong iron cover guard that shall enclose the wheel as far as practicable to retain fragments in the event of bursting. The guard shall be securely attached to the frame of the machine or other solid foundation.

(d) Where workers are employed continuously on dry grinding or polishing wheels, such wheels shall be provided with an efficient exhaust system capable of drawing off dust particles.

(e) Wheels shall not be operated at a speed in excess of that which is recommended by the manufacturer.

SCHEDULE VI

ALL FACTORIES

(a) Wherever practicable and considered necessary by the Inspector, service platforms and gangways shall be provided for overhead shafting and when required by him these shall be securely fenced with guards, rails and toe boards.

(b) Safe access shall be provided to all hearing clutches, belt shifting levers and all such other appliances which are required to be handled or operated while the machinery is at work.

(c) All ladders used in replacing belts or in attending similar overhead machinery shall be specially made for that work and provided with books or an effective nonskid device.

(d) No transmission machinery in motion shall be cleaned with cotton waste, rags or similar materials held in hand.

(e) All belts shall be regularly examined to ensure that the joints are safe and the belts are kept in proper tension.

(f) Each water gauge glass of a boiler shall be fitted with an efficient guard.

(g) All condenser pipes of steam engines and exhaust pipes of oil engine; shall be adequately guarded.

[83][SCHEDULE VII

[84][SAFELY OF CENTRIFUGAL MACHINES]

1. Centrifugal machine shall be provided with sufficient inter-locking devices that will physically prevent the lids from being opened whilst the rotating drums or baskets are in motion under power or due to power derived earlier and by then switched off and also prevent the starling of the drums or baskets under power while the lids arc open.

2. The above requirements shall not apply while charging, ploughing and discharging operations are carried out when the drums or the baskets are rotated at lower speed.

3. Centrifugal machines shall not be operated at a speed in excess of the manufacturer's rating which shall be legibly stamped by the manufacturers both on the inside of the basket and on the outside of the machine casing at easily visible places.

4. All centrifugal machines shall be provided with effective breaking arrangements [85][for bringing the] cage, drum or basket to rest within a seasonable short period of time after the power to drive the motor is cut off.

5. The cages, drums or baskets shall be thoroughly examined by a competent person once in envy twelve months to check their balance and in case balance at high speed is not observed, effective steps shall be taken to restore their balance before recomissioning the machines.]

[86][SCHEDULE VIII

POWER PRESSES

1. Application

The schedule shall apply to all types of power presses including press brakes, except when used for working hot metal.

2. Definition

For the purpose of this Schedule,

(a) "approved" means approved by the Chief Inspector;

(b) "fixed fencing" means fencing provided for the tools of a power press being fencing which has no moving part associated with or dependent upon the mechanism of a power press and includes that part of a closed tool which acts as a guard;

(c) "power press" means a machine used in metal or other industries for moulding, pressing, blanking, raising drawing and similar purposes;

(d) "safety device" means the fencing and any other safeguard provided for the tools of a power press.

3. Starting and stopping mechanism

The starting and stopping mechanism shall be provided with a safety stop so as to prevent over running of the press or descent of the ram during tool setting, etc.

4. Protection of tool and disc

(1) Each press shall be provided with a fixed guard with a slip plate on the underside enclosing the front and all sides of the tool.

(2) Each disc shall be provided with a (heed guard surrounding its front and sides and extending to the back in the form of a tunnel through which the pressed article falls to the rear of the press.

(3) The design, construction and mutual position of the guards referred to in sub-paragraphs (1) and (2) shall be such as to preclude the possibility of the workers hand or fingers reaching the danger zone.

(4) The machine shall be fed through a small aperture at the bottom of the guard but a wider aperture may be permitted for a second or subsequent operation if feeding is done through a chute.

(5) Notwithstanding anything contained in sub-paragraphs (1) and (2) an automatic or an inter-locked guard may he used in place of a fixed guard, but where such guards are used they shall be maintained in an efficient working condition and if any guard develops a defect, the power press shall not be operated unless the defect of the guard is removed.

5. Appointment of persons to prepare power presses for use

(1) Except as provided in paragraph 6, no person shall set, re-set, adjust or try out the tools on a power press or install or adjust any safety device thereon, being installation or adjustment preparatory to production of (to proving, or carry out an inspection and test of any safety device thereon required by paragraph 8 unless he –

(a) has attained the age eighteen;

(b) has been trained in accordance with the sub-paragraph (2) ; and

(c) has been appointed by the Occupier of the Factory to carry out those duties in respect of the class or description of power press or the class or description of safety device to which the power press or the safety device (as the case may

be) belongs; and the name of every such person shall be entered in a Register in Form 35.

(2) The training shall include suitable and sufficient practical instruction in the matters in relation to cash type of power press and safety device in respect of which it is proposed to appoint the person being trained.

6. Examination and testing of power-presses and safety devices

(1) No power press or safety device shall he taken into use in any Factory for the first time in that factory or in case of a safety device for the first time on any power press, unless it has been thoroughly examined and tested, in the case of a power press, after installation in the factory, or in the ease of a safety device, when in position on the power press in connection with which it is to be used.

(2) No power press shall be used unless it has been thoroughly examined and tested by a competent person, within the immediately preceding period of twelve months.

(3) No power press shall be used unless every safety device (other than fixed fencing) thereon has within the immediately preceding six months when in position on that power press been thoroughly examined and tested by a competent person.

(4) The competent person carrying out an examination and test under the foregoing provisions shall make a report of the examination and test containing the following particulars and every such report shall be kept readily available for inspection, namely:

(a) name of the occupier of the Factory;

(b) address of the Factory;

(c) identification number or mark sufficient to identify the power press or the safety device;

(d) date on which the power press or the safe device was first taken into use in the Factory;

(e) the date of each periodical thorough examination carried out as per requirements of sub-paragraph (2) above;

(f) particulars of any defects affecting the safe working of the power press or the safety device found at any such thorough examination and steps taken to remedy such defects.

7. Defects disclosed during a thorough examination and tests

(1) Where any defect is disclosed in any power press or in any safety device by any examination and test under paragraph 6 and in the opinion of the competent person carrying out the examination and test, either

(a) the said defect is a cause of danger to workers and in consequence the power press or safely device (as the case may be) ought not to be used until the said defect has been remedied ; or

(b) the said defect may become a cause of danger to workers and in consequence the power press or the safety device (as the case may be) ought not to be used after the expiration of a specified period unless the said defect has been remedied ; such defect shall, as soon as possible after the completion of the examination and test, be notified in writing by the competent person to the Occupier of the Factory and, in the case of a defect falling within clause (b) of this paragraph such notification shall include the period within which, in the opinion of the competent person, the defect ought to be remedied.

(2) In every case where notification has been given under this paragraph, a copy of the report made under sub-paragraph (4) of paragraph 6 shall be sent by the competent person to the Inspector for the area within fourteen days of the completion of the examination and test.

(3) Where any such defect is notified to the Occupier in accordance with the foregoing provisions of this paragraph the power press or safety device (as the case may be) having the said defect shall not be used

(a) In the case of a defect falling within clause (a) of sub-paragraph (1) until the said defect has been remedied; and

(b) In the case of defect falling within clause (b) of sub-paragraph (1), after the expiration of the said defect has been remedied.

(4) As soon as is practicable after any defect of which notification has been given under sub-paragraph (1) has been remedied, a record shall be made by or on behalf of the Occupier stating the measures by which and the date on which the defect was remedied.

8. Inspection and test of safety devices

(1) No power press shall be used after the setting, resetting or adjustment of the tools thereon unless a person appointed or authorised for the purpose under paragraph 5 has inspected and tested every safety device thereon whack is in position on the said power press;

Provided that an inspection, test and certificate as aforesaid shall not be required where any adjustment of the tools has not caused or resulted in any alteration to or disturbance of any safety device on the power press and if, after the adjustment of the tools, the safety devices remain, in the opinion of such a person as aforesaid, in efficient working order.

(2) Every power press and every safety device thereon while it is in position on the said power press shall be inspected and tested by a trained person every day.

9. Defects disclosed during an inspection and test

(1) Where it appears to any person as a result of any inspection and test carried out by him under paragraph 8 that any necessary safety device is not in position or is not properly in position on a power press or that any safety device which is in position

on a power press is not in his opinion suitable, he shall notify the manager forthwith.

(2) Except as provided in sub-paragraph (3) of this paragraph where any defect is disclosed in a safety device by any inspection and test under paragraph 8, the person carrying out the inspection and test shall notify the manager forthwith.

(3) Where any defect in a safety device is the subject of a notification in writing under paragraph 7 by virtue of which the use of the safety device may be continued during a specified period without the said defect having been remedied, the requirement in sub-paragraph (2) of this paragraph shall not apply to the said defect until the said period has expired.

10. Identification of power presses and safety devices

For the purpose of identification every power press and every safety device provided for the same shall be distinctively and plainly marked.

11. Training and Instructions to operators

The operators shall be trained and instructed in the safe method of work before starting work on any power press.

12. Exemptions

(1) If in respect of any factory, the Chief Inspector is satisfied that owing to t he circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this Schedule are not necessary for the protection of the workers employed on any power press or any class or description of power press in the factory, the Chief Inspector may by a certificate in writing (which he may in his discretion revoke at any time), exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

(2) Where such exemption is granted a legible copy of the certificate, showing the conditions (if any) subject to which it has been granted, shall be kept posted in the factory in a position where it may be conveniently read by the persons employed.

[87][SCHEDULE IX

SHEARS, SLITTERS AND GUILLOTINE MACHINES

1. Definitions

For the purpose of this Schedule,

(a) "guillotine" means a machine ordinarily equipped with straight, beveledged blade operating vertically against a stationary resisting edge and used for cutting metallic or non-metallic substances;

(b) "shears" or "shearing machine" means a machine ordinarily equipped with straight, bevel-edged blades operating vertically against resisting edge, or with rotary, overlapping cutting wheels and used for shearing metals or non-metallic substances;

(c) "slitter" or slitting machine" means a machine ordinarily equipped with circular disc-type knives and used for trimming or cutting into metal or non-metallic substances or for slitting them into narrow strips; for the purpose of this schedule, this term includes bread or other feed slicers equipped with rotary knives or cutting dirs.

2. Guillotine and Shears

(1) Where practicable, a barrier metal guard of adequate strength shall be provided at the front of the knife, fastened to the machine frame and shall be so fixed as would prevent any part of the operator's body to reach the descending blade from above. below or through the barrier guard or from the sides:

Provided that in case of machines used in the paper printing and allied industries, where a fixed barrier metal guard is not suitable on account of the height and volume of the material being fed, there shall be provided suitable starting devices which require simultaneous action of both the Wands of the operator or an automatic device which will remove both the hands of the operator from the danger zone at every descent of the blade.

(2) At the back end of such machines an inclined guard shall be provided over which the slit pieces would slide and be collected at a safe distance in a manner as would prevent a person at the back from reaching the descending blade.

(3) Power-driven guillotine cutters, except continuous feed trimmers, shall be equipped with:

(a) starting devices which require the simultaneous action of both hands to start the cutting motion and of at least one hand on a control during the complete stroke of the knife ; or

(b) an automatic guard which will remove the hands of the operator from the danger zone at every descent of the blade, used in conjunction with one-hand starting devices which require two distinct movements of the device to start the cutting motion, and so designed as to return positively to the non-starting position after each complete cycle of the knife.

(4) Where two or more workers are employed at the same time on the same power-driven guillotine cutter equipped with two-hand control, the device shall be so arranged that, each worker shall be required to use both hands simultaneously on the safety trip to start the cutting motion, and atleast one hand on a control to complete the cut.

(5) Power-driven guillotine cutters, other than continuous trimmer, shall be provided, in addition to the brake or other stopping mechanism with an emergency device which will prevent the machine from operating in the event of failure of the brake when the starting mechanism is in the non-starting position.

3. Slitting machine

(1) Circulars disc-type knives on machines for cutting metal and leather, paper, rubber, textile or other non-metallic sub-stances shall. if within reach of operators standing on the floor or working level, he provided with guards enclosing the knife edges at all times as near as practicable to the surface of the material and which may either.

(a) automatically adjust themselves to the thickness of the material ; or

(b) be fixed or manually adjusted so that the space between the bottom of the guard and the material will not exceed 6 mm (1/4 inch) at any time.

(2) portion of blades underneath the tables or benches of slitting machines shall be covered by guard.

4. Index cutter and Vertical Paper slotters

Index cutters, and other machines for cutting strips from the ends of hooks, and for similar operations, shall be provided with fixed guards, so arranged that the fingers of the operators cannot come between the blades and the tables.

5. Corner cutters

Corner cutters, used in the manufacture of paper boxes, shall be equipped with,

(a) suitable guard, fastened to the machines in front of the knives and provided with slots or perforations to afford visibility of the operations : or

(b) other guards equally efficient for the protection of the fingers of the workers.

6. Band Knives

Band wheels on band knives and all portions of the blades except the working side between the sliding guide and the table on vertical machines, or between the wheel guards on horizontal machines, shall be completed enclosed with hinged guards of sheet metal not less than I mm. (0.04 inch) in thickness or of other material of equal strength.]

[88][SCHEDULE X

PAPER, PAPER BOARD AND CORRESPONDING MACHINES FOR PULP PRODUCTION

1. Application

The requirements of the Schedule shall apply to machinery in manufacture of paper, paper board and also to the corresponding machines for pulp production.

2. Definitions

For the purpose of this schedule:

(a) "approach safety stop" means a safety device which automatically removes a hazardous function when part of a body comes within dangerous proximity of the danger zone;

(b) "broke " means paper or paper board wasted out during processing

(c) " broke Guilletine " means a machine with a straight knife for cutting up broke or paper reels ;

(d) "Calendar "means a machine for glazing paper or paper board:

(e) " Calendar work platform " means a lifting platform at a Calendar;

(f) "Constant Pressure Switch" means a start and stop switch automatically returning to the stop position when not actuated:

(g) "Crosscutting knife" means a knife mounted on a cylinder roll cross cutting the web ;

(h) "drum reel up" means a machine (pope reel) for reeling up the web on an empty spool, friction-driven

(i) "nip point " means roll nip or any other place where face converge or run so close together that part of the body is in danger of being caught and injured;

(j) "pulper " means a machine for making fiber suspension by mechanical treatment of pulp or paper broke;

(k) "reeling Drum or Spool" means a roll for reeling up the web in full machine width at the drum reel-up ;

(l) "threading" means (ceding a narrower pointed web (tail end) through a machine;

(m) “web" means pulp paper or paper-board in the shape of a continuous carpet during manufacturing or processing.

3. Safety Measures against Nip Hazards

(1) General: Nip points shall, when possible be inaccessible from floor level or from any other surface that can easily be stepped on. If this requirement cannot be satisfied the risk must be avoided in some other way, like air jet/chute, carrier ropes, carrier belt or felt. The platforms should have the board of atleast 100 millimeters high and two handrails al a height of 400 millimeters and at 900 millimeters. The vertical members of the platform should be spaced at 1 meter for cross platform and 2 meters for longitudinal platform.

(2) Threading: Threading shall be done without manual interference when feasible. If threading must be done manually measures must be taken to achieve adequate safety as in paragraph (l) above.

4. Reeling Drum Exchange

Feeding during spool exchange at the drum reel up shall be effected only by using air jet or air hose, if the speed of the paper machine exceeds 100 meters per minute. If the speed of the machine is less than 100 meters per minute the feeding may be done manually, but measures must be taken to safety during the operation.

5. Safety measures against risks of being squeezed or knocked down

The movement of machine pan or other technical device must not expose anybody to the risk of being squeezed, knocked down or injured. If it cannot be ensured that the danger-zone is in accession when a risk is present, the moving device must be equipped with an approach safety stop. Its movement controlled by a hand-operated constant pressure switch or the risk avoided.

6. Web Reeling

(1) Web reeling shall be arranged so that the reel cannot cause injury by moving without control from its intended position by providing a cradle or a protection barrier.

(2) When a reel is carried by a through shaft, a device must. if necessary, be arranged to keep the shaft ends in their intended position.

(3) When a reel is carried and substantially governed by resting on two rolls, an ejection shield must be arranged to stop any reel, ejection when the web speed exceeds 15 meters per minute. If the shield is movable. a web speed exceeding 15 meters per minute must not be attainable unless the shield is in its protective position. The shield must not be removable from that position if the web speed exceeds the above value.

7. Handling of reels

(1) A reel must not be automatically put in free motion on a floor level or surface that can easily be stepped on unless this can be done with adequate safety.

(2) A reel discharger shall be arranged and handled so that no-body can be injured by its function or by the discharge reel.

(3) The discharger must not come into operation unless measures are taken to receive the discharger reel safety, if necessary, the discharger shall be controlled by a hand-operated constant pressure switch from a place where the operator can supervise both the zone of movement of the discharger and the course of the discharged reel.

(4) A reel lifted by the ends of a through shaft must not rotate unless the shaft ends and the lifting equipment can stand the stress caused by the rotation.

8. Cutting of paper

(1) A power-driven sharp edged tool for cutting paper shall be shielded against inadvertent contact and as far as possible, inaccessible while in operation.

(2) A crosscutting knife shall be shielded so that the tool is inaccessible when in operation. It must not be possible to start the tool unless the shield is in its protective position and it must not be possible to open the shield unless the tool is inoperative and its energy supply has been cut off by a safety switch which can be locked in its off-position.

9. Pulpers, pulp chests. Etc

(1) The opening of a pulper, a pulp chest another reservoir of a feeding service shall be arranged so that nobody is in danger of falling or stepping down through the opening.

(2) A pulper and its feeding device shall have a joint emergency stop and if possible a joint energy cut-off device, lock able in the off position.

(3) Broke holes should not be allowed to become covered by paper or broke which may hide them from operating personnel.

10. Certain devices moving vertically

(1) Calendar work platforms, pallet table, rider rolls, ejection shields, reel lowering devices, lids o driving section covers broke guillotine knives or other stationery devices, which for functional reasons arc regularly maneuvered to considerably different heights. shall be constructed, handled and maintained in such a way that they do not cause any risk of injury by falling down or in any other way and must not be liable to fall down as a result of interruption or variation in the energy supply.

(2) An operating movement that can cause risk of injury shall be controlled by a constant pressure switch from a place where the operator can supervise the zone of movement.

(3) A device as referred to in paragraph (I) above carried by a wire rope or chain shall have the requisite derailment protection and a breaker to stop the movement if the wire rope or chain should slacken or burst.

(4) If operationally stopped in a position where it could cause a risk of injury by falling down, the device shall be automatically secured.

(5) The hoisting equipment of a device as referred to in paragraph (1) above shall be readily available for full inspection,

11. Calendar Work Platform

(1) Calendar work platform shall be longer than the width of the calendar roll and provided with a gate or opening bar. The gate may only be openable inward or the bar may only be openable upwards and it must not be capable of staying open. The bar shall contain at least two rails.

(2) A calendar super work platform shall be controlled by a constant pressure switch, located on the platform.

(3) Along the work side of the platform there shall be on emergency stop controlling the movement of the platform as well as the calendar bowl rotation.

(4) The hoisting and lowering speed must not exceed 0.15 meter per second.

(5) A hydraulic cylinder being part of the hoisting gear of a calendar work platform shall have a valve which, in the event of a hose or pipe fracture or considerable leakage. Prevents the platform from moving downwards or retards its descent. Such a valve shall be mounted in or directly on the cylinder.

(6) A calendar super work platform carried by wire rope or chain shall have a reliable catch.

(7) An elevating screw of a calendar wait platform shall be self broking bearing nuts and safety nuts shall serve as load-carrying devices.

12. Examination and Inspection

(1) A device as referred to in paragraph 10 (1) above, shall when needed and atleast twice a year, and in case of a calendar work platform once a month, is subjected to thorough examination by a competent person as long as it is being used. If a calendar work platform has been out of use for more than three months, thorough examination shall be carried out before it is used again.

(2) In the course of examination, a check shall be made to ensure that safety devices are in working order and also that the hoisting and towering speed of the calendar work platform does not exceed the permitted value.

(3) An examination log book shall he maintained and made readily available.

13. Hose Pipes

(1) A hose pipe used for cleaning near a rotating pair of rolls shall have a rounded nozzle or otherwise be arranged so that the nozzle cannot be caught in the nip.

(2) A hose used for flushing liquid at a pressure exceeding 25 Kilogram/Centimeter shall have a constant pressure actuated valve for flow control. If needed for safely during handling the nozzle shall be mounted on a stand or the hose designed for two operators.

14. Space inside a machine

Any opening leading to a walkable passage into or through a machine must be blocked. This does not apply if the passage must be accessible for operational or maintenance purpose on condition that entering does not involve any risk.

15. Inching

If it is necessary, to operate a machine temporarily without the protective devices otherwise provided, the speed of the web shall be as low as possible and shall not exceed 15 meters per minute. The machine shall he governed by a hand operated constant pressure switch from a place where the operator can supervise those places where protective devices have been rendered inoperative.

16. Emergency stop

An emergency stop must not break the energy supply to any device needed in an emergency or provoke any movement that might aggravate the situation. Braking provoked by the emergency stop must not be so violent as to cause any risk of injury.

17. Auxiliary measures

In place where large quantities of pulp or broke are frequently handled, measures shall he taken to facilitate the work. Special attention shall he paid to the need for such measures in places where there are high temperatures.

18. Work Instructions

(1) Instructions shall be provided for the work routines necessary to promote safety during normal operation as well as during maintenance cleaning supervision and similar kinds of periodically recurrent tasks.

(2) Work permit system should be adopted for maintenance and cleaning operations.

19. Other Safety Precautions

(1) Wherever risk of injury prevails, necessary caution boards or symbols should be displayed like moving equipments, Nip points, slippery area, men at work, etc.

(2) Adequate training in safe operations should be imparted to workers at the time of induction into the factory and at periodical intervals not exceeding a year and whenever there is a job rotation or operational changes.

(3) For paper machine speeds exceeding 200 meters per minute start up alarm should be provided before crawl and before being put to run.

(4) All rotating elements should indicate direction of rotation.

(5) Wherever nip is there, indication in bold letter to be provided.)

[89][SCHEDULE - XI

CONVEYORS

PART-A — GENERAL

1. Definition

For the purposes of this Schedule:

“Conveyor " means a horizontal, inclined, or vertical device for moving or transporting material of any kind, in a path determined by the design of the device, and having points of loading or discharge and the device shall include skip hoists, but shall not include devices like cranes, hoists, monorails, bucket drag lines, platform elevators, plant railways, cableways and tramways.

2. Design, construction and maintenance, etc

(1) Conveyor shall be of good design, proper construction, sound material, adequate strength and free from defects and shall be properly maintained.

(2) 'In running nips ' shall he securely fenced by safeguard of substantial construction or by any other suitable device.

(3) Conveyor shall be installed in such a way that a clearance of atleast 45 centimeters shall be provided between the conveyors side of the passage way and the conveyor.

Hand rails or railings shall be provided on open sides of the walkway all along the belt.

(4) When workers have to cross over conveyor, regular crossing facilities affording safe passage shall be provided.

(5) Suitable device like gongs, whistles or signal lights shall be provided to the operator to warn the workers before starting the conveyor.

(6)

(a) The starting button or switch for the conveyor shall be so located that the operator can see as much of the conveyor as possible. The starting and stopping devices shall be marked distinctly and so located that they can be clearly seen and safely approached.

(b) All personnel working on or around the conveyor shall be made to have knowledge about the location and operation of all stopping devices.

(7) Side guard of sufficient height and strength shall be provided to prevent falling of material from the conveyor.

(8)

(a) conveyors shall be tested and the parts thereof thoroughly examined by a competent person before being taken into use for the first time or after it has undergone any alteration or major repairs liable to affect its strength or stability.

(b) A certificate of such tests and examinations signed by the competent person making the tests and examinations specifying the maximum safe conveying load shall be obtained and made available to the Inspector on demand.

(c) Conveyors shall be thoroughly examined atleast once in every twelve months by the competent person and report of the competent person shall be made available to the Inspector on demand.

(9) Belt conveyors carrying materials which might stick to tail drums or belts, shall be provided with fixed scrappers or revolving brushes for removing the deposits to avoid the hazards in cleaning the moving parts or pulleys by hand or shovels while the belts are in motion.

(10) Conveyors shall be provided with automatic and continuous lubrication systems or with lubricating facilities so arranged that oiling and greasing can be performed without the oils coming within the dangerous proximity to moving pans.

(11) Before commencing any maintenance work, electrical or mechanical, ' permit ' to work shall be obtained from the manager or any person so authorized by the manager for the purpose and the procedure laid down in the permit shall be strictly followed.

(12) The workers working on conveyor shall be adequately trained.

(13) No person shall be required or allowed to ride on conveyors.

3. Conveyor Guarding

(1) The Underpasses of the conveyor shall be securely guarded.

(2) All the transfer points of conveyors system shall be adequately enclosed.

(3) Where the top of hopper for feeding conveyor is less than 90 centimeters above floor, the opening shall be adequately guarded.

(4) All the areas underneath the counterweight of the conveyor system shall be suitable (sic) barricaded so as to prevent any person getting injured due to accidental fall of the 'counterweight'.

(5) Gears, sprockets, sheaves and other moving parts shall be either adequately guarded or positioned in such a way as to protect workers against personal injuries.

4. Safety Devices

(1) A conveyor shall

(i) stop when its driving power is cut-off and remain stopped until the power is reconnected;

(ii) have a provision at each point of loading or delivery of the conveyor, to stop the conveyor;

(iii) not be capable of being restarted after having been stopped until the device, if any, by which it is stopped is reset in the running position; and

(iv) where the conveyor can be stopped by means of a push button have provision whereby the push button can be secured in the stop position.

(2)

(a) Chord shall be provided on both sides of the belt along the walkway covering the entire length of the belt when pulled shall stop the conveyor and the distance between two consecutive emergency stopping devices of the chords shall not exceed 23 (twenty three) meters.

(b) For conveyers other than belt conveyors emergency stopping devices shall be provided at the accessible points throughout the length of the conveyors and distance between the two consecutive devices shall not be more than 8 (eight) meters.

(3) Overload protection device shall be provided so that when overloaded all starting devices shall get automatically tripped off. In addition to such overload protection customarily provided for electric motors, there shall be an overload device designed to protect the conveyor and mechanical drive parts. In the event of an overload, the device shall shut off the electric power quickly, disconnect the conveyor or drive parts from the motive power, or limit the applied torque.

(4) When a conveyor has stopped because of an overload, all starting devices shall be locked out and the cause of the overload removed. The entire conveyor shall be inspected before it is restarted.

(5) If two or more conveyers are operated in series, conveyors shall be interlocked in such a way that if one conveyor is stopped all other conveyors fed by it shall be stopped simultaneously.

(6) Conveyors which carry loads up inclines shall be provided with mechanical devices that will prevent machinery from reversing and carrying the loads back towards the loading point in the event of the power being cut-off.

(7) The precautions necessary to avoid the accumulation of the static electricity shall be taken.

5. Personal Protective Equipment

The worker engaged in the operation of conveyors shall wear tight fitting clothing and use appropriate personal protective equipment.

PART-B

SPECIAL TYPES OF CONVEYORS

6. Gravity Conveyers

(1) The delivery ends of the conveyors shall be provided with electrically or mechanically operated devices to give warning that a package is about to be delivered.

(2) To prevent the spread of fire, the chute conveyors shall be

(a) enclosed in shafts made of fire resisting materials, with a door at each charging station and at the delivery end ; or

(b) provided with automatic fire doors or with draught checks where the chutes pass through the floors.

(3) The gravity roller conveyors shall be provided with guides or guard rails on each side of the conveyor way at corners or turns and on each side of those portions of the conveyor way which are more than 5 (five) feet above the floor.

7. Chain Conveyor

(1) Overhead chain conveyor systems shall be so designed and installed that ample clearance is provided between the material transported and any fixed or moving objects.

(2) Apron conveyors used for carrying unpacked bottles, jars or other glass containers shall be provided with side rails at a suitable distance above the conveying surfaces to prevent the containers from tipping over or falling off.

(3) Return portion of a chain conveyor shall be adequately guarded.

8. Bucket Conveyors

(1) Inclined bucket conveyors shall be enclosed with solid guards which,

(a) are not less than 7 (seven) feet in height, but preferably extend to the full height of the machinery, so as

(i) to prevent anything being pushed or thrown into the shaft ways ; and

(ii) to hold any material which might drop from the buckets; and

(b) are provided with wire-glass windows or doors or with removable sections to facilitate inspection, cleaning and repairs.

(2) Controls of movable tripping devices for bucket conveyors shall be so located that they can be operated from a safe position.

9. Screw Conveyors

(1) Screw conveyors shall be placed in steel or steel-lined trough fitted with well-secured tight covers of not less than 3 (three) mm (1/8 inch) steel plates in removable sections and should be provided with second covers of heavy wire mesh in corresponding removable sections underneath the solid top covers so as to guard the screw when the solid cover is removed for inspection of the interior.

(2) Inside coven of screw conveyors, or outside covers where so inside covers are provided, should be mechanically or electrically interlocked with the control units or driving mechanisms in such a manner that the power is automatically shut off whenever a section of the cover is removed.

(3) No person shall be allowed/required to stand or walk on housings of screw conveyors.

10. Pneumatic Conveyors

(1) Blower or exhaust fans for pneumatic conveyors systems shall be —

(a) of non-combustible construction;

(b) of adequate but not greatly excessive capacity properly to perform the functions required;

(c) firmly secured to substantial supports or foundations.

(d) so located and arranged as to afford ready and safe access for cleaning inspection, lubrication and repairing ; and

(e) provided with remote control in addition to any controls located close to the systems.

(2) Where readily ignitable materials are passed through fans for pneumatic conveyor systems, the blades and spiders of the fans shall be of non-ferrous material; or the casings shall be lined with non-ferrous material.

(3) Blades or runners of blower or exhaust fans for pneumatic conveyor systems shall be of sufficient strength to prevent contact with casings or distortion under conditions of deposit loading or other operating factors.

(4) Housing or casings of blower or exhaust fans for pneumatic conveyors shall be so constructed as to prevent distortion and loss of alignment under operating conditions.

(5) Intake openings of blowers or exhaust fans for pneumatic conveyors shall be protected with substantial metal screens or gratings.

(6) Bearing of blower or exhaust fans for pneumatic conveyors shall be self-lubricating, dust-tight, and located outside casings and ducts.

(7) Ducts for pneumatic conveyor systems shall be constructed of steel plate of adequate strength or other metal equal in strength to steel plate.

(8) Ducts for pneumatic conveyor systems shall be

(a) reasonably tight throughout, with no openings other than those required for the proper operation and maintenance of the systems;

(b) substantially supported by metal brackets or hangers, and thoroughly braced where required ; and

(c) kept open and unobstructed throughout their entire length with no screens inside them.

(9) Hand holes for cleaning purposes in ducts for pneumatic conveyors shall be equipped with tight-fitting sliding or swinging doors pro-vided with substantial latches.

(10) Where material is fed by hand into pneumatic conveyors through openings 30 (thirty) centimeters 12 (twelve) inches or larger, provision shall be made to prevent worker from being drawn into the ducts, such as by installing feed hoppers extending at least I (one) meter-40 (forty inches) from the ducts.

(11) Doors of a pneumatic conveyor shall be so interlocked that they cannot be opened when there is positive internal pressure and the conveyor cannot be started unless all the doors are closed].

54. Employment of young person's on dangerous machines

[90][The machines specified in Sections 28, 29 and 30 and the machines mentioned below] shall be deemed to be of such dangerous character that young person's shall not work at them unless the provisions of section 23 (1) are complied with:

Power presses other than hydraulic presses; milling machines used in the metal trades;

Guillotine machines;

Circular saws;

Platen printing machines;

Decorticator;

Oil expeller;

54A.

The following pans of machines will be deemed to be machinery to be guarded by the makers for the purpose of section 26 (1):

(1) The platen motion of letter printing machine.

(2) Reciprocating dies of power presses.

(3) Reciprocating knife of the guillotine machine.

(4) Revolving drums and cylinders in all machines, such as groundnut seed crustier, soap mixtures and foundry tumblers.

(5) Revolving beaters in groundnut decorticator.

(6) Abrasive wheels.

(7) Projections on revolving parts such as key heads set screws, cotton pins and coupling bolts.

(8) Revolving open arm pulleys including fan blades.

(9) Back gears, change wheels and cog driver of lathes.

(10) Level drives of planning, shaping, slotting, drilling and milling machines.

(11) All cog and level drives of oil expellers,

55. Hoists and lifts

(1) [91][A Register shall be maintained to record particulars of examination of hoists and lifts and shall give particulars as shown in Form No. 36.]

(2) **Exemption of certain hoists and lifts**: In pursuance of the provisions of sub-section (4) of section 28. in respect of any class or description of hoist or lift specified in the first column of the following schedule, the requirements of section 28 specified in the second column of the said schedule and set opposite to that class or description of hoist or lift shall not apply.

SCHEDULE

Class or description of hoist or lift	Requirements which shall not apply
(1)	(2)
Hoists or lifts mainly used for raising materials for charging blast furnaces or lime kilns.	Sub-section (1) (b) in so far as it requires a gate at the bottom landing: sub-section (1) (d); sub-section (1) (e)

Hoists not connected with mechanical power and which are not used for carrying persons	Subsection (1) (b) in so far as it requires the hoist-way or lift-way enclosure to be so constructed as to prevent any person or thing from being trapped between any pans of the hoist or lift and any fixed structure or moving part ; sub-section (1)(e).

55A. Lifting machines, chains, ropes and lifting tackles

(1) No lifting machine and no chain, rope or lifting tackle, except a fiber rope or fiber rope sling, shall be taken into use in any factory for the first time in that factory unless it has been tested and all parts have been thoroughly examined by a competent person and a certificate of such a test and examination specifying the safe working load or loads and signed by the person making the test and the examination, has been obtained and is kept available for inspection.

(2) Every jib crane so constructed that the safe working load may be varied by the raising or lowering of the jib. shall have attached thereto either an automatic indicator of safe working loads or an automatic jib angle indicator and a table indicating the safe working loads at corresponding inclinations of the jib or corresponding radii of the load.

(3) A table showing the safe working loads of every kind and size of chain, rope or lifting tackle in use, and in the case of a multiple sling, the safe working load at different angles of the legs, shall be posted in the store in which the chains, ropes or lifting tackles are kept, and in prominent positions on the premises, and no chain, rope or lifting tackle not shown in the table shall be used. This sub-rule shall not apply in respect of any lifting tackle if the safe working loads thereof or in the case of a multiple sling, the safe working load at different angles of the legs is plainly marked upon it.

(4) The register to be maintained under clause (a) (iii) of sub-section (1) of section 29 of the Act shall contain the following particulars and shall be kept readily available for inspection:

(i) Name of occupier of factory.

(ii) Address of the factory.

(iii) Distinguishing number or mark, if any and description sufficient to identify the lifting machine, chain, rope or the lifting tackle.

(iv) Date when the lifting machine, chain, rope or lifting tackle was first taken into use in the factory.

(v) Date and number of the certificate relating to any test and examination made under sub-rules (I) and (8) together with the name and address of the person who issued the certificate.

(vi) Date of each periodical thorough examination made under clause (a) (iii) of sub-section (I) of section 29 of the Act and sub-rule (7) and by whom it was carried out.

(vii) Date of annealing or other heat treatment of the chain and other lifting tackle made under sub-rule (6) and by whom it was carried out.

(viii) Particulars of any defects found at any such thorough examination or after annealing and affecting the safe working load, and of the steps taken to remedy such defects.

(4A) Passage ways for cranes

(i) To provide access to mil tracks of overhead travelling cranes suitable passage-ways of at least 50cm. (20 inches) width with toe boards and double hand rails 90 cm. (3 feet) high shall be provided alongside, and clear of the rail tracks of overhead travelling cranes, such that no moving part of the crane can strike persons on the ways, and the passage-way shall be at a lower level than the crane can strike persons on the ways, and the passage-way shall be at a lower level than the crane track itself. Safe access ladders shall be provided at suitable intervals to afford access to these passage-ways, and from passage-ways to the rail tracks.

(ii) [92][The Chief Inspector may, for reasons to be specified in writing, exempt any factory in respect of any overhead travelling crane from the operation of any provisions of clause (i) subject to such conditions as he may specify.]

(5) All rails on which a travelling crane moves and every track on which the carriage of a transporter or runway moves shall be of proper size and adequate strength and have an even running surface and every such rail or track shall be properly laid, adequately supported and properly maintained.

(6) All chains, and lifting tackle, except a rope sling shall, unless they have been subjected to such other heat treatment as may be approved by the Chief Inspector, be effectively annealed under the supervision of a competent person at the following intervals:

(i) All chains, slings, rings, hooks, shackles and swivels used in connection with molten metal or molten slag or when they are made of 12.7 millimeters bar or smaller, once at least in every six months.

(ii) All other chains, rings, hooks, shackles and swivels in general use, once at least in every twelve month:

Provided that chains and lifting tackle not in frequent use shall, subject to the Chief Inspector's approval, be annealed only when necessary. Particulars of such annealing shall

be entered in a register prescribed under sub-rule (4) which shall be kept available for inspection.

(7) Nothing in the foregoing sub-rule (6) shall apply to the following classes of chains and lifting tackle:

(i) Chains made of malleable cast iron.

(ii) Plate link chains.

(iii) Chains, rings, hooks, shackles and swivels made of steel or of any non-ferrous metals.

(iv) Pitched chains, working on sprocket or pocketed wheels.

(v) Rings, hooks, shackles and swivels permanently attached to pitched chains, pulley blocks or weighing machines.

(vi) Hooks and swivels having screw threaded parts or ball-bearing or other case-hardened parts.

(vii) Socket shackles secured to wire ropes by white metal capping.

(viii) Bordeaux connections.

Such chains and lifting tackles shall be thoroughly examined by a competent person once at least in every twelve months and particulars entered in the register kept in accordance with sub-rule (4).

(8) All lifting machines, chains, ropes and lifting tackle, except a fiber rope or fiber rope sling, which have been lengthened, altered or repaired by welding or otherwise shall, before being again taken into use, be adequately i.e., tested and re-examined by a competent person and a certificate of such test and examination be obtained and particulars entered in the register kept in accordance with sub-rule (4).

(9) No person under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as driver of a lifting machine whether driven by mechanical power or otherwise, or to give signals to a driver

56. Pressure Plant

(1) Definition

In this rule

(a) ‘design pressure ' means the maximum pressure that a pressure vessel or plant is designed to withstand safely when operating normally

(b) 'maximum permissible working pressure' is the maximum pressure at which a pressure vessel or plant is permitted to be operated or used under this rule and is determined by the technical requirements of the process

(c) ‘plant' means a system of piping that is connected to a pressure vessel and is used to contain a gas vapour or liquid under pressure greater than the atmospheric pressure, and includes the pressure vessel

(d) 'pressure vessel ' means [93][a] vessel that may be used for containing, storing, distributing, transferring, distilling, processing or other-wise handling any gas, vapour or liquid under pressure greater than the atmospheric pressure and includes any pipeline fitting or other equipment attached thereto or used in connection therewith ; and

(e) [94]["notified person" means a person notified by the State Government, for the purpose of this rule;

(2) Exceptions

Nothing in this rule shall apply to

(a) [95][* * *]

(b) vessels made of ferrous materials having an internal operating pressure not exceeding 1 kg/cm^2 (I5 1 bs/square inch);

(c) steam boiler, steam and feed pipes and their fittings coming under the purview of Indian Boilers Act, 1923 (Central Act V of 1923);

(d) metal bottles or cylinders used for storage or transport of compressed gases or liquefied or dissolved gases, under pressure covered by the Gas Cylinder Rules, 1940 framed under the Indian Explosives Act. 1884 (Central Act IV of 1884):

(e) vessels in which internal pressure is due solely to the static head of liquid

(f) vessels with a nominal water capacity not exceeding 500 liters connected in a water-pumping system containing air that is compressed to serve as a cushion;

(g) vessel for nuclear energy application;

(h) refrigeration plant having a capacity of three tons or less of refrigeration in 24 hours; and

(i) working cylinders of steam engines or prime movers, feed pumps and steam traps ; turbine castings ; compressor cylinders steam separators or drivers : steam strainers ; steam desuper heaters ; oil separators :air receivers for fire sprinklers installations ; air receivers of monotype machines provided the maximum working pressure of the air receiver does not exceed 1.33kg.f/cm.(201bs/sq inch) and the capacity 84.95 liters (3 cu.ft); air receivers of electrical circuit breakers; air receivers of electrical relays ; air vessels on pumps, pipe coils, accessories of instruments and appliances, such as cylinders and piston assemblies used for operating relays and inter-locking type of guards ; vessels with liquids subjected to static head only ; and hydraulically operating cylinders other than any cylinder communicated with an air loaded accumulator.

(3) Design and construction

Every pressure vessel or plant used in a factory

(a) shall be properly designed on sound engineering practice;

(b) shall be of good construction. sound material, adequate strength and free from any patent defects; and

(c) shall be properly maintained in a safe condition:

Provided that a pressure vessel or plant in respect of the design and construction of which there is an Indian Standard or a standard of the country of manufacture or any other law or regulation in force, shall be designed and constructed in accordance with the said standard, law or regulation, as the case may be and certificate thereof shall be obtained from the manufacturer or from the [96][notified person] which shall be kept and produced on demand by an Inspector.

(4) Safety devices

Every pressure vessel shall be fitted with

(a) a suitable safety valve or other effective pressure relieving device of adequate capacity to ensure that the maximum permissible working pressure of the pressure vessel shall not be exceeded. It shall be set to operate at a pressure not exceeding the maximum permissible working pres-sure and when more than one protective device is provided, only one of the devices need be set to operate at the maximum permissible working pressure and the additional device shall be set to discharge at a pressure not more than 5 percent. in excess of the maximum permissible working pressure;

(b) a suitable pressure gauge with a dial range not less than 1.5 times the maximum permissible working pressure. easily visible and designed to show at all times the correct internal pressure and marked with a prominent red mark at the maximum permissible working pressure of the pressure vessel:

(c) a suitable nipple and globe valve connected for the exclusive purpose of attaching a test pressure gauge for checking the accuracy of the pressure gauge referred to in clause (b) of this sub-rule:

(d) a suitable stop valve or valves by which the pressure vessel may be isolated from other pressure vessels or plant or source of supply of pressure. Such a stop valve or valves shall be located as close to the pressure vessel as possible and shall be easily accessible ; and

(e) a suitable drain cock or valve at the lowest part of the pres-sure vessel for the discharge of the liquid or other substances that may collect in the pressure vessel :

Provided that it shall be sufficient for the purpose of this sub-rule if the safety valve or pressure relieving device, the pressure gauge and the stop valve are mounted on a pipeline immediately adjacent to the pressure vessel and where there is a range of two or more similar pressure vessels served by the same pressure lead, only one set

of such mountings need be fitted on the pressure lead immediately adjacent to the range of pressure vessels, provided they cannot be isolated.

(5) Pressure reducing devices

(a) Every pressure vessel which is designed for a working pressure less than the pressure at the source of supply, or less than the pressure which can be obtained in the pipe connecting the pressure vessel with any other source of supply, shall be fitted with a suitable pressure reducing valve or other suitable automatic device to prevent the maximum permissible working pressure of the pressure vessel being exceeded ;

(b) To further protect the pressure vessel in the event of failure of the reducing valve or device, at least one safety valve having a capacity sufficient to release all the steam, vapour or gas without undue pressure rise as determined by the pressure at the source of supply and the size of the pipe connecting the source of supply, shall be fitted on the low pressure side of the reducing valve.

(6) Pressure vessel or plant being taken into use

(a) No new pressure vessel or plant shall be taken into use in a factory after coming into force of this rule unless it has been hydrostatically tested by a competent person at a pressure at least 1.3 times the design pressure, and no pressure vessel or plant which has been previously used or has remained isolated or idle for a period exceeding two months or which has undergone alterations or repairs shall be taken into use in a factory unless it has been thoroughly examined by a [97][notified person] externally, and internally if practicable, and has been hydrostatically tested by the [98] [notified person] at a pressure which shall be 1.5 times the maximum permissible working pressure:

Provided, however, that the pressure vessel or plant which is so designed and constructed that it cannot be safely filled with water or liquid or is used in service even some traces of water cannot be tolerated, shall be pneumatically tested at a pressure not less than the design pressure or the maximum permissible working pressure as the case may be:

Provided further that the pressure vessel or plant which is lined with glass shall be tested hydrostatically or pneumatically as required at a pressure not less than the design pressure or maximum permissible working pressure as the case may be.

Design pressure shall be not less than the maximum permissible working pressure and shall take into account the possible fluctuations of pres-sure during actual operation.

(b) No pressure vessel or plant shall be used in factory unless there has obtained from the maker of the pressure vessel or plant or from the [99] [notified person] a certificate specifying the design pressure or maximum-permissible working pressure thereof, and stating the nature of tests to which the pressure vessel or plant and its fittings (if any) have been subjected, and every pressure vessel

or plant so used in a factory shall be marked so as to enable it to be identified as to be the pressure vessel or plant to which the certificate relates and the certificate shall be kept available for perusal by the Inspector.

(c) No pressure vessel or plant shall be permitted to be operated or used at a pressure higher than its design pressure or maximum permissible working pressure as shown in the certificate.

(7) In service test and examinations

Every pressure vessel or plant in service shall be thoroughly examined by a [100] [notified person]

(a) Externally, once in every six months;

(b) internally, once in every twelve months.

If by reason of the construction of a pressure vessel or plant, a thorough internal examination is not possible this examination may be replaced by a hydrostatic test which shall be carried out once in every two years:

Provided that for a pressure vessel or plant in continuous process which cannot be frequently opened, the period of internal examination may be extended to four years;

(c) hydrostatically tested once in every four years; and

(d) the hydrostatic test pressure to be carried out for the purpose of this rule shall be 1.25 times the design pressure or 1.5 times the maximum permissible working pressure whichever is less:

Provided that in respect of a pressure vessel or plant with thin walls such as sizing cylinder made of copper or any other non-ferrous metal, periodic hydrostatic test may be dispensed with subject to the condition that the requirements laid down in sub-rule (8) are fulfilled:

Provided further that when it is impracticable to carry out thorough external examination of any pressure vessel or plant every six months as required in clause (a) of this sub-rule, or if owing to its construction and use a pressure vessel or plant cannot be hydrostatically tested as required in clauses (d) and (c) of this sub-rule, a thorough external examination of the pressure vessel or plant shall be carried out at least once in every period of two years ; and at least once in every period of four years thorough systematic non-destructive test like ultrasonic test for thickness or other defects of all parts the failure of which might lead to eventual rupture of the pressure vessel or plant shall be carried out.

(8) Thin walled pressure vessel or plant

(a) In respect of any pressure vessel or plant of thin walls such as sizing cylinder made of copper or any other non-ferrous metal the maximum permissible working pressure shall be reduced at the rate of 5 per cent. of the original maximum permissible working pressure for every year of its use after the first

five years and no such cylinder shall he allowed to continue to be used for more than twenty years after it was first taken into use

(b) If any information as to the date of construction. thickness of walls, or maximum permissible working pressure is not available, the age of such pressure vessel or plant shall be determined by the [101][notified person] in consultation with the Chief Inspector from the other particulars available with the manager;

(c) Every new and second hand pressure vessel or plant of thin walls to which repairs likely to affect its strength or safety have been carried out shall be tested before use to at least 1.5 times its maximum permissible working pressure.

(9) [102] **[Report by notified person]**

(a) If during any examination any doubt arises as to the ability of the pressure vessel or plant to work safely until the next prescribed examination, the [notified person] shall enter in the prescribed register his observations, findings and conclusions with other relevant remarks with reasons and may authorize the pressure vessel or plant to be used and kept in operation subject to a lowering of maximum permissible working pressure. or to more frequent or special examination or test, or subject to both of these conditions;

(b) A report of the result of every examination or test carried out shall be completed in the prescribed Form No. 8 and shall be signed by the person making the examination or test, and shall be kept available for perusal by the Inspector at all hours when the factory or any part thereof is working :

(c) Where the report of any examination under this rule specified any condition for securing the safe working of any pressure vessel or plant. the pressure vessel or plant shall not be used unless the specified condition is fulfilled

(d) The [103][notified person] making report of any examination under this rule, shall within seven days of the completion of the examination send to the Inspector a copy of the report in every case where the maximum permissible working pressure is reduced or the examination shows that the pressure vessel or plant or any part thereof cannot continue to be used with safety unless certain repairs are carried out or unless any other safety mea-sure is taken.

(10) Application of other laws

(a) The requirements of this rule shall be in addition to and without any prejudice to and not in derogation of the requirements of any other law in force:

(b) Certificates or reports of any examination. or test of any pressure vessel or plant to which sub-rules (7) to (9) do not apply, conducted or required to be conducted under any other law in force and other relevant record relating to

such pressure vessel or plant, shall be properly maintained as required under the said law and shall be produced on demand by the Inspector.

56-A. Water sealed gas holder

(1) The expression "gas holder" means a water sealed gas holder which has a storage capacity of not less than 141.5 cubic meters (5000 cu. ft).

(2) Every gas holder shall be of good construction, sound material adequate strength and properly maintained.

(3) Where there is more than one gas holder in the factory every gas holder shall be matted in a conspicuous position with a distinguishing number or letter.

(4) Every gas holder shall be thoroughly examined externally by a [104][Notified person] at least once in every period of 12 months.

(5) In the ease of a gas holder of which any lift has been in use for more than 10 years, the internal state of the sheeting shall, within one year of the coming into force of this rule and thereafter at least once in every period of four years, be examined by a [105] [notified person] by means of electronic or other accurate devices;

Provided that if the Chief Inspector is satisfied that such electronic or other accurate devices are not available, he may permit the cutting of samples from the crown and the sides of holder:

Provided further, that if such inspection raises a doubt, an internal visual examination shall be made.

(6) All possible steps shall be taken to prevent or minimize ingress of impurities in the gas holder.

(7) No gas holder shall be repaired or demolished except under the direct supervision of a person who, by reason of his training and experience and of his knowledge of the necessary precautions against risks of explosion and of persons being overcome by gas, is competent to supervise such work.

(8)

(i) All sample discs cut under sub-rule (5) shall be kept readily available for inspection.

(ii) A permanent register duly signed by the occupier or man-ager shall be maintained giving the following particulars, namely:

(a) the distinguishing number or letter of the gas holder -specified under sub-rule (3) and the particulars of manufacture relating to the maker's name, date of manufacture, capacity number of lifts and pres-sure thrown by holder when lull of gas

(b) the dates of examination carried out as required by sub-rules (4) and (5) and by whom carried out

(c) the method of examination used;

(d) date of painting and other similar particulars:

(e) nature of repairs and name of persons carrying out such repairs : and

(f) other remarks if any.

(iii) The results of examinations by a [106] [notified person] carried out under sub-rules (4) and (5) shall be in Form No. 8-A.

(iv) A copy of the report in Form No. 8-A shall be kept in the register and both the register and the report shall be readily available for inspection by an Inspector.

(9) The Inspector shall ensure that every gas holder is duly examined periodically as required by sub-rules (4) and (5).

[107][56-B. Testing or Examination of Pressure Plant or Vessel

(1) An application duly filled in Form No. 8-B for the-testing or examination of pressure plant or vessel or water sealed gas holder shall be submitted to the respective Deputy Chief Inspector of Factories [108][***]

(2) [109][The fee payable for the examination and testing of pressure plant or vessel or water sealed gas holder shall be as follows:

(i) Rs. 400 (Rupees four hundred only) per plant irrespective of its size or capacity for external examination;

(ii) Rs. 1000 (Rupees one thousand only) per plant unto 4 Kgf/Sq.cm(g) for Hydrostatic test:

(iii) Rs. 2,000 (Rupees two thousand only) per plant above 4 Kgf/Sq.cm.(g) for Hydrostatic test

(iv) Rs. 1,000 (Rupees one thousand only) per plant irrespective of the size or capacity for internal examination: and

(v) Rs. 4,000 (Rupees four thousand only) per plant or vessel irrespective of the size of capacity for non-destructive ultrasonic thickness gauging test.

(3) Every application under sub-rule (1) shall be accompanied [110][by a treasury receipt or by a crossed demand draft drawn in any branch of a Nationalized Bank in favour of the respective Deputy Chief Inspector of Factories] evidencing payment of appropriate fee specified in sub-rule (2): and

(4) The occupier shall apply for examination and testing of Pressure Vessel or Plant along with the prescribed application and fee one month in advance from the date on which the vessel or plain fall due for such examination or test.]

57. Excessive weights

(1) No man, woman or young person shall, unaided by another person, lift, carry or move by hand or head, any material, article, tool or appliance exceeding the maximum limit in weight set out in the following schedule:

[111][SCHEDULE

Persons		Maximum weight of material, article, tool or appliance K.Grams
(a) Adult male	.....	[112][50
(b) Adult female	.....	30
(c) Adolescent male	.....	30
(d) Adolescent female	.....	20
(e) Male child	.....	16
(f) Female child	.....	13]

(2) No man, woman or young person shall engage in conjunction with others, in lifting, carrying or moving by hand or on head, any material, ankle, tool, or appliance, if the weight thereof exceeds the lowest weight fixed by the schedule to sub-rule (1) for any of the persons engaged, multiplied by the number of the persons engaged.

58. Protection of eyes

Effective screens or suitable goggles shall be provided for the protection of persons employed in or in the immediate vicinity of the following processes.

(a) The processes specified in Schedule I annexed hereto, being processes which involve risk of injury to the eyes from particles or fragments thrown off in the course of the process.

(b) The processes specified in Schedule 11 annexed hereto, being processes which involve risk of injury to the eyes by reason of exposure to excessive light [113][or infra-red or ultra-violet radiations.)

SCHEDULE I

1. The breaking, cutting, dressing or carving of bricks, stone, concrete, slag or similar materials by means of a hammer, a chisel, pick or similar hand tool. or by means of a portable tool driven by mechanical power, and the dry grinding of surfaces of any such materials by means of a wheel or disc driven by mechanical power, wherein any of the foregoing cases particles or fragments am liable to be thrown off towards the face of the operator in the course of the process.

2. The dry grinding of surfaces of metal by supplying them by hand to a wheel, disc or hand driven by mechanical power and of surfaces of metal by means of a portable tool driven by mechanical power.

3. The dividing into separate parts of metal, bricks, stone, concrete or similar materials by means of high speed of saw driven by mechanical power or by means of an abrasive cutting off wheel or disc driven by mechanical power.
4. The turning of metals, or articles of metal, where particles or fragments are liable to the thrown off towards the fact of the operator in the course of the process.
5. Drilling by means of portable tools, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
6. The welding and cutting of metals by means of an electric, oxy-acetylene or similar process.
7. The hot fettling of steel castings by means of a flux injected burner or air-torch, and the dc-seaming of metal.
8. The fettling metal castings, involving the removal of metal, including runners, gates and risers and the removal of any other material during the course of such fettling.
9. The chipping of metal, and the chipping knocking out, cutting out or cutting off cold rivets, bolts, nuts, lugs, pins, collars, or similar articles from any structure or plant, or from part of any structure or plant, by means of a hammer, chisel, punch or similar hand tool, or by means of a portable tool driven by mechanical power.
10. The chipping or sculling of paint, scale, slag rust or other corrosion from the surface of metal and other hard materials by means of a hand tool or by a portable tool driven by mechanical power.
11. The breaking of scrap metal by means of a hammer or by means of a tool driven by mechanical power.
12. The routing of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
13. Work with drop hammers and power hammers, used in either case for the manufacture of forgings. and work by any person not working with such hammers whose work is carried on in such circumstances and in such a position that particles or fragments arc liable to be thrown off towards his face during work with drop hammers or power hammers.
14. Work at a furnace where there is risk to the eyes from molten metal.
15. Pouring or skimming of molten metal.
16. Work involving risk to the eyes from hot sand being thrown off.
17. Turning or dressing of an abrasive wheel.
18. The handling in open vessels or manipulation of strong acids or dangerous corrosive liquids or materials, and the operation, maintenance or dismantling of plant or any part of plant, being plant or part of plant, which contains or has contained such acids liquids or materials, unless the plant or part of plant has been so prepared (by

isolation, reduction of pressure, or otherwise) treated or designed and constructed as to prevent risk of injury

19. Any other process wherein there is a risk of injury to eyes from particles or fragments thrown off during the course of the process.

[114][SCHEDULE

(1) Welding or cutting of metals by means of an electrical, oxy-acetylene or similar process.

(2) All work on furnaces where there is risk of exposure to excessive light or infra-red radiations.

(3) Process such as rolling, casting or forging of metals where there is risk of exposure to excessive light or infra-red radiations.

(4) Any other process wherein there is a risk of injury to eyes from exposure to excessive light or ultra-violet or infra-red radiations.]

59. Minimum dimensions of manholes

Every chamber, tank, vat, pits- pipe, flue or other confined space, which persons may have to enter and which may contain dangerous fumes to such an extent as to involve risk of the persons being overcome thereby, shall unless there is other effective means of egress, be provided with a manhole which may be rectangular, oval or circular in shape, and which shall

(a) in the case of a rectangular or oval shape, be not less than 40.6 centimeters long and 30.5 centimeters wide;

(b) in the case of a circular shape, be not less than 40.6 centimeters in diameter.

60. Exemptions

The requirements of sub-section (4) of section 37 shall not apply to the following processes carried on in any factory:

(a) The operation of repairing a water sealed gas holder by the electric welding process Subject to the following conditions;

(i) The gas holder shall contain only the following gases separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture:

Provided that this exemption shall not apply to any gas holder containing acetylene or mixture of gases to which acetylene bas been added intentionally.

(ii) Welding shall only be done by the electric welding process and shall be carried out by experienced operatives under the constant supervision of a competent person.

(b) The operations of cutting or welding steel or wrought iron gas mains and services by the application of heat, subject to the following conditions:

(i) The main or service shall be situated in the open air, and it shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture;

(ii) the main or service shall not contain acetylene or any gas or mixture of gases to which acetylene has been added intentionally;

(iii) the operation shall be carried out by an experienced person or persons and at least two persons (including those carrying out the operations) experienced in work on gas mains and over 18 years of age shall be present during the operation;

(iv) the site of the operation shall be free from any inflammable or explosive gas or vapour;

(v) where acetylene gas is used as a source of heat in connection with an operation, it shall be compressed and contained in a porous substance in a cylinder; and

(vi) prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.

(c) The operation of repairing an oil tank on any ship by the electric welding process, subject to the following conditions

(i) The only oil contained in the tank shall have a flash point of not less than 150°F (dose test) and a certificate to this effect shall be obtained from a competent analyst;

(ii) the analyst's certificate shall be kept available for inspection by an Inspector or by any person employed or working on the ship;

(iii) the welding operation shall be carried out only on the exterior surface of the tank at a place (a) which is free from oil or oil leakage in inflammable quantities and (b) which is not less than 30.5 centimeter below the nearest part of the surface of the oil within the tank ; and

(iv) welding shall be done only by the electric welding and shall be carried out by experienced operatives under the constant supervision of a competent person.

61. [115][Fire protection

(1) Processes, equipment, plant, etc., involving serious explosion and serious fire hazards.

(a) All processes, storages, equipments, plants, etc., invoking serious explosion and flash fire hazards shall be located in segregated building where the

equipment shall be so arranged that only a minimum number of employees are exposed to such hazards at any one time.

(b) All industrial processes involving serious fire hazard should be located in buildings or work places separated from one another by walls of fire-resistant construction.

(c) Equipment and plant involving serious fire or flash fire hazard shall, wherever possible, be so constructed and installed that in case of fire, they can be easily isolated.

(d) Ventilation ducts, pneumatic conveyors and similar equipment involving a serious fire risk should be provided with flame-arresting or automatic fire extinguishing appliances or fire resisting dampers electrically interlocked with heat sensitive/smoke detectors and the air-conditioning plant system.

(e) In all workplaces having serious fire or flash fire hazards, passages between machines, installations or piles of material should be at least 90 cm. wide. For storage piles, the clearance between the ceiling and the top of the pile should not be less than 2 m.

(2) Access for fire fighting

(a) Buildings and Plants shall be so laid out and roads, passage-ways, etc., so maintained as to permit unobstructed access for fire fighting.

(b) Doors and window openings shall be located in suitable positions on all external walls of the building to provide easy areas to the entire area within the building for lire fighting.

(3) [116][Protection against lighting]

Protection from lighting shall be provided for

(a) buildings in which explosive or highly flammable substances are manufactured, used, handled or stored ;

(b) storage tanks containing oils, paints or other flammable liquids ;

(c) grain elevators;

(d) buildings, tall chimneys or stacks where flammable gases, fumes, dust or lint are likely to be present ; and

(e) Sub-station buildings and out-door transformers and switch yards.

(4) Precautions against ignition

Wherever there is danger of fire or explosion from accumulation of flammable or explosive substances in air :-

(a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition ;

(b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;

(c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;

(d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited ;

(e) transmission belts with iron fasteners shall not be used; and

(f) all other precautions as are reasonably practicable, shall be taken by (sic) prevent initiation of ignition from all other possible sources such as open flames, frictional sparks overheated surfaces of machinery or plant, chemical or physical chemical reaction and radiant heat.

(5) **Spontaneous ignition** - Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation. The material susceptible to spontaneous ignition should be stored in dry condition and should be in heaps of such capacity and separated by such passage which will prevent fire. The materials susceptible to ignition and stored in the open shall be at a distance not less than 10 meters away from process or storage buildings.

(6) **Cylinders containing compressed gas** - Cylinders containing compressed gas may only be stored in open if they are protected against excessive variation of temperature, direct rays of sun, or continuous dampness. Such cylinders shall never be stored near highly flammable substances, furnaces or hot process. The room where such cylinders arc stored shall have adequate ventilation.

(7) Storage of flammable liquids

(a) The quantity of flammable liquids in any work room shall be the minimum required for the process or processes carried on in such room. Flammable liquids shall be stored in suitable containers with close fitting covers:

Provided that not more than 20 liters of flammable liquids having a flash point of 21°C or less shall be kept or stored in any work room.

(b) Flammable liquids shall be stored in closed containers and in limited quantities in well ventilated rooms of fire resisting construction which are isolated from the remainder of the building by fire walls and self closing fire doors.

(c) Large quantities of such liquids shall be stored in isolated adequately ventilated building of fire resisting construction or in storage tanks, preferably underground and at a distance from any building as required in the Petroleum Rules, 1976.

(d) Effective steps shall be taken to prevent leakage of such liquids into basements, sums or drains and to confine any escaping liquid within safe limit.

(8) Accumulation of flammable dust, gas, fume or vapour in air or flammable material on the floors.

(a) Effective steps shall be taken for removal or prevention of the accumulation in the air of flammable dust, gas, fume or vapour to an extent which is likely to be dangerous.

(b) No waste material of a flammable nature shall be permitted to accumulate on the floors and shall be removed atleast one in a day or shift, and more often, when possible. Such materials shall be placed in suitable metal containers with covers wherever possible.

(9) Fire exists

(a) in this sub-paragraph

(i) "Horizontal exit" means an arrangement which allows alternative egress from a floor area to another floor at or near the same level in an adjoining building or an adjoining part of the same building with adequate separation; and

(ii) “travel distance" means the distance an occupant has to travel to reach an exit.

(b) An exit may be a doorway, corridor, passageway to an external stairway or to a verandah or to an internal stairway segregated from the rest of building by fire resisting walls which shall provide continuous and protected means of egress to the exterior of a building or to an exterior open space. An exit may also include a horizontal exit leading to an adjoining building at the same level.

(c) Lifts, escalators and revolving doors shall not be considered as exits for the purpose of this sub-paragraph.

(d) In every room of a factory exits sufficient to permit safe escape of the occupants in case of fire or other emergency shall be provided which shall be free of any obstruction.

(e) The exits shall be clearly visible and suitably illuminated with suitable arrangement, whatever artificial lighting is to be adopted for this purpose, to maintain the required illumination in case of dilute of the normal source of electric supply.

(f) The exits shall be marked in a language understood by the majority of the workers.

(g) Iron rung ladders or spiral staircases shall not be used as not be used as exit.

(h) Fire resisting doors or roller shutters shall be provided at appropriate places along the escape routes to prevent spread of fire and smoke, particularly at the entrance of lifts or stairs where funnel or flue effect may be created inducing an upward spread of fire.

(i) All exits shall provide continuous means of egress to the exterior of a building or to an exterior open space leading to a street.

(j) Exits shall be so located that the travel distance to reach atleast one of them on the floor shall not exceed 30 meters.

(k) In case of those factories where high hazard materials are stored or used, the travel distance to the exit shall not exceed 22.5 meters and there shall be atleast two ways of escape from every room, however small, except toilet rooms, so located that the points of access thereto are out of or suitably shielded from areas of high hazard.

(l) Wherever more than one exit is required for any room space or floor, exits shall be placed as remote from each other as possible and shall be arranged to provide direct access in separate directions from any point in the area served.

(m) The unit of exit width used to measure capacity of any exit shall be 50 cm. A clear width of 25 cm. shall be counted as an additional half unit Clear width of less than 25 cm. shall not be counted for exit width.

(n) Occupants per unit width shall be 50 for stairs and 75 for doors.

(o) For determining the exits required, the occupant load shall be reckoned on the basis of actual number of occupants within any floor area or 10 square meter per person, whichever is more.

(p) There shall not be less than two exits serving every floor area above and below the ground floor, and atleast one of them shall be an internal enclosed stairway.

(q) For every building or structure used for storage only, and every section thereof considered separately shall have access to atleast one exit so arranged and located as to provide a suitable means of escape for any person employed therein and in any such room wherein more than ten persons may be normally present, atleast two separate means of exit shall be available, as remote from each other as practicable.

(r) Every storage area shall have access to atleast one means of exit which can be readily opened.

(s) Every exit doorway shall open into an enclosed stairway, a horizontal exit on a corridor or passage way providing continuous and protected means of egress.

(t) No exit doorway shall be less than 100 cm in permitted (sic)

(u) Exit doorways shall open outwards, that is, away from the room but shall not obstruct the travel along any exit. No door when opened shall reduce the required width of stairway or landing to less than 90 cm overhead or sliding doors shall not be installed for this purpose.

(v) An exit door shall not open immediately upon a flight of stairs. A landing atleast 1.5 m. x 1.5 m. in size shall be provided in the stairway at each

doorway. The level of landing shall be the same as that of the floor which it serves.

(w) The exit doorways shall be openable from the side which they serve without the use of a key.

(x) Exit corridors and passage ways shall be of a width not less than the aggregate required width of exit doorways leading from there in the direction of travel to the exterior.

(y) Where stairways discharge through corridors and passage ways, the height of the corridors and passage ways shall not be less than 2.4 meters.

(aa) A staircase shall not be arranged round a lift shaft unless the latter is totally enclosed by a material having a fire resistance rating not lower than that of the type of construction of the farmer.

(bb) Hallow combustible construction shall not be permitted.

(cc) The minimum width of an internal staircase shall be 100 cms

(dd) The minimum width of treads without nosing shall be 25 cm. for an internal staircase. The treads shall be constructed and maintained in a manner to prevent, slipping.

(ee) The maximum height of a risor shall be 19 cm. and the number of risors shall be limited to 12 per flight.

(ff) Hand rails shall be provided with a minimum height of 100 cm. and shall be firmly supported.

(gg) The use of spiral staircase shall be limited to low occupant load and to a building of height of 9 meters, unless they are connected to platform such as balconies and terraces to allow escapees to pause. A spiral staircase shall be not less than 300 cm. in diameter and have adequate head room.

(hh) The width of a horizontal exit shall be same as for the exit doorways.

(ii) The horizontal exit shall be equipped with atleast one fire door of self closing type.

(jj) The floor area on the opposite or refuge side of a horizontal exit shall be sufficient to accommodate occupants of the floor areas served, allowing not less than 0.3 square meter per person. The refuge area shall be provided with exits adequate to meet the requirements of this sub-rule at least one of the exits shall lead directly to the exterior or street.

(kk) Where there is difference in level between connected areas for horizontal exit, rams not more than 1 in 8 slope shall be provided. For this purpose steps shall not be used.

(ll) Doors in horizontal exits shall be openable at all times

(mm) Ramps with a slope of not more than 1 in 10 may be substituted for the requirements of staircase. For all slopes exceeding 1 in 10 and wherever the use is such as to involve danger of slipping, the ramp shall be surfaced with non-slipping materials.

(nn) in any building not provided with automatic fire alarm a manual fire alarm system shall be provided if the total capacity of the building is over 500 persons, or if more than 25 persons are employed above or below the ground floor, except that no manual fire alarm shall be required in one-storey buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

(10) First-aid fire-fighting arrangements

(a) In every factory there shall be provided and maintained adequate and suitable firefighting equipment for fighting fires in the early stages, those being referred to as first-aid firefighting equipment in this rule.

(b) [117][The types of first-aid firefighting equipment to be provided shall be determined by considering the different types of fire risks which are classified as follows:

(i) "Class 'A' fire" Fire due to combustible materials such as wood, textiles, paper, rubbish and the like.

(ii) "Class 'B' fire"- Fire involving flammable liquids or liquefiable solids or the like where a blanketing effect is essential

(iii) "Class 'C' fire"- Fire involving flammable gases under pressure including liquefied gases, where it is necessary to inhibit the burning gas at fast rate with an inert gas, powder or vaporizing liquid for extinguishment

(iv) "Class 'D' fire" Fire involving combustible metals, such as magnesium, aluminium, zinc, sodium, potassium, etc., when the burning metal are reactive to water and water containing agents and in certain cases carbon dioxide, halogenated hydrocarbons and ordinary dry powders. This type of fire requires special media and techniques to extinguish

(c) The number and types of first aid firefighting equipment to be provided shall be as per Bureau of Indian Standards recommendations for installation of fire extinguishers given in Annexure B of IS 2190:1992. The types are detailed in Schedule-I.]

(d) The first-aid firefighting equipment shall conform to the relevant Indian Standards.

(e) As far as possible the first-aid firefighting equipment shall all be similar in shape and appearance and shall have the same method operation.

(f) All first-aid firefighting equipment shall be placed in a conspicuous position and shall be readily and easily accessible for immediate use. Generally, these

equipment shall be placed as near as possible to the exits or stair landing or normal routes of escape.

(g) All water buckets and bucket pump type extinguishers shall be filled with clean water. All sand buckets shall be filled with clean, dry and fine sand.

(h) All other extinguishers shall be charged appropriately in accordance with the instructions of the manufacturer.

(i) Each first-aid fire-fighting equipment shall be allotted to a serial number by which it shall be referred to in the records. The following details shall be painted with white paint on the body of each equipment:

(1) Serial number:

(2) Date of last refilling; and

(3) Date of last inspection.

(j) First-aid firefighting equipment shall be placed on plat-forms or in cabinets in such a way that their bottom is 750 trim, above the floor level. Fire buckets shall be placed on hooks attached to a suitable stand or valve in such a way that their bottom is 720 mm. above the floor level. Such equipment if placed outside the building, shall be under sheds

(k) All extinguishers shall be thoroughly cleaned and re-charged immediately after discharge. Sufficient refill material shall be kept readily available for this purpose at all times.

(l) All first-aid fire-fighting equipment shall be subjected to routine maintenance, inspection and testing to be carried out by properly trained persons. Periodicity of the routine maintenance, inspection and test shall conform to the relevant Indian Standards.

(11) Other fire-fighting arrangements

(a) In every factory, adequate provision of water supply for firefighting shall be made and where the amount of water required in liters per minute, as calculated from the formula A plus B plus C Plus D divided by 20 in 550 or more power driven trailer pumps of adequate capacity to meet the requirement of water as calculated above shall be provided and maintained.

THE TABLE

Sl.No	Nature of Risk	Capacity of Static Storage Exclusively Reserved for Hydrant Services.
(1)	(2)	(3)
1	Light Hazard	Not less than 1 hour aggregate pumping capacity with a minimum of 1,35,000 liters

2	Ordinary Hazard	Not less than 2 hours aggregate pumping capacity
3	High Hazard A	Not less than 3 hours aggregate pumping capacity
4	High Hazard B	Not less than 4 hours aggregate pumping capacity

1. LIGHT HAZARD OCCUPANCIES

1 Abrasive Manufacturing Premises
2 Aerated Water Factories
3 Agarbatti Manufacturing
4 Aluminum, Zinc and Copper Factories.
5 Analytical and/or Quality Control Laboratories
6 Asbestos Steam Packing and Lagging Manufactories
7 Battery Charging/Service Station
8 Battery Manufactories
9 Breweries
10 Brick Works
11 Canning Factories
12 Cardamom Factories
13 Cement Factories and/or Asbestos Products Manufacturing.
14 Ceramic Factories and Crockery and Stoneware Pipe Manufacturing
15 Cinema Theatres (including Preview Theatres)
16 Clay works
17 Clock and Watch Manufacturing
18 Clubs
19 Coffee Curing an Roasting Premises
20 Computer installation (Main Frame).
21 Condensed Milk Factories, Milk Pasteurizing Plant and Dairies
22 Confectionery Manufacturing
23 Dwellings
24 Educational and Research Institutes
25 Electric Generating Houses (Hydel)
26 Electric Lamps (incandescent and Fluorescent) and TV Picture Tube Manufacturing

27 Electric Sub-Station Distribution Station.
28 Electroplating Works.
29 Electronic and/or Computer Equipments Assemble and Manufactures.
30 Empty containers Storage Yard.
31 Engineering Workshops
32 Fruits and Vegetables Dehydrating/Drying Factories
33 Fruit Products and Condiment Factories
34 Glass and Glass Fiber Manufacturing
35 Godowns and warehouses storing non-combustible Goods.
36 Green Houses.
37 Gold Thread Factories/Gliding Factories.
38 Gum and/or Glue and Geletine Manufacturing
39 Hospital including X-ray and other Diagnostic Clinics.
40 Ice Candy and Ice-cream Manufacturing
41 Ice Factories
42 Ink (excluding Printing Ink) Factories.
43 Laundries.
44 Libraries.
45 Mica Products Manufacturing
46 Office premises
47 Places of worship
48 Pottery Works
49 Poultry Farms
50 Residential Hotels, Cafes and Restaurants
51 Salt Crushing Factories and Refineries.
52 Stables
53 Steel Plants(other than Gas based)
54 Sugar candy Manufacturing
55 Sugar Factories and Refineries
56 Tea Blending and Tea Packing Factories
57 Umbrella Assembling Factories

58 Vermicelli Factories

59 Water Treatment/Water Filtration Plants and Water Pump House.

2. ORDINARY HAZARD OCCUPANCIES

1 Airport and other Transportation Terminal Building

2 Areca Nut Slicing and/or Beterl Nut Factories

3 Atta and Cereal Grinding

4 Bakeries

5 Beedi Factories

6 Biscuit Factories

7 Bobbin Factories

8 Book Binder, Envelopes and Paper Bag Manufactures

9 Bulk Storage

10 Cable Manufacturing

11 Camphor Boiling

12 Candle Works

13 Carbon Paper/Typewriter Ribbon Manufactures

14 Cardboard Box Manufacturing

15 Carpenters, Wood Wool And Furniture Manufactures

16 Carpet And Druggist Factories

17 Cashew Nut Factories

18 Chemical Manufacturing

19 Cigar And Cigarette Factories

20 Coffee Grinding Premises

21 Coir Factories

22 Coir Carpets, Rugs And Tobacco, Hides And Skin Presses

23 Cold Storage Premises

24 Cork Products Manufacturing

25 Dry Cleaning, Dyeing And Laundries

26 Electric Generating Stations(Other Than Hydel)

27 Enamelware Factories

28 Filter And Wax Paper Manufacturing
29 Flour Mills
30 Garages
31 Garment Makers
32 Ghee Factories (Other Than Vegetable)
33 Godowns And Warehouses (Others)
34 Grain And/Or Seeds Disintegrating And/or Crushing Factories
35 Grease Manufacturing
36 Hat And Topee Factories
37 Hosiery, Lace, Embroidery And Thread Factories
38 Incandescent Gas Mantle Manufactures
39 Industrial gas manufacturing including halogenated hydrocarbon gases.
40 Linoleum Factories.
41 Man-made Yard/Fiber Manufacturing (Except Acrylic).
42 Manure and Fertilizer Works (Blending, mixing and granulating only).
43 Mercantile Occupancies (Departmental Stores, Shopping Complexes of Malls).
44 Mineral Oil Blending and Processing
45 Museums.
46 Oil and Leather Cloth Factories
47 Oil Terminals/Depots other than those categorized under high hazard A.
48 Oxygen Plants.
49 Plywood Manufacturing/Wood Veneering Factories.
50 Paper and Cardboard Mills.
51 Piers, wharves, dockyards.
52 Plastic Goods Manufacturing.
53 Printing Press Premises.
54 Pulverizing and Crushing Mills.
55 Rice Mills.
56 Rope Works.
57 Rubber Goods Manufacturing.
58 Rubber Tyres and Tubes Manufacturing.

59 Shellac Factories.

60 Shopping Complexes (underground).

61 Silk filatures and cocoon stores.

62 Spray Painting.

63 Soaps and Glycerine Factories.

64 Starch Factories.

65 Steel Plants (Gas Based).

66 Tanneries/Leather Goods Manufacturers.

67 Tank farms other than those categories under high hazard A.

68 Textile Mills.

69 ea Factories.

70 Telephone Exchanges.

71 Theatres and Auditoriums.

72 Tobacco (Chewing) and pan-masala making.

73 Tobacco Grinding and Crushing.

74 Tobacco Re-drying Factories.

75 Woolen Mills.

3. HIGH HAZARD OCCUPANCIES

Sub-Category -A :

1 Aircraft Hangers.

2 Aluminium/Magnesium Powder Plants.

3 Bituminised Paper and/or Hessian Cloth Manufacturing inducltrig Tar Felt Manufacturing.

4 Cotton Waste Factories.

5 Coal and/or Coke and/or Charcoal Ball Briquettes Manufacturing.

6 Celluloid goods manufacturing.

7 Cigarette filter manufacturing.

8 Cinema films and T.V. production studios

9 Collieries.

10 Cotton Seed Cleaning or De-lining Factories.

11 Distilleries.

12 Duplicating and Stencil Paper Manufacturing.

13 Fire-Works Manufacturing.

14 Foamed Plastics Manufacturing and/or Converting Plants.

15 Grass Hay, Fodder and Bhoosa (chaff).

16 Pressing Factories.

17 Jute Mills and Jute Presses.

18 LPG Bottling Plants (Mini)*

(* Bottling plants having total inventory not exceeding 100 Metric Ton of Liquefied Petroleum Gas and also bottling a total quantity of not exceeding 20 Metric Ton of LPG per shift of 8 hours.)

19 Match Factories.

20 Man Made Fibers (Acrylic fibers/Yarn making).

21 Mattress and Pillow Making.

22 Metal or Tin Printers (where more than 50% of floor area is occupied as Engineering Workshop, this may be taken as Ordinary Hazard Risk).

23 Oil Mills.

24 Oil Extraction Plants (other than those forming part of ghee factories and oil refining factories).

25 Oil Terminals/Depots handling flammable liquids having flash point of 32°C and below.

26 Paints and Varnish Factories.

27 Printing Ink Manufacturing

28 Saw Mills.

29 Sponge Iron Plants.

30 Surgical Cotton Manufacturers.

31 Tank Farms storing flammable liquids having flash point of 32°C and below.

32 Tarpaulin and Canvas Proofing Factories.

33 Turpentine and Rosin Distilleries.

34 Tyre Retreading and Resoling Factories.

Sub-Category-B

1 Ammonia and Urea Synthesis Plants

2 CNG Compressing and Bottling Plant

3 Explosive Factories

4 LPG Bottling Plants (other than Mini)

5 Petrochemical Plants

6 Petroleum Refineries

(b) Each trailer pump shall be provided with equipment as per Schedule II appended to this paragraph. Such equipment shall conform to the relevant Indian Standard.

(c) Trailer pumps shall be housed in a separate shed or sheds which shall be sited close to a principal source of water supplies in the vicinity of the main risks of the factory.

(d) In factories where the area is such as cannot be reached by man-hauling of trailer pumps within reasonable time vehicles with towing attachment shall be provided at the scale of one for every four trailer pumps with a minimum of one such vehicle kept available at all times.

(e) [118][The hydrant system should be distributed round the factory with due regard to potential fire risks at the factory. Where piped supply is provided, the size of the main shall not be less than 15 cm diameter and it shall be capable of supplying a minimum of 4,500 liters per minute at a pressure of not less than 7 kilograms per square cm. in case of light hazard occupancies. In case of high hazard area, the water pressure should be 10 kg. per square centimeter.

A certificate of completion from the installing engineer stating the pressure test to which the installation has been subjected and giving the dates from which it is in complete working order should also be submitted at the office of the inspector of Factories.

(f) All trailer pumps including the equipment provided with them and the vehicles for towing them shall be maintained in good condition and subjected to periodical inspection and testing as required.

(12) Personnel in-charge of equipment and for fire fighting, fire drills, etc.

(a) The first-aid and other firefighting equipment to be provided as required in sub-paragraph (10) and (11) shall be in-charge of a trained responsible person.

(b) Sufficient number of persons shall be trained in the proper handling of firefighting equipment as referred to in clause (a) and their use against the types of fire for which they are intended to ensure that adequate number of persons are available for firefighting both by means of first-aid firefighting equipment and others. Such persons shall be provided with clothing and equipment including helmets, belts and boots, preferably gumboots. Wherever vehicles with towing attachment are to be provided as required in clause (d) of sub-paragraph (11) sufficient number of persons shall be trained

in driving these vehicles to ensure that trained persons are available for driving them whenever the need arises.

(c) Fire fighting drills shall be held as often as necessary and at least once in every period of two months.

(13) Automatic sprinkler and fire hydrants shall be in addition and not in substitution of the requirements in sub-paragraphs (10) and (1 1).

(14) If the Chief Inspector is satisfied in respect of any factory or any part of the factory that owing to the exceptional circumstances such as inadequacy of water supply or infrequency of the manufacturing processor for any other reason, to be recorded in writing, all or any of the requirements of the rules are impracticable or not necessary for the protection of workers, he may by order in writing (which he may at his discretion revoke) exempt such factory or part of the factory from all or any of the provisions of the rules subject to conditions as he may by such order prescribe.

(15) [119][Plan of fire-fighting installations showing the entire compound, whole buildings therein, within their doors and window openings, boundary walls, etc., should be submitted to the office of the Inspector of Factories, the State Fire Directorate and the local authority.]

[120][SCHEDULE-I

FIRST-AID FIRE FIGHTING EQUIPMENTS

(1) The different types of fire and first-aid firefighting equipment suitable for use on them are as under:

Class of fire	Suitable type of Appliances
Class 'A' Fires	Water expelling type extinguishers
Class 'B' Fires	Foam, dry, power, vaporizing liquid and carbon dioxide extinguishers
Class 'C' Fires	Dry powder, vaporizing liquid and carbon dioxide extinguishers

(2) Where cleanliness and contamination of sensitive electrical equipment are of importance or where the sensitivity of the control instruments or electronic equipment and systems are likely to be affected. only carbon dioxide or vaporizing liquid type extinguishers should be used

(3) For fires involving polar solvents and other water miscible flammable liquids, dry powder type or mechanical foam extinguisher with alcohol-resistant foam should be used.]

SCHEDULE II

EQUIPMENT TO BE PROVIDED WITH TRAILER PUMP

For light trailer pump of a capacity of 680 liters/minute

1 Armoured suction hose of 9 meters length, with wrenches.

1 Metal suction strainer.

1 Basket strainer.

1 Two-way suction collecting-head.

1 Suction adapter.

10 Unlined or rubber lined 70 mm. delivery hose of 25 meters length complete with quick-release couplings.

1 Dividing breaching-piece.

2 Branch-piece with 15 mm. nozzles.

1 Diffuser nozzle.

1 Standpipe with blank cap.

1 Hydrant key.

4 Collapsible canvas buckets.

1 Fire hook (preventer) with cutting edge.

1 25 mm. manila rope of 30 meters length.

1 Extension ladder of 9 meters length (where necessary).

1 Heavy axe.

1 Spade.

1 Pick axe.

1 Crowbar.

1 Saw.

1 Hurricane lamp.

1 Electric torch.

1 Pair rubber glows.

For large trailer pump of capacity of 1800 liters/minute

1 Armoured suction hose of 9 meters length with wrenches.

1 Metal strainer.

1 Basket strainer.

1 Three-way suction, collecting head.

1 Suction adapter.

14 Unlined or rubber lined 70 mm. delivery hose of 25 meters length complete with quick-release couplings.

1 Dividing breaching-piece.

1 Collecting breaching-piece.

4 Branch pipes with one 25 mm., two 20 mm. and one diffuser nozzles.

2 Standpipe with blank caps.

2 Hydrant keys.

6 Collapsible canvas buckets.

1 Coiling hook (preventer) with cutting edge.

1 50 mm. manila rope of 30 mm. meters length.

1 Extension ladder of 9 meters length (where necessary).

1 Heavy axe.

1 Spade.

1 Pick-axe.

1 Crowbar.

1 Saw.

1 Hurricane lamp.

1 Electric torch.

1 Pair rubber gloves.

Explanation- if it appears to the Chief Inspector of Factories that in any factory the provision of breathing apparatus is necessary he may by an order in writing require the occupier to provide suitable breathing apparatus in addition to the equipment for light trailer pump or large trailer pump as the case may be]

61-A. Safety belts

Where any person is required or allowed to work at a place from which he may be liable to fall through a distance of more than two meters), he shall be provided with a safety belt with leather shoulder straps of not less than [121][five centimeters] in width and a 'D' ring at the back for fastening a rope, the other end of which shall be securely tied or hooked to some suitable rigid fixture. The safety belt so provided shall be tested and examined thoroughly by a competent person at least once in six months and a certificate with regard to its suitability obtained from the said competent person and entered in a register, which shall be produced before the Inspector on demand.

[122][61-AA Safety officers.—*]**

[[123]61-B. Ovens and driers

(1) Application-This rule shall apply to ovens and driers, except those used in laboratories or kitchens of any establishment and those which have a capacity below 325 liters.

(2) Definition-For the purpose of this rule, oven or drier means any enclosed structure, receptacle, compartment or box which is used for baking, drying or otherwise processing of any article or substance at a temperature higher than the ambient temperature of the air in the room or space in which the oven or drier is situated and in which a flammable or explosive mixture of air and a flammable substance is likely to be evolved within the enclosed structure, receptacle, compartment or box or part thereof on account of the article or substance which is baked, dried or otherwise processed within it.

(3) Separate electrical connection-Electrical power supplied to every oven or drier shall be by means of separate circuit provided with an isolation switch.

(4) Designs, construction, examination and testing

(a) Every oven or drier shall be properly designed on sound engineering practice and be of good construction, sound materials and adequate strength, free from any patent defects and safe if properly used.

(b) No oven or drier shall be taken into use in a factory for the first time unless a competent person has thoroughly examined all its parts and carried out the tests as arc required to establish that the necessary safe systems and controls provided for safety in operation for the process for which it is to be used and a certificate of such examination and tests signed by that competent person has been obtained and is kept available for inspection.

(c) All pans of an oven or drier which has undergone any alteration or repair which has the effect of modifying any of the design characteristics shall not he used unless a thorough examination and tests as have been mentioned in clause (b) has been carried out by a competent person and certificate of such examination and tests signed by that competent person has been obtained and is kept available for inspection.

(5) Safety ventilation

(a) Every oven or drier shall be provided with a positive and effective safety ventilation system using one or more motor driven centrifugal fans so as to dilute any mixture of air and any flammable substance that may be formed within the oven or drier and maintain the concentration of the flammable substance in the air at a safe level of dilution.

(b) The sere level of dilution referred to in clause (a) shall be so as to achieve a concentration of the concerned flammable substance in air of not more than 25 per cent, of its lower explosive limit.

Provided that a level of concentration in air up to 50 per cent of the lower explosive limit of the concerned flammable substance may be permitted to exist subject to installation and maintenance of an automatic device which

(i) shows continuously the concentration of the flammable substance in air present in the oven or drier at any instant;

(ii) sounds an alarm when the concentration of the flammable substance in air in any part of the oven or drier, reaches a level of 50 per cent. of its lower explosive limit; and

(iii) shuts down the heating system of the oven or drier automatically when the concentration In air of the flammable substance in any part of the oven or drier teaches a level of 60 per cent. of its lower explosive limit, is provided to the oven or drier end maintained In efficient working condition.

(c) No oven or drier shall be operated without its safety ventilation system working in an efficient manner.

(d) No oven or drier shall be operated with a level of dilution less than what is referred to in clause (b).

(e) Exhaust ducts of safety ventilation system should be so designed and placed that their ducts discharge the mixture of air end flammable substance away from the work rooms and not near windows or doors or other openings from where the mixture could re-enter the work rooms.

(f) The fresh air admitted into the oven or drier by means of the safety ventilation system shall be circulated adequately by means of circulating fan or fans through all parts of the oven or drier so as to ensure that there are no locations where the flammable substance can accumulate in the air or become pocketed to any dangerous degree.

(g) Throttling dampers in any safety ventilation system should be so designed by cutting away a portion of the damper or otherwise, that the system will handle at least the minimum ventilation rate required for safety when they are set in their maximum throttling position.

(6) Explosion panels

(a) Every oven or drier having an internal total space of not less than half cubic meter shall be provided with suitably designed explosion panels so as to allow release of the pressure of any possible explosion within the oven or drier through explosion vents. The area of openings to be provided by means of such events together with the area of opening; of any access doors which are provided with suitable arrangements for their release in case of an explosion, shall be not less than 2,200 square centimeters for every one cubic meter of volume of the oven or drier. The design of the explosion panels and doors as above said shall be such as to secure their complete release under an internal pressure of 0.25 kilogram per square centimeter.

(b) The explosion releasing panels, shall, as for as practicable, be situated at the roof of the oven or drier or at those portions of the walls where persons do not remain in connection with operation of the oven or drier.

(7) Interlocking arrangements-In Bath oven or drier, efficient interlocking arrangements shall be provided and maintained to ensure that, -

(i) all ventilating fans and circulating fans whose failure would adversely affect the ventilation rate of flow pattern, are in operation before any mechanical conveyor that may be provided for feeding the articles or substances to be processed in the oven or drier is put into operation;

(ii) failure of any of the ventilating or circulating fans will automatically stop any conveyor as referred to in clause (I) as may be provided, as well as stop the fuel supply by closing the shut off valve and shut off the ignition in the cue of gas or oil fired ovens end in the case of electrically heated ovens switch off the electrical supply to the heaters;

(iii) the above said mechanical conveyor is set in operation before the above said shut off valve can be energized; end

(iv) the failure of the above said conveyor will automatically close the above said shut off valve in the case of ovens and driers heated by gas, oil or steam and deactivate the ignition system, or cut off the electrical heaters In the case of electrically heated ovens or furnaces.

(8) Automatic Preventilation- Every oven or drier heated by oil, gas, steam or electricity shall be provided with an efficient arrangement for automatic pre-ventilation consisting of at least 3 volume changes with fresh air by operation of the safety ventilation fans and the circulating fans (if used so as to effect purging of the oven cc drier of any mixture of air and a flammable substance before the heating system can be activated and before the conveyor can be placed in position.)

(9) Temperature control-Every oven or drier shall be provided with en automatic arrangement to ensure that the temperature within does not exceed a safe upper preset limit to be decided In respect of the particular processing being carried on.

(10) Multi-stage processes-Wherever materials are to be processed in ovens or driers in successive operations, suitable arrangement should be provided to ensure that the operating temperatures necessary for safe operation at each stage are maintained within the design limits.

(11) Combustible substances not to drip on electrical healers or burners flame-Effective arrangements shall be provided In every oven or drier to prevent dripping of combustible substances on electric heaters or burner flame used for heating.

(12) Periodical examination, testing and maintenance

(a) All parts of every oven and drier shall be properly main- tamed and thoroughly examined end the various controls as mentioned in this rule and the waking of the oven or drier tested at frequent intervals to ensure its safe operation by a responsible person designated by the occupier or manager, who by his experience and knowledge of necessary precautions against risks el explosion, is fit to undertake such work.

(b) A register shall be maintained in which the details of the various tests carried out from time to time under clause (a) shall be entered and every entry made shall be signed by the person making the tests.

(13) Training of operators-No person shall he assigned any task connected with operation of any oven or drier unless he has completed 18 years of age and he is properly trained.

(14) Polymerizing machines

(a) Printed fabric shall be thoroughly dried by passing them over drying cans or through hot flue or other equally effective means before the same Is allowed to pass through polymerizing machines.

(b) Infra-red ray heaters of polymerizing machines shall be cut of 1 while running the prints.]

[[124]61-C Fragile roofs

In any factory no person shall be required or allowed to stand on or pass over or walk on or near any roof or ceiling covered with fragile material through which he is liable to fall, in case it breaks or gives way, a distance of more than three meters, unless,

(i) suitable and sufficient ladders, duck ladders or crawling boards which shall be securely supported, arc provided and used; and

(ii) a permit to work on the fragile roof is issued to him each time he is required to work thereon, by a responsible person of the factory concerned, such as Supervisor, Foreman, Engineer or Manager.)

61D Buildings and structures

No building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging or other structure, whether of a permanent or temporary character, shall be constructed, situated or maintained in any factory in such a manner as to cause risk of bodily injury.

61E Machinery and plant

No machinery, plant or equipment shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily Injury.

61F. Methods of work

No process or work shall be carried on in any factory in such a manner as to cause risk of bodily Injury.

61G Stacking and storing of materials, etc.

No materials or equipment shall be stacked or stored in such a manner as to cause risk of bodily Injury.

61H [125][Special provisions regarding electricity

[* * *]

61I [126][Ship building and Ship Repairing

(1) Application - These rules shall apply in respect of work carried out in ship building and ship repairing operations

(2) Definitions-In these rules, unless there is anything repugnant in the subject or context:

(i) "Certificate of entry" means a certificate which-

(a) is given by a person who is a competent analyst and who is competent to give such certificates; and

(b) certifies that he has in an adequate and suitable manner tested the atmosphere in the oil-tank or oil-tanks specified in the certificate and found that having regard to all circumstances of the case, including the likelihood or otherwise of the atmosphere being or becoming dangerous, entry to the oil-tank or oil-tanks without wearing breathing apparatus may in his opinion be permitted;

(ii) "hot work" means any work which involves

(a) welding, burning, soldering, brazing, sand blasting or chipping by spark producing tools; or

(b) use of non-flame proof electrical equipment or equipment with internal combustion engines; and includes any other work which Is likely to produce sufficient heat capable of igniting inflammable gases cc vapors.

(iii) "naked light certificate" means a certificate which

(a) is given by a person who is a competent analyst to give such certificates; and

(b) certifies that he has in an adequate and suitable manner tested for the presence of inflammable vapour the oil-tank compartment space or other part of the vessel specified in the certificate and found it to be free there from and that having regard to all the circumstances of the case, including the likelihood or otherwise of the atmosphere becoming inflammable, the use of naked lights. fires, lamps or heated rivets or any hot work to be carried out nay in his opinion be permitted In the oil-tank compartment, space or other part of the vessel specified in the certificate;

(iv) "oil" means any liquid which has a flash point below 130°C (270°F) and also includes lubricating oils, liquid methane, liquid butane and liquid propane.

Explanation.- Flash paint whatever it occurs in these rules shall be flash point as determined by Abel Closed Cup or Prousky-Marten Closed Cup Procedures as described in I.S: 1448-1950.

(v) "Oil-tank" means any tank or compartment in which oil is or has been carried;

(vi) "The operations" means

(a) construction, reconstruction or breaking up of any ship or vessel, repairing, refitting, painting and finishing;

(b) the scaling, surfing or cleaning of its boilers (including combustion chambers or smoke boxes); and

(c) the cleaning of its bilges or oil-fuel-tanks or any of its tanks last used for carrying oil.

Explanation.-For the purpose of this clause, the expression ' oil' means oil of any description;

(vii) "Ship and vessel" have the same meanings as in the Merchant Shipping Act, 1958 (Central Act 44 of 1958);

(viii) "Shipyard" means any yard of dry dock (including the precincts thereof) in which ships or vessels are constructed, reconstructed, repaired, fitted or finished;

(ix) "Stage" means any temporary platform on or from which persons employed perform work in connection with the operations, but does not include a boatswain's chair ;

(x) "Staging" includes any stage, any upright thwart, thwart pin, wedge, distance piece, belt or other appliance or material, not being part of the structure of the vessel, which is used in connection with the support of any stage, and any guard-rails connected with a stage;

(xi) "tanker" means a vessel constructed or adapted for carrying a cargo of oil in bulk.

(3) Access and staging: General access to vessels in a ship-yard - All main gangways giving general a:cess to a vessel in a shipyard, whether from the ground or from a wharf or quay, and all cross gangways leading from such a main gangway on to the vessel, shall

(a) be at least 60 cm wide;

(b) be securely protected on each side to a height of at least 90 cm. by strongly constructed upper and lower hand-rails and by a secure toe board projecting at least 15 c.m. above the floor;

(c) be a good construction, of sound material and adequate strength;

(d) be stable and wherever practicable, of permanent construction;

(e) be kept in position as long as required; and

(f) maintained in good repairs.

(4) Access to dry dock.

(i) Every flight of steps giving access from ground level either to an altar or to the bottom of a dry dock shall be provided throughout on each side with a substantial hand-rail. In the case of an open side, secure fencing to a height of at least 90cm. shall be provided by means of upper and lower rails, taut ropes or chains, or by other equally safe means. For the purpose of this sub-rule a flight of steps which is divided into two by chute for materials, with no space between either side of the chute and steps, shall be deemed to be one flight of steps.

(ii) Such hand-rails and fencings as aforesaid shall be kept in position save when and to the extent to which their absence is necessary (whether or not for the purposes of the operations), for the access of persons, or for the movement of materials or vessels or for traffic or working or for repair, but hand-rails or fencing removed for any of those purposes shall be kept readily available and shall be replaced as soon as practicable.

(5) Access to vessels in dry dock

(i) If a ship is lying in dry dock for the purpose of undergoing any of the operations, there shall be provided means of access for the use of workers at such times as they have to pass to, or from, the ship or dry dock

(a) where reasonably practicable, one or more ship's accommodation ladders; or

(b) one or more soundly constructed gangways or similar constructions.

(ii) The means so provided shall be not less than 55 cm. wide, properly secured and fenced throughout on each side to a clear height of 90 cm. by means of upper and lower rail:. taut ropes or chains or by any other safe means, except that in the case of the ship's accommodation ladder, such fencing shall be necessary on one side only, provided, where the other side is properly protected by the ship's side.

(iii) Where at any dry dock, there is a gangway giving access from an altar of the dock to a vessel which is in the dock for the purpose of undergoing any of the operations, and the edge of the altar is unfenced, adequate hand holds shall be available for full length of the altar which workers commonly use when passing between the gangway and the nearest flight of steps which gives access to ground level.

(6) Access to and from bulkwarks: Where there is a gang-way leading on to a bulkwark of a vessel there shall be provided a platform at the in-board end of the gangway with safe means of access there from to the decks:

Provided that such a platform is not practicable, a second gangway or stairway leading from a bulkwark on to the deck which are either attached to the first mentioned gangway or place contiguous to it, in which case means of access securely protected by fencing shall be provided from the one to the other.

(7) Access to staging, etc

(i) Whether outside staging is erected in a shipyard, there shall be provided sufficient ladders giving direct access to the stages having regard to the extent of the staging and to the work to be done.

(ii) Where a vessel is under construction or reconstruction and worker!. are liable to go forward or after a thwartship across or along uncovered deck-beams, or across or along floors, sufficient planks shall be provided on these deck-beams or on those floors for the purpose of access to or from places of work and sufficient and suitable portable ladders shall be provided so as to give access either from the ground or outer bottom plating to the top of the floor.

(iii) Without prejudice to any other provision contained in clause (ii) of sub-rule (5) requiring greater width, no footway or passageway, constructed of planks shall be less than 45 cm. wide.

(8)

(i) Subject to clauses (ii) and (iii) of this sub-rule, every ladder which affords a means of access, communication or support to person shall

(a) be soundly constructed and properly maintained;

(b) be of adequate strength for the purpose for which it is used; and

(c) be securely fixed either

(i) as near its upper resting place as possible; or

(ii) where this is impracticable at its base, or where such fixing is impracticable. a person shall be stationed at the base of the ladder when in use to prevent it from slipping; and

(d) Unless there is other adequate hand-hold, extend to a height of at least 75 cm. above the place of landing or the height of the highest rung to be reached by the foot of any person working on the ladder, as the case may be or, if this is impracticable, to the greatest practicable height.

(ii) Requirements of sub-clauses (c) and (d) of clause (i) above shall not apply to fixed ladders of a ship or to rope ladders. Effect's e measures by means of roping off or other similar means shall be taken to prevent the use of fixed ladders of a ship which do not comply with requirements of sub-clauses (a) and (b) of clause (i) above.

(iii) Any worker who removes any ladder and acts it up in a new position shall, as regards that ladder, comply with requirements of sub-clause (c) of clause (i) above.

(iv) Rope ladders shall provide foothold of a depth including any space behind the ladder of not less than 12 cm. and suitable provisions shall be made for preventing such ladders from twisting.

(9) Lashing of ladders

(i) A fiber rope, or a rope made with strands consisting of wire cores covered with fiber, shall not be used to secure a ladder used for the purpose of the operations.

(ii) A wire rope shall not be used to secure any such ladder unless its ends are forruled, but this provision shall not apply in the case of an end which is so situated or protected that a person using the ladder is not liable to come into contact with it so as to suffer injury.

(10) Material for staging

(i) A sufficient supply of sound and substantial material and appliances shall be available in convenient place or places for the construction of staging.

(ii) All planks and other materials and appliances intended to be used or re-used for staging shall be carefully examined before being taken into use or re-use in any staging. Every examination required by this clause shall be carried out by a person competent for the purpose.

(11) Maintenance of staging, dry dock altars and shoring sills

(i) All staging's and every part thereof shall be of good construction, of suitable and sound materials and of adequate strength for the purpose of which it is used and shill be properly maintained, and every upright and thwart shall be kept so fixed, secured or placed in position as to prevent accidental displacement.

(ii) All planks forming stages shall be securely fastened to prevent them from slipping unless they extend 45 cm. or more beyond the inside edge of the thwart or support on which they rest.

(iii) All staging used in connection with the operations shall be inspected before use, and thereafter at regular and frequent intervals, by a responsible person.

(iv) All dry dock altars and shoring sills on or from which persons perform work in connection with the operations shall be of sound construction and properly maintained.

(v) All parts of stages, all parts of footways or passage-ways constructed of planks, and all parts of the dry dock altars or shoring sills, being parts on nr from which persons perform work in connection with the operations, shall be kept clear of all substances likely to make foot-hold or handhold insecure.

(12) Using of upright for hoisting block

(i) If any upright forming part of staging is used as a fixing for a pulley block for hoisting materials

(a) it shall be properly housed in the ground or shall otherwise be adequately secured so as to prevent it from rising ; and

(b) it shall be suitably protected against damage by the action of the chain or wire or other means of securing the pulley block to the upright.

(ii) No upright forming part of staging shall be used as an anchorage for a load pulley block, unless the upright is not likely to be displaced by such use.

(13) Support of stages on planks:

Planks supported on the rungs of ladders shall not be used to support stages.

(14) Maintenance of suspended stages

(i) Stages suspended by ropes or chains shall be secured as far as possible so as to prevent them from swinging.

(ii) A fiber rope, or a rope made of strands consisting of wire cores covered with fiber, shall not be used for suspending a stage except that fiber ropes may be used in the use of a stage of which the suspension ropes are received through blocks.

(iii) Chains, ropes, blocks and other gear used for the suspension of stages shall be of sound material, adequate strength and suitable quality, and in good condition.

(iv) Appropriate steps shall be taken to prevent ropes or chains used for supporting a stage from coming into contact with sharp edges of any part of • vessel.

(15) Provision of Boatswin's Chairs

(i) Boatswain's chairs and chains ropes or other gear used for their suspension shall be of sound materials, adequate strength and suitable quality and the chains, ropes or other gear shall be securely attached.

(ii) Suitable measures shall be taken to prevent where possible the spinning of a boatswain's chair to prevent the tipping of a boatswain's chair and to prevent any occupant falling there-from.

(16) Rising stages

All planks forming a rising stage at the bow end of a vessel shall be securely fastened to prevent them from slipping.

(17) Width of staging-

Without prejudice to the other provisions of this rule all stages shall be sufficient width as is reasonable in all the circumstances of the case to secure the safety of the persons working thereon.

(18) Maintenance of stage: from which a person is liable to fall more than 2 m or into water while working

(i) This sub-rule applies to stages from which a person is liable to fall a distance of more than 2 m. or into water in which there is a risk of drown-ins while working.

(ii) Every stage to which this sub-rule applies

(a) if it is not a side immediately adjacent to any part of a vessel,

(b) shall be so constructed or placed that a person is not liable to fall while working as aforesaid through a gap in the staging not being a gap necessary and having regard to the nature of the work being carried on;

(c) shall be at least 45 cm. on wide.

(iii) Every side of a stage to which this sub-rule applies shall

(a) if it is not a side immediately adjacent to any part of a vessel, be fenced subject to the provisions of clauses (iv) to (vii) of this sub-rule, with a guard rail or guard rails to a height of at least I m. above the stage, which rail or rails shall be so placed as to prevent the fall of persons from the stage or from any standing raised standing place on the stage; or

(b) if it is a side immediately adjacent to any part of vessel, be placed to that part having regard to the nature of the work being carried on and to the nature of the structure of the vessel.

(iv) in the case of stages which are suspended ropes or chains, and which are used solely for painting, the fencing required by sub-clause (a) of clause (iii) of this sub-rule may be provided by means of taut guard rope or taut guard ropes.

(v) No side of a stage or, as the case may be. no part of the side of a stage need be fenced in pursuance of sub-clause (a) of clause (iii) of this sub-rule in cases where and so long as, the nature of the work being carried on makes the fencing of that side, or, as the case may be, that part impracticable.

(vi) Guard rails provided in pursuance of sub-clause (a) of clause (iii) of this sub rule may he removed for the access of persons or for the movement of materials only and replaced immediately.

(vii) Where it is not reasonably practicable to comply with the provisions of sub-clause (a) of clause (iii) of this sub-rule, workers shall be provided with suitable safety belts equipped with life lines which are secured with a minimum amount of slack to a fixed structure.

Further precautions against fall of persons, materials and articles

(19) Fencing of dry docks

(i) Fencing shall be provided at or near the edges of a dry dock at ground level, including edges above flights of steps and chutes for materials. The height of such fencing shall a; a no point be less than I m.

(ii) Such fencing as aforesaid shall be kept in position safe when and to the extent to which its absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for movement of materials or vessels or for traffic or working, or for repair, but fencing removed for any of these purposes shall be kept readily available and shall be replaced immediately.

(20) Protection of openings

(i) Every side or edge of an opening in a dock or tank top of a vessel being aside or edge which may be a source of danger to workers shall, except where and while the opening is securely covered or where the side or edge is protected to a height of not less than 75 cm by a coaming or other part of the vessel, be provided with fencing to a height of not less than 90 cm above the edge of side and such fencing shall be kept in position save when and to the extent to which its absence is necessary (whether or not for the purposes of the operations), for the access of persons. or for the movement of materials, or for traffic or working, or for repair, but fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

(ii) Clause (i) above shall not apply

(a) to that part of an opening in a deck or tank top which is at the head of a stairway or ladder-way intended to be used while the operations are being carried on ; or

(b) to parts of a deck or tank top which are intended to be plated, except such parts where the plating has necessarily to be delayed so that the opening may be used for the purpose of the operations.

(21) Fall of articles front stages-

Where workers are at work outside a vessel on stage adjacent to part of the structure of the vessel and other workers are at work dimity beneath that stage, the planks of the stage shall be in such a position that no article liable to cause injury to the workers can fall between the planks and the inside plank of the stage shall be placed as near as practicable to the structure of the vessel having regard to the nature of the work being carried on.

(22) Provision of boxes for rivets, etc

(i) Boxes or other suitable receptacles for rivets, nuts, bolts and welding rods shall be provided for the use of workers.

(ii) It shall be the duty of the workers to use so far as practicable the boxes or other suitable receptacles so provided.

(23) Prohibition of throwing down materials and articles

(i) Subject to the provision of clause of this sub-rule, parts of staging, tools and other articles and materials shall not be thrown down from a height where they are liable to cause injury to workers but shall be properly lowered.

(ii) When the work to be done necessarily involves the throwing down from a height of articles or materials, conspicuous notice shall be pasted to warn persons from working or passing underneath the place from which articles or materials may fall and the work shall be done under the direct supervision of a supervisor in charge of the work.

(iii) No person shall throw down any articles or materials from height except in accordance with the requirements of this sub-rule.

(24) Rising of loose articles or materials-

So far as practicable, steps shall be taken to minimize the risk arising from loose articles or materials being left lying about in any place from which they may fall on workers or persons passing underneath.

Raising and Lowering

(25) Precaution for secureness of loads

(i) Loads shall be securely suspended or supported whilst being raised or lowered, and all reasonable precautions shall be taken to prevent danger from slipping or displacement.

(ii) Where by reasons of the nature of position of the operations load is liable, whilst being moved by a lifting machine or lifting tackle, to come into contact with any object so that the object may became displaced, special measures shall be adopted to prevent the danger so far as reasonably practicable.

(26) Support of lifting machinery and lifting tackle

Every lifting machine and all lifting tackles shall be adequately and suitably supported or suspended having regard to the purpose for which it is used.

(27) Wire ropes with broken wires

No wire rope shall be used if in any length of ten times the diameters of the wire rope the total number of visible broken wires exceeds five percent of the total number of wires, or if the rope shows signs of excessive wear or corrosion or other serious defect.

(28) Splices in wire ropes

A thimble or loop splices made in any wire rope shall have at least three tucks with a whole strand of the rope and two tucks with one half of the wires cut out of each strand. All tucks shall be against the lay of' the rope:

Provided that this sub-rule shall not operate to prevent the use of another form of splice which can be shown to be as efficient as the form of splice specified in this sub-rule.

(29) Restriction in the use of knotted chains, etc

(i) No chain or wire rope shall be used when there is a knot tied in any part thereof.

(ii) No chain which is shortened or joined to another chain by means of bolts and nuts shall be used:

Provided that this does not exclude the use of a chain bolted or joined to another chain by an approved and properly constructed attachment.

(30) Precautions against damage to chains and wire ropes

Appropriate steps shall be taken to prevent so far as practicable, the use of chains or wire ropes for raising or lowering in circum-stances in which they are in or liable to come into contact with sharp edges of plant, materials or loads, or with sharp edges of any part of the vessel on which work is being carried on.

(31) Loads on lifting appliances

No load shall be left suspended from a lifting appliance other than a self sustaining, manually operated lifting appliance unless there is competent person in charge of the appliance while the load is so left.

(32) Ascertaining the weights of heavy loads

Where there is reason to believe that a load being lifted or lowered on a lifting appliance weighs more than 20 tonnes, its weight shall be ascertained by means of an accurate weighing machine or by the estimation of a person competent for the purpose, and shall be clearly marked on the load:

Provided that this sub-rule shall not apply to any load lifted or lowered by a crane which has either a fixed or a derricking jib and which is fitted with an approved type of indicatory in good working order which

(a) indicates clearly to the driver or person operating the crane when the load being carried approaches the safe working load of the crane for the radius of the jib at which the load is carried; and

(b) gives an efficient sound signal when the load moved is in excess of the safe working load of the crane at that radius.

Precautions against asphyxiation, injuries, fumes or explosions

(33) Certification for entry into confined spaces

A space shall not be certified under section 36 (3) (a) of the Act unless

(a) effective steps have been taken to prevent, any ingress of dangerous fumes;

(b) any sludge or other deposit liable to give off dangerous fumes has been removed and the space contains no other material liable to give off dangerous fumes; and

(c) the space has been adequately ventilated and tested for dangerous fumes and has a supply of air adequate for respiration ; but no account shall be taken for the purposes of clause (b) of this sub-rule of any deposit or other material liable to give off dangerous fume in insignificant quantities only.

(34) Precautions against shortage of oxygen

No person shall enter or remain in any confined space in a vessel, being a confined space in which there is reason to apprehend that the proportion of oxygen in the air is so low as to involve risk of persons being overcome, unless either

(a) the space has been and remains adequately ventilated and a responsible person has tested it and certified that it is safe for entry without breathing apparatus, or

(b) he is wearing a suitable breathing apparatus and a safety belt securely attached to a rope, the free end of which is held by a person standing outside the confined space.

Explanation.—"a responsible person" means a supervisory personnel who is competent to test the confined space and issue a certificate.

(35) Restriction for the use of rivet fires-

(i) Rivet fires shall not be taken into or used in or remain in any confined space on board or in a vessel unless there is adequate ventilation to prevent the accumulation of fumes.

(ii) No person employed shall move a rivet fire into any confined space on board of in a vessel unless he has been authorised by his employer to move the fire into that space.

(36) Use of gas cylinders and acetylene generators

(i) No cylinder which contains or has contained oxygen or any inflammable gas or vapour at a pressure above atmospheric pressure and no acetylene generating plant, shall be installed or placed with 5 m. of any substantial source of heat (including any boiler or furnace when alight) other than the burner or blow pipe operated from the cylinder or plant.

(ii) No such cylinder and no such plant shall be taken below the weather deck in the case of a vessel undergoing repair, or below the topmost completed deck in the case of a vessel under construction, unless it is installed or placed in a part of the vessel which is adequately ventilated to prevent any dangerous concentration of gas or fumes.

(37) Restriction in the use of acetylene generators

(i) The following shall be observed as respects any acetylene generating plant

(a) no such plant shall be installed or placed in an) confined space unless effective and suitable provision is made for securing and maintaining the adequate ventilation of that space so ac to prevent, so far as practicable, any dangerous accumulation of gas;

(b) any person attending or operating any such plant shall have been fully instructed in its working and copy of the maker's instructions for that type of plant shall be constantly available for his use;

(c) the charging and cleaning of such plant shall so far as practicable be done during daylight;

(d) partly spent calcium carbide shall not be recharged into an acetylene generator.

(ii) No person shall smoke or strike a light or take a naked light or a lamp in or into any acetylene generator house or shed or in or into dangerous proximity to any acetylene generating plant in the open air or on board a vessel:

Provided that this clause shall not apply as respects a generator in the open air or on board a vessel which since it was last charged, has been thoroughly cleaned and freed from any calcium carbide and acetylene gas.

(iii) A prominent notice prohibiting smoking, naked lights and lamps shall be exhibited on or near every acetylene generating plant whilst it is charged or is being charged or is being cleaned.

(38) Use of proper apparatus for cutting, welding or heating metal

(i) Pipes or hoses for the supply of oxygen or any inflammable gases or vapour to any apparatus for cutting, welding or heating metal shall be of good construction and sound material and be properly maintained.

(ii) Such pipes or hoses shall be securely attached to the apparatus and other connections by means of suitable clips or other equally effective appliances.

(iii) Efficient reducing and regulating valves for reducing the pressure of the gases shall be provided and maintained in connection with all cylinders containing oxygen or any inflammable gases or vapour at a pressure above atmospheric pressure while the gases or vapors from such cylinders are being used in any process of cutting, welding or heating metal.

(iv) Where acetylene gas is used for cutting, welding or beating metal

(a) properly constructed and efficient back-pressure valve and flame arrester shall be provided and maintained in the acetylene supply pipe between each burner or blow-pipe pod the acetylene generator, cylinder or container from which it is supplied and shall be placed as near as

practicable to the burner or blow-pipe except that those requirements shall not apply where an acetylene cylinder serves only one burner or blow pipe ; and

(b) any hydraulic valves provided in pursuance of sub-clause (a) of clause (iv) shall be inspected on each day by every person who uses the burner or blow-pipe on that day and it shall be the duty of every worker who used the burner or blow-pipe to inspect the hydraulic valve accordingly

(v) The operating valves of burners or blow-pipes to which oxygen or any inflammable gases or vapour is supplied for the purpose of cutting, welding or heating metal shall be so constructed, or the operating mechanism shall be so protected that the valves cannot be opened accidentally.

(39) Precaution after use of apparatus for cutting, welding or heating metal

(i) In the case of apparatus on board a vessel and used for cutting, welding or heating metal with the aid of oxygen or any inflammable gas or vapour supplied at a pressure above atmospheric pressure, the precautions specified in this sub-rule shall be taken when such use ceases for the day or for a substantial period and the apparatus is to be left on board, but need not be taken when such use is discontinued merely during short interruptions of work. The requirements in clauses (iii) and (iv) of this sub-rule shall not apply during a meal interval, provided that a responsible person is placed in charge of the plant and equipment referred to therein.

(ii) Supply valves of cylinders, generators and gas mains shall be securely closed and the valve key shall be kept in the custody of a responsible person.

(iii) Movable pipes or hoses used for conveying oxygen or inflammable gas or vapour and the welding and cutting torches, shall, in the case of a vessel undergoing construction, be brought to the topmost completed deck, or in the case of a vessel under-going repair, to a weather deck or in either case to some other place of safety which is adequately ventilated to prevent any dangerous concentration of gas or fumes:

Provided that where, owing to the nature of the work, it is impracticable to comply with the foregoing requirements of this clause, the pipes or hoses shall be disconnected from cylinders, generators or gas mains, as the case may be.

(iv) When cylinders or acetylene generating plant have been taken below deck as permitted by clause (ii) of sub-rule (36). Such cylinders or acetylene generating plant shall be brought to a weather deck or, in the case of a vessel undergoing construction to the topmost completed deck.

(40) Naked lights and hot works on oil-carrying vessels

(i) Subject to the provisions of clause (ii) of this sub-rule and to the provisions of sub-rule (48) and without prejudice to the provisions of sub-rules (46) and

(47), no naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this sub-rule:

(a) shall be permitted to be applied to, or to be in, or any hot work permitted to be carried out in any part of a tanker. unless a naked light certificate has been obtained and is in force in respect of these parts of the tanker for which, in the opinion of a competent analyst, a naked light certificate is necessary:

Provided that a -naked light, fire or lamp of a kind specified by a competent analyst may be applied to or be in. or any hot work of a type specified by him carried on, in any part of the tanker so specified,

(b) shall be permitted

(i) to be in any oil teak on board or in a vessel in which oil tank the oil last carried was having a flash point of less than 23°C (75^0F) or was liquid methane, liquid propane or liquid butane;

(ii) to be applied, to the outer surface of any oil tanker on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid or any work of such a nature which is likely to produce sufficient heat capable of lighting inflammable gases or vapors permitted to be carried out, on the outer surface of such oil tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil tank

(iii) to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel to which oil tank the oil last carried was such oil as aforesaid, or any hot work permitted to be carried out in such compartment or space as aforesaid, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapors, permitted to be carried out on the outer surface of such compartment or space, unless naked light certificate has previously been obtained on the same day and is in force in respect of that compartment or space:

Provided that where in any such case referred to in items (i), (ii) and (iii) of this clause a competent analyst has certified that daily naked light certificates are unnecessary or are necessary only to a specified extent such a daily certificate need not be obtained or as the case may be, need only be obtained to the specified extent;

(c) shall be permitted to be applied to the outer surface of, or be in, any oil-tank on board or in a vessel or any hot work permitted to be carried out in any such oil-tank or vessel or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapors, permitted to be carried out on the outer surface of the oil-tank or vessel,

unless, since oil was last carried in that oil-tank, a asked light certificate has been obtained and is in force in respect of that oil-tank ;

(d)

(i) shall be permitted to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel or any hot work permitted to be carried out In any such compartment or space or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapors, permitted to be carried out on the outer surface of any such compartment or space, unless, since oil was last carried as cargo in that oil-tank. a naked light certificate has been obtained and is in force in respect of that compartment Of space.

(ii) Notwithstanding anything in clause (i) of this sub-rule, heated rivets may be permitted in any place without naked light certificate being in force in respect of that place if expressly so authorised by a competent analyst who certifies that after adequate and suitable testing, he is satisfied having regard to all the circumstances of the atmosphere becoming case including the likelihood or otherwise of the atmosphere becoming flammable that the place is sufficiently fret from flammable vapour, but such heated rivets shall where practicable, be passed through tubes.

(iii) No person shall introduce, have or apply naked light, fire or lamp (other than safety lamp of a type approved for the purpose of this rule) into, in or to any place where they are prohibited by this rule.

(iv) No person shall carry out hot work or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapors, in any place or any surface where they are prohibited by this rule.

Explanation: 'Competent analyst' means an analyst who is competent to give a naked light certificate.

(41) Restrictions for entering oil-tanks

(i) No person (other than an analyst entering with a view to issuing a certificate of entry) shall, unless he is wearing a breathing apparatus of a type approved for the purpose of this sub-rule, enter or remain in an oil-tank on board or in a vessel unless, since the oil-tank last contained oil, a certificate of entry has been obtained and is in force in respect of the tank.

(ii) Without prejudice to clause (i) of this sub-rule. no person (other than an analyst entering as aforesaid) shall be allowed or required to enter or remain in an oil-tank, on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23°C (73°F) unless since the oil-tank last

contained oil, an analyst has certified that the atmosphere is sufficiently free from inflammable mixture.

(iii) The provisions of this sub-rule are without prejudice to the requirement of sub-rule (34).

(42) Duration of Certificate - Any naked light certificate or certificate of entry may be issued subject to a condition that it shall not remain in force after a time specified in the certificate.

(43) Posting of Certificates - Every occupier for whom a naked light certificate or a certificate of entry is obtained shall ensure that the certificate or a duplicate thereof is posted as soon as may be and remains posted in a position where it may be conveniently read by all persons concerned.

(44) Maintaining safe atmosphere-

(i) When conditions in an oil-tank are such in respect of which a naked light certificate has been issued that there is a possibility of oil vapour being released from residues or other sources, test shall be carried out by a competent analyst at such intervals as may be required so as to ensure that the conditions in the tank are maintained safe.

(ii) Whenever hot work is carried on or naked light, fire or lamp is allowed to be, on the weather deck over spaces, in respect of which a naked light certificate has not been issued, all Covers of manholes and openings on deck and all valves (except those which are connected to high vent pipes) connecting the weather deck with the said spaces, shall be closed.

(iii) A record of all the tests carried out for the purpose of sub-rules (34), (40) and (41) shall be maintained in a register which shall furnish the date, time, locations and results of the tests.

(45) Cleaning of oil-tanks

(i) Subject to the provisions of sub-rule (48), before a test for flammable vapour is carried out with a view to the issue of a naked light certificate for the purposes of sub-rule (40) in respect of an oil-tank on board or in a vessel, that oil-tank shall, since oil was last introduced into the tank, be cleaned and ventilated in accordance with clause (ii) of this sub-rule.

(ii) The said cleaning and ventilation shall be carried out by the following methods

(a) the oil-tank shall be treated in such manner and for such period as will ensure the vaporization of all volatile oil;

(b) all residual oil and any sludge or other deposit in the oil-tank shall be removed therefrom; and

(c) after the oil-tank has been so cleaned

(i) all covers of manholes and other openings therein shall be removed and it shall be thoroughly ventilated by mechanical or other efficient means with a view to the removal of all oil vapour; and then

(ii) the interior surfaces, if any deposit remains thereon shall be washed or scraped down.

(46) Invalidation of certificates

(i) If during the course of work in, or to the other surface of, any part of a tanker or air-craft carrier, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapour entering or arising in that part of the tanker or aircraft carrier, that work shall be suspended and thereafter any certificate or entry previously issued in respect of any oil-tank in that part and any naked light certificate previously issued in respect of that part shall be no longer in force.

(ii) If (in the case of a vessel other than a tanker or air-craft carrier) during the course of work, in any oil-pipe or in any compartment or space adjacent thereto, any pipe or tank joint is opened or broken or any other event occurs so that there is risk of oil vapour entering or arising in the oil-tank or in any compartment or space adjacent thereto shall be suspended and thereafter any certificate of entry previously issued in respect of the oil-tank, and any naked light certificate previously issued in respect of the oil-tank, or any compartment or space adjacent thereto shall be no longer in force.

(47) Provisions as to work in other compartments of spaces

(i) Without prejudice to the other provisions of these sub-rules, if the presence of oil in such quantity and in such position as to be likely to give rise to fire or explosion is detested in any part of a vessel, being a part to which this rule applied and in which repairs of the following kind are to be or are being undertaken that is to say, repairs involving the use of a naked light, fire (sic.) purpose of sub-rule (40) or involving hot work, such repairs shall not be started or continued until a naked light certificate has been issued or, as the case may be misused in respect of that part of the vessel.

(ii) This rule shall apply to bilges, shaft, tunnels, pump-rooms, lamp rooms, and to compartments and spaces other than those to which clause (i) (d) of sub-rule (40) applies.

(48) Exemption — If the Chief Inspector is satisfied, by reasons of the nature of the work and the circumstances in which it is carried out, that any provisions of sub-rules (33) to (45) or part thereof can be suspended or relaxed without dangers to the health or safety of any person, be may grant suspension or relaxation in writing specifying such conditions as he may consider fit. Any such suspension or relaxation may be revoked at any time.

Precautions In Use Of Electrical Energy

(49) Electric energy other than that generated by an independent generating unit on board shall not be taken for use, or used in, or in connection with any of the operations unless the body of the ship is securely earthed in such a manner as to ensure an immediate and safe discharge of energy to the earth. A ship or vessel shall not be considered as securely earthed for the purpose of this sub-rule only on account of it being partly submerged in water.

(50)

(i) Electric or welding shall not be carried on in connection with any of the operations unless separate and fully insulated welding return conductor or conductor as the case may be of adequate electrical capacity are provided for return of the current to the transformer or generator of the welding set:

(ii) The return end of the source of the welding current shall not be earthed;

(iii) All work on which welding is carried on shall be securely earthed independently to an earth electrode by means of conductor or conductors as the case may be, of adequate capacity, unless all such work are connected to any structure of the ship or vessel in such a manner as to ensure adequate connection to earth as aforesaid.

(51) Cutting of energy In certain cases - Electric energy shall be cut off from all portable electric tools and manual electrode holders within any tank, compartment or space referred to in sub-rules (34) and (40) or in any other confined space during all times when such toots or holders are not in operation:

Provided that for determining whether any such portable electric tool or electrode holder is not in operation, no account shall be taken of brief interruptions of work occurring during normal working:

Provided further that energy may not be cut-off from any such equipment if a responsible person is left in charge of it in such tank, compartment or space concerned:

Provided also that cutting of all electrical energy by 'operation of any switch or control provided on the portable tool or electrodes holder itself should not be taken as fulfilling the requirement of this sub-rule.

Miscellaneous Safety Provisions

(52) Provisions of sufficient light - All parts of a vessel and all other places where the operations are being carried on, and all approaches to such parts and to places to which a worker may be required to proceed in the course of his employment, shall be sufficiently and suitably lighted. In providing such lighting due regard shall be given to avoidance of glare and formation of shadow, to the safety of the vessel and cargo, of the navigation of other vessels, and to any local statutory requirements as to the lighting of the harbor or deck.

(53) When work shall be permitted in boilers, etc.

(i) No work shall be permitted in any boiler, boiler furnace or boiler-flue until it has been sufficiently cooled to make work safe for the workers.

(ii) Before any worker enters any steam boiler which is one or a range of two or more steam boilers

(a) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range shall be disconnected from that part, or

(b) all valves or taps controlling such entry shall be closed and securely locked.

(iii) While workers remain in any steam boiler to which clause (ii) of this sub-rule applies all such inlets as are referred to in that sub-rule shall remain disconnected or all such valves or taps as are therein referred to shall remain closed and securely locked.

(iv) No worker shall be allowed or required to enter or remain in and no person shall enter or remain in, any steam boiler to which clause (ii) of this sub-rule applies unless the provisions of that sub-rule are being complied with.

(54) The hatch beams of any hatch in use for the operations shall, if not removed, be adequately secured to prevent their displacements.

(55) Bolts which have been jumped-up and re-screwed shall not be used for securing plates on the sides of vessels, and no worker shall use such bolts for this purpose.

(56) Work In or on life boats

(i) Before workers are permitted to work in or on any life boat, either steward or in suspended position, precautions shall be taken to prevent the boat from falling due to accidental tripping of the releasing gear' or movement of the davits, and capsizing of the boat if in checks.

(ii) Workers shall not be permitted to remain in life boats while the life boats are being hoisted into final steward position.

Protection Wear

(57) Hand Protection - Adequate protection for the hands shall be available for all workers when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure greater than atmospheric pressure or when engaged in machine caulking or machine reveling or in transporting or stacking plates or in handling plates at machines.

(58) Protection In connection with cutting or welding

(i) Suitable goggles fitted with tinted eye pieces shall be provided and maintained for all persons employed when using cutting or welding apparatus to which

oxygen or any flammable gas or vapour is supplied at a pressure above atmospheric pressure.

(ii) There shall be provided and maintained for the use of all persons employed when engaged in the process of electric welding

(a) suitable helmets or suitable head-shields or suitable hand shields to protect the eyes and face from hot metal and from rays likely to be injurious ; and

(b) suitable gauntlets to protect the hands and fore-arms from bet metal and from rays likely to be injurious.

(iii) When electric welding is in progress at any place and persons other than those enraged in that process are employed in a position where the rays are likely to be injurious to their eyes, screens shall be provided at that place for the protection of these persons: Provided that when it is not possible to provide screen, suitable goggles shall be provided for their use.

(59) Eye protection for other processes - Suitable goggles of effective screens shall be provided to protect the eye of all workers in any of the following processes:

(a) the cutting out or cutting off of cold rivets bolts from boilers or other plant or from ships;

(b) the chipping, scaling or scaling of boilers or ships plates;

(c) drilling by means of portable machine tools;

(d) dry grinding of metals.

(60) Head Protection - When workers are employed in areas where there is danger of falling objects they shall be provided with suitable safety helmets.

(61) Provision of safety belts and life-lines

(i) Whenever any worker is engaged on work at a place from which he is liable to fall more than 2 (two) m. he shall be provided with safety belts equipped with lifelines which are secured with a minimum of slack, to a fixed structure unless any other effective means such as provision of guard rails or ropes are taken to prevent his falling.

(ii) All safety belts and lifelines shall be examined once in six months by a competent person to ensure that no belt or lifeline which is not in good condition is used.

Health And Welfare

(62) Prohibition of employment of young persons in certain process

(1) No young person shall be employed in

(a) the application of asbestos by means of a spray ; or

(b) the breaking down for removal of asbestos lagging; or

(c) the cleaning of sacks or other containers which have contained asbestos; or

(d) the cutting of materials containing asbestos by means of portable power-driven saws ; or

(2) the scaling, scurfing or cleaning of boilers, combustion chambers or smoke boxes, where his work exposes him to dust of such a character and to such an extent as to be likely to be injurious or offensive to persons employed in such work.

(63) Restriction in the use of lead

(i) Lead paint shall not be applied in the form of a spray in the interior painting of any part of a ship or vessel

(ii) Wherever lead sheathing work is carried on for making cold storage chambers in the ships, efficient exhaust droughts with portable extractors should be provided to remove the lead fumes from the confined spaces.

(64) Provision of stretchers, ambulances and ambulance rooms, etc.

(i) In every shipyard, there shall be provided and kept readily available

(a) at least two numbers of suitably constructed sling stretchers or other similar appliances for raising injured persons;

(b) at least two numbers of carrying or wheel stretchers;

(c) at least two numbers of suitable reviving apparatus and oxygen and the stretchers, appliances and apparatus so provided shall be properly maintained.

(ii) In every shipyard, there shall always be readily available during working hours a responsible person or responsible persons whose duty it is to summon an ambulance or other means of transport if needed in cases of accident or illness. Legible copies of a notice indicating that person, or as the case may be these persons shall be affixed in prominent positions in every shipyard.

(iii) In every shipyard other than a dry dock available for hire-

(a) in which the number of persons employed normally exceeds five hundred; or

(b) in which the number of persons employed normally exceeds one hundred and which is more than ten miles from a hospital there shall be provided and maintained in good order and in clean condition a properly constructed ambulance room containing at least the equipment as prescribed in the rule 64 of the Tamil Nadu Factories Rules, 1950. The room shall be used only for the purpose of treatment and rest and shall be in charge of a suitably qualified person who shall be readily available

during working hours, and record shall be kept of all cases of accident or sickness treated at the room.

(65) Restrictions In the employment of young persons

(i) No young person shall until he has been employed in a shipyard or shipyards for at least six months be employed in connection with the operations in a shipyard on stage from which, or in any part of a ship where, he is liable to fall a distance of more than 2 m. or into water in which there is a risk of drowning.

(ii) Any young person under the age of sixteen shall, when employed in the operations in shipyard, be placed under the charge of an experienced workman.

(66) Safety supervisions - In the case of every shipyard other than a dry deck available for hire being a shipyard where the number of workers regularly or from time to time exceeds five hundred, a person experienced in the work of such yards shall be appointed and employed exclusively to exercise general supervision of the observance of this rule and to promote the safe conduct of the work generally.

[[127]61-J. Reaction Vessels and Kettles

(1) This rule applies to reaction and kettles (hereinafter in this rule referred to as reaction vessels) which normally work at a pressure not above the atmospheric pressure, but in which there is likelihood of pressure being created above the atmospheric pressure due to reaction get-ting out at control or any other circumstances.

(2) In the event of the vessel being heated by electrical means, a suitable control device shall be provided to prevent the temperature exceeding the safe limit.

(3) Where steam is used for heating purposes in reaction vessel it shall be supplied through a suitable pressure reducing valve, (sic.) any other suitable automatic device to prevent the maximum permissible steam pressure being exceeded, unless the pressure of the steam in the supply line itself cannot exceed the said maximum permissible pressure.

(4) A suitable safety valve or rupture disc of adequate size and capacity shall be provided to effectively, prevent the pressure being built up in the reaction vessel beyond the safe limit. Effective arrangements shall be made to ensure that the released gases, fumes, vapors, liquids or dusts, as the case may be, are led away and disposed of through suitable pipes without causing any hazard. Where flammable gases or vapors are likely to be vented out from the vessel, the discharge end shall be provided with a flame arrestor.

(5) Every reaction vessel shall be provided with a pressure gauge having the appropriate range.

(6) In addition to the devices as mentioned in the fore-going provisions, means shall be provided for automatically stopping the feed into the vessel as soon as process

conditions deviate from the normal limits to an extent which can be considered as dangerous.

(7) Where necessary, an effective system for cooling, flooding or blanketing shall he provided, for the purpose of controlling the reaction and process conditions within the safe limits of temperature and pressure.

(8) An automatic auditory and visual warning device shall be provided for clear warning whenever process conditions exceed the present limits. This device, wherever possible, shall be integrated with automatic process correction systems.

(9) A notice pointing out the possible circumstances in which pressures above atmospheric pressure may be built up in the reaction vessel, the dangers involved and the precautions to be taken by the operators shall be displayed at a conspicuous place near the vessel.]

[128][61-K. Examination of eye sight of certain workers

(1) No person shall be employed to operate a crane, locomotive or fork lift truck or to give signals to crane or locomotive operator unless his eye sight and colour vision have been examined and declared fit by a qualified ophthalmologist to work whether with or without use of corrective glasses.

(2) The eye sight and colour vision of the person employed as referred to in sub-rule (1) shall be examined at least once in every two years.

(3) Any fee payable for an examination of a person under this rule and the cost of corrective glasses shall be paid by the occupier and shall not be recoverable from that person.

(4) [129][The record of examination or re-examination carried out by the concerned ophthalmologist shall be produced on demand]]

[130][61-L Railways In factories

(1) This rule shall apply to railways in the precincts of a factory which are not subject to Indian Railways Act, 1890 (Central Act IX of 1890).

(2) Gateways - A Gateway through which a railway track passes shall not be used for the general passage of workers into or out of a factory.

(3) Barriers and turn gates

(a) Where building or walls contain doors or gates which open to a railway track, a barrier about 1 meter high shall be fixed parallel to and about 60 c.m. away from the building or wall outside the opening and extending several feet beyond it at either end, so that any person passing out may become aware of an approaching train when his pace is checked at the barrier. If the traffic of the nearest track is all in one direction, the barrier shall be in the form of a 'L'

with the end of the short leg abutting on to the wall and the other end opening towards the approaching train.

(b) If the distance between wall and track cannot be made to accommodate such a barrier, the barrier or a turngate shall be placed at the inside of the opening.

(c) Where a footway passes close to a building or other obstruction as it approaches a railway track, a barrier or a turngate shall be fixed in such a manner that a person approaching the track is compelled to move away from the building or obstruction and thus obtain timely sight of an approaching locomotive or wagon.

(4) Crowd

(a) Workers' pay-window, first-aid stations and other points where a crowd may collect shall not be placed near a railway track.

(b) At any time of the day when workers are starting or ending work, all railways traffic shall cease for not less than five minutes.

(5) Locomotives

(a) No locomotive shall be used in shunting operations unless it is in good working order

(b) Every locomotive and tender shall be provided with efficient brakes, all of which shall be maintained in good working order. Brake shoes shall be examined at suitably fixed interval and those that are worn out replaced at once.

(c) Water-gauge glasses of every locomotive, whatever its boiler pressure, shall be protected with substantial glass or metal screens.

(d) Suitable steps and hand-holds shall be provided at the corners of the locomotive for the use of shunters.

(e) Every locomotive crane shall be provided with lifting and jacking pads at the four corners of the locomotive for assisting in re-railing operations.

(f) It shall be clearly indicated on every locomotive crane in English and in language understood by the majority of the workers in the factory, for what weight of load and at what radius the crane is safe.

(6) Wagons

(a) Every wagon (and passenger coach, if any) shall be provided either with self-acting brakes capable of being applied continuously or with efficient hand brakes which shall be maintained, in good working order. The hand brakes shall be capable of being applied by a person on the ground and fitted with a device for retaining them in the applied position.

(b) No wagon shall be kept standing within 3 meters of any authorised crossing

(c) No wagon shall be moved with the help of crow bars or pinch bars.

(7) Riding on locomotive, wagon or other rolling stock- No person shall be permitted to be upon (whether inside or out-side) any locomotive wagon or other rolling stock except where secure foot hold and hand hold are provided.

(8) Attention to brakes and doors

(a) No locomotive. wagon or other rolling stock shall be kept standing unless its brakes are firmly applied and, where it is on a gradient, without sufficient number of properly constructed scotches placed firmly in position.

(b) No train shall be set in motion until shunting jamadar has satisfied himself that all wagon doors are securely fastened.

(9) Projecting loads and cranes

(a) If the load on a wagon projects beyond its length, a guard or dummy-truck shall be used beneath the projection.

(b) No loco-crane shall travel without load unless the job is completely lowered and positioned in line with the track.

(c) When it is necessary for a loco-crane to travel with a load, the jib shall not be swung until the loco-crane has come to rest.

(10) Loose shunting- Loose shunting shall be permitted only when it cannot be avoided. It shall never be performed on a wagon not accompanied by a man capable of applying and pinning down the brakes. A wagon not provided with brakes in good working order and capable of being easily pinned down shall not be loose-shunted, unless there is attached to it at least another wagon with such brakes. Loose shunting shall not be performed with, or against a wagon containing passengers, live-stock or explosives.

(11) Fly-shunting- Fly shunting shall not be permitted on any factory railway.

(12) The shunting jamadar

(a) Every locomotive or wagon in motion in a factory shall be in charge of a properly trained jamadar.

(b) Before authorizing a locomotive or wagons to be moved, the shunting jamadar shall satisfy himself that no person is under or in between or in front of the locomotive or wagons.

(13) Hand signals- The hand signals used by the shunting jamadar by day and night shall be those prescribed by the shunting rules of railways, working under the Indian Railways Act, 1890 (Central Act IX of 1890).

(14) Night work and fog

(a) In factories where persons work at night, no movement of locomotive, wagon or other rolling stock otherwise than by hand shall be permitted between

sunset and sunrise unless the tracks and their vicinity are lighted on a scale of not less than 10 lux as measured at the horizontal plane at the ground level.

(b) In no circumstances shall any locomotive or train be moved between sunset and sunrise or at any time when there is fog, unless it carries a white head light and a red rear light.

(15) Speed control

(a) A locomotive or train shall not be permitted to move at a speed greater than seven kilometers per hour.

(b) A train, locomotive, wagon or other rolling stock shall not be moved by mechanical or electrical power unless it is preceded at a distance of not less than 10 meters during the whole of its journey by a shunting jamadar. He shall be provided with signaling flags or lamp and whistle necessary for calling the attention of the driver.

(16) Tracks

(a) The distance (i) between tracks and between tracks and buildings, blind walls or other structures and (iii) tracks and materials deposited on the ground shall be respectively not less than:

(aa) from centre to centre of parallel tracks, the overall width of the widest wagon of that gauge plus twice the width of the door of such a wagon when opened directly outwards plus 1 meter.

(bb) from a building or structure other than a loading platform to the centre of the nearest track, half the overall width of the widest wagon of that gauge, plus the width of its door when opened outwards plus 1.5 meters.

(cc) from material stacked or deposited alongside the track, on the ground or on a loading platform, to the centre of the nearest track, half the overall width of the widest wagon of that gauge, plus half the width of its door when opened directly outward, plus 1 meter.

(b) Sleepers of a track shall be in level with ground and at all crossings of the track width a road or walkway, the surface of the road or walkway shall be in level with the top of the rails.

(c) All track ends shall be equipped with buffer stops of adequate strength.

(d) Barriers of substantial construction shall be securely and permanently fixed across any doorway or gateway in a building or in a wall which conceals an approaching train from view, between the building and the track as prescribed in clause (a) of sub-rule (3).

(e) Where tracks are carried on a gantry, or other elevation, a safety footway or footways with hand rails and toe-boards shall be provided at all positions where persons work or pass on foot; and where there is an opening in the

stage of an elevated fenced or the opening itself provided with a grill through which a person cannot fall.

(f) All point levels shall have their movements parallel to, not across, the direction of the track.

(g) All loading platforms which are more than 60 c.m. above the level of the ground on which the track is laid and more than 15 meters in length shall be provided with steps at interval not greater than 15 meters apart to enable the platform to be easily mounted from the track.

(h) Turn tables on plant railways shall be provided with locking devices which will prevent the tables from turning while locomotives or wagons are being run on or off the tables.

(i) Workers shall be prohibited from passing under, between or above railway wagons.

(17) Crossings

(a) At all crossings of a track with a road of walkway, danger or crossing signs and wherever reasonably practicable, blinking lights or alarm lights shall be provided. At all important crossings, gates or barriers manned by watchman shall be provided. Swinging gates and barriers shall be secured against inadvertent opening or closing.

(b) All crossings, warning, signs, gates and barriers shall be illuminated during hours of darkness.

(18) Duties of drivers and shunters - It shall be the duty of every driver of a locomotive or a shunter including a shunting jamadar, to report without delay to their superior any defect in permanent way locomotive or rolling stock.

(19) Young persons not to be employed as drivers of locomotive or as shunters- No person who is under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as a driver of locomotive or as a shunter.

(20) The Chief Inspector may by an order in writing exempt a factory or part of it from all or any of the provisions of this rule to such extent and on such conditions as he deems necessary].

[131][61-M. Safety Committee

(1) In every factory

(a) Wherein two hundred and fifty or more workers are ordinarily employed; or

(b) which carries on any process or operation declared to be dangerous under Section 87 of the Act; or

(c) which carries on hazardous process as defined under Section 2 (oh) Of the Act; there shall be a Safety Committee.

(2) The representatives of the management of Safety Committee shall include

(a) A senior official, who by his position in the organization can contribute effectively to the functioning of the Committee, shall he the Chairman;

(b) A Safety Officer and a Factory Medical Officer, wherever available and the Safety Officer, in such a case shall be the Secretary of the Committee;

(c) A representative each from the production, maintenance and purchase departments.

(3) The Workers' representatives on this Committee shall be as equal to the number of representatives of the management, as elected by the workers.

(4) The tenure of the Committee shall be three years.

(5) Safety Committee shall meet as often as necessary but at least once in every quarter. The minutes of the meeting shall be recorded and produced to the Inspector on demand.

(6) Safety Committee shall have the right to be adequately and suitably informed of

(a) Potential safety and health hazards to which the workers may be exposed at work place.

(b) data on accidents as well as data resulting from surveillance of the working environment and of the health of workers exposed to hazardous substances so far as the factory is concerned :

Provided that the Committee undertakes to use the data on a confidential basis and solely to provide guidance and advice on measures to improve the working environment and the health and safely of the workers.

(7) Functions and duties of the Safety Committee shall include

(a) Assisting and co-operating with the management in achieving the aims and objectives outlined in the Health and Safety Policy of the Occupier.

(b) dealing with all matters concerning health, safety and environment and to arrive at practicable solutions to problems encountered;

(c) creating safety awareness amongst all workers;

(d) undertaking educational, training and promotional activities;

(e) discussing reports on safety, environmental and occupational health surveys, safely audits, risk assessment, emergency and disaster management plans and implementation of the recommendations made in the reports;

(f) carrying out health and safety surveys and identifying causes of accidents;

(g) looking into any complaint made on the likelihood of an imminent danger to the safety and health of the workers and suggesting corrective measures ; and

(h) Reviewing the implementation of the recommendations made by it.

(8) Where owing to the size of the factory or any other reason, the functions referred to in sub-rule (7) cannot be effectively carried out by the Safety Committee, it may establish sub-committees as may be required to assist it]

[[132]61-N. Quality of personal protective equipment

All personal protective equipments provided to workers as required under any of the provisions of the Act or the rules shall have certification by Indian Standard Institute.]

[133][61-O. Protective equipment

The Inspector may, having regard to the nature of the hazards involved in work and process carried out, order the Occupier or the Manager in writing to supply to the workers exposed to particular hazard any personal equipment as may be found necessary.]

[134][61-P. Thermic Fluid Heaters

(1) All heaters shall be of such construction that coils are removable for periodic cleaning, visual inspection and hydraulic test.

(2) Suitable arrangements shall be made for cooling the furnace effectively In case of power failure.

(3) Before restarting the furnace, it shall be effectively purged.

(4) Velocity of flow of the thermic fluid shall not be allowed to fall below the minimum recommended by the manufacturers while the heater is in operation.

(5) The thermic fluid shall be circulated in dosed circuit formation with an expansion-cum-decorator tank. This tank shall be located outside the shed where the heater is installed.

(6) Every heater shall be provided with a Photo-register actuated audio-visual alarm to indicate flame failure and automatic burner cut off.

(7) The stack temperature monitor-cum-controller with audio-Visual alarm shall be provided so as to warn the operator in case the outlet temperature exceeds the specified minimum.

(8) Where inspection doors are provided on the furnace they shall be inter-locked with the burner itself so that they cannot be opened until burner is shut off and furnace is cooled sufficiently.

(9) All heaters shall also be provided with the following safety devices:

(i) Level control in the expansion tank;

(ii) temperature control of thermic fluid;

(iii) Differential pressure switch on the outlet line of the heater tubes; and

(iv) temperature control device for the fuel oil supply to the burner.

(10) All devices mentioned in paragraph (9) shall have interlocking arrangement with burner so that in case of any predetermined limits being crossed the supply of fuel and air to burner shall automatically be cut-off.

(11) All safety interlocks when operated shall be indicated on the control panel of the heater by a suitable audio-visual alarm.

(12) Every heater unit shall be provided as a standard accessory an arrangement for stifling with low pressure steam or nitrogen for putting out the fire.

(13) Electric panel for the heater shall be located near the heater but not so close as to be exposed to spilling or leaking oil.

(14) The heater shall be located in a place partitioned off with fire proof material from other manufacturing activities.

(15) Explosion vent shall be so installed that release takes place at safe location.

(16) The heater coil shall be subjected to pressure test by competent person once atleast in every 12 months. The test pressure shall not be less than twice the operating pressure.

(17) If repairs are carried out to the coil, it shall be tested before taking it into use.

(18) The thermic fluid shall conform to the specifications prescribed by the manufacturers and shall be tested by competent person for suitability atleast once in every three months period. Such test shall include lest for acidity, suspended matter, ash contents, viscosity and flash point.

(19) Cleaning of internal surface of the heater or soot and check up of refractory surface on the inside shall be carried out every month or as often as required depending upon working conditions. The coils shall be removed and surface of the coils cleaned thoroughly once atleast in a period of silt months. The burner, nozzles, oil filters and pumps shall be cleaned once a week during the periods of use.

(20) A separate register containing the following information shall be maintained

(i) weekly checks carried out confirming the effectiveness of the interlock,

(ii) weekly checks confirming that all accessories are in good state of repairs, and

(iii) information regarding fuel oil temperature, pressure, thermic fluid inlet/outlet pressure and temperature, fuel gas temperature, recorded at four hourly interval.

(21) The heater when in operation shall always be kept in charge of a trained operator)

61-Q Site appraisal committee

(1) The State Government may appoint a Senior Official of the Factories Inspectorate to be a member and also function as the Secretary of the Committee.

(2) No member of the Site Appraisal Committee unless required to do so by a Court of Law, shall disclose otherwise than in connection with the purpose of Act, at any lime

any infatuation relating to manufacturing or commercial business or any working process which may come to his knowledge during his tenure as a Member on this Committee.

(3) Applications for appraisal of sites

(a) Applications for appraisal of sites in respect of the Factories covered under Section 2 (cb) of the Act shall be submitted to the Chairman of the Site Appraisal Committee.

(b) The application for site appraisal along with fifteen copies thereof shall be submitted in the form annexed to this rule. The Committee may dispense with furnishing information on any particular item in the Application Form if it considers the same to be not relevant to the application under consideration.

(4) Function of the Committee:

(a) The Member Secretary shall arrange to register the applications received for appraisal of site in a separate register and acknowledge the same within a period of seven days.

(b) The Member Secretary shall fix up meeting in such a manner that all the applications received and registered are referred to the Committee within a period of one month from the date of their receipt.

(c) The Committee may adopt a procedure for its working keeping in view the need for expeditious disposal of applications.

(d) The Committee shall examine the application for appraisal of a site with reference to the prohibitions and restrictions on the location of industry and the carrying on of processes and operations in different areas as per the provisions of rule 5 of the Environment (Protection) Rules, 1986 framed under the Environment (Protection) Act, 1986 (Central Act 29 of 1986).

(e) The Committee may call for documents, examine experts, inspect the site if necessary and take other steps for formulating its views in regard to the suitability of the site.

(f) The application for Site Appraisal will be considered by the Committee after obtaining Letter of Intent by the applicant from the Ministry of Industries of Government of India before its conversion as Industrial Licence.

Format of Application to the Site Appraisal Committee

1. Name and address of the applicant

2. Site Ownership Data

2.1 Revenue details of site such as Survey No. Plot No. etc.

2.2 Whether the site is classified as forest and if so, whether approval by the Central Government under Section 5 of the Indian Forest Act, 1927 has been taken.

2.3 Whether the proposed site attracts the provisions of Section 3 (2) (v) of the Environment (Protection) Act, 1986 (Central Act 29 of 1986). If so the nature of the restrictions.

2.4 Local authority under whose jurisdiction the site is located.

3. Site Plan

3.1 Site Plan with clear identification of boundaries and total area proposed to be occupied and showing the following details nearby the proposed site.

(a) Historical monument, if any, in the vicinity

(b) Names of neighboring manufacturing units and human habitats, educational and training institutions, Petrol Installations, storages of LPG and other hazardous substances in the vicinity and their distances from the proposed unit.

(c) Water sources (rivers, streams, canals, dams, water filtration plants, etc.) in the vicinity.

(d) Nearest hospitals, fire stations, civil defense stations and Police Stations and their distances.

(e) High tension electrical transmission lines, pipe lines for water, oil, gas or sewerage, railway lines, roads, stations, jetties and other similar installations.

3.2 Details of soil conditions and depth at which hard strata obtained.

3.3 Contour map of the area showing nearby hillocks and differences in levels

3.4 Plot Plan of the factory showing the entry and exit points roads within water drains, etc.

4. Project Reports

4.1 A summary of the salient features of the project

4.2 Status of the organization (Government, Semi-Government, Public or Private, etc.)

4.3 Maximum number of persons likely to be working in the factory

4.4 Maximum amount of power and water requirements and source of their supply

4.5 Block diagram of the buildings and installations in the proposed supply.

4.6 Details of housing colony, hospital, school and other infrastructural facilities proposed.

5. Organizations structure of the proposed manufacturing unit/factory

5.1 Organization diagrams of Proposed enterprise in general Health, Safety and Environment Protection Departments and their linkage to operation and technical departments

5.2 Proposed Health and Safety Policy

5.3 Area allocated for treatment of wastes and effluent

5.4 Percentage outlay on safety, health and environment protection measures

6. Meteorological data relating to the Site:

6.1 Average, minimum and maximum of Temperature Humidity Wind velocities During the previous ten years

6.2 Seasonal variations of wind directions

6.3 Highest water level reached during the floods in the area recorded so far

6.4 Lightening and seismic data of the area

7. Communication Links

7.1 Availability of telephone/telex/wireless and other communication facilities for outside communication

7.2 Internal Communication facilities proposed

8. Manufacturing Process Information

8.1 Process flow diagram

8.2 Brief write up on process and technology

8.3 Critical process parameters such as pressure build-up temperature rise and run-away reactions

8.4 Other external effects critical to the process having safety implications, such as in grass of moisture or water, contact with incompatible substances, sudden power failure.

8.5 Highlights of the built-in safety/pollution control devices or measures incorporated in the manufacturing technology

9. Information of Hazardous Materials

9.1 Raw materials, intermediates, products and by-products and their quantities (enclose Material Safety Data Sheet in respect of each hazardous substance).

9.2 Main and intermediate storages proposed for raw materials intermediate/products /by-products (maximum quantities to be stored at any time).

9.3 Transportation methods to be used for materials in. flow and outflow, their quantities and likely routes to be followed

9.4 Safety measures proposed for

---Handling materials

---internal and external transportation

---disposal (packing and forwarding of finished products)

10. Information on Dispersal/Disposal of wastes and Pollutants

10.1 Major pollutants (gas, liquid, solid) their characteristics and quantities (average at peak loads)

10.2 Quality and quantity of solid wastes generated, method of their treatment and disposal

10.3 Air, Water and Soil Pollution problems anticipated and the proposed measures to control the same, including treatment and disposal of effluents.]

11. [135][Process Hazard Information].

11.1 Enclose a copy of the report on environmental impact assessment

11.2 Enclose a copy of the report on Risk Assessment Study.

11.3 Published (open or classified) reports, if any, on accident situations/occupational health hazards or similar plants elsewhere (within or outside the country).

12. Information of proposed safety and Occupational Health Measures

12.1 Details of fire fighting facilities and minimum quantity of water, CO2 and or other fire-fighting measures needed to meet the emergencies.

12.2 Details of In-house medical facilities proposed.

13. Information on Emergency Preparedness.

13.1 On-site emergency plan.

13.2 Proposed arrangements, if any, for mutual aid scheme with the group of neighboring factories.

14. Any other relevant information.

I certify that the information furnished above is correct to the best of my knowledge and nothing of importance has been concealed while furnishing it.

Name and Signature of the Applicant.]

[136][61-R. Road Safety in Factory premises

(1) Definitions-For the purpose of this Rule,

(a) "Authority" means registering authority under Motor Vehicles Act, 1988 (Central Act 59 of 1988) ;

(b) "Driver or operator" means a person authorized by the authority to drive or operate a vehicle;

(c) "Vehicles" means all types of vehicles including carriages registered or required to be registered under the Motor Vehicles Act, 1988 (Central Act 59 of 1988) and rules framed thereunder and used within the factory premises.

(2) Construction and maintenance of roads and safety in driving

(a) Internal roads shall be soundly constructed, surfaced with good wearing material and properly maintained.

(b) Suitable dividers shall be provided where the width of road is 16 meters or more.

(c) All junctions, blind comers and railway crossings shall have necessary cautionary traffic signals displayed.

(d) The speed limit shall be displayed at conspicuous places such as entrance to the factory and at a distance of every 500 meters along the roads inside the factory premises.

(e) Parking places with clear marking shall be provided at convenient places inside the factory premises.

(f) It shall be ensured that,

(i) no vehicle is allowed or required to enter the factory premises unless it is duly registered with the authority;

(ii) no driver or operator is allowed or required to drive the vehicle inside the factory premises unless he holds a valid driving licence ;

(iii) record of details of vehicle, driver or operator or persons accompanying the vehicle and other information such as TREM CARD, as found necessary is maintained;

(iv) entry of vehicles is restricted to the necessity of the workplace;

(v) no vehicle is loaded beyond its rated capacity: and

(vi) no person is allowed to park or stay or take rest under, between or above the vehicle.

(g) Proper traffic signals shall be displayed at sharp turns or 'U' turns or wherever necessary

(h) All traffic signals, markings and cautionary notices shall be displayed in Tamil.

(i) At blind corners, convex mirror shall be installed at correct angle which shall reflect the movement of any incoming vehicle to unwary pedestrian or another vehicle.

(j) While reversing the vehicle, it shall be ensured that suitable warning is sounded and if need be another person is deployed to give signals and clearance to the driver)

CHAPTER V

62. Washing facilities

Rule Prescribed under sub-section (2) of section 42

(1) This rule shall come into force, in respect of any class or description of factories, on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.

(2) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

(3) Without prejudice to the generality of the foregoing provisions, the washing facilities shall include –

(a) a trough with taps or jets at intervals of not less than 61 centimeters, or

(b) wash-basins with taps attached thereto, or

(c) taps on stand-pipes, or

(d) showers controlled by taps, or

(e) circular troughs of the fountain type, provided that the Inspector may, having regard to the needs and habits of the workers, fix the proportion in which the aforementioned types of facilities shall be installed,

(f) or such other washing facilities as the Inspector may consider sufficient and suitable in the circumstances of each case.

(4)

(a) Every trough and basin shall have a smooth, impervious surface and shall be fitted with a waste pipe and plug.

(b) The floor or ground under and in the immediate vicinity of every trough, tap, jet, wash-basin, stand-pipe and shower shall be so laid or finished as to provide a smooth, impervious surface and shall be adequately drained.

(5) For persons whose work involves contact with any injurious or noxious substance there shall be at least one tap for every fifteen persons; and for persons whose work does not involve such contact the number of taps shall be as follows:

Number of workers	Number of taps
Up to 20	1
21 to 35	2
36 to 50	3

51 to 150	4
151 to 200	5
Exceeding 200 but not exceeding 500	5 plus one tap for every 50 or fraction of 50
Exceeding 500	11 plus one tap for every 100 or fraction of 100

(6) If female workers are employed, separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers "For Women only" and shall also be indicated pictorially.

(7) The water-supply to the washing facilities shall be capable of yielding at least 27.3 liters a day for each person employed in the factory and shall be from a source approved in writing by the Health Officer:

Provided that where the Chief Inspector is satisfied that such an yield is not practicable he may by certificate in writing permit the supply of a smaller quantity not being less than 4.5 liters per day for every person employed in the factory.

62.A

All classes of factories mentioned in the schedule annexed hereto shall provide facilities for keeping clothing not worn during working hours and for the drying of wet clothing. Such facilities shall include the provision of separate rooms, bags, lockers or other arrangements approved by the Chief Inspector of Factories.

THE SCHEDULE

Glass Works
Engineering Works
Iron and Steel Works
Oil Mills
Chemical Works
Automobile Workshop
Dyeing Works
[137][Tea Factories]

[138][62-B. Health and Safety Policy

(1) The occupier of every factory, except as provided for in sub-role (2), shall prepare a written statement of his policy in respect of health and safety of workers at work.

(2) All factories,

(a) covered under section 2 (m) (i) but employing less than fifty workers;

(b) covered under section 2 (m) (ii) but employing less than one hundred workers; are exempted from requirements of sub rule (1):

Provided that they are not covered under the First Schedule under section 2 (cb) or carrying out processes or operations declared to be dangerous under section 87 of the Act.

(3) Notwithstanding anything contained in sub-rule (2), the Chief Inspector may require the occupiers of any of the factories or class or description of factories to comply with the requirements of sub-rule (1), if, in his opinion, it is expedient to do so.

(4) The Health and Safety Policy should contain or deal with:

(a) declared intention and commitment of the top Management to health, safety and environment and compliance with all the relevant statutory requirements;

(b) organizational set up to carry out the declared policy clearly assigning the responsibility at different levels and;

(c) arrangements for making the policy effective.

(5) In particular, the policy should specify the following

(a) arrangements for involving the workers;

(b) intention of taking into account the health and safety performance of individuals at different levels while considering their career advancement;

(c) fixing the responsibility of the contractors, sub-contractors, transporters and other agencies entering the premises;

(d) providing a resume of health and safety performance of the factory in its Annual Report;

(e) relevant techniques and methods, such as safety audits and risk assessment for periodical assessment of the status on health, safety and environment and taking all the remedial measures;

(f) stating its intentions to integrate health and safety, in all decisions, including those dealing with purchase of plant, equipment machinery and material as well as selection and placement of personnel;

(g) arrangements for informing, educating and training and retaining its own employees at different levels and the public, wherever required;

(6) A copy of the declared Health and Safety Policy signed by the occupier shall be made available to the Inspector having jurisdiction over the factory and to the Chief Inspector;

(7) The policy shall be made widely known by

(a) making copies available to all workers including contract workers, apprentices, transport workers, suppliers, etc.;

(b) displaying copies of the policy at conspicuous places; and

(c) any other means of communication ; in a language understood by majority of workers.

(8) The occupier shall revise the Safety Policy as often as may be appropriate, but it shall necessarily be revised under the following Circumstances:

(a) Whenever any expansion or modification having implications on safety and health of persons at work is made; or

(b) Whenever new substance(s) or articles are introduced in the manufacturing process having implications on health and safety of per-sons exposed to such substances;

62-C. Collection and Development and Dissemination of Information

(1) The occupier of every factory carrying an a hazardous process shall arrange to obtain development information in the form of Material Safety Data Sheet (MSDS) in respect of every hazardous substance or material handled in the manufacture, transportation and storage in the factory. It shall be accessible upon request to a worker for reference.

(a) Every such material Safety Data Sheet shall include the following information,

(i) The identify used on the label;

(ii) Hazardous ingredients of the substance;

(iii) Physical and chemical characteristics of the hazardous substance;

(iv) The physical hazards of the hazardous substance, including the potential for fire explosion and reactivity;

(v) The health hazards of the hazardous substance, including signs and symptoms of exposure, and any medical conditions which are generally recognised as being aggravated by exposure to the substance;

(vi) The primary route(s) of entry;

(vii) The permissible limits of exposure prescribed in the Second Schedule under section 41 -F of the Act, and in respect of a Chemical not covered by the said Schedule, any exposure limit used or recommended by the manufacturer, importer or occupier:

(viii) Any generally applicable precautions for safe handling and use of the hazardous substance, which arc known, including appropriate hygienic practices, protective measures during repairs and maintenance of contaminated equipment, procedures for clean-up of spills and leaks:

(ix) Any generally applicable control measures, such as appropriate engineering controls, work practices. or use of personal protective equipment;

(x) Emergency and first aid procedures;

(xi) The date of preparation of the Material Safety Data Sheet, or the last change to it; and

(xii) The name, address and telephone number of the manufacturer, importer, occupier or other responsible party preparing or distributing the Material Safety Data Sheet who can provide additional information on the hazardous substance and appropriate emergency procedures, if necessary.

(b) The occupier who (sic.) obtaining or developing a Material Safety Data Sheet in respect of hazardous substance shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If he be-comes newly aware of any significant information regarding the hazards of a substance, or ways to protect against the hazards, this new information shall be added to the Material Safety Data Sheet as soon as practicable.

(c) An example of such Material Safety Data Sheet is given in the Schedule to this rule.

(2) Labeling- Every container of a hazardous substance shall be clearly labeled or marked to identify:

(a) the contents of the container:

(b) the name and address of the manufacturer or importer of the hazardous substances;

(c) the physical and health hazards; and

(d) the recommended personal protective equipment needed to work safely with the hazardous substance.

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MATERIAL SAFETY DATA SHEET

1. IDENTITY OF MATERIALS	
Product Name	Chemical Designation
Trade Name	Synonyms

Formula	Label	Category	CAS Number	UN Number
Regulated Identification	Shipping Name/Codes/Label		HAZCHEM Code	
	Hazardous Identification	Waste Number		
	Hazardous Ingredients		CAS Number	
1. 2. 3. 4.				

2. PHYSICAL AND CHEMICAL PROPERTIES		
Physical State : (Gas, Liquid-.Solid-)	Boiling point in degree C	Vapour pressure at 35 degree C--mm Hg.
Appearance	Melting/Freezing point in degree C	Evaporation rate at 30 degree C
Odour	Vapour Density (air-I)	Solubility in Water at 30 degree C
Others (Corrosivity) etc	Specific Gravity (Water-1)	PH

3. FIRE AND EXPLOSIVE HAZARDS DATA			
Explosion/Flammability	Flash Point (deg.) C	LEL %	Auto ignition Temperature degree C
	Flash Point (deg.) C	UEL%	TDC Flammability (Classification)

4. REACTIVE HAZARDS		
Stability to	Impact (Hazardous Combustion products)	
	Static Discharge (Hazardous Decomposition product)	
	Reactivity	(Conditions to avoid)
Hazardous Polymerization	May/May not occur	(Conditions to avoid)
Incompatibility (Materials to avoid)		

5. HEALTH HAZARDS DATA		
Routes of Entry: (Inhalation, skin, mucous membranes, eye contact and ingestion)		
Effects of Exposure/Symptoms		
LD 50 (in rat) (mg/kg body weight)	(Orally or percutaneous absorption)	LC 50 (in rat) (mg/1) 4/hours

Threshold Limit Value (TLV) of ACGIH	PPM. Mg/cu m	Odor Threshold	PPM. Mg/cu. M
Emergency Treatment:			
6. HAZARD SPECIFICATION			
NFPA Signal Health Flammability Stability Special Hazard			
Known Hazards:			

Combustible Liquid	Water Reactive Material	Irritant
Flammable Material	Oxidizer	Sensitizer
Pyrophoric Material	Organic Peroxide	Carcinogen
Explosive Material Unstable Material	Corrosive Material Compressed Gas	Mutagen Other (Specify)

7. SAFE USAGE DATA	
Ventilation	General/Mechanical Local Exhaust
Protective Equipment Required	Eyes (Specify) Respiratory (Specify) Gloves (Specify) Clothing (Specify) Others (Specify)
Precautions	Handling & Storage Others (speedy)
8. EMERGENCY RESPONSE DATA	
Fire	Fire Extinguishing Media Special procedures

	Unusual Hazards
Exposure First Aid Measures (inhalation, skin, eye contact and ingestion)	
Spills	Step to be taken Waste Disposal Method
9. ADDITIONAL INFORMATION	
10. SOURCES USED : Reference to books, journals, etc.	
11. MANUFACTURERS/SUPPLIER DATA	
Firm's Name	Standard packing
Mailing Address	
Telephone Number	
Telex Number	Others
Telegraphic Address	
Contact person in Emergency	Others
	Emergency Telephone in Transit Areas

Acronyms- and Glossary, of terms:

CAS: Chemical Abstract Service Registration Number.

UN Number: United Nations Number

HAZCHEM CODE: Emergency Action Code (EAC). allocated by the Joint Comminute of Fire Bripde Operations, UK.

TDG Flammability: Transport of Dangerous Goods --Flammability Classification by United Nations.

NFPA: National Fire Protection Association, USA. LD 50 and LC 50 represent the dose in mg/kg of body weight and the concentration in mg/1 for 4 hours having lethal effect on 50% of the animals (rats) treated.

PEL: Permissible Exposure Limit as laid down in the Statutes.

TLV: Threshold Limit Value as laid down by the American Conference of Governmental Industrial Hygienists. (ACGIH), USA.

STEL: Short Term Exposure Limit as laid down in the statutes or by the ACGIH.

GUIDELINES: All efforts should be made to fill in all the columns. No column should be left blank. In case certain information is not applicable or available. N/APP or N/AV sign may be used.

62-D. Disclosure of information to workers

The Occupier of a factory carrying on a hazardous process shall supply to all workers the following information in relation to handling of hazardous materials or substances in the manufacture transportation, storage and other processes

(a) Requirements of Sections 41-B, 41-C and 4I-H of the Act:

(b) A list of hazardous processes carried on in the factory;

(c) Location and availability of all Material Safety Data Sheets as per Rule 62-B;

(d) Physical and health hazards arising from the exposure to or handling of substances:

(e) Measures taken by the occupier to ensure safety and control of physical and health hazards;

(f) Measures to be taken by the workers to ensure safe handling, storage and transportation of hazardous substances;

(g) Personal Protective Equipment required to be used by workers employed in hazardous process or dangerous operations:

(h) Meaning of various labels and markings used on the containers of hazardous substances as provided under Rule 62-B;

(i) Signs and symptoms likely to be manifested on exposure to hazardous substances and to whom to report;

(j) Measures to be taken by the workers in case of any spillage or leakage of a hazardous substance;

(k) Role of workers vis-a-vis the emergency plan of the factory. in particular the evacuation procedures; and

(1) Any other information considered necessary by the occupier to ensure safety and health of workers.

(2) The information required by sub-rule (1) shall be compiled and made known to workers individually through supply of booklets or leaflets and display of cautionary notices at the work places.

(3) The booklets, leaflets and the cautionary notices displayed in the factory shall be in the language understood by the majority of the workers, and also explain to them.

(4) The Chief Inspector may direct the Occupier to supply further information to the workers as deemed necessary.

[**Rules 62E to 62G** omitted by G.O. Ms. No. 222, Labour and Employment, dated the 21st November, 1995]

62-H. Disclosure of information to the Chief Inspector

(1) [140][The Occupier of every factory carrying on "hazardous process" shall furnish in writing. to the Chief Inspector a copy of all the information furnished to the workers]

(2) A copy of compilation of Material Safety Data Sheets in respect of hazardous substances used, produced or stored in the factory shall he furnished to the Chief Inspector and the local Inspector.

(3) The Occupier shall also furnish any other information asked for by the Chief Inspector from time to time for the purpose of this Act and rules made thereunder.

[**Rules 62-I and 62J** omitted by G.O. Ms. No. 222, dated the 1st November, 1995]

62-K. Information on Industrial Wastes

(1) [The information furnished under rules 62-D and 62-H shall include the quantity of the solid and liquid wastes generated per day, their characteristics and the method of treatment such as incineration of solid wastes, chemical and biological treatment of liquid wastes, and arrangements for their final disposal.]

(2) It shall also include information on the quality and quantity of gaseous waste discharged through the stacks or other openings and arrangements such as provision of scrubbers, cyclone separators electrostatic precipitators or similar such arrangement made for controlling pollution of the environment.

(3) The Occupier shall also furnish the information prescribed in the sub-rules (I) and (2) to the State Pollution Control Board.

62-L. Review of the information furnished to workers, etc

(1) [141][The Occupier shall review once in every calendar year and modify, if necessary, the information furnished under rules 62-D and 62-H to the workers and the Chief Inspector.]

(2) In the event of any change in the process or operations or methods of work or when any new substance is introduced in the process or in the event of a serious accident taking place, the information so furnished shall be reviewed and modified to the extent necessary.

62-M. Confidentiality of information

The Occupier of a factory carrying on an "hazardous process" shall disclose all information needed for protecting the safety and health of the workers to

(a) his workers; and

(b) Chief Inspector

as required under rules 62-D and 62-H. If the Occupier is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interests, he may make representation to the Chief Inspector stating the reasons for withholding such information. The Chief Inspector shall give an opportunity to the Occupier of being heard and pass an order on the representation. An Occupier aggrieved by an order of the Chief Inspector may prefer an appeal before the State Government within a period of thirty days. The State Government shall give an opportunity to the Occupier of being heard and pass an order. The order of the State Government shall be final.]

62-N. Medical Examination

(1) Workers employed in a "hazardous process" shall be medically examined by a qualified medical practitioner hereinafter referred to as Factory Medical Officer in the following manner:

(a) Once before employment, to ascertain the physical fitness of the person to do the particular job:

(b) Once in a period of six months, to ascertain the health status of all the workers in respect of occupational health hazards to which they are exposed; and in cases where in the opinion of the Factory Medical Officer it is necessary to do so at a shorter interval in respect of any workers.

(c) The details of pre-employment and periodical examinations carried out as aforesaid shall be recorded in the Health Registers in Forms 39 and 17 respectively.

(2) No person shall be employed for the first time without a Certificate of Fitness in Form 27 granted by the Factory Medical Officer. If the Factory Medical Officer declares a person unfit for being employed in any process covered under sub-rule (I), such a person shall have the right to appeal to the Inspector who shall refer the matter to the Certifying Surgeon whose opinion shall be final in this regard. If the Inspector is also a Certifying Surgeon, he may dispose of the application himself

(3) Any findings of the Factory Medical Officer revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the Certifying Surgeon who shall in turn, examine the concerned worker and communicate his findings to the occupier within thirty days. If the Certifying Surgeon is of the opinion that the workers examined is required to be taken away from the process for health protection, he will direct the occupier accordingly, who shall not employ the said worker in the same process. However, the worker so taken away shall be provided with alternate placement unless he is in the opinion of the Certifying Surgeon, fully incapacitated in which case the worker affected shall he suitably rehabilitated.

(4) A Certifying Surgeon on his own motion or on a reference from an Inspector may conduct medical examination of a worker to ascertain the suitability of his employment in a hazardous process or for ascertaining his health status. The

opinion of the Certifying Surgeon in such a case shall be final. The fee required for this medical examination shall be paid by the occupier.

(5) The worker taken away from employment in any process under sub-rule (2) may be employed again in the same process only after obtaining the Fitness Certificate from the Certifying Surgeon and after making entries to that effect in the Health Register.

(6) The worker required to undergo medical examination under these rules and for any medical survey conducted by or on behalf of the Central or the State Government shall not refuse to undergo such medical examination.

62-O. Occupational Health Centers

(1) In respect of any factory carrying on "Hazardous process" there shall be provided and maintained in good order an Occupational Health Centre with the services and facilities as per scale laid down hereunder:

(a) For factories employing up to fifty workers

(i) the services of a Factory Medical Officer on retainership basis, in his clinic to be notified by the occupier. He will carry out the pre-employment and periodical medical examination as stipulated in [142][rule 62-N] and render medical assistance during any emergency;

(ii) a minimum of five persons trained in first-aid procedure amongst whom at least one shall always be available during the working period;

(iii) a fully equipped first aid box.

(b) For factories employing fifty-one to two hundred workers

(i) shall have an occupational health centre. It is suggested that it shall have a room with a floor area of fifteen square meters with floors and walls made of smooth and imperious surface and adequate illumination and ventilation. It is suggested to have the equipments given in the Schedule annexed to this rule;

(ii) a part-time Factory Medical Officer shall be in overall charge of the centre who shall visit the factory atleast twice in a week and whose services shall be readily available during medical emergencies;

(iii) one qualified and trained dresser-cum-compounder on duty throughout the working period;

(iv) a fully equipped first-aid box in all the departments.

(c) For factories employing above two hundred workers

(i) one full time Factory Medical Officer for factories employing up to five hundred workers and one more Medical Officer for every additional thousand workers or part thereof;

(ii) shall have an Occupational Health Centre. It is suggested that it shall have two rooms with a floor area of fifteen sq. meters with floors and walls made of smooth and impervious surface and adequate illumination and ventilation. It is suggested to have the equipments given in the Schedule annexed to this rule;

(iii) there shall be one nurse, one dresser-cum-compounder and one sweeper-cum-ward boy throughout the working period:

(iv) the Occupational Health Centre shall be suitably equipped to manage medical emergencies;

(2) The Factory Medical Officer required to be appointed under sub-rule (I) shall have qualifications included in the Schedules to the Indian Medical Degrees Act, 1916 (Central Act VII of 1916) or in the Schedules to the Indian Medical Council Act. 1956 (Central Act 102 of 1956) and possess a Certificate of Training in Industrial Health of minimum three months duration recognized by the State Government

Provided that

(i) a person possessing a Diploma in Industrial Health or equivalent shall not be required to possess the certificate of training as aforesaid;

(ii) the Chief Inspector may subject to such conditions as he may specify, grant exemption from the requirement of this sub-rule, if in his opinion a suitable person possessing the necessary qualification is not available for appointment:

(iii) in case of a person who has been working as a Factory Medical Officer for a period of not less than three years on the date of commencement of this rule, the Chief Inspector may, subject to the condition that the said person shall obtain the aforesaid certificate of training within a period of three years, relax the qualification.

(3) The syllabus of the course leading to the above certificate, and the organisations conducting the Course shall be approved by the Directorate-General of Factory Advice Service and Labour Institutes or the State Government in accordance with the guidelines issued by the DGFASLI.

(4) Within one month of the appointment of a Factory Medical Officer, the occupier of the factory shall furnish to the Chief Inspector the following particulars

(a) Name and address of the Factory Medical Officer;

(b) Qualifications;

(c) Experience, if any; and

(d) the sub-rule under which appointed.

THE SCHEDULE

SUGGESTIVE LIST OF EQUIPMENT FOR OCCUPATIONAL HEALTH CENTRE IN FACTORIES

1. A glazed sink with hot and cold water always available.
2. A table with a smooth top at least 180 cm x 105 cm.
3. Means for sterilizing instruments.
4. A couch.
5. Two buckets or containers with close fitting lids.
6. A kettle and spirit stove or other suitable means of boiling water.
7. One bottle of spirit ammonia aromatics (120 ml.)
8. Two medium size sponges.
9. Two "Kidney" trays.
10. Four cakes of toilet, preferably antiseptic soap.
11. Two glass tumblers and two wine glasses.
12. Two clinical thermometers.
13. Two teaspoons.
14. Two graduated (120 ml.) measuring glasses.
15. One wash bottle (1000 cc) for washing eyes.
16. One bottle (one liter) carbolic lotion 1 in 20.
17. Three chairs
18. One Screen
19. One electric hand-torch.
20. An adequate supply of tetanus toxoid.
21. Coramine liquid (60 ml.)
22. Tablets -- antihistaminic antispasmodic (25 each.)
23. Syringes with needles - 2 cc., 5 cc. and 10 cc.
24. Two needle holders, big and small.
25. Suturing needles and materials.
26. One dissecting forceps.
27. One dressin forceps.
28. One scalpel.
29. One stethoscope.
30. Rubber bandage -- pressure bandage.
31. Oxygen cylinder with necessary attachments.

32. One Blood Pressure Apparatus.

33. One Patellar Hammer.

34. One Peak-Flow meter for lung function measurement.

35. One stomach washout.

36. Any other equipment recommended by the Factory Medical Officer according to specific need relating to manufacturing process.

37. In addition

(1) For Factories employing fifty one to two hundred

1. Four plain wooden splints 900 mm x 100 mm x 6 mm:
2. Four plain wooden splints 350 mm x 75 mm x 6 mm;
3. Two plain wooden splints 250 mm x 50 mm x 12 mm;
4. 0ne pair artery forceps;
5. Injections -- morphia, pethidine, atropine, adrenaline, coramine, Novocain (2 each);
6. One surgical scissor;

(2) For Factories employing above two hundred workers

1. Eight plain wooden splints 900 mm x 100 mm x 6 mm;
2. Eight plain wooden splints 350 mm x 75 mm x 6 mm;
3. Four plain wooden splints 250 mm x 50 mm x 12 mm:
4. Two pairs artery forceps;
5. Injections Morphia, pethadine, atropine, adrenaline. ceramine, novacain (4 each):
6. Two Surgical scissors.

62-P. Ambulance Van

(1) In any factory carrying on "hazardous process" there shall be provided and maintained in good condition, a suitably constructed ambulance van equipped with item as per sub-rule (2) and manned by a full-time Driver-cum-Mechanic and a Helper trained in first-aid for the purpose of transportation of serious cases of accidents or sickness. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will normally be stationed at or near to the Occupational Health Centre :

Provided that a factory employing less than two hundred workers, may make arrangements for procuring such facility at short notice from a nearby hospital or other places to meet any emergency.

(2) It is suggested that the ambulance may have the following equipments:

(a) General: A wheeled stretcher with folding and adjusting devices with the head of the stretcher capable of being tilted upward;

Fixed suction unit with equipment;

Fixed oxygen supply with equipment;

Pillow with case; Sheets; Blankets Towels; Emesis bags; Bed pan; Urinal: Glass:

(b) Safety equipment: Flares with life of thirty minutes; Flood lights; Flash lights; -- Fire Extinguisher dry powder type; Insulated gauntlets;

(c) Emergency Care Equipment

(i) Resuscitation --Portable suction unit; portable oxygen units:

Bag; Valve; Mask; and operated artificial ventilation unit; Airways; Mouthgags; Trachcctomy adapters; Short spine board; I.V. Fluids with administration unit; B.P. Manometer -- Cup; Stethoscope;

(ii) Immobilization: Long and short padded boards; Wire ladder splints:

Triangular bondage -- Long and short spine boards;

(iii) Dressings: Gauze pads -- 4 x 4; — Universal dressing 10 x 36; Roll of aluminum foils; -- soft roller bandages 6 x 5" yards; Adhesive tape in 3 " roll; Safety pins; Bandage Sheets; Burn sheet;

(iv) Poisoning: Syrup of Ipecac; Activated charcoal pre-packeted in dozes; Snake bite kit; Drinking Water;

(v) Emergency Medicines --As per requirement (under the advice of Medical Officer only)

62-Q. Decontamination facilities

In every factory, carrying out hazardous process the following provisions shall be made to meet emergency:

(a) Fully equipped first-aid box;

(b) readily accessible means of water for washing by workers as well as for drenching the clothing of workers who have been contaminated with hazardous and corrosive substance; and such means shall be as per the scale shown in the Table below :--

THE TABLE

Number of Persons employed at any time	Number of drenching showers
(1)	(2)
(i) Upton 50 workers	2
(ii) Between 51 to 200 workers	2 + I for every additional 50 or part thereof.

(iii) Between 201 to 500 workers	5 + 1 for every additional 100 or pan thereof
(iv) 501 workers and above	8 + 1 for every additional 200 or part thereof

(c) A sufficient number of eye wash bottles filled with distilled water of suitable liquid kept in boxes or cup-boards conveniently situated and clearly indicated by distinctive sign which shall be visible at all times

62-R Making available Health Records to Workers

(1) The Occupier of every factory carrying out an "hazardous process" shall make accessible the health records including the record of worker's exposure to hazardous process or, as the case may be, the medical records of any worker for his perusal under the following conditions:

(a) Once in every six months or immediately after the Medical examination whichever is earlier:

(b) If the Factory Medical Officer or the Certifying Surgeon as the case may be is of the opinion that the worker has manifested signs and symptoms of any notifiable disease as specified in the Third Schedule of the Act;

(c) If the worker leaves the employment;

(d) If any one of the following authorities so direct-

An inspector notified under the Act;

District Health Officer;

The Commissioner of Workmen's Compensation:

The Director General, Employees' State Insurance Corporation:

The Director, Employees' State Insurance Corporation (Medical Benefits); and

The Director-General, Factory Advice Service and Labour Institutes.

(2) A copy of the up to-date health records including the records of worker's exposure to hazardous process or as the case may be, the medical records shall be supplied to the worker, on receipt of an application from him. X-ray plates and other medical diagnostic reports may also be made available for reference to his medical practitioner.

62-S. Qualifications, etc., of Supervisors

(1) All persons who are required to supervise the handling of hazardous substances shall possess the following qualifications and experience:

(a)

(i) A degree in Chemistry or Diploma in Chemical Engineering or Technology with five years experience; or

(ii) A Master's Degree in Chemistry or a Degree in Chemical Engineering or Technology with two years experience.

The experience stipulated above shall be in process operation and maintenance in the Chemical Industry.

(b) Chief Inspector may require the supervisor to undergo training in Health and Safety.

(2) The syllabus and duration of the above training and the organisations conducting the training shall be approved by the Director-General. Factory Advice Service and Labour Institutes or the State Government in accordance with the guidelines issued by the Director-General; Factory Advice Service and Labour Institutes.

62-T. Issue of guidelines

For the purpose of compliance with the requirements of sub-sections (1), (4) and (7) of Section 41-B and Section 41-3 (sic.) of the Act, the Chief Inspector may if deemed necessary, issue guidelines from time to time to the occupiers of factories carrying one 'hazardous process'. Such guidelines may be based on National Standards Codes of Practices or recommendations of International Bodies such as International Labour Organization and World Health Organization.

63. First-aid Appliances

In every factory there shall be provided and maintained by regular replenishment first aid boxes or cupboard/s distinctively marked with a red cross on a white background [143][and it is suggested that the first aid boxes or cupboards are equipped] with the contents as per the appropriate scale specified in the following Table for the corresponding class of Factories A. B or C. as indicated below:

Class – A	(i) All factories under section 85 (i) of the Act, and (ii) Factories under section 2 (m) (ii) of the Act, employing up to fifty workers
Class – B	(i) Factories under section 2 (m) (i) of the Act employing up to fifty workers
Class - C	(i) Factories under section 2 (m) (i) or 2 (m) (ii) of the Act employing more than fifty workers

THE TABLE

(Specifying the scale of contents with which each first-aid box or cupboard is to be equipped)

Sl.No	Contents	Quantity or number applicable to Factories in		
		Class A	Class B	Class C

(1)	(2)	(3)	(4)	(5)
1	Copy of First-aid leaflet issued by the Directorate-General of Factory Advice Service and Labour Institutes, Government of India. Bombay	1	1	1
2	Scissors	1	1	1
3	Snake-bite lancet	1	1	1
4	Tablet (each of 5 grains of aspirin or any other analgesic)	100 Tablets	100 Tablets	100 Tablets
5	Bottle of Potassium Permanganate crystals	30 ml.	30 ml.	30 ml.
6	Bottle of Salvolatile having the dose and mode of administration indicated on the label	30 ml.	60 ml.	120 ml.
7	Bottle of Contrimide solution (1%) or a suitable antiseptic solution	60 ml.	120 ml.	200 ml.
8	Bottle of Mercurochrome solution (2%) in water	60 ml.	120 ml.	200 ml.
9	15 gm. packet of sterilized cotton wool	3	6	12
10	Adhesive Plaster (2 cm. x 1 m.)	1 roll	2 rolls	2 rolls
11	Adhesive Plaster (6 cm. x 1 m.)	-	-	1 roll
12	Small size sterilized dressing or adhesive wound dressing approved by the Chief Inspector	6	12	24
13	Medium size sterilized dressing or adhesive wound dressing approved by the Chief Inspector	3	6	12
14	Large size sterilized dressing or adhesive wound dressing approved by the Chief Inspector	3	6	12
15	Large size sterilized burn dressing	3	6	12
16	Sterilized eye pad in a sealed packet	6	8	12
17	Polythene wash bottle (1/2 liter or 500 cc.) for washing eyes	1	1	1

18	Tourniquet	-	1	1
19	Safety pins	-	1 Dozen	1 Dozen
20	Roller bandage 5 cm. wide	-	-	12
21	Roller bandage 10 cm. wide	-	-	12
22	Triangular bandage	-	-	6
23	Plain wooden splint 353 mm. x 75 mm. X 6 mm	-	-	6
24	Plain wooden splint 900 mm. x 100 mm. x 6 mm	-	-	6
25	Plain wooden splint 250 mm. x 50 mm. x 12 mm	-	-	3
26	Kidney tray	-	-	1

[144][Provided that each first-aid box or cupboard shall also contain such other equipment or medicine as the Chief Inspector may deem essential and direct in writing, from time to time:

Provided further that in a factory where a properly equipped ambulance room or dispensary is provided and maintained under rule 64 or if dispensary or hospital is available within one kilometer of the precincts of a factory and such arrangements are made by the Occupier as to ensure the immediate treatment therein of all injuries sustained by a worker within the factory, the Chief Inspector may by an order in writing, relax the requirements of this rule, subject to such conditions as he may specify in that order.]

63-A Notice regarding first-aid

In every factory, a prominent notice containing the following particulars shall be displayed at some conspicuous and convenient place at or near the main entrance to the factory

(a) the location's of the first-aid box/es or cupboard's in the factory;

(b) the name and designation of the responsible person working within the precincts of the factory who is trained in first-aid treatment and who is separately in charge of each of the above first-aid box/es or cupboard's;

(c) the work-room or place where each such person shall be available during the working hours of the factory; and

(d) the name of the nearest hospital and its telephone number.

Copies of the above notice shall also be displayed at a conspicuous place near each first-aid box or cupboard.

[145][63-B First-aid

Persons who are in charge of first-aid box shall be persons who possess the certificate granted by the Saint John's Ambulance Association for rendering first-aid.]

64. Ambulance room

(1) The ambulance room shall be separately situated from the factory premises. It shall be kept open when any work is being carried on in the factory and shall be used only for the purposes of first-aid treatment and rest. It shall have a floor area of at least 24 square meters and shall be adequately ventilated and lighted by natural and artificial means. The floor and walls shall be smooth, bard and impervious. [146][There shall be attached to it at least one latrine and urinal of sanitary type].

(2) An adequate supply of wholesome drinking water shall be provided in the ambulance room which shall also contain at least

(i) One screen;

(ii) A table with a smooth top at least 180 cm. x 105 cm.;

(iii) Three chairs;

(iv) A couch;

(v) Two stretchers;

(vi) A glazed sink with hot and cold water always available;

(vii) Two buckets or containers with close fitting lids;

(viii) A kettle and spirit stove or other suitable means of boiling water;

(ix) Means for sterilizing instrument;

(x) Two rubber hot water bags:

(xi) Six woolen blankets;

(xii) Six hand towels;

(xiii) Four cakes of antiseptic soap;

(xiv) Two medium size sponges;

(xv) A stethoscope:

(xvi) Two clinical thermometers;

(xvii) One electric hand torch;

(xviii) Four kidney trays;

(xix) Two glass tumblers;

(xx) Two wine glasses;

(xxi) Two graduated measuring glasses (120 ml.);

(xxii) Two mini-measuring glasses;

(xxiii) Two teaspoons;

(xxiv) One wash bottle (1,000 cc.) for washing eyes:

(xxv) Three surgical scissors;

(xxvi) Three pairs of artery forceps;

(xxvii) Three dissecting forceps;

(xxviii) Three dressing forceps;

(xxix) Three scalpels;

(xxx) Needle holder;

(xxxi) Syringes with needles 2 cc., 5 cc., 10 cc., and 50 cc.;

(xxxii) Suturing needles and materials;

(xxxiii) Rubber bandage—Pressure bandage;

(xxxiv) Twelve plain wooden splints, 350 mm. x 75 mm. X 6 mm.;

(xxxv) Twelve plain wooden splints 900 mm. x 100 mm. X 6 min.;

(xxxvi) Six plain wooden splints 250 mm. x 50 mm. x 12 mm.;

(xxxvii) An adequate supply of antitetanus toxiod;

(xxxviii) One bottle (120 ml.) of Spiritus Ammoniac Aromaticus

(xxxix) Smelling salts (60 gm.);

(xl) Tablets: Anithistamine, Antispasmodic (25 each);

(xli) One bottle (one liter) carbolic lotion 1 in 20; (xlii)

Coramine liquid (60 ml.);

(xliii) Injections ; Morphia, pethedine, atropine, adrenaline, coramine, novocaine (6 each);

(xliv) Oxygen cylinder with necessary attachments;

(xlv) Four first-aid boxes or cupboards stocked to the scale, specified for Class C under Rule 63.

(3) The ambulance room shall be in-charge of a qualified medical practitioner assisted by at least one qualified nurse and such staff as the Chief Inspector may deem necessary and direct in writing from time to time.

Explanation: For the purpose of this sub-rule, the expression "Qualified Medical Practitioner" means a person holding a qualification granted by an authority specified in the schedule to the Indian Medical Degrees Act. 1916 (Central Act VII of 1916), or in the schedule to the Indian Medical Council Act, 1956 (Central Act 102 of 1956).

(4) A prominent notice containing the following particulars shall be displayed at a conspicuous place in the ambulance room

(a) the name, address and telephone number of the medical practitioner in charge ; and

(b) the name of the nearest hospital and its telephone number.

(5) The occupier of every factory to which sub-section (3) of section 45 of the Act and this rule (Rule 64) apply shall make all necessary arrangements for the expeditious removal in a suitable conveyance of serious cases of accident or sickness in the factory for further treatment to the nearest Government or other hospital, where the requisite facilities for the further treatment of such cases are available.

(6) The Chief Inspector may, by an order in writing, exempt any factory from the requirements of this rule, subject to such conditions as he may specify in that order, if a properly equipped dispensary or hospital is available at or within one kilometer of the precincts of the factory and such arrangements are made by the occupier as to ensure the immediate treatment therein, of all injuries sustained by workers within the factory and for pro-viding rest to the injured workers.

65. Canteens

(1) Rules 65 to 71 shall come into force in respect of any class or description of factories on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.

(2) The occupier of every factory notified by the State Government and wherein more than two hundred and fifty workers are ordinarily employed shall provide in or near the factory an adequate canteen according to the standards prescribed in these rules.

(2-A) In factories, in which workplaces are situated at a distance of more than 0.2 km. from the canteen and where the Chief Inspector directs in writing, arrangements shall be made for serving light refreshments from the canteen to workers at the workplaces.

(3) The [147][Occupier or Manager of a factory] shall submit for the approval of the Chief Inspector plans and site plan, in triplicate, of the building to be constructed or adapted for use as a canteen.

(4) The canteen building shall be situated not less than 15.2 meters from any latrine, urinal, boiler house, coal stacks, ash dumps and any other source of dust, smoke or obnoxious fumes:

Provided that the Chief Inspector may in any particular factory relax the provisions of this sub rule to such extent as may be reasonable in the circumstances and may require measures to be adopted to secure the essential purpose of this sub-rule.

(5) The canteen building shall be constructed in accordance with the plans approved by the Chief Inspector and shall accommodate at least a dining hall, kitchen room,

pantry and washing places separately for workers and for utensils. The minimum height of the building shall be not less than 3.7 meters and all the walls and roof shall be of suitable heat-resisting materials and shall be water-proof

(6) In a canteen the floor and inside walls up to a height of 1.2 meters from the floor shall be made of smooth and impervious materials ; the remaining portion of the inside walls shall be made smooth by cement plaster or in any other manner approved by the Chief Inspector.

(7) The doors and windows of a canteen building shall be of fly-proof construction and shall allow adequate ventilation.

(8) The canteen shall be sufficiently lighted at all times when any persons have access to it.

(9)

(a) In every canteen

(i) all inside walls of rooms and ceiling and passages and staircases shall be lime washed or colour washed at least once in each year or painted once in three years dating from the period when last lime washed or painted, as the case may be;

(ii) all wood work shall be varnished or painted once in three years dating from the period when last varnished or painted ;

(iii) all internal structural iron or steel work shall be varnished or painted once in three years dating from the period when last varnished or painted:

Provided that inside walls of the kitchen shall be lime washed once in every four months;

(b) Records of dates on which lime washing, colour-washing, varnishing or painting is carried out shall be maintained in the prescribed register (Form No. 7).

(10) The precincts of the canteen shall be maintained in a clean and sanitary condition. Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance. Suitable arrangement shall be made for the collection and disposal of garbage.

66. Dining hall

(1) The dining hall shall accommodate at a time at least 30 percent of the workers working at a time:

Provided that, in any particular factory or in any particular class of factories, [148][the Chief Inspector of Factories may, by an order in writing] in this behalf, alter the percentage of workers to be accommodated.

(2) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs, shall be not less than 0.9 square meters per diner to be accommodated as prescribed in sub-rule (1).

(3) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number. Washing places for women shall be separate and screened to secure privacy.

(4) Sufficient tables, chairs or benches shall be available for the number of diners or accommodated as prescribed in sub-rule (1):

Provided that where the Chief Inspector is satisfied that satisfactory alternate arrangements are made, he may exempt any particular factory or class of factories from the provisions of this sub-rule.

(5) Soaps and towels should be provided at the washing places in the canteen for the use of the workers.

67. Equipment

(1) There shall be provided and maintained sufficient utensils, crockery, cutlery, furniture and any other equipment necessary for the efficient running of the canteen. Suitable clean clothes for the employees serving in the canteen shall also be provided and maintained.

(2) The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition. A service counter, if provided, shall have a top of smooth and impervious material. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

(3) Food and food materials should be stored in fly-proof safe and handled with the help of wooden ladles or suitable metal forceps whichever is convenient. Vessels once used should be scalded before being used again.

67-A. Medical examination of Canteen Staff

Every member of the canteen staff who handles foodstuffs shall be medically examined by the Factory Medical Officer or the Certifying Surgeon and such examination shall include the following, namely:

(i) Routine and bacteriological testing of faces and urine for germs of dysentery and typhoid fever at intervals of not more than six months;

(ii) Routine blood examination at intervals of not more than twelve months;

(iii) Any other examination including chest X-rays that may be considered necessary by the Factory Medical Officer or the Certifying Surgeon. Any person, who in the opinion of the Factory Medical Officer as confirmed in writing by the Certifying Surgeon, is unsuitable for employment on account of possible risk to the health of others, shall not be employed as canteen staff.

(iv)

(a) [149][The fee for such routine clinical examination of each member of the canteen staff by the certifying surgeons shall be [150][Rs.100/- (Rupees one hundred only)] which fee is exclusive of any charges incurred for conducting any kind of laboratory tests, etc.

(b) Such charges shall be paid by the occupier into the local treasury and the receipt attached with the application.]

(c) [151][The certificate of Medical Examination of Canteen Staff shall be issued in Form No. 40.]

68. Prices to be charged

(1) Food, drinks and other items served in the canteen shall be served on a non-profit basis and the prices charged shall be subject to the approval of the Canteen Managing Committee. In the event of the Committee not approving the price list or where the Committee are equally divided on the issue, the price list should be sent to the Chief Inspector for approval.

(1-A) [152][In computing the prices referred to in sub-rule (I), the following items of expenditure shall not be taken into consideration, but will be borne by the occupier:

(a) the rent for the land and building;

(b) the depreciation and maintenance charges of the building and equipment provided for the canteen;

(c) the cost of purchase, repairs and replacement of equipment including furniture, crockery, cutlery and utensils;

(d) the water charges and expenses for providing lighting and ventilation

(e) the interest on the amount spent on the provision and maintenance of the building, furniture and equipment provided for the canteen;

(f) the cost of the fuel required for cooking or heating food-stuffs or water and

(g) the wages of the employees serving in the canteen and the cost of uniforms : if any, provided to them.]

(2) The charge per portion of foodstuff beverages and any other item served in the canteen shall be conspicuously displayed in the canteen.

69. Accounts

(1) All books of accounts, registers and any other documents used in connection with the running of the canteen shall be produced on demand to an Inspector of Factories.

(2) The accounts pertaining to the canteen shall be audited once in every twelve months, by registered accountants and auditors. The balance-sheet prepared by the said auditors shall be submitted to the Canteen Managing Committee not later than two months after the closing of the audited accounts:

Provided that the accounts pertaining to the canteen in a Government Factory having its own Accounts Department may be audited in such Department.

70. Managing Committees

(1) The manager shall appoint a Canteen Managing Committee which shall be consulted from time to time as to

(a) the quality and quantity of foodstuffs to be served in the canteen;

(b) the arrangements of the menus;

(c) times of meals to the canteen ; and

(d) any other matter as may be directed by the Committee.

(2) The Canteen Managing Committee shall consist of an equal number of persons nominated by the occupier and elected by the workers. The number of elected workers shall be in the pro-portion of one for every 1,000 workers employed in the factory, provided that in no case shall there be more than five or less than two workers on the Committee and in cases where the workers refuse to elect their representatives, the occupier shall himself nominate the worker's representatives.

(3) The occupier shall appoint from among the persons nominated by him, a Chairman of the Canteen Managing Committee.

(4) The manager shall determine and supervise the procedure for elections to the Canteen Managing Committee.

(5) A Canteen Managing Committee shall be dissolved by the manager two years after the last election, no account being taken of a by-election or its constitution, as the case may be.

(6) Where the workers of a factory in which a canteen has been provided by the occupier in accordance with rules 65 to 67 for the use of the workers, desire to run the canteen by themselves on a co-operative basis with share capital contributed by themselves, the management may permit them to run the canteen in accordance with the by-laws of the Co-operative Canteen, the Madras Co-operative Societies Act, 1932[153], and the rules framed thereunder, subject to such conditions as the Chief Inspector may, in consultation with the Registrar of Co-operative Societies, Madras, impose.

(7) The provisions of sub-rule (1) of rule 68, sub-rule (2) of rule 69 and sub-rules (1) to (5) of rule 70 shall not apply to canteens which are run on co-operative basis by the workers themselves and which are recognized by the Chief Inspector.

71.

The provisions of rules 65 to 70 may be relaxed by the Chief Inspector, subject to such conditions as he may deem fit, in the case of factories belonging to the same business groups or amalgamation where centralized cooking in an approved industrial canteen is arranged for. Adequate arrangements to the satisfaction of the Chief Inspector shall,

however, be made in such cases for the conveyance and proper distribution of the food so cooked to the workers concerned as if separate canteens had actually been provided at site in the factories covered by this relaxation.

72. Shelters, rest rooms and lunch rooms

(1) This rule shall apply to any factory wherein more than one hundred and fifty workers are ordinarily employed.

(2) The shelters, or rest rooms and lunch rooms shall conform to the following standards and the [154][Occupier or Manager of a factory] shall submit for the approval of the Chief Inspector plans and site plans in triplicate of the building to be constructed or adapted:

(a) The building shall be soundly constructed and all the walls and roof shall be of suitable heat-resisting materials and shall be water-proof. The floor and walls to a height of 91.4 centimeters shall be so laid or finished as to provide a smooth, hard and impervious surface.

(b) The height of every room in the building shall be not less than 3.7 meters from floor level to the lowest part of the roof and there shall be at least 1.1 square meters of floor area for every person employed:

Provided that (i) workers who habitually go home for their meals during the rest periods may be excluded in calculating the number of workers to be accommodated and (ii) in the case of factories in existence at the date of commencement of the Act, where it is impracticable, owing to lack of space to provide 1.1 square meters of floor area for each person, such reduced floor area per person shall be provided as may be approved in writing by the Chief Inspector.

(c) Effective and suitable provision shall be made in every room for securing and maintaining adequate ventilation by the circulation of fresh air and there shall also be provided and maintained sufficient and suitable natural or artificial lighting.

(d) Every room shall be adequately furnished with chairs or benches with back-rests.

(e) Sweepers shall be employed whose primary duty it is to keep the rooms, building and precincts thereof in a clean and tidy condition.

(ee) [155][Suitable provisions shall be made in every room for supply of drinking water and facilities for washing]

(f) The Chief Inspector may, for reasons to be recorded in writing, relax the provisions of this rule subject to such conditions as he may deem it to impose, in respect of factories in existence on the 1st April, 1949.

(3) [156][A portion of the shelters or rest rooms and lunch rooms shall be partitioned off and reserved for women workers in proportion to their strength]

73. Crèches

(1) Rules 73 to 76 shall apply to any factory wherein more than [157][Thirty women workers] are ordinarily employed.

(2) The crèches shall conform to the following standards and the [158][Occupier or Manager of the factory] shall submit for approval of the Chief Inspector, detailed plans in triplicate of the building to be constructed or adapted.

(3) The crèche shall be conveniently accessible to the mothers of the children accommodated therein and so far as is reasonably practicable it shall not be situated in the close proximity to any part of the factory where obnoxious fumes, dust or odours are given off or in which excessively noisy processes are carried on.

(4) The building in which the crèche is situated shall be soundly constructed and all the walls and roof shall be of suitable heat-resisting materials and shall be water-proof. The floor and internal walls of the crèche to a height of 1.2 meters all round shall be so laid or finished as to provide a smooth impervious surface.

(5) The height of the rooms in the building shall be not less than 3.7 meters from the floor to the lowest part of the roof and then shall be not less than 1.9 square meters or floor area for each child to be accommodated.

(6) Effective and suitable provision shall be made in every part of the crèche for securing and maintaining adequate ventilation by the circulation of fresh air.

(7) The crèche shall be adequately furnished and equipped and in particular there shall be one suitable cot or cradle with the necessary bedding for each child (provided that for children over two years of age it will be sufficient if suitable bedding is made available) at least one chair or equivalent seating accommodation for the use of each mother while she is feeding or attending to her child and a sufficient supply of suitable toys for the older children.

(8) A suitably fenced and shady open air playground shall be provided for the older children:

Provided that the Chief Inspector may by order in writing exempt any factory from compliance with this sub-rule if he is satisfied that there is not sufficient space available for the provision of such a playground.

74. Wash room

There shall be in or adjoining the crèche a suitable wash room for the washing of the children and their clothing. The wash room shall conform to the following standards:

(a) The floor and internal walls of the room to a height of 91.4 centimeters shall be so laid or finished as to provide a smooth impervious surface. The room shall be adequately lighted and ventilated and the floor shall be effectively drained and maintained in a clean and tidy condition.

(b) There shall be at least one basin or similar vessel for every four children accommodated in the crèche at any one time together with a supply of water provided, if practicable, through taps from a source approved by the Health Officer.

Such source shall be capable of yielding for each child a supply of at least 22.7 liters of water a day.

(c) An adequate supply of clean clothes, soap and clean towels shall be made available for each child while it is in the crèche.

(d) Adjoining the washing room referred to above, a septic type latrine shall be provided for the sole use of the children in the crèche. The design of this latrine and the scale of accommodation to be provided shall be determined by the Health Officer. The crèche latrine shall always be kept clean and in a sanitary condition by a sweeper specially employed for the purpose.

75. Supply of milk and refreshment

At least 284.1 milliliters of clean pure milk shall be available for each child on every day it is accommodated in the crèche and the mother of such a child shall be allowed in the course of her daily work, intervals of at least 15 minutes to feed the child. For children above two years of age there shall be provided in addition an adequate supply of wholesome refreshment.

76. Crèche staff and clothes for crèche staff

(1) The occupier shall appoint a qualified nurse or midwife with sufficient number of ayahs, the number calculated at the rate of one ayah for every 30 children or part thereof for the purposes of looking after the children accommodated in the crèches and the occupier shall provide suitable equipment and the facilities for the purpose:

Provided that the occupier may appoint a nurse or midwife who is not qualified if the Chief Inspector, in consultation with the Director of Medical Services, certifies that such nurse or midwife is suitable for appointment under this sub-rule.

(2) The crèche staff shall be provided with suitable clean clothes by the occupier for use while on duty in the crèche.

[159][76-A Exemption from the provisions of crèche

(1) In factories where the number of married women or widows employed does not exceed 15 or where the factory works for less than 180 days in a calendar year, or where number of children kept in the crèche was less than 5 in the preceding year, the Chief Inspector may exempt such factories from the provisions of section 48 and rules 73 to 76 if he is satisfied that alternate arrangements as stipulated under sub-rule (2) are provided by the factory.

(2)

(a) The alternate arrangements required in sub-rule (1) shall include a crèche building, which has a minimum accommodation at the rate of [160][1.9 meter] per child and constructed in accordance with the plans approved by the aid Inspector.

(b) The crèche building shall have

(i) a suitable wash room for washing of the children and their clothing ;

(ii) adequate supply of soap, clean clothes and towels ; and

(iii) adequate number of female attendants who are provided with suitable clean clothes for use, while on duty, to look after the children in the crèche.

[161][(2-A)

(a) If factories or group of factories or cluster of factories in an area which are statutorily required to provide a crèche, decide by mutual agreement among themselves to provide a common crèche in the form of a group or chain of crèches, within one kilometer radius from such factories and to share the expenditure and maintenance in the running of such common crèche facilities, proportionate to the number of eligible children, such factories may apply to the Chief Inspector in writing for grant of exemption from providing a separate crèche. The Chief Inspector may exempt such factories from providing a separate crèche, subject to such conditions as he may deem fit, after satisfying himself that the alternate arrangements are adequate and appropriate to meet the needs of all the eligible employees in such factories;

(b) Where the factories in an area, on payment of contribution proportionate to the number of the eligible children, avail the common crèche facilities provided by the promotional institutions such as Small Industries Development Corporation, State Industries Promotional Corporation of Tamil Nadu Limited or by the Employers' Association or by voluntary organisations aided by the State Government or Central Government, such factories may apply to the Chief Inspector in writing for grant of exemption from providing a separate crèche. The Chief Inspector may exempt such factories from providing a separate crèche, subject to such conditions as he may deem fit, after satisfying himself that the alternate arrangements are adequate and appropriate to meet the needs of all the eligible employees in such factories.]

(3) The exemption granted under sub-rule (1) may at any time be withdrawn by the Chief Inspector if he finds after such enquiry as he may deem fit, that the factory has committed a breach of this rule,]

CHAPTER VI

WORKING HOURS OF ADULTS

77. Compensatory holidays

(1) Except in the case of workers engaged in any work which for technical reasons must be carried on continuously throughout the day, the compensatory holidays to be allowed sub-section (1) of section 52 of the Act shall be so spaced that not more than two holidays are given in one week.

(2) The Manager of the factory shall display, on or before the end of the month in which holidays are lost, a notice in respect of workers allowed compensatory holidays during the following month and of the dates thereof, at the place at which the Notice of Periods of Work prescribed under section 61 is displayed. Any subsequent change in the notice in respect of any compensatory holiday shall be made not less than three days in advance of the date of that holiday

(3) Any compensatory holiday or holidays to which a worker is entitled shall be given to him before he is discharged or dismissed and shall not be reckoned as part of any period of notice required to be given before discharge or dismissal.

(4)

(a) [162][The Manager shall maintain the details of compensatory holidays in the Muster Roll in Form No.25

(b) The register maintained under clause (a) shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

78. Muster-roll for exempted factories

The Manager of every factory in which workers are exempted under sub section 64 or 65 from the provisions of section 51 or 54 shall keep a muster-roll in Form No. 10 showing the normal piece-work rate of pay or the rate of pay per hour of all exempted employees. In this muster-roll shall be correctly entered the overtime hours of work and payments therefor of all exempted workers. The raster-roll in Form No. 10 shall always be available for inspection.

78A. Method of calculating cash equivalent on account of concessional sale of food grains and other articles

(i) The cash equivalent of the advantage accruing through the concessional sale to a worker of food grains and other articles shall be computed at the end of every wage period fixed under the provisions of the Payment of Wages Act, 1936.

(ii) For the purpose of computing cash equivalent of the advantage accruing through the concessional sale to a worker of food grains and other articles, the difference between the value of food grains and other articles, at the average market rates prevailing during the wage period in which overtime was worked and value of food grains and other articles supplied at concessional rates shall be calculated and allowed for the number of overtime hours worked:

Provided that this rule shall not apply to any railway factory whose alternative method of computation has been approved by the State Government.

78B. Overtime slips

Period of overtime work shall be entered in the overtime slip in duplicate and a copy of the slip signed by the Manager or by a person authorised by him shall be given to the worker immediately after the completion of the overtime work:

Provided that the Chief Inspector may by order in writing exempt any factory or class of factories from the provisions of this rule, subject to such conditions as he may impose, if he is satisfied that any alternative system followed therein, is adequate to meet the requirements of this rule.

78C. Restriction of double employment

An adult worker may be employed, in more than one factory on the same day, with the previous approval of the Inspector, subject to the following conditions:-

(1) He shall not be employed for more than nine hours in all on any one day.

(2) He shall receive a weekly holiday in accordance with the provisions of section 52.

(3) Every worker who is required to work in another factory on the same day shall carry with him a card in which the following particulars shall be entered by the Manager of the first factory.

(a) His normal periods of work as the notice of period of work, for the day.

(b) The period or periods he has worked in the first factory for the day.

The Manager of the second factory in which he is to work for the rest of the day shall enter in the card the period or periods he has worked for the day in his factory. The Manager of both the factories in which the worker has worked for the day on the same day shall send to the Inspector, an extract of the card mentioned above not later than three days from the date on which the worker has so worked in the two factories on the same day.

79. Notice of periods of work

The notice of periods of work for adults required under sub-section (1) of section 61 of the Act and the notice of periods of work for children required under sub-section (1) of section 72 of the Act shall be in Form No. 11 and shall be displayed in a conspicuous place at or near the entrance to the factory both in English and Tamil.

80. [163][Register of adult workers and young persons

The Register of adult workers shall be in Form No.12.

81. [164][Persons defined to hold position of supervision or management

(a) The following categories of persons shall he deemed to hold position of supervision or management;

(1) Directors;

(2) Managers;

(3) Assistant Managers;

(4) Engineers;

(5) Weaving Masters And Spinning Masters;

(6) Head Electricians;

(7) Labour Welfare Officers;

(8) Chief Chemist;

(9) Chief Metallurgists;

(10) Chief Production Engineers;

(11) Work Superintendents;

(12) Chief Security Officers;

(13) Fire Officers;

(14) Chief Accounts Officers;

(15) Chief Personnel Officers;

(16) Chief Public Relations Officer;

(17) Foreman;

(18) Charge man;

(19) Chief Draftsman;

(20) Head Store-Keepers

(21) Safety Officers;

(22) Human Resources Development Officers;

(23) Quality Assurance Personnel;

(24) Sales Personnel;

(25) Material Issue Personnel; and

(26) Systems Analysts or Operators in Electronic Data Processing Section.

(b) Any other person, who, in the opinion of the Chief Inspector or Factories, holds position of supervision or management.

82. Persons employed in a confidential position

(a) The following categories of persons shall be deemed to be employed in confidential positions

(1) Stenographers;

(2) Personal Assistants or Secretaries of Managers of Factories;

(3) Time-Keepers;

(4) Telephone Operators;

(5) Personnel Officers;

(6) Human Resources Development Personnel;

(7) Security Officers;

(8) Industrial Engineers;

(9) Quality Assurance Personnel;

(10) Sales Personnel;

(11) Material Issue Personnel; and

(12) Systems Analysis or Operators in Electronic Data Processing Section.

(b) Any other person, who, in the opinion of the Chief Inspector of Factories, is employed in confidential position.

83. List to be maintained of persons holding confidential positions or supervision or management

A list showing the names and designations of all persons to whom the provision of sub-section (1) of Section 64 have been applied shall be maintained in every factory.

84. Exemption of certain adult workers

(a) Adult workers engaged in factories specified in Column (2) of the Schedule to this Rule on the work specified in Column (3) thereof shall be exempted from the provisions of the Sections specified in Column (4) subject to the conditions, if any specified in Column (5) of the said Schedule.

(b) Except in the case of urgent repairs covered by item (1) of the Schedule, the exemptions shall be subject to the following conditions. namely:

(1) in case of exemption from Sections 51 and 54, no worker shall work for more than ten hours per day or 56 hours per week;

(2) in case of exemption from Section 55. sufficient time, though not a fixed period, shall be given for meals to the satisfaction of the Inspector of Factories concerned;

(3) in case of exemption from Section 56, the spread over of hours of work inclusive of intervals for rest shall not exceed twelve hours in any one day ; and

(4) the total overtime hours worked beyond the limits of nine hours per day and 48 hours per week shall not exceed 50 hours for such quarter of the calendar year.

(c) In the absence of a worker who has failed to report for duty in factories in which any work should be carried on continuously for technical reasons, a shift worker be allowed to work the whole or part of the subsequent shift irrespective of the restrictions imposed in Clauses (i) and (ii) of sub-section (4) of Section 64 of the Act ; Provided that;

(1) the next shift of the shift-worker shall not commence, before a period of eight hours has elapsed;

(2) within 24 hours of the commencement of the subsequent shift notice shall be sent to the Inspector, explaining the circumstances under which the worker is required to work in the subsequent shift; and

(3) the exemption will be restricted to only male adult workers.]

[165][84A. Exemption of women workers

All women working in fish-curing and fish-canning factories shall be exempted from the provisions of sub-section (1) of section 66 of the Act, subject to the following conditions, namely

(1) No woman shall be employed before 6 a.m. or after 7 p.m. for more than three days in any one week. The number of days on which a woman may be so employed shall not exceed fifty in a year;

(2) No woman shall be employed after I p.m. and before 5 am;

(3) A period of uninterrupted rest of atleast nine hours shall intervene between the cessation of period of work after 7 p.m. on any day. and the beginning of a fresh period of work on the following day ; and

(4) A muster-roll in Form No. 25-A shall be maintained.]

THE SCHEDULE

Sanction of the Act empowering the grant of exemption	Class of factory	Name of the exempted work	Extent of exemption	Remarks
1	2	3	4	5

64(2)(a) and 64(3)	All factories	Urgent repairs Explanation: The following shall be considered to be urgent repairs (a) Repairs to any part of the machinery, plant or structure of factory which are of such a nature that delay in their execution would involve danger to human life or safety or the stoppage of manufacturing process.	Sections 51, 52, 54, 55, 56 and 61	(i) No worker shall be employed for more than I5 hours on any one day, 39 hours during any three consecutive days or 66 hours during each period-of seven consecutive days commencing from his first employment (ii) Within 24 hours of the commencement of the work, notice shall be sent to the Inspector describing the nature of the urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the case of male adult workers (iv) A running record of work done on such repairs shall be maintained in the Muster Roll in Form No. 25-A vide Rule 103-A
64(2)(a) and 64(3)	All factories	(b) Breakdown repairs to motive power transmission of other Essential plant of other factories. Collieries, Railways, Motor Transports, Dockhand, Harbors, Gas Electrical Generating and Transmissions Pumping or similar essential or Public Utility Services carried out in the general Engineering Works and Foundries and which are necessary to enable such concerns to maintain their main manufacturing process. Production or service during normal working hours or according to Schedule	Sections 51, 52, 54, 55, 56 and 61	(i) No worker shall be employed for more than 15 hours on any one day, 39 hours during any three consecutive days or 66 hours during each period of seven consecutive days commencing from his first employment (ii) within 24 hours of the commencement of the work, notice shall be sent to the Inspector describing the unsure of the urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the case of male adult workers (iv) A running record of work done on such repairs shall be maintained in the Muster Roll in Form No. 25-A vide Rule I03-A
64(2)(a) and 64(3)	All factories	(c) Repairs to deep sea ships and repairs to commercial aircrafts done in a factory which ore essential to enable such ships or aircrafts to leave port at proper time or continue their normal operations, in sea or airworthy conditions, as the case may be	Sections 51, 52, 54, 55, 56 and 61	(i) No worker shall be employed for more than I5 hours on any one day, 39 hours during any three consecutive days or 66 hours during each period of seven consecutive days commencing from his finis employment. (ii) within 24 hours of the commencement of the work, notice shall be sent to the Inspector describing the nature of the urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the care of male adult workers (iv) A running record of work done on such repairs shall be Maintained in the Muster Roll in Form No. 25-A vide Rule 103-A

64(2)(a) and 64(3)	All factories	(d) Repairs in connection with a change of motive power. for example, from swam to electricity, or vice versa when such work cannot possibly be done without stoppage of the normal manufacturing process	Sections 51, 52, 54, 55, 56 and 61	(i) No worker shall be employed for more than 15 hours on any one day, 39 hours during any three consecutive days or 66 hours during each period of seven consecutive days commencing from his firs employment (ii) within 24 hours of the commencement of the work, notice shall be sent to the Inspector describing the nature of the urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the case of male adult workers (iv) A running record of work done on such repairs shall be maintained in the Muster Roll in Form No. 25-A vide Rule l03-A
Explanation: Periodical cleaning is not included in the terms “examining " or “repairing"				
64(2)(a) and 64(3)	All factories	1. Work in the machine shop, the smithy or the foundry or in connection with the mill gearing the electric driving of lighting apparatus, the mechanical or electrical lifts or the steam or water pipes or pumps of the factory	Sections 51, 52, 54, 55, 56 and 61	(i) No worker shall be employed foe more than 15 hours on any one day, 39 hours during any three consecutive days or 66 hours during each period of seven consecutive days commencing from his first employment (ii) within 24 hours of the commencement of the work, notice shall be sent to the Inspector describing the nature of the urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the case of male adult workers. (iv) A running record of work done on such repairs shall be maintained in the Muster Roll in Ferro No 25.A Vide Rule 103.A
64(2)(a) and 64(3)	All factories	2. Work of examining or repairing any machinery or other part of the plant which is necessary for carrying on the work in the factory.	Sections 51, 52, 54, 55, 56 and 61	(i) No worker shall be employed for more than 15 hours on any one day, 39 hours during any three Consecutive days or 66 hours during each period of seven consecutive days commencing from his first employment (ii) within 24 hours of the commencement of the work. notice shall be sent to the Inspector describing the nature of dm urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the case of male adult workers (iv) A running record of work done on such repairs shall he main-lamed in the Muster Roll in Form No. 25-A vide Rule 103.A

64(2)(a) and 64(3)	All factories	3. Work in boiler houses and engine rooms, such as lighting fires in order to raise steam or generate gas preparatory to the commencement of regular work in the factory	Sections 51, 54, 55, 56 and 61	(i) No worker shall to employed for more than 15 hours on any one day, 39 hours during any three consecutive days or 66 hours Miring each period or seven consecutive days commencing from his first employment (ii) within 24 hours of the commencement of the work, noise shall be sent to the Inspector describing the nature of the urgent repairs and the period probably required for their completion (iii) Exemption from the provisions of Section 54 shall apply only in the case of male adult workers. (iv) A running record of work done on such repairs shall be maintained in the Muster Roll in Form No. 25-A vide Rule 103.A
		4. Clerks engaged in the preparation of payrolls		The exemption shall be only for the preparation of payrolls
	Cinema Studio	Workers showing reflectors, shifting furniture on set clap Sections, boys, cameraman and sound department men in the process of shooting films	Sections 51, 54, 55, 56 and 61	-----
	Cinema Studio	Election or dismantling of settings or the makeup of actors and actresses in Cinema studio		-----
Iron, Steel, Brass, Copper rolling mills		Work in connection with roll changing		-----
64(2)(a) and 64(3)	All Factories	1. Work performed by drivers, on lighting, ventilating and humidifying apparatus 2. Work performed by fire pump men	Sections 51, 54, 55, 56 and 61	----

	Cardamom factories	Work of persons employed in drying Cardamom	Section 55, 56 and 61	----
	Salt Factories	All workers employed in the manufacture or dispatch		----
	Dal conversion (Black gram) factories and other dal factories	Work of persons employed in drying Black gram		(1) Exemption from the provisions of section 61 apply in so far as it relates to the specification of the period of cost Interval in the notice of work period for adults (2) The spread over shall not exceed twelve hones on any day. The entries reseeding actual commencement and completion of their periods of work shall be entered in Form Na 25.A
	Gingelly Oil (chekkus) Country Expellers	All adult workers engaged in manufacturing process	Section 55, 56 and 61	(1) Exemption from the amnions of section 61 will and 61 apply in so far as ii relates to the specification of the period of rest interval in the notice of work period for adults (2) The spread over shall not exceed twelve hours on any day The mines reseeding actual commencement and completion of their periods of work shall be entered in Form No. 15-A
64 (2) (c)	News Paper Presses	Work of persons employed in the rotary, machine stores, binding and process departments	Section 51, 54 and 56	---
64(2) (d) and 64 (3)	(1) Public Electric Generating and Transformi ng stations	All workers engaged in continuous work for generating or transforming of Electricity	Section 52, 54, 55 and 61	Exemption from the provisions of section 61 will apply in so far as it relates to the specification of the period of rest interval in the notice of work period for adults

64 (2) (d) and 64 (3)	(2) Sugar factories	All workers engaged in continuous process work.		---Same as above---
	(3) Chemical factories	All workers engaged in continuous process work.		---Same as above---
	(4) Vegetable Oil, Hydrogenation factories	All workers engaged in continuous process work.		---Same as above---
	(5) Ice factories	All workers engaged in continuous process work.		---Same as above---
	(6) Oil Mills	All workers engaged in continuous process work.		---Same as above---
	(7) Roller Flour	---Same as above---		---Same as above---
	(8) Glass factories	---Same as above---		---Same as above---

	(9) Paper factories	---Same as above---		---Same as above---
	(10) Rubber Tyre factories	All workers on the curing Process		---Same as above---
	(11) Cement factories	All workers engaged in continuous process work		---Same as above---
	(12) Municipal and public water and sewage pumping stations	---Same as above---		---Same as above---
	(13) Tanneries	Country and Chrome tanning excluding the finishing process	Section 52, 54, 57 and 61	---Same as above---
	(14) Bricks, tiles and potteries	Work of Kiln burners		---Same as above---
	(15) Distilling sandalwood and other essential oils	Work in the still and condensing rooms		---Same as above---

	(16) Enamel work	Work in the furnace enameling rooms		---Same as above---
	(17) Plywood manufacture	Work of cutting, gumming, pressing and drying of plywood		---Same as above---
	(18) Chicory factories	Work of persons engaged in the process of drying chicory		---Same as above---
	(19) Iron, Steel, Brass, Copper and Aluminum rolling mills	All the workers in continuous process		---Same as above---
	(20) Textile dyeing factories (non-power)	Workers employed in the dyeing bleaching and finishing sections		---Same as above---
	(21) Oil tank installation	Work of persons and in connection with the pumping of oil out of into a ship pr with bilk transfer of oil from or into storage tanks	Section 51, 52, 54, 55, 56 and 61	1. The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64 2. The exemption shall be granted only in respect of adult male workers
	(22) All factories	Any special class of workers engaged and work considered being essential or continuous in the nature of oil from or into storage tanks		Exemption to be given by the Chief Inspector of Factories if he considers it necessary on application by the Manager

	(23) All factories	Work on automatic equipment engaged in galvanizing, anodizing and enameling		1. The limits of work inclusive of overtime shall not exceed these mentioned in sub-section (4) of section 64 2. The exemption shall be granted only in respect of adult male workers
64 (2) (g) (1) and 64 (3)	(1) Tea factories	Work of persons in the factories except in the shifting department	Sections 55 and 61	The time of starting work, etc., of each worker shall be entered in Form No.25-A
	(2) Rubber factories	Work of persons in rubber factories		Exemptions from the provision of section 61 will apply in so far as it relates to the specification of the periods of rest interval in the notice of work period for adults
	(3) Rice Mills	Work of persons engaged in drying lifting and storing of paddy		---Same as above---
	(4) Coffee and Cashew nut factories	Work of persons engaged in receiving drying, lifting and storing, unpeeled or unshelled coffee and cashew nuts		---Same as above---
64 (2) (g) and 64 (3)	(5) Match or wood working factories	Work of persons engaged in drying of splints and veeners in match or wood working factories		---Same as above---
64 (2) (i)	Newspapers printing factories	Teleprinting service only in case of breakdown, maintenance and repairing	Section 51, 54 and 56	---Same as above---

64 (2) (j) and 64 (3)	All factories	Loading and Unloading of railway Wagons, Lorries or Trunks	Section 51, 52, 54, 55, 56 and 61	-----
64(2) (k)	Any factory or class or Work of natural importance as may be description of factories as notified by the State Government in the May be notified by the Official Gazette State Government in the Official Gazette.		Section 51, 52, 54, 55, 56 and 58	1. The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64 2. The exemption shall be limited to adult male worker

CHAPTER VII

EMPLOYMENT OF YOUNG PERSONS

85. [***Omitted]

86. [166]**[Register of adult workers and young persons**

The factories permitting or allowing young person workers who have completed the age of fourteen years but have not completed the age of eighteen years and carrying token and certificate as laid down under sections 68 and 69 of the Act shall record the particulars of such young persons in Form No. 12]. The date of birth indicated in [167][column (3) of Form No. 12], shall be supported by a birth certificate issued by the local authorities who are vested with powers for recording and issuing birth and death certificates, namely. Village Panchayats/ Panchayat Unions Municipalities/Corporations, as the case may be.

The Manager shall make available the birth certificate of the young person workers for verification and inspection, to the inspector on demand at all times during the working hours or when any work is being carried on in the factory. The Register for young person workers shall be preserved for a period of three years, after the last entry.]

[168]**[86-A Certificate of fitness**

(a) The certificate of fitness to be granted under section 69 shall be in Form No. 5. In the event of loss of the original certificates, the Manager shall apply to the Certifying Surgeons for the grant of duplicates. The Certifying Surgeon shall after verification with his records grant duplicate certificates.

(b) A fee of [169][Rs.100 (Rupees one hundred only)] shall be charged for such certificates or renewal thereof or such duplicates. The fee shall be paid by the Occupier into the local treasury and the receipt attached with the application]

CHAPTER VIII

Leave with wages

[170][86-B Method of calculating cash equivalent on account of concessional sale of food grains and other articles

The cash equivalent of the advantage accruing through the concessional sale of food grains and other articles payable to workers proceeding on leave shall be the difference between the value at the average market rates prevailing during the month immediately preceding his leave and the value at the concessional rates allowed of food grains and other articles he is entitled to.

For the purpose of the cash equivalent, monthly average market rate of food grains and other articles shall be computed at the end of every month.

87. Leave with wages register

(1) The Manager shall keep an up-to-date Register in Form No. 15 hereinafter called the Leave with Wages Register :

Provided that if the Chief inspector is of the opinion that any muster-roll or register maintained as part of the routine of the factory, or return made by the Manager, gives in respect of any or all of the workers in the factory, the particulars required for the enforcement of Chapter VIII of the Act, he may, by order in writing, direct that such muster-roll or register or return shall, to the corresponding extent, be maintained in place of and be treated as the register or return required under this rule in respect of that factory.

(2) The Leave with Wages Register shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

88. Leave Book

(1) The Manager shall provide each worker who has become entitled to leave during a calendar year, with a book in Form No. 15 (hereinafter called the Leave Book) not later than the 3Ist January of that year. The Leave Book shall be the property of the worker, and the Manager or his agent shall not demand it except to make entries and shall not keep it for more than one week at a time.

Provided that if a worker to whom sub-section (3) of section 79 of the Act applies is discharged or dismissed from service before he is provided by the manager with the Leave Book, the Manager shall, within one week from the date of such discharge or dismissal, issue to such worker an abstract from the "Leave with Wages Register" in Form No. 15 maintained under rule 87.

(2) If a worker loses his Leave Book the Manager shall provide him with another copy on the payment of fifteen paisa, and shall complete it from his record.

89. Medical certificate

If any worker is absent from work due to his illness and he wants to avail himself of the leave with wages due to him to cover the period of his illness as far as possible under the provisions of sub-section (7) of section 79 of Chapter VIII as revised by the Factories (Amendment) Act, 1954, he shall. if required by the Manager, produce a medical certificate signed by a registered medical practitioner or by a registered or recognised void or hakim stating the cause of the absence and the period for which the worker is, in the opinion of such medical practitioner, raid or hakim, unable to attend to his work.

90. [Omitted]

91. Notice by worker

Before or at the end of every calendar year, a worker who may be required to avail of leave in accordance with sub-section (8) of section 79 of the Factories Act, 1948, may give notice to the Manager of his intention not to avail himself of the leave with wages falling due during the following calendar year. The Manager shall make an entry to that effect in the Leave with Wages Register and in the Leave Book of the worker concerned.

92. Grant of leave with wages

(1) Whenever leave with wages is given to any worker, necessary entries shall be made in the Leave with Wages Register and the Leave Book of the worker concerned.

(2) As far as circumstances permit, members of the same family shall be allowed leave at the same time.

(3) A worker may exchange the period of his leave with another worker, subject to the approval of the Manager.

93. Payment of wages if the worker dies

If a worker dies before he resumes work, the balance of his pay due for the period of leave with wages not availed of shall be paid to his nominee within one week of the receipt of intimation of the death of the worker.

For this purpose each worker shall submit a nomination in Form No. 34 duly signed by himself and attested by two witnesses. The nomination shall remain in force until it is cancelled or revised by another nomination.

94. Factories exempted under section 84

(1) Where an exemption is granted to any factory under section 84, the Manager shall display at the main entrance of the factory a notice, giving full details of the system established in the factory for leave with wages and shall send a copy of it to the Inspector.

(2) No alteration shall be made in the scheme approved by the State Government at the time of granting exemption under section 84 without their previous sanction.

94-A. Exemption of certain factories

The Chief Inspector may grant exemption from all or any of the provisions of rules 87 to 93 in respect of all or any of the workers in any factory subject to such conditions as he may impose.

CHAPTER IX

SPECIAL PROVISIONS

95. Dangerous operations

(1) The following operations when carried on in any factory are declared to be dangerous operations under section 87

1. Manufacture of aerated water and processes incidental thereto.
2. [171][Electroplating or oxidation of metal articles by use of an electrolyte containing acids, bases of salts of metals such as chromium, nickel, cadmium. zinc, copper, silver, gold, etc.]
3. Manufacture and repair of electric accumulators.
4. Glass manufacture.
5. Grinding or glazing of metals.
6. Manufacture and treatment of lead and certain compounds of lead.
7. [172][Generation of gas from dangerous petroleum.]
8. Cleaning or smoothing of articles by a jet of sand, metal shot or grit or other abrasive propelled by a blast of compressed air or steam.
9. Liming and tanning of raw hides and skins and processes incidental thereto.
10. Cellulose spraying.
11. Graphite powdering and incidental processes.
12. Certain lead process carried on in printing presses and type foundries.
13. Cashew nut processing.
14. Dyeing, stenciling and painting of mats, mailings and carpets in coir and fiber factories.
15. [173][Pottery and ceramics industry.
16. Chemical works.]
17. [174][Manufacture of dichromate]

18. [175][Compression of oxygen and hydrogen produced by the electrolysis of water].

19. [176][Manipulation of stone or any other material containing free silica].

20. Handling and processing of asbestos, manufacture of any article of asbestos and any other process or manufacture or otherwise in which asbestos is used in any form.

21. Handling and manipulation of corrosive substances.]

22. [177][Manufacture or manipulation of Carcinogenic Dye intermediates.]

23. [178][Process of extracting oils and fats from vegetable and animal sources in Solvent Extraction Plants]

24. [179][Fireworks Manufactories and Match factories.]

25. [180][Manufacture or manipulation of Manganese and its compounds.]

26. [181][Carbon-disulphide plants.]

27. [182][Manufacture, handling and use of Benzene.]

28. [183][Operations involving High Noise Levels].

29. Manufacture or manipulation of dangerous pesticides.

30. Manufacture of Rayon by Viscose Process.

31. [184][Flammable liquefied or compressed gases and highly flammable liquids]

32. [185][Operations in foundries and furnaces]

(1-A)

(a) [186][The fee for medical examination of workers by the Certifying Surgeon as required by the Schedules annexed to this rule, shall be [187][Rs.100 (Rupees one hundred only)] for each examination of any such worker.

(b) The fee charged in clause (a) shall be exclusive of any charges for biological; radiological or other tests which may have to be carried out in connection with the medical examination. Such charges shall be paid by the occupier.

(c) The fee shall be paid by the occupier into the local treasury and the receipt attached with the application.]

(2) The provisions specified in the schedules annexed hereto shall apply to any class or description of factories wherein dangerous operations specified in each schedule arc carried out.

(3) This rule shall into force in respect of any class or description of factories, wherein the said operations are carried on, on such dates as the State Government may by notification in the Official Gazette appoint in this behalf.

(4) [188][Notwithstanding the provisions specified in the Schedules annexed to this rule, the inspector may by issue of orders in writing to the manager or occupier or both, direct them to carry out such measures, and within such time, as may be specified in such order with a view to [189][remove] conditions dangerous to the health of the workers, or to suspend any process, where such process constitutes, in the opinion of the Inspector, imminent danger of poisoning or toxicity.]

(5) [190][Any register or record of medical examinations and tests connected therewith required to be carried out under any of the schedules annexed hereto in respect of any worker shall be kept readily available to the Inspector and shall be preserved till the expiry of one year after the worker ceases to be in employment of the factory.]

(6) [191][First employment' means employment for the first time in a hazardous process or operation so notified under Section 87, or re-employment therein after cessation of employment in such process or operation for a period exceeding three calendar months.]

SCHEDULE I

MANUFACTURE OF AERATED WATERS AND PROCESSES INCIDENTAL THERETO

1. Fencing of machines

All machines for filling bottles or syphons shall be so constructed, placed or fenced as to prevent at far as may be practicable, a fragment of a bursting bottle or syphon from striking any person employed in the factory.

2. Face-guards and gauntlets

(1) The occupier shall provide and maintain in good condition for the use of all persons engaged in filling bottles or siphons

(a) suitable face-guards to protect the face, neck and throat, and

(b) suitable gauntlets for both arms to protect the whole hands and arms :

Provided that --

(i) paragraph 2 (1) shall not apply where bottles are filled by means of an automatic machine so constructed that no fragment of a bursting bottle can escape, and

(ii) where a machine is so constructed that only one arm of the bottle at work upon it is exposed to danger, a gauntlet need not be provided for the arm which is not exposed to danger.

(2) The occupier shall provide and maintain in good condition for the use of all persons engaged in corking, crowning, screwing, wiring, foiling capsuling, sighting [192][handling] or labeling bottles or syphons --

(a) suitable face-guards to protect the fact, neck and throat, and

(b) suitable gauntlets for both arms to protect the arm and atleast half of the palm and the space between the thumb and forefinger.

3. Wearing of face-guards and gauntlets

All persons engaged in any of the processes specified in paragraph (2) shall, while at work in such processes, wear the faceguards and gauntlets provided under the provisions of the said paragraph.

[193][Schedule II

Electrolytic plating or oxidation of metal ankles by use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold etc.

1. Definitions

For the purposes of this schedule

(a) "electrolytic process" means the electrolytic plating or oxidation of metal articles by the use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold, etc.

(b) "bath" means any vessel used for an electrolytic process or for any subsequent process; and

(c) "employed" means employed in any process involving contact with liquid from a bath.

2. Exhaust draught

An efficient exhaust draught shall be applied to every vessel in which an electrolytic process is carried on. Such draught shall be provided by mechanical means and shall operate on the vapour or spray given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the vapour or spray entering into any room or place in which work is carried on.

3. Prohibition relating to women and young persons

No woman, adolescent or child shall be employed or permitted to work at a bath.

4. Floor or workrooms

The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at least once a day.

5. Protective devices

(1) The occupier shall provide and maintain in good and clean condition the following articles of protective devices for the use of all persons employed on any process at which they are liable to come in contact with liquid from a bath and such devices shall be worn by the persons concerned

(a) waterproof aprons and bibs; and

(b) for persons actually working at a bath, loose-fitting rubber gloves and rubber boots or other waterproof footwear, and chemical goggles.

(2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and drying of protective devices.

6. Water facilities

(1) There shall be provided and maintained in good repairs for the use of all persons employed in electrolytic process and processes incidental to it

(a) a wash place under cover, with either

(i) a trough with a smooth impervious surface fitted with a waste pipe, and of sufficient length to allow at least 60 cms. for every 5 persons employed at any one time, and having a constant supply of water from taps or jets above the trough intervals of not more than 60 cms; or

(ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and having a constant supply of water laid on;

(b) a sufficient supply of clean towels renewed daily, and soap or other suitable cleaning material.

(2) In addition to the facility in sub-paragraph (1) an approved type of emergency shower with eye fountain shall be provided and maintained in good working order. Wherever necessary, in order to ensure continuous water supply, storage tank of 1,500 liters capacity shall be provided as a source of clean water for emergency use.

7. Cautionary placard

A cautionary placard in the form specified below and printed in the language of the majority of the workers employed shall be affixed in a prominent place in the factory where it can be easily and conveniently read by the workers.

CAUTIONARY NOTICE

ELECTROLYTIC PLATING

1. Chemicals handled in this plant are corrosive and poisonous.
2. Smoking, chewing tobacco, eating food or drinking, in this area is prohibited. No food stuff or drink shall be brought in this area.
3. Some of these chemicals maybe absorbed through the skin and may cause poisoning.
4. A good wash shall be taken before meals.
5. Protective devices supplied shall be used while working in this area.
6. Spillage of the chemicals on any part of the body or on the floor shall be immediately washed away with water.
7. All workers shall report for the prescribed medical tests regularly to protect their own health.
8. Medical facilities and records of examinations and tests
   (1) The occupier of every factory in which electrolytic processes are carried on shall
      (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector of Factories ;
      (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a) ; and
      (c) maintain a sufficient supply of suitable barrier cream, ointment and impermeable water proof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping these substances. In case cyanides are used in the bath, the box shall also contain an emergency cyanide kit.
   (2) The medical practitioner shall examine all workers before they are employed in electrolytic processes. Such examination in case of chrome plating shall include inspection of hands, forearms and nose and will be carried out once at least in every fortnight.
   (3) The record of the examinations referred to in sub-paragraph (2) shall be maintained in a separate register approved by the Chief Inspector of Factories which shall be kept readily available for inspection by the Inspector.
9. Medical examination by the Certifying Surgeon
   (1) Every worker employed in the electrolytic processes shall be examined by a certifying surgeon before his rust employment. Such examination shall include X-ray of the chest and

(a) in case of chromium plating, include examination for nasal septum perforation and test for chromium in urine

(b) in case of nickel plating, test for nickel in urine; and

(c) in case of cadmium plating, test for cadmium in urine and -2 microlobulin in urine.

(2) No worker shall be employed in any electrolytic process unless certified fit for such employment by the Certifying Surgeon.

(3) Every worker employed in the electrolytic processes shall be re-examined by a Certifying Surgeon at least once in every year except in case of the workers employed in cadmium, chromium and nickel plating processes for whom this examination shall be carried out once in every six months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests as specified under sub-paragraph (1) excluding the X- ray of the chest which shall not be required normally to be carried out earlier than once in three years.

(4) The Certifying Surgeon after examining a worker shall issue a Certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests shall also be entered by the Certifying Surgeon in a health register in Form 17.

(5) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(6) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the electrolytic processes on the ground that continuance therein would involve danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person declared unfit in such circumstances shall be provided with alternate placement facility unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(7) No person who has been found unfit to work as said in sub-paragraph (6) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination again certifies him fit for employment in those processes.]

SCHEDULE III

MANUFACTURE AND REPAIR OF ELECTRIC ACCUMULATORS

1. Savings

This Schedule shall not apply to the manufacture or repair of electric accumulators or parts thereof not containing lead or any compound of lead; or to the repair on the premises, of any accumulator forming part of a stationary battery.

2. Definitions

For the purposes of this schedule

(a) "Lead process" means the melting of lead or any materials containing lead, casting, pasting, lead burning, or any other work, including trimming, or any other abrading or cutting of pasted plates, involving the use, movement or manipulation of, or contact with, any oxide of lead.

(b) "Manipulation of raw oxide of lead" means any lead process involving any manipulation or movement of raw oxides of lead other than its conveyance in a receptacle or by means of an implement from one operation to another.

(c) [194][* * *]Omitted

3. Prohibition relating to women and young persons

No woman or young person shall be employed or permitted to work in any lead process in any room in which the manipulation of raw oxide of lead or pasting is carried on.

4. Separation of certain processes

Each of the following processes shall be carried on in such a manner under such conditions as to secure effectual separation from one another, and from any other process;

(a) Manipulation of raw oxide of lead;

(b) Pasting;

(c) Drying of pasted plates;

(d) Formation with lead burning ("tacking") necessarily carried on in connection therewith;

(e) Melting down of pasted plates.

5. Air-space

In every room in which a lead process is carried on, there shall be at least 14.2 cubic meters of air space for each person employed therein, and in computing this air space no height over 3.7 meters shall be taken into account.

6. Ventilation

Every workroom shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.

7. Distance between workers in pasting room

In every pasting room the distance between the centre of the working position of any paster and that of the paster working nearest to him shall not be less than 1.5 meters.

8. Floor of work-rooms

(1) The floor of every room in which a lead process is carried on shall be

(a) of cement or similar material so as to be smooth and impervious to water;

(b) maintained in sound condition;

(c) kept free from materials, plant, or other obstruction not required for, or produced is the process carried on in the room.

(2) In all such rooms other than grid casting shops the floor shall be cleansed daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.

(3) In grid casting shop the floor shall be cleansed daily.

(4) Without prejudice to the requirements of sub- paragraphs (1), (2) and (3) where manipulation of raw oxide of lead or pasting is carried on, the floor shall also be

(a) kept constantly moist while work is being done;

(b) provided with suitable and adequate arrangements for drainage ;

(c) thoroughly washed daily by means of a hose pipe.

9. Work-benches

The work benches at which any lead process is carried on shall

(a) have a smooth surface and be maintained in sound condition;

(b) be kept free from all materials or plant not required for, or produced in, the process carried on thereat; and all such work-benches other than those in grid casting shops shall

(c) be cleaned daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat; and,

all such work-benches in grid casting shops shall

(d) be cleansed daily;

and every work-bench used for pasting shall

(e) be covered throughout with sheet lead or other impervious material;

(f) be provided with raised edges;

(g) be kept constantly moist while pasting is being carried on.

10. Exhaust draught

The following processes shall not be carried on without the use of an efficient exhaust draught;

(a) Melting of lead or materials containing lead.

(b) Manipulation of raw oxide of lead, unless done in an enclosed apparatus so as to prevent the escape of dust into the workroom.

(c) Pasting

(d) Trimming, brushing, filing or any other abrading or cutting of pasted plates giving rise to dust.

(e) Lead burning, other than

(i) "tacking" in the formation room;

(ii) chemical burning for the making of lead linings for cell cases necessarily carried on in such a manner, that the application of efficient exhaust is impracticable.

Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as maybe at its point of origin, so as to prevent its entering the air of any room in which persons work.

11. Fumes and gases from melting pots

The products of combustion produced in the heating of any melting pot shall not be allowed to escape into a room in which persons work.

12. Container for dross

A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the workroom, except when dross is being deposited therein.

13. Container for lead waste

A suitable receptacle shall be provided in every workroom in which old plates and waste material which may give rise to dust shall be deposited.

14. Racks or shelves in drying room

The racks or shelves provided in any drying room shall not be more than 2.4 meters from the floor not more than 61 centimeters in width: provided that as regards racks or shelves set or drawn from both sides the total width shall not exceed 1.2 meters.

Such racks or shelves shall be cleansed only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose.

15. [195][Medical facilities and records of examinations and tests

(1) The occupier of every factory in which manufacture and repair of electric accumulators is carried on shall

(a) Employ a qualified medical practitioner for medical surveillance of the workers employed therein, whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

15-A. Medical examination by Certifying Surgeon

(1) Every worker employed in lead processes shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in urine and blood. ALA in urine, hemoglobin content stippling of cells and steadiness test. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every three calendar months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Manager of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.]

16. Protective clothing

Protective clothing shall be provided and maintained in good repair for all persons employed in

(a) Manipulation of raw oxide of lead ;

(b) pasting;

(c) the formation room ;

and such clothing shall be worn by the persons concerned. The protective clothing shall consist of a waterproof apron and waterproof footwear; and, also as regards persons employed in the manipulation of raw oxide of lead or in pasting, head coverings. The head coverings shall be washed daily.

17. Mess-room

There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable mess-room which shall be furnished with (a) sufficient tables and benches, and (b) adequate means for warming food.

The mess-room shall be placed under the charge of a responsible person, and shall be kept clean.

18. Clock-room

There shall be provided and maintained for the use of all persons employed in a lead process

(a) A clock-room for clothing put off during working hours with adequate arrangements for drying the clothing if wet. Such accommodation shall be separate from any mess-room.

(b) Separate and suitable arrangements for the storage of protective clothing provided under paragraph 16.

19. Washing facilities

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in a lead process

(a) A wash place under cover, with either

(i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 61 centimeters for every five such persons employed at any one time, and having a constant supply of water

from taps or jets above the trough at intervals of not more than 61 centimeters ; or

(ii) at least one wash basin for every live such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water laid on;

(iii) a sufficient supply of clean towels made of suitable materials renewed daily, which supply, in the case of pasters and persons employed in the manipulation of raw oxide of lead, shall include a separate marked towel for each such worker; and

(iv) a sufficient supply of soap or other suitable cleansing material and of nail brushes.

(b) There shall in addition be provided means of washing in close proximity to the rooms in which manipulation of raw oxide of lead or pasting is carried on if required by notice in writing from the Chief Inspector.

20. Time to be allowed for washing

Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person who has been employed in the manipulation of raw oxide of lead or in pasting:

Provided that if there be one basin or 61 centimeters of trough for each such person this rule shall not apply.

21. Facilities for bathing

Sufficient bath accommodation to the satisfaction of the Chief Inspector shall be provided for all persons engaged in the manipulation of raw oxide of lead or in pasting, and a sufficient supply of soap and clean towels.

22. Food, drinks, etc., prohibited in workrooms

No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any lead process is carried on.

SCHEDULE IV

Glass manufacture

1. Exemptions

If the Chief Inspector is satisfied in respect of any factory or any class of process that, owing to the special methods of work or the special conditions in a factory or otherwise, any of the requirements of this schedule can be suspended or relaxed, without danger to the persons employed therein, or that the application of this schedule or any part thereof is for any reason impracticable, he may by certificate in writing authorize such suspension

or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

2. Definitions

For the purpose of this schedule

(a) "Efficient exhaust draught" means localized ventilation effected by mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fume, or dust originate.

(b) "Lead compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead com-pound exceeding when calculated as lead monoxide, 5 percent of the dry weight of the portion taken for analysis.

The method of treatment shall be as follows:

A weighed quantity of the material which has been dried at 100^{o}C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 percent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

(c) [196][* * *] Omitted

3. Exhaust draught

The following processes shall not be carried -on except under an efficient exhaust draught or under such other conditions as may be approved by the Chief Inspector:

(a) The mixing of raw materials to form a "batch".

(b) The dry grinding, glazing and polishing of glass or any article of glass.

(c) All processes in which hydrofluoric acid fumes or ammonical vapors are given off.

(d) All processes in the making of furnace moulds or "pots" including the grinding or crushing of used "pots"

(e) All processes involving the use of a dry lead compound.

4. Prohibition relating to women and young persons

No woman or young person shall be employed or permitted to work in any of the operations specified in paragraph 3 or at any place where such operations are carried on.

5. Floors and work-benches

The floor and work- benches of every room in which a dry compound of lead is manipulated or in which any process is carried on giving off silica dust shall be kept moist and shall comply with the following requirements

The floor shall be --

(a) of cement or similar material so as to be smooth and impervious to water ;

(b) maintained in sound conditions ; and

(c) cleansed daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.

The work-benches shall —

(a) have a smooth surface and be maintained in sound condition, and

(b) be cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat.

6. Use of Hydrofluoric Acid

The following provisions shall apply to rooms in which glass is treated with hydrofluoric acid :

(a) There shall be inlets and outlets of adequate size so as to secure and maintain efficient ventilation in all parts of the room

(b) the floor shall be covered with guttaparacha and be tight and shall slope gently down to a covered drain;

(c) the work places shall be so enclosed in projecting hoods that openings required for bringing in the objects to be treated shall be as small as practicable ; and

(d) the efficient exhaust draught shall be so contrived that the gases are exhausted downwards.

7. Storage and transport of Hydrofluoric acid

Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles made of lead or rubber.

8. Suitable facilities shall be readily available for sterilizing the blow-pipes used by the glass blowers and such blow-pipes shall be sterilized at the beginning of the operations of blowing, each day.

9. Food, drinks, etc., prohibited In workrooms

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any room or work place wherein any process specified in paragraph 3 is carried on.

10. Protective clothing

The occupier shall provide, maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 3 suitable protective clothing, footwear and goggles according to the nature of the work and such clothing, footwear, etc., shall be worn by the persons concerned.

11. Washing facilities

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in the processes specified in paragraph 3

(a) a wash place with either

(i) a trough with a smooth impervious surface fitted with a waste pipe, without plug and of sufficient length to allow of at least 61 centimeters for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters ; or

(ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available ; and

a sufficient supply of clean towels made of suitable materials renewed daily with a sufficient supply of soap or other suitable cleansing material and of nail brushes ; and

(b) a sufficient number of stand pipes with taps - the number and location of such stand pipes shall be to the satisfaction of the Chief Inspector.

12. [197][Medical facilities and record of examinations and tests

(1) The Occupier of every factory in which glass manufacturing processes are carried out, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector of Factories; and

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The records of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

12-A Medical Examination by Certifying Surgeon

(1) Every worker employed in processes specified in paragraph 12 shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function tests and in suspected cases chest X-ray as well as tests for lead and (sic.) urine. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that t he said person is unfit for work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certifies him fit for employment in those processes.]

SCHEDULE V

GRINDING OR GLAZING OF METALS AND PROCESSES INCIDENTAL THERETO

1. Definitions

For the purposes of this schedule

(a) "Grindstone" means a grindstone composed of natural or manufactured sandstone but does not include a metal wheel or cylinder into which blocks of natural or manufactured sandstone are fitted.

(b) "Abrasive wheel' means a wheel manufactured of bonded emery or similar abrasive.

(c) "Grinding" means the abrasion, by aid of mechanical power of metal, by means of a grindstone or abrasive wheel.

(d) "Glazing" means the abrading, polishing or finishing by aid of mechanical power of metal, by means of any wheel, buff mop or similar appliance to which any abrading or polishing substance is attached or applied.

(e) "Racing" means the turning up, cutting or dressing of a revolving grindstone before it is brought into use for the first time.

(f) "Hacking" means the chipping of the surface of a grindstone by a hack or similar tool.

(g) "Rodding" means the dressing of the surface of a revolving grindstone by the application of rod, bar or strip of metal to such surface.

2. Exemptions

(1) Nothing in this schedule shall apply to any factory in which only repairs are carried on except any part thereof in which one or more persons are wholly or mainly employed in the grinding or glazing of metals.

(2) Nothing in this schedule except paragraph 4 shall apply to any grinding or glazing of metals carried on intermittently and at which no person is employed for more than 12 hours in any week.

(3) The Chief Inspector may by certificate in writing, subject to such condition as he may specify therein, relax or suspend any of the provisions of this schedule in respect of any factory if owing to the special methods of work or otherwise such relaxation or suspension is practicable without danger to the health or safety of the persons employed.

3. Equipment for removal of dust

No racing, dry grinding or glazing shall be performed without

(a) a hood or other appliance so constructed, arranged, placed, and maintained as substantially to intercept the dust thrown off;

(b) a duct of adequate size, air-tight and so arranged as to be capable of carrying away the dust, which dust shall be kept free from obstruction and shall be provided with proper means of access for inspection and cleaning, and where practicable, with a connection at the end remote from the fan to enable the Inspector to attach thereto any instrument necessary for ascertaining the pressure of air in the said duct ; and

(c) a fan or other efficient means of producing a draught sufficient to extract the dust :

Provided that the Chief Inspector may accept any other appliance that is, in his opinion, as effectual for the interception, removal and disposal of dust thrown off as a hood, duct and fan would be.

4. Restriction on employment on grinding operations

Not more than one person shall at any time perform the actual process of grinding, or glazing upon a grindstone, abrasive wheel or glazing appliance:

Provided that this paragraph shall not prohibit the employment of persons to assist in the manipulation of heavy or bulky articles at any such grindstone, abrasive wheel or glazing appliance.

5. Glazing

Glazing or other processes, except processes incidental to wet grinding upon a grindstone shall not be carried on in any room in which wet grinding upon a grindstone is done.

6. Hacking and rodding

Hacking or rodding shall not be done unless during the process either (a) an adequate supply of water is laid on at the upper surface of the grindstone or (b) adequate appliances for the interception of dust are provided in accordance with the requirements of paragraph 3.

7. Examination of dust equipment

(a) All equipment for the extraction or suppression of dust shall at least once in every six months be examined and tested by a competent person, and any defect disclosed by such examination and test shall be rectified as soon as practicable.

(b) A resister containing particulars of such examination and test shall be kept in [198][Form No. 37]

[199][7-A Medical facilities and record of examinations and tests

(1) The occupier of every factory in which grinding or glazing of metals arc carried out, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

7-B Medical examination by Certifying Surgeon

(1) Every worker employed in grinding or glazing of metal and processes incidental thereto shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function tests and in suspected cases chest X-rays. No worker shall be allowed to work after 15 days, of

his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every 12 calendar months. Such re- examination shall wherever the Certifying Surgeon considers appropriate, include tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2) including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The Certificate of Fitness and the Health Register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said Certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes]

SCHEDULE VI

MANUFACTURE AND TREATMENT OF LEAD AND CERTAIN COMPOUNDS OF LEAD

1. Exemptions

Where the Chief Inspector is satisfied that all or any of the provisions of this schedule are not necessary for the protection of the persons employed he may by certificate in writing exempt any factory from all or any of such provisions, subject to such conditions as he may specify'therein.

2. Definitions

For the purposes of this schedule

(a) "Lead compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid, a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five per cent. of the dry weight of the portion taken for analysis. In the case of paints and similar products and other mixtures containing oil or fat the "dry weight" means the dry weight of the material remaining after the substance has been thoroughly mixed and treated with suitable solvents to remove oil, fats, varnish or other media.

The method of treatment shall be as follows:

A weighed quantity of the material which has been dried at 100°C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent. by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear liberate shall then be precipitated as lead sulphide and weighed as lead sulphate.

(b) "Efficient exhaust draught" means localized ventilation effected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originate.

3. Application

This schedule shall apply to all factories or parts of factories in which any of the following operations are carried on:

(a) Work at a furnace where the reduction or treatment of zinc or lead ores is carried on.

(b) The manipulation, treatment or reduction of ashes containing lead, the desilverising of lead or the melting of scrap lead or zinc.

(c) The manufacture of solder or alloys containing more than ten percent of lead.

(d) The manufacture of any oxide, carbonate, sulphate, chromate, acetate, nitrate, or silicate of lead.

(e) Handling or mixing of lead tetraethyl.

(f) Any other operation involving the use of a lead compound.

(g) The cleaning of workroom where any of the operations aforesaid are carried on.

4. Prohibition relating to women and young persons

No woman or young persons shall be employed or permitted to work in any of the operations specified in paragraph 3.

5. Requirements to be observed

No person shall be employed or permitted to work in any process involving the use of lead compounds if the process is such that dust or fume from a lead compound is produced therein, or the persons employed therein are liable to be splashed with any lead compound in the course of their employment unless the provisions of paragraphs 6 to 14 are complied with.

6. Exhaust draught

Where dust, fume, gas or vapour is produced in the process, provision shall be made for removing them by means of any efficient exhaust draught so contrived as to operate on the dust, fume, gas or vapour as closely as possible to the point of origin.

7. [200][Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.]

8. [201] [Medical Examination by Certifying Surgeon

(1) Every worker employed in the processes referred to in paragraph 1 shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in blood and urine, ALA in urine, hemoglobin content, stippling of cells and steadiness tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every three calendar months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said process unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.)

9. Food, drinks, etc., prohibited in workrooms

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom in which the process is carried on and no person shall remain in any such room during intervals for meals or rest.

10. Protective clothing

Suitable protective overalls and head coverings shall be provided, maintained and kept clean by the factory occupier and such overalls and head coverings shall be worn by the persons employed.

11. Cleanliness of workrooms, tools, etc

The rooms in which the person's arc employed and all tools and apparatus used by them shall be kept in a clean state.

12. Washing facilities

(1) The occupier shall provide and maintain for the use of all persons employed, suitable washing facilities consisting of

(a) a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 61 centimeters for every ten persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 61 centimeters ; or

(b) atleast one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of clean water, together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material and clean towels.

(2) The facilities so provided shall be placed under the charge of a responsible person and shall be kept dean.

13. Mess-room or Canteen

The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking their meals. The arrangement shall consist of the use of a room separate from any workroom which shall be furnished with sufficient tables and benches and unless a canteen serving hot meals is provided, adequate means for warming food. The room shall be adequately ventilated by the circulation of fresh air shall be placed under the charge of a responsible person and shall be kept clean.

14. Cloak-room

The occupier shall provide and maintain for the use of persons employed, suitable accommodation for clothing not worn during working hours, and for the drying of wet clothing.

SCHEDULE VII

GENERATION OF GAS FROM DANGEROUS PETROLEUM

1. Prohibition relating to women and young persons

No woman or young person shall be employed or permitted to work in or shall be allowed to enter any building in which the generation of gas from dangerous petroleum is carried on.

2. Flame traps

The plant for generation of gas from dangerous petroleum and associated piping and fittings shall be fitted with atleast two efficient flame traps so designed and maintained as to prevent a flash back from any burner to the plant. One of these traps shall be fitted as close to the plant as possible. The plant and all pipes and valves shall be installed and maintained free from leaks.

3. Generating building or room

All plants for generation of gas from dangerous petroleum erected after the coming into force of the provisions specified in this schedule shall be erected outside the factory building proper in a separate well ventilated building (hereinafter referred to as the "generating building"). In the case of such plant erected before the coming into force of the provisions specified in this schedule there shall be no direct communication between the room where such plants are erected (hereinafter referred to as the "generating room"), and the remainder of the factory building. So far as practicable, all such generating rooms shall be constructed of fire-resisting materials.

4. Fire Extinguishers

An efficient means of extinguishing petrol fires shall be maintained in an easily accessible position near the plant for generation of gas from dangerous petroleum.

5. Plant to be approved by the Chief Inspector

Gas from dangerous petroleum shall not be manufactured except in a plant for generating gas from dangerous petroleum, the design and construction of which has been approved by the Chief Inspector.

6. Escape of dangerous petroleum

Effective steps shall be taken to prevent dangerous petroleum from escaping into any drain or sewer.

7. Prohibition relating to smoking, etc.

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in the generating room or generating building or in the vicinity thereof and a warning notice in the language understood by the majority of the workers shall he pasted in the factory prohibiting smoking and the carrying of matches, fire or naked light or other means of producing a naked light or spark into such room or building.

8. Access to dangerous petroleum or container

No unauthorized person shall have access to any dangerous petroleum or to vessel containing or having actually contained (dangerous) petroleum.

9. Electric fittings

All electric fittings shall be of flame-proof construction and all electric conductors shall either be enclosed in metal conduits or be lead sheathed.

10. Construction of doors

All doors in generating room or generating building shall be constructed to open outwards or to slide and no door shall be locked or obstructed or fastened in such a manner that it cannot be easily and immediately opened from the inside while gas is being generated and any person is working in the generating room or generating building.

11. Repair of containers

No vessel that has contained petroleum shall be repaired in a generating room or generating building and no repairs to any such vessel shall be undertaken unless live-steam has been blown into the vessel and until the interior is thoroughly steamed out or other equally effective steps have been taken to ensure that it has been rendered free from dangerous petroleum or inflammable vapour.

[202][SCHEDULE VIII

CLEANING SMOOTHING ROUGHENING ETC., OF ARTICLES BY A JET OF SAND METAL SHOT OR GRIT OR OTHER ABRASIVE PROPELLED BY A BLAST OF COMPRESSED AIR OR STEAM

1. Definitions

For the purposes of this schedule

"Blasting" means cleaning, smoothing, roughening or removing of any part of the surface of any article by the use as an abrasive of a jet of sand, metal shot, or grit or other material, propelled by a blast, of compressed air or steam.

"Blast enclosures" means a chamber, barrel cabinet or any other enclosure designed for the performance of blasting therein.

“Blasting chamber" means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise.

"Cleaning of castings", where done as an incidental or supplemental process in connection with the making of metal castings, means, the freeing of the casting from adherent sand or other substance and includes the removal of dross and the general smoothing of a casting, but does not include the free treatment.

2. Prohibition of sand blasting

Sand or any other substance containing free silica shall not be introduced as an abrasive into any blasting apparatus and shall not be used for blasting:

Provided that this clause shall come into force two years after the coming into operation of this Schedule

3. Precautions in connection with blasting operations

(1) Blasting to be done in blasting enclosure: Blasting shall not be done except in a blasting enclosure and no work other than blasting and any work immediately incidental thereto and cleaning and repairing of the enclosure including the plants and appliances situated therein, shall be performed in a blasting enclosure. Every door, aperture and joint of blasting enclosure, shall be kept closed and air-tight, while blasting is being done therein.

(2) Maintenance of blasting enclosure: Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosures and from any apparatus connected therewith, into the air of any room.

(3) Provision of separating apparatus: There shall be provided and maintained for and in connection with every blasting enclosure, efficient apparatus for separating, so far as practicable, abrasive which has been used for blasting and which is to be used again as an abrasive, from dust or particles or other materials arising from blasting ; and no such abrasive shall be introduced into any blasting apparatus and used for blasting until it has been so separated:

Provided that this clause shall not apply, except in the case of blasting chambers, to blasting enclosures constructed or installed before the coming into force of this Schedule, if the Chief Inspector is of the opinion that it is not reasonably practicable to provide such separating apparatus.

(4) Provision of ventilating plant: There shall be provided and maintained in connection with every blasting enclosure efficient ventilating plant to extract, by exhaust

draught effected by mechanical means, dust produced in the enclosure. The dust extracted and removed shall be disposed of by such method and in such a manner that it shall not escape into the air of any room; and every other filtering or settling device situated in a room in which persons are employed, other than persons attending to such bag or other filtering or settling device, shall be completely separated from the general air of that room in an enclosure ventilated to the open air.

(5) Operation of ventilating plant: The ventilating plant provided for the purpose of sub-clause (4) shall be kept in continuous operation wherever the blasting enclosure is in use whether or not blasting is actually taking place therein, and in the case of a blasting chamber, it shall be in operation even when any person is inside the chamber for the purpose of cleaning.

4. Inspection and examination

(1) Every blasting enclosure shall be specially inspected by a competent person atleast once in every week in which it is used for blasting. Every blasting enclosure, the apparatus connected therewith and the ventilating plant shall be thoroughly examined and in the case of ventilating plant, tested by a competent person atleast once in every month.

(2) Particulars of the result of every such inspection, examination and test shall forthwith be entered in a register, which shall be kept in a form approved by the chief Inspector and shall be available for inspection by any workman employed in, or in connection with, blasting in the factory. Any defect found on any such inspection, examination or test shall be immediately reported by the person carrying out the inspection, examination or test to the occupier, Manager or other appropriate person and without prejudice to the foregoing requirements of this Schedule, shall be removed without avoidable delay.

5. Provision of protective helmets, gauntlets and overalls

(1) There shall be provided and maintained for the use of all persons who are employed in a blasting chamber, whether in blasting or in any work connected therewith or in cleaning such a chamber, protective helmets of a type approved by a certificate of the Chief Inspector; and every such person shall wear the helmet provided for this use whilst he is in the chamber and shall not remove it until he is outside the chamber

(2) Each protective helmet shall carry a distinguishing mark indicating the person by whom if is intended to be used and no person shall be allowed or required to wear a helmet not carrying his mark or a helmet which has been worn by another person and has not since be thoroughly disinfected.

(3) Each protective helmet when in use shall be supplied with clean and not unreasonably cold air at a rate of not less than 0.17 cubic meter per minute.

(4) Suitable gauntlets and overalls shall be provided for the use of all persons while performing blasting or assisting at blasting and every such person shall, while so engaged, wear the gauntlet and overall provided.

6. [203][Precautions In connection with cleaning and other work

(1) Where any person is engaged upon cleaning of any blasting apparatus or blasting enclosure or of any apparatus or ventilating plant connected therewith or the surroundings thereof or upon any other work in connection with any blasting apparatus or blasting enclosure or with any apparatus or ventilating plant connected therewith so that he is exposed to the risk of inhaling dust which has arisen from blasting, all practicable measures shall be taken to prevent such inhalation.

(2) In connection with any cleaning operation referred to in clause 5 and the removal of dust from filtering or settling devices all practicable measures shall be taken to dispose of the dust in such manner that it does not enter the air of any room. Vacuum cleaners shall be provided and used wherever practicable for such cleaning operations.]

7. Storage accommodation for protective wear

Adequate and suitable storage accommodation for the helmets, gauntlets and overalls required to be provided by clause 5 shall be provided outside, and conveniently near to, every blasting enclosure and such accommodation shall be kept clean. Helmets, gauntlets and overalls when not in actual use shall be kept in this accommodation.

8. Maintenance and cleaning of protective wear

All helmets, gauntlets, overalls, and other protective devices or clothing's provided and worn for the purpose of this Schedule, shall be kept in good condition and so far as is reasonably practicable shall be cleaned on every week day in which they are used. Where dust arising from the cleaning of such protective clothing or devices is likely to be inhaled, all practicable measures shall be taken to prevent such inhalation. Vacuum cleaners shall, wherever practicable, be used for removing dust from such clothing and compressed air shall not be used for removing dust from any clothing.

9. Maintenance of vacuum cleaning plant

Vacuum cleaning plant used for the purpose of this Schedule shall be properly maintained.

[204][9-A. Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

9-B. Medical Examination by Certifying Surgeon

(1) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function test and chest X-ray. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every 12 calendar months and such re-examination shall, wherever the Certifying Surgeon considers appropriate, include pulmonary function test and chest X-ray once in every three years.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in the Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work in the processes as said in sub-paragraph (5) above shall be re-employed or permitted to work unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.]

10. Restriction in employment of young persons and prohibition of employment of women

No woman or person under 18 years of age shall be employed or permitted to work at blasting or assist at blasting or in any blasting chamber or in the cleaning of any blasting apparatus or any blasting enclosure or any apparatus or ventilating plant connected there-

with or be employed on maintenance or repair work at such apparatus, enclosure or plant.

11. Power to exempt or relax

(1) If the Chief Inspector is satisfied that in any factory or any class of factories, the use of sand or other substance containing free silica as an abrasive in blasting is necessary for a particular manufacture or process (other than the process incidental or supplemental to making of metal castings) and that the manufacture or process cannot be carried on without the use of such abrasive ; or that owing to the special conditions or special method of work or otherwise any requirement of this Schedule can be suspended either temporarily or permanently, or can be relaxed without endangering the health of the persons employed ; or that application of any such requirements is for any reason impracticable or inappropriate, he may, with the previous sanction of the State Government, by an order in writing exempt the said factory or class of factories from such provisions of this Schedule, to such an extent and subject to such conditions and for such period as he may specify in the said order.

(2) Where an exemption has been granted under sub- clause (1) a copy of the order shall be displayed at a notice board at a prominent place at the main entrance or entrances to the factory and also at the place where the blasting is carried on.]

SCHEDULE IX

LIMING AND TANNING OF RAW HIDES AND SKINS AND PROCESSES INCIDENTAL THERETO

1. Cautionary notices

(1) Cautionary notices as to anthrax in the form specified by the Chief Inspector shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed.

(2) A copy of a warning notice as to anthrax in the form specified by the Chief Inspector shall be given to each person employed when he is engaged, and subsequently if still employed, on the first day of each calendar year.

(3) Cautionary notices as to the effects of chrome on the skin shall be affixed in prominent positions in every factory in which chrome solutions are used and such notices shall be so placed as to be easily and conveniently read by the persons employed.

(4) Notices shall be affixed in prominent places in the factory stating the position of the "First-aid" box or cupboard and the name of the person in charge of such box or cupboard.

(5) If any person employed in the factory is illiterate, effective steps shall be taken to explain carefully to such illiterate person the contents of the notices specified in paragraphs 1, 2, and 4 and if chrome solutions are used in the factory the contents of the notice specified in Paragraph 3.

2. [205]**[Protective clothing**

The occupier shall provide and maintain in good condition the following articles of protective clothing:

(a) water-proof foot-wear, leg coverings, aprons and gloves for persons employed in process involving contact with chrome solutions, including the preparation of such solution;

(b) gloves and boots for persons employed in lime-yard; and

(c) protective foot-wear, aprons and gloves for persons employed in processes involving the handling of hides or skins, other than in processes specified in clauses (a) and (b):

Provided that —

(i) the gloves, aprons, leg coverings or boots may be of rubber or leather, but the gloves and boots to be provided under sub-clauses (a) and (b) shall be of rubber;

(ii) the gloves may not be provided to persons fleshing by hand or employed in processes in which there is no risk of contact with lime, sodium sulphide or other caustic liquor.]

3. Washing facilities, mess-room and cloak-room

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed

(a) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 61 centimeters for every ten persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters ; or

(b) at least one wash-basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material, and clean towels ;

(c) a suitable mess-room, adequate for the number remaining on the premises during the meal intervals, which shall be furnished with (1) sufficient tables and benches and (2) adequate means for warming food and for boiling water.

The mess-room shall

(1) be separate from any room or shed in which hides or skins are stored, treated or manipulated,
(2) be separated from the cloak-room and
(3) be placed under the charge of a responsible person ;

(d) [206][The occupier shall provide and maintain for the use of all persons employed, suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and shall also make adequate arrangements

for drying up the clothing in both the cases, if wet. The accommodation so provided shall be kept clean at all times and placed under the charge of a responsible person.]

4. Food, drinks, etc., prohibited in work-rooms

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work room or shed in which hides or skins are stored, treated or manipulated.

5. [207][Medical facilities and records of examination and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories;

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a);

(c) arrange for inspection of the hands of all the persons keeping in contact with the Chromium substances to be made twice a week ; and

(d) provide and maintain and supply suitable ointment and plaster in a box readily accessible to the workers and solely used for the purpose of keeping the ointment and the plaster.

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

6. Medical Examination by Certifying Surgeon

(1) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include skin test for dermatoses and detection of anthrax bacillus from local lesion by gram stain. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said process shall be re-examined by a Certifying Surgeon at least once in every 12 calendar months and such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes]

SCHEDULE X

CELLULOSE SPRAYING

1. Application

The provisions of this schedule shall apply to all factories or parts of factories in which the spraying of cellulose ester paints, or lacquers is carried on.

2. Prohibition of the employment of children and adolescents

No child or adolescent shall be employed in any factory on the operation specified in paragraph 1 above.

3. Exhaust draughts

An efficient exhaust draught shall be provided by mechanical means for the process specified in paragraph 1. The draught shall operate on the vapour given off in the process as near as may be at the point of origin so as to prevent it (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. The draught shall be maintained working for a period of at least five minutes after the cessation of the operation.

Provided that the Chief Inspector may grant exemption from these provisions if he is satisfied that due to the casual nature of the operation they are not necessary to seat re the health of the workers.

4. Position of spray operators

Arrangement shall, as far as practicable, be made so as to render it unnecessary for the person operating the spray to be in a position between a ventilating outfit and the article being sprayed.

SCIIEDULE XI

GRAPHITE POWDERING

1. Application

The provisions of this schedule shall apply to all factories or parts of factories in which the grinding and sieving of graphite and the processes incidental thereto are carried on.

2. Prohibition of employment of women, children and adolescents

No woman, child or adolescent shall be employed in any factory upon any of the operations specified in paragraph 1 above.

3. Medical certificates and examinations

(1) No person shall be employed in any factory for more than fifteen days in the year upon any of the operations specified in paragraph 1 above unless a special certificate of fitness in Form No. 27, granted to him by a Certifying Surgeon appointed under section 10, is in the custody of the manager of the factory.

(2) The Inspector of Factories may require that any person in respect of whom a certificate referred to in sub-paragraph (1) has been granted shall carry with him while at work a token giving reference to such certificate.

(3) Every person so employed shall be medically examined by a Certifying Surgeon at intervals of not more than six months and a record of such examination shall be entered in the special certificate granted under sub-paragraph (1).

(4) if at any time a Certifying Surgeon is of opinion that any person is no longer fit for employment upon any of the operations specified in paragraph 1 above he shall cancel the special certificate of fitness granted to that person.

(5) No person whose special certificate of fitness has been can-celled shall be employed upon any of the operations specified in paragraph 1 above unless a Certifying Surgeon again certifies him to be fit.

4. Exhaust draught

Provisions shall be made for removing the dust produced in any of the operations specified in paragraph 1 above by means of an efficient exhaust draught so contrived as to operate on the dust as closely to the point of origin as possible:

Provided that where the provision of an exhaust draught is not reasonably practicable the Inspector may require

(a) respirators of a type approved by him to be provided and maintained in a clean and efficient condition by the occupier and worn by every person working under such conditions ; and

(b) the damping of floors, apparatus and material to prevent the raising of dust.

5. Floor and work benches

(1) The floor of every room in which any person is employed upon any of the operations specified in paragraph 1 above shall be of cement or other impervious material.

(2) The top of every work-bench in every such room shall be of impervious material.

(3) The said floors and work-benches shall be kept dean and in good condition.

(4) The Inspector may, by order in writing, require the said floors and work-benches to be kept wet in such manner as he may deem suitable, in order to reduce dust.

6. Washing facilities

The occupier shall provide and maintain in a clean state and in good repair for the use of persons employed upon any of the operations specified in paragraph 1 above either (a) a trough with smooth impervious surface fitted with a waste-pipe without plug, and of sufficient length to allow at least 61 centimeters for every five such persons employed at any one time and having a constant supply of water, from taps or jets above the trough at intervals of not more than 61 centimeters, or (b) at least one lavatory basin for every five such persons employed at any one time, fitted with a waste pipe and plug having a constant supply of water, together with, in either case a sufficient supply of nail brushes, soap or other suitable cleaning material and clean towels.

7. Food, drink, and tobacco

No food, drink, pan and supari or tobacco shall be brought into, or consumed, in any room in which any person is employed upon any of the operations specified in paragraph 1 above.

8. Protective clothing

Adequate protective clothing such as over-alls in a clean condition shall be provided by the occupier to every person employed upon any of the operations specified in paragraph 1 above.

9. Exemptions

The Chief Inspector may exempt any factory or part of a factory from the provisions of paragraphs 4 to 7 to the extent he deems suitable, if he is satisfied that their observance is not necessary for safeguarding the health of the operatives:

SCHEDULE XII

PRINTING PRESS AND TYPE FOUNDRIES - CERTAIN LEAD PROCESS CARRIED ON THEREIN

1. Exemptions

Where the Chief Inspector is satisfied that all or any of the provisions of this schedule are not necessary for the protection of persons employed he may by certificate in writing exempt any factory from all or any of such provisions subject to such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector.

2. Definitions

In these regulations — 'Lead material' means material containing not less than 5 Percent of lead.

'Lead process' means

(a) the melting of lead or any lead material for casting and mechanical composing;

(b) the recharging of machines with used lead material ; or

(c) any other work including removal of dross from melting pots, cleaning of plungers ; and

(d) Manipulation, movement or other treatment of lead material.

'Efficient exhaust draught' means localized ventilation effected by heat or mechanical means for the removal of gas, vapour, dust or fumes so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove gas, vapour, fume or dust at the point where they originate.

3. Exhaust draught

None of the following process shall be carried on except with an efficient exhaust draugh :

(a) melting lead material or slugs ;

(b) heating lead material so that vapour containing lead is given off ; or

unless carried on in such a manner as to prevent free escape of gas, vapour, fumes or dust into any place in which work is carried an ; or

unless carried on in electrically heated and thermostatically control-led melting pots.

Such exhaust draught shall be effected by mechanical means and so contrived as to operate on the dust, fume, gas or vapour given off as closely as may be at its point of origin.

4. Prohibition relating to women and young persons

No woman or young person shall be employed or permitted to work in any lead process.

5. Separation of certain processes

Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another and from any other process:

(a) melting of lead or any lead material;

(b) casting of lead ingots ;

(c) mechanical composing.

6. Container for dross

A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the work-room near the machine except when the dross is being deposited therein.

7. Floor of workroom

The floor of every work- room where lead process is carried on shall be

(a) of cement or similar material so as to be smooth and impervious to water;

(b) maintained in sound condition ; and

(c) shall be cleansed throughout daily after being thoroughly damped with water at a time when no other work is being carried on at the place.

8. Mess room

There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable mess -room which shall be furnished with sufficient tables and benches.

9. Washing facilities

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in a lead process,

(a) a wash place with either

(i) a trough with smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 61 centimeters for every five such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters , or

(ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available ; and

(b) a sufficient supply of clean towels made of suitable material renewed daily with a sufficient supply of soap or other suitable cleaning material.

10. [208][Medical facilities and records of examination and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories which shall be kept readily available for inspection by the Inspector.

10-A. Medical Examination by Certifying Surgeon

(1) Every worker employed in a lead process shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, hemoglobin, stippling of cells and steadliness tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every six calendar months. Such re- examination shall, wherever the Certifying Surgeon considers appropriate, include tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (I) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said process unless the Certifying Surgeon, after further examination, again certifies him lit for employment in those processes.]

11. Food, drinks, etc., prohibited in work rooms

No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any work-room in which any lead process is carried on.

SCHEDULE XIII

CASHEW-NUT PROCESSING

1. Application

The provisions of this schedule shall apply to all factories in which roasting, scrubbing or shelling of cashew-nuts or extracting oil from cashew- nuts or cashew-nuts shells is carried on.

2. Prohibition of employment of women and young persons

No woman or young person shall be employed in any of the processes specified in paragraph 1 except in shelling of roasted cashew-nuts.

3. Protective clothing and equipment

The occupier shall provide and maintain --

(i) for the use of all persons employed in roasting or scrubbing of cashew-nuts or extracting oil from cashew-nuts or cashew- nuts shells

(a) suitable rubber or washable leather gloves,

(b) suitable impervious aprons with sleeves to cover the body down to the knees and shoulders, and

(c) suitable foot-wear to afford protection to the feet and legs against cashew-nut oil ;

(ii) for the workers employed in cashew- nut shelling, either,

(a) protective ointment containing 10 per cent. of shellac, 55 percent of alcohol, 10 per cent. of sodium perborate, 5 percent of carbitol and 20 percent of talc, or

(b) a sufficient quantity of kaolin and coconut oil ; and

(iii) any other material or equipment which the Chief Inspector of Factories may deem to be necessary for the protection of the workers.

4. Use of protective clothing and equipment

Every person employed in the processes specified in paragraph 1, shall make use of the protective clothing and equipment supplied and arrangement shall be made by the occupier to supervise their maintenance and cleanliness.

5. Disposal of shells, ashes or oil of cashew-nut

(i) Shells, ashes or oil of cashew-nut shall not be stored in any room in which workers are employed and shall be removed atleast twice a day to any pit or enclosed place in the case of shells and ashes and to closed containers kept in a separate room in the case of oil.

(ii) No worker shall be allowed to handle shells or oil of cashew-nut without using the protective measures provided in paragraph 3.

6. Floors of work-rooms

The floor of every work-room in which the processes specified in paragraph 1 are carried on shall be of a hard material so as to be smooth and impervious and of even surface and shall be cleaned daily ; and spillage of any cashew- nut oil in any work-room shall be washed with soap and cleaned immediately.

7. Seating accommodation

Workers engaged in shelling of cashew-nuts shall be provided with adequate seats of work benches which shall be cleaned daily.

8. Mess-room

(a) There shall be provided and maintained for the use of all persons employed in the processes specified in paragraph 1, a suitable rest room furnished with a sufficient number of tables and chairs or benches ;

(b) Separate lockers shall be provided where food, etc., shall be stored by workers before it is consumed in the rest room.

9. Food, drinks, etc., prohibited in work-rooms

No food, drink, pan, supari or tobacco shall be brought or consumed by any worker in any room in which the processes specified is paragraph 1 are carried out and no person shall remain in any such room during intervals for meals or rest.

10. Washing facilities

Where roasting, scrubbing and shelling of cashew- nuts or extracting oil from cashew-nuts or cashew-nuts shells is carried on, there shall be provided and maintained, in clean and good repair, washing facilities, at the scale of one tap or stand pipe for every ten workers the taps or stand pipes being spaced not less than 4 feet apart and also a sufficient supply of soap, coconut oil, nail brushes and towels.

11. Time allowed for washing

Before each meal and before the end of the day's work at least ten minutes, in addition to the regular meal times, shall be allowed to any person employed in the process specified in paragraph 1, for the purpose of washing.

12. Smoke or gas produced by roasting cashew-nuts

Where smoke or gas is produced in the operation of roasting, provision shall be made for removing the smoke or gas through a chimney of sufficient height and capacity or by such other arrangements as may be necessary to prevent the gas or smoke from escaping into the air or any place in which workers are employed.

13. Storage of protective equipment

A suitable room or a portion of the factory suitably partitioned off, shall be provided exclusively for the storage of all the protective equipment supplied to the workers and no such equipment shall be stored in any place other than the room or place so provided.

14. [209][Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the Medical Practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The said Medical Practitioner shall inspect daily the hands and feet of all the persons employed in the process specified in paragraph 1.

(3) The record of such examinations carried out by the Medical Practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

(4) The first-aid box maintained shall also contain Burrough's Solution (1:20) and aqueous solution of tannic acid (10%) for treatment of cases of dermatitis.

14A. Medical Examination by Certifying Surgeon

(1) Every worker employed in the processes specified in paragraph (1) shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examinations shall include skin test for dermatitis and no worker shall be allowed to work after 15 days of his rust employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every three calendar months. Such examinations shall, wherever the Certifying Surgeon considers appropriate, include asking test for dermatitis.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those

documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him lit for employment in those processes]

15. Exemption

The Chief Inspector of Factories may grant exemption from the operation of any of these provisions where he is satisfied that their observance is not necessary for safeguarding the health of workers.

SCHEDULE XIV

DYEING STENCILING AND PAINTING OF MATS, MATTINGS AND CARPETS IN COIR AND FIBRE FACTORIES

1. Application

These provisions shall apply to all coir factories in which stenciling or painting of mats or maittings or carpets is carried on, and to all coir and fibre factories in which dyeing of yarn (other than cotton yarn) and fibre is carried on.

2. Prohibition of employment of women and young persons

No woman or young person shall be employed or permitted to work in any of the operations specified in clause 1.

3. Protective measures

The occupier shall provide free of cost and maintain in a good condition for use of all persons engaged in the operations specified in clause 1

(a) suitable rubber gloves of durable quality for both hands;

(b) rubber boots of durable quality for both legs ;

(c) goggles ; and

(d) any other material or appliance which in the opinion of the Chief Inspector shall be necessary for the protection of workers.

4. Wearing of gloves, boots and goggles

All persons engaged in any of the operations specified in clause 1, shall while at work in those processes, make use of the materials and appliances provided under clause 3.

5. Food and drink

No food or drink shall be brought into or consumed in, in any room in which any of the operations specified in clause 1 is carried on.

6. Floor of work-rooms

The floor of every room in which any of the operations specified in clause 1 is carried on shall be

(a) of cement or similar material so as to be smooth and impervious to water;

(b) maintained in sound condition; and

(c) provided with suitable and adequate arrangement for drainage.

7. Washing facilities

(i) The occupier shall provide and maintain for the use of all persons employed in operations specified in clause 1, suitable washing facilities consisting of :

(a) a masonry or steel water tank capable of holding sufficient water and having taps at the rate of one tap for every ten persons employed at any one time, the floor around the tank and below the taps being cement plastered and maintained in sound and clean condition and suitable and adequate arrangements for drainage being provided around the tanks and the taps ;

(b) sufficient supply of nail brushes, non-irritable soap or other suitable cleansing materials and dean towels.

(ii) The facilities so provided shall be placed under the charge of a responsible person and shall be kept dean.

(iii) The following method shall be adopted in removing dye from the hands of employees and the occupier shall make readily available in the premises of the factory all the chemicals required for the purpose in the specified proportion:

(a) wash with sulphonated oil followed by water;

(b) wash in 1 to 2000 solution of potassium permanganate;

(c) wash in two per cent. solution of sodium hydrosulphite or in two percent solution of sodium bisulphite;

(d) wash in water; and

(e) application of lanolim cream.

Note : No person shall be allowed to use turpentine, petroleum, distillates, bleaching powder and other bleaches for removing dirt and dye from his hands.

8. Medical examination

(1) Every person employed in any of the operations specified in clause 1 shall be medically examined by a Certifying Surgeon within fourteen days of his first employment in such operations and thereafter shall be examined by the Certifying Surgeon at intervals of not more than twelve months and a record of such examinations shall be entered by the Certifying Surgeon in the Health Register in Form No. 17.

(2) A Health Register in Form No. 17 containing the names of all persons employed in the operations specified in clause 1 shall be kept.

(3) No person after suspension shall be employed unless the Certifying Surgeon after re-examination, again certifies him to be fit for employment.

Explanation: 'Suspension' means suspension from employment in any of the operations specified in clause 1 by written certificate in the Health Register signed by the Certifying Surgeon who shall have power to suspend any person employed in any such operation.

9. Dermatitis

(i) The occupier shall make arrangements to give suitable jobs to workers affected by chronic dermatitis;

(ii) The occupier shall notify to the Certifying Surgeon all cases of dermatitis.

10. Exemptions

The Chief Inspector may grant exemption from the operation of clauses 3, 4, 5, 6 and 7 to the extent he deems suitable where he is satisfied that their observance is not necessary for safeguarding the health of the operatives.

SCHEDULE XV

POTTERY

1. Definitions

For the purposes of this schedule

(a) 'pottery' includes earthenware, stoneware, porcelain, china tiles and any other articles made from clay or from a mixture containing clay, any other materials such as quartz, flint, feldspar and gypsum.

(b) 'efficient exhaust draught' means localized ventilation affected by mechanical or other means, for the removal of dust or fume so as to prevent it from escaping into the air or any place in which work is carried on. No draught shall be deemed efficient which fails to remove effectively dust or fume generated at the point where dust or fume originates;

(c) 'fettling' includes scalloping, towing, sand papering, sand sticking, brushing or any other process of cleaning of pottery-ware in which dust is given off;

(d) 'leadless glaze' mean a glaze which does not contain more than one percent of its dry weight of a lead compound calculated as lead monoxide ;

(e) 'low solubility glaze' means a glaze which does not yield to dilute hydrochloric add more than five per cent. of its dry weight of a soluble lead compound calculated as lead monoxide when determined in the manner described below: —

A weighed quantity of the material which has been dried at 100°C and thoroughly mixed shall be continuously shaken for one hour at the common temperature with

1,003 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent. by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;

(f) 'ground or powdered flint or quartz' does not include natural sands;

(g) 'potter's shop' includes all places where pottery is firmed by pressing or by any other process and all places where shaping, fettling or other treatment of pottery articles prior to placing for the biscuit rue is carried on.

2. Efficient exhaust draught

The following processes shall not be carried on without the use of an efficient exhaust draught:

(i) All processes involving the manipulation or use of a dry and unfitted lead compound;

(ii) The fettling operations of any kind, whether on green ware or biscuit, provided that this shall not apply to the wet fettling, and to the occasional finishing of pottery articles without the aid of mechanical power;

(iii) The sifting of clay dust or any other material for making tiles or other articles by pressure, except where

(a) this is done in a machine so enclosed as to effectively prevent the escape of dust; or

(b) the material to be sifted is so damp that no dust can be given off;

(iv) The pressing of tiles from clay dust, an exhaust opening being connected with each press ; this clause shall also apply to the pressing from clay dust of articles other than tiles, unless the material is so damp that no dust is given off;

(v)

(a) The fettling of tiles made from clay dust, by pressure. except where the fettling is done wholly on, or with, damp material;

(b) The fettling of other articles made from clay dust, unless the material is so damp that no dust is given off;

(vi) The process of loading and unloading of saggars, where handling and manipulation of ground and powdered flint, quart, alumina or other materials are involved;

(vii) The brushing of earthenware biscuit, unless the process is carried on in a room provided with efficient general mechanical ventilation or other ventilation which is certified by the Inspector of Factories as adequate, having regard to all the circumstances of the case;

(viii) Fettling of biscuit ware which has been fired in powdered flint or quartz except where this is done in machines so enclosed as to effectively prevent the escape of dust;

(ix) Ware cleaning after the application of glaze by dipping or other process ;

(x) Crushing and dry grinding of materials for pottery bodies and saggars, unless carried on in machines so enclosed as to effectively prevent the escape of dust or is so damp that no dust can be given off ;

(xi) Sieving or manipulation of powdered flint, quartz, day grog or mixture of these materials unless it is so damp that no dust can be given off ;

(xii) Grinding of tiles on a power- driven wheel unless an efficient water spray is used on the wheel ;

(xiii) Lifting and conveying of materials by elevators and conveyors unless they are effectively enclosed and so arranged as to prevent escape of dust into the air in or near any place in which persons are employed ;

(xiv) The preparation or weighing out of flow material, !awning of dry colors, colour dusting and colour blowing;

(xv) Mould making, unless the bins or similar receptacles are used for holding plaster of paris and provided with suitable covers ;

(xvi) The manipulation of calcined materials unless the material has been made and remain so wet that no dust is given off.

3. Certain processes to be carried on so as to secure effective separation from one another

Each of the following processes shall be carried on in such a manner and under such conditions so as to secure effectual separation from one another, and from wet processes:

(a) Crushing and by grinding or sieving of materials, fettling, pressing of tiles, drying day and green ware, loading and unloading of saggars ; and

(b) all processes involving the use of a dry lead compound.

4. Restriction on the use of glaze

No glaze which is not a leadless glaze or a low solubility glaze shall be used in a factory in which pottery is manufactured.

5. Prohibition of the employment of women and young persons

No woman or young person shall be employed or permitted to work in any of the operations specified in paragraph 2, or at any place where such operation is carried on.

6. Potter's wheel

The potter's wheel (Jolly and Jiggar) shall be provided with screens or so constructed as to prevent clay scrapings being thrown off beyond the wheel.

7. Prevention of dust

(1) All practical measures shall be taken by damping or otherwise to prevent dust arising during cleaning of floors.

(2) Damp saw dust or other suitable materials shall be used to render the moist method effective in preventing dust rising into the air during the cleaning process which shall be carried out after work has ceased.

8. Floors

The floors of potters' shops, slip houses, dipping houses and ware cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by a moist method by an adult male.

9. [210][Medical facilities and records of examinations and tests

(1) The occupier of every factory in which manufacture of pottery is carried on, shall --

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

10. Medical Examination by Certifying Surgeon

(1) Every worker employed in any process mentioned under paragraph 2, shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, hemoglobin content, stippling of cells and pulmonary function test and chest X-ray for workers engaged in processes mentioned in clauses (i) and (xiv) of paragraph land pulmonary function tests and chest X-rays for the others. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) All persons employed in any of the processes included under sub-paragraph 2 (i) and (xiv) shall be examined by a Certifying Surgeon once in every three calendar months. Those employed in any other processes mentioned in the remaining sub-paragraphs of paragraph 2 shall be examined by a Certifying Surgeon once in every twelve calendar months. Such examinations in respect of all the workers shall include all the tests as specified in sub-paragraph (1) except chest X-ray which will be once in three years

(3) The Certifying Surgeon, after examining a worker, shall issue certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be

entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory.

The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.]

11. Protective equipment

(1) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in any process specified in paragraph 2.

(2) The occupier shall provide and maintain suitable aprons of water-proof or similar material, which can be sponged daily for the use of the dippers, dippers' assistants, throwers, jolly workers, casters, mould makers and filter press and pug mill workers.

(3) Aprons provided in pursuance of sub- paragraph (2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All overalls and head coverings shall be washed, cleaned and mended atleast once a week and the occupier shall provide facilities for such washing, cleaning and mending.

(4) No person shall be allowed to work in emptying sacks of dusty materials, weighing out and mixing of dusty materials and charging of ball mills and blungers without wearing a suitable and efficient dust respirator.

12. Washing facilities

The occupier shall provide and maintain, in a cleanly state and in good repair for the use of all persons employed in any of the processes specified in paragraph 2 a wash place under cover with --

(a) either a trough with smooth impervious surface fitted with a waste pipe, without plug, and of sufficient length to allow atleast 60 centimeters for every five such

persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimeter ;

Or

atleast one tap or stand pipe for every five such persons employed at any one time, and having a constant supply of clean water, the tap or stand pipe being spaced not less than 1.22 meters apart ; and

(b) a sufficient supply of clean towels made of suitable materials changed daily, with sufficient supply of nail brushes and soap.

13. Time allowed for washing

Before each meal and before the end of the day's work at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person employed in any of the processes specified in paragraph 2.

14. Mess-room

(1) There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable and an adequate mess room providing accommodation at the rate of 0.93 square meters per head and furnished with the following, namely:

(i) a sufficient number of tables and chairs or benches with back rests ;

(ii) arrangements for washing utensils;

(iii) adequate means for warming food ; and

(iv) adequate quantity of drinking water.

(2) The room shall be adequately ventilated by the circulation of 'fresh air and placed under the charge of a responsible person and shall be kept clean.

15. Food drinks, etc., prohibited in work- rooms

No food, drink, pan and supari or tobacco shall be brought into, or consumed by any worker in any work-room in which any process specified in paragraph 2 is carried on and no person shall remain in any such room during intervals for meals or rest.

16. Cloak-room, etc

There shall be provided and maintained for the use of all persons employed in any process specified in paragraph 2

(a) a cloak-room for clothing put off during working hours and such accommodation shall be separate from any mess room ; and

(b) separate and suitable arrangements for the storage of protective equipment provided under paragraph 11.

17. Savings

Nothing contained in this Schedule shall apply to a factory in which any of the following articles, but no other ankles of pottery are made:

(a) unglazed or salt glazed bricks and tiles ; and

(b) Architectural terra-cotta made from plastic clay and either unglazed or glazed with leadless glaze only.

18. Exemption

If the Chief Inspector of Factories is satisfied in respect of any factory that the application of all or any of the provisions of this Schedule to that factory, is not necessary for the protection of the persons employed in such factory, he may, by order in writing, exempt such factory, from all or any of those provisions, subject to such conditions as he may specify therein. The Chief Inspector may at any time in his discretion revoke such order without assigning any reason.

[211][SCHEDULE XVI

CHEMICAL WORKS

PART 1

1. Application

This schedule shall apply to all manufacture and processes incidental thereto carried on in chemical works.

2. Definition

For the purpose of this Schedule

(a) "chemical works " means any factory or such parts of any factory as are listed in Appendix 'A' to this schedule;

(b) "efficient exhaust draught" means localized ventilation effected by mechanical or other means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air of any place in which work is carried on;

(c) "bleaching powder" means the bleaching powder commonly called chloride of lime ;

(d) "chlorate" means chlorate or perchlorate;

(e) "caustic" means hydroxide of potassium or sodium;

(f) "chrome process" means the manufacture of chromate or bi-chromate of potassium or sodium, or the manipulation, movement or other treatment of these substances;

(g) "nitro or amino process" means the manufacture of nitro or amino derivatives of phenol and of benzene or its homologues and the making of explosives with the use of any of these substances ;

(h) the term 'permit to work' system means the compliance with the procedures laid down under paragraph 20 of Part II ;

(i) "toxic substances" means all those substances which when they enter into the human body, through inhalation or ingestion or absorption through skin in sufficient quantities cause fatality or exert serious affliction of health or chronic harmful effects on the health of persons exposed to it due to its inherent chemical or biological effects in respect of substances whose TLV is specified in Rule 102-A, exceeding the concentration specified therein would make the substance toxic ;

(j) "emergency" means a situation or condition leading to a circumstance or set of circumstances in which there is danger to the life or health of persons or which could result in big fire or explosion or pollution to the work and outside environment, affecting the workers or neighborhood in a serious manner, demanding immediate action;

(k) "dangerous chemical reactions" means high speed reactions, rim-away reactions, delayed reactions, etc., and are characterized by evolution of large quantities of heat, intense release of toxic or flammable gases or vapors, sudden pressure build-up, etc;

(l) "manipulation" means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping, handling, using, etc. ;

(m) "approved personal protective equipment" means items of personal protective equipment conforming to the relevant ISI specifications or in the absence of it, personal protective equipment approved by the Chief Inspector of Factories;

(n) "appropriate personal protective equipment" means that when the protective equipment is used by the worker, he shall have no risk to his life or health or body ; and

(o) "confined space" means any space by reason of its construction as well as in relation to the nature of the work carried therein and where hazards to the persons entering into or working inside exist or are likely to develop during working.

PART II

GENERAL REQUIREMENTS

Applying to all the works in Appendix 'A'

1. House keeping

(1) Any spillage of materials shall be cleaned up before further processing.

(2) Floors, platforms, stairways, passages and gangways shall be kept free of any obstructions.

(3) There shall be provided easy means of access to all parts of the plant to facilitate cleaning.

2. Improper use of chemicals

No chemicals or solvents or empty containers containing chemicals or solvents shall be permitted to be used by workers for any purposes other than in the processes for which they are supplied.

3. Prohibition on the use of food, etc.

No food, drink, tobacco, pan or any edible item shall be stored or heated or consumed on or near any part of the plant or equipment.

4. Cautionary notices and instructions

(1) Cautionary notices in a language understood by the majority of workers shall be prominently displayed in all hazardous areas drawing the attention of all workers about the hazards to health, hazards involving fire and explosion and any other hazard such as consequences of testing of material or substances used in the process or using any contaminated container for drinking or eating, to which the workers' attention should be drawn for ensuring their safety and health.

(2) In addition to the above cautionary notice, arrangement shall be made to instruct and educate all the workers including illiterate workers about the hazards in the process including the specific hazards to which they may be exposed to, in the normal course of their work. Such instructions and education should also deal with the hazards involved in unauthorized and unsafe practices including the properties of substances used in the process under normal conditions as well as abnormal conditions and the precautions to be observed against each and every hazard. Further, an undertaking from the workers shall be obtained within one month of their employment and (or old workers employed, within one month of coming into operation of the rules, to the effect that they have read the contents of the cautionary notices and instructions, understood them and would abide by them. The training and instructions to all workers and all supervisory personnel shall include the significance of different types of symbols and colors used on the labels struck or painted on the various types of containers and pipelines.

5. Evaluation and provisions of safeguards before the commencement of process

(1) Before commencing any process or any experimental work, or any new manufacture covered under Appendix 'A', the occupier shall take all possible steps to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions including the dangerous chemical reactions. The properties of the raw materials used, the final products to be made, and any by-products derived during manufacture, shall be carefully studied and provisions shall be made for dealing with any hazards including effects on workers, which may occur during manufacture.

(2) Information in writing giving details of the process, its hazards and the steps taken or proposed to be taken from the design stage to disposal stage for ensuring the safety as in sub-paragraph (1) above should be sent to the Chief Inspector at the earliest but in no case less than 15 days before commencing manufacture, handling, or storage of any of items covered under Appendix 'A' whether on experimental basis, or as pilot plant or as trial production, or as large-scale manufacture.

(3) The design, construction, installation, operation, maintenance and disposal of the buildings, plant and facilities shall take into consideration effective safeguards against all the safety and health hazards so evaluated.

(4) The requirements under the sub-paragraphs (1) to (3) shall not ad in lieu of or in derogation to, any other provisions contained in any Act governing the work.

6. Authorised entry

Authorised persons only shall be permitted to enter any section of the factory or plant where any dangerous operations or processes are being carried on or where dangerous chemical reactions are taking place or where hazardous chemicals are stored.

7. Examination of instruments and safety devices

(1) All instruments and safety devices used in the process shall be tested before taking into use and after carrying out any repair to them and examined once in a month, by a competent person. Records of such tests and examinations shall be maintained in a register.

(2) All instruments and safety devices used in the process shall be operated daily or as often as it is necessary, to ensure its effective and efficient working at all times.

8. Electrical Installations

All electrical installations used in the process covered in Appendix 'A' shall be of an appropriate type to ensure safety against the hazard prevalent in that area such as suitability against dust, dampness, corrosion, flammability and explosion, etc., and shall conform to the relevant ISI specifications governing their construction and use for that area.

9. Handling and storage of chemicals

(1) The containers for handling and storage of chemicals shall be of adequate strength taking into consideration the hazardous nature of the contents. They shall also be provided with adequate labeling and colour coding arrangements to enable identification of the containers and their contents indicating the hazards and safe handling methods and shall conform to the respective ISI standards. The instructions given in the label shall be strictly adhered to. Damaged containers shall be handled only under supervision of a knowledgeable and responsible person and spillage shall be rendered innocuous in a safe manner using appropriate means.

(2) The arrangements for the storage of chemicals including charging of chemicals in reaction vessels and containers shall be such as to prevent any risk of fire or explosion or formation of toxic concentration of substances above the limits specified in Rule 102-A.

(3) Without prejudice to the generality of the requirements in sub-paragraph (2) above, the arrangements shall have suitable ventilation facilities and shall enable the maintenance of safe levels in vessels and containers. Such arrangements shall also

take into consideration, the type of flooring and the capacity of flooring and the compatibility requirements of substances with other chemicals stored nearby.

(4)

(a) Storage of chemicals and intermediate products, which are highly unstable or reactive or explosive shall be limited to the quantities required for two months use.

(b) Whenever the quantities laid down in the above clause (a) are to be exceeded, the permission of the Chief Inspector shall be obtained.

(c) Notwithstanding anything contained in clauses (a) and (b) above, the Chief Inspector of Factories may direct any factory carrying out processes covered in Appendix 'A' to further limit the storage of hazardous substances to quantities less than two months on considerations of safety.

(5) Standby arrangements equal to the biggest container shall always be available to transfer the toxic substances quickly into the standby storage facility if any defect develops in any of the containers resulting in the release of toxic substances.

(6) Any storage facility constructed using non-metallic material such as Fiber glass Reinforced Plastics (FRP), all glass vessels, etc., shall have adequate strength to withstand the stress, if any, exerted by the contents and shall be properly anchored. Working platforms, atom ladders, pipe lines, etc., used in such storage facility shall not have any support on the structure of the storage facility and shall be independently supported.

10. Facility for Isolation

The plant and equipment shall be so constructed and maintained as to enable quick isolation of plant or part of plant or equipment, with appropriate indication. One copy of the layout plan indicating the isolation facilities shall always be available with the security personnel, the maintenance and the Health and Safety personnel and these isolation facilities shall be checked for its effectiveness once in a month.

11. Personal protective equipment

(1) All workers exposed to the hazards in the processes covered by this schedule shall be provided with appropriate and approved type of personal protective equipment. Such equipment shall be m a clean, sterile and hygienic condition before issue.

(2) The occupier shall arrange to inform, educate and supervise all the workers in the use of personal protective equipment while carrying out the job.

(3) As regards any doubt regarding the appropriateness of any personal protective equipment, the decision of the Chief Inspector will be final.

12. Alarm systems

(1) Suitable alarm and effective alarm systems giving audible and visible indications, shall be installed at the control room as well as in all strategic locations where

process control arrangements are available so as to enable corrective action to be taken before the operational parameters exceed the predetermined safe levels or lead to conditions conducive for an outbreak of fire or explosion to occur. Such alarm systems shall be checked daily and tested every month at least once to ensure its performance efficiency at all times.

(2) The Chief Inspector of Factories may direct such systems to be installed in case of plants or processes where toxic materials are being used and spillage or leakage of which may cause widespread poisoning to or around the plant.

13. Control of escape of substances into the work atmosphere

(1) Effective arrangements such as enclosure, or by-pass or efficient exhaust draught, maintenance of negative pressure, etc., shall be provided in all plants, containers, vessels, sewers, drains, flues, ducts, culverts and buried pipes and equipments, to control the escape and spread of substances which are likely to give rise to fire or explosion or toxic hazards during normal working and in the event of accident or emergency.

(2) In the event of the failure of the arrangements for control resulting in the escape of substances in the work atmosphere immediate steps shall be taken to control the process in such a manner, that further escape is brought down to the safe level.

(3) The substances that would have escaped into the work atmosphere before taking immediate steps as required in sub-paragraph (2), shall be rendered innocuous by diluting with air or water or any other suitable agent or by suitably treating the substances.

14. Control of dangerous chemical reactions

Suitable provisions, such as automatic and or remote control arrangements, shall be made for controlling the effects of "dangerous chemical reactions". In the event of failure of control arrangements automatic flooding or blanketing or other effective arrangements shall come into operation.

15. Testing, examination and repair of plant and equipment

(1) All parts of plant, equipment and machinery used in the process which in the likely event of their failure may give rise to an emergent situation shall be tested by a competent person before commencing process and retested at an interval of two years or after carrying out repairs to it. The competent person shall identify the parts of the plant, equipment and machinery required to be tested as aforesaid and evolve a suitable testing procedures. In carrying out the test as mentioned above in respect of pressure vessels or reaction vessels the following precautions shall be observed, namely:

(a) before the test is carried out, each vessel shall be thoroughly cleaned and examined externally, and as far as practicable, internally also for surface

defects, corrosion and foreign matter. During the process of cleaning and removal of sludge, if any, all due precautions shall be taken against fire or explosion, if such sludge is of phyropheric nature or contains spontaneously combustible chemicals ;

(b) as soon as the test is completed, the vessel shall be thoroughly dried internally and shall be clearly stamped with the marks and figures indicating the person by whom testing has been done and the date of test ; and

(c) any vessel which fails to pass the test or which for any other reason is found to be unsafe for use shall be destroyed or rendered unusable under intimation to the Chief Inspector.

(2) All parts of plant, equipment, machinery which in the likely event of failure may give rise to an emergent situation shall be examined once in a month by the competent person.

(3) Records of testing and examination referred to in paragraphs (1) and (2) shall be maintained as long as that part of the plant, equipment and machinery are in use.

(4) All repair work including alteration, modification and addition to be carried out to the plant, equipment and machinery shall be done under the supervision of a responsible person who shall evolve a procedure to ensure safety and health of persons doing the work. When repairs or modification is done on pipelines and joints are required to be welded, but welding of joints shall be preferred. Wherever necessary, the responsible person shall regulate the aforesaid work through a 'permit to work system'.

16. Staging

(1) All staging that is erected for the purpose of maintenance work or repair work or for work connected with entry into confined spaces and used in the processes included in Appendix 'A shall be stable, rigid and constructed out of substantial material of adequate strength. Such staging shall conform to the respective Indian Standard Specifications.

(2) Staging shall not be erected over any closed or open vessel unless the vessel is so constructed and ventilated to prevent exposure of persons working on the stages.

(3) All the staging constructed for the purpose of this paragraph shall have appropriate access which are safe and shall be fitted with proper hand rails to a height of one meter and toe board.

17. Seating arrangements

The seating arrangements provided for the operating personnel working in processes covered in Appendix 'A' shall be located in a safe manner as to prevent the risk of exposure to toxic, flammable and explosive substances evolved in the work environment in the course of manufacture or repair or maintenance, either due to failure of plant and

equipment or due to the substances which are under pressure, escaping into the atmosphere.

18. Entry into or work in confined space

(1) The occupier of every factory to which the provision of this schedule apply, shall ensure the observance of the following precautions before permitting any person to enter or work inside the confined spaces:

(a) identify all confined spaces and the nature of hazards that are encountered in such spaces, normally or abnormally and arrange to develop the most appropriate safeguards for ensuring the safety and health of persons entering into or working inside, the confined spaces;

(b) regulate the entry or work inside the confined spaces through a 'permit to work system' which should include the safeguards so developed as required under sub-clause (a) above;

(c) before testing the confined space for entry into or work, the place shall be rendered safe by washing or cleaning with neutralizing agents or purging with steam or men gases and making adequate forced ventilation arrangements or such measure which will render the confined space safe;

(d) shall arrange to carry out such tests as are necessary for the purpose by a competent person and ensure that the confined space is safe for the persons to enter or work. Such testing shall be carried out as often as is necessary during the course of work to ensure its continued safety;

(e) shall arrange to educate and train the personnel who would be required to work in confined spaces about the hazards involved in the work. He shall also keep in readiness the appropriate and approved personal protective equipment including arrangements for rescue, resurrection and first aid, and shall arrange supervision of the work at all times by a responsible and knowledgeable person.

(2) The Manager shall maintain a log of all entry into or work in, confined spaces and such record shall contain the details of persons assigned for the work, the location of the work and such other details that would have a bearing on the safety and health of the persons assigned for this work. The log book so maintained shall be retained as long as the concerned workers are in service and produced to the inspector when demanded.

19. Maintenance work, etc

(1) All the work connected with the maintenance of plants and equipment including cleaning of empty containers which have held hazardous substances used in the processes covered in this Schedule, shall be carried out under 'permit to work system' employing trained personnel and under the supervision of responsible person, having knowledge of the hazards and precautions required to deal with them.

(2) Maintenance work shall be carried out in such a manner that there is no risk to persons in the vicinity or to persons who pass by. If necessary, the place of such work shall be cordoned off or the presence of unconnected persons effectively controlled.

20. Permit to work system

The permit to work system shall inter alia include the observance of the following precautions while carrying out any specified work to be subjected to the permit to work system

(a) all work subject to the permit to work system shall be carried out under the supervision of a knowledgeable and responsible person;

(b) all parts of plant or machinery or equipment on which permit to work system is carried out, shall remain isolated from other parts throughout the period of permit to work and the place of work including the parts of plant, machinery shall be rendered safe by cleaning, purging, washing, etc.;

(c) all work subject to the permit to work system shall have pre-determined work procedures which integrate safety with the work. Such procedures shall be reviewed whenever any change occurs in material or equipment so that continued safety is ensured ;

(d) persons who are assigned to carry out the permit to work system shall be physically fit in all respects taking into consideration the demands and nature of the work before entering into the confined space. Such person shall be adequately informed about the correct work procedure as well as the precautions to be observed while carrying out the permit to work system;

(e) adequate rescue arrangements wherever considered necessary and adequate first-aid, rescue and resurrection arrangements shall be available in good working condition near the place of work while carrying out the permit to work system, for use in emergency ;

(f) appropriate and approved personal protective equipment shall be use while carrying out the 'permit to work system';

(g) after completion of work subject to the 'permit to work system', the person responsible shall remove all the equipment and tools and restore to the original condition so as to prevent any danger while carrying out regular process.

21. Safety sampling personnel

The occupier shall ensure the safety of persons assigned for collecting samples by instructing them on the safe procedures. Such personnel shall be provided with proper and approved personal protective equipment, if required.

22. Ventilation

Adequate ventilation arrangements shall be provided and maintained at all times in the process area where dangerous or toxic or flammable or explosive substances could be

evolved. These arrangements shall ensure that concentrations, which are either harmful or could result in explosion, are not permitted to be built up in the work environment.

23. Procedures for meeting emergencies

(1) The occupier of every factory carrying out the works covered in Appendix 'A', shall arrange to identify all types of possible emergencies that could occur in the processes during the course of work or while carrying out maintenance work or repair work. The emergencies so identified shall be reviewed every year.

(2) The occupier shall formulate a detailed plan to meet all such identified emergencies including arrangements for summoning outside help for rescue and fire-fighting and arrangements for making available urgent medical facilities.

(3) The occupier shall send the list of emergencies and the details of procedures and plans formulated to meet the emergencies to the Chief Inspector of Factories.

(4) The occupier shall arrange to install distinctive and recognizable warning arrangements to caution all persons inside the plant as well as the neighboring community, if necessary, to enable evacuation of persons and to enable the observance of emergency procedures by the persons who are assigned emergency duties. All concerned must be well informed about the warning arrangement and their meaning. The arrangement must be checked for its effectiveness every month.

(5) Alternate power supply arrangements shall be made and inter-locked with the normal power supply. system so as to ensure constant supply of power to the facilities and equipment meant for compliance with requirements of paragraphs 10,11,12,13, 14,18,22 and this paragraph of Part II, Part III, Part IV and Part V of this Schedule.

(6) The occupier shall arrange to suspend the further process work in a place where emergency is established and shall forthwith evacuate all persons in the area except workers who have been assigned emergency duties.

(7) All the employees of the factory shall be trained about the action to be taken by them including evacuation procedures during emergencies.

(8) All emergency procedures must be rehearsed every three months and deficiencies, if any, in the achievement of the objectives shall suitably be corrected.

(9) The occupier shall arrange to have ten percent of the workers trained in the use of First-Aid Fire Fighting appliances and in the rendering of specific First-Aid measures taking into consideration the special hazards of the particular process.

(10) The occupier shall furnish immediately on request the specific chemical identity of the hazardous substances to the treating physician when the information is needed to administer proper emergency or first-aid treatment to exposed persons.

24. Danger due to effluents

(1) Adequate precautions shall be taken to prevent the mixing of effluents from different processes and operations which may cause dangerous or poisonous gases to be evolved

(2) Effluents which contain or give rise in the presence of other effluents to poisonous gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe

PART III

FIRE AND EXPLOSIONS RISKS

1. Source of ignition including lighting installation

(1) No internal combustion engine and no electric motor or other electrical equipment and fittings and fixtures capable of generating sparks or otherwise causing combustion or any other source of ignition or any naked light, shall be installed or permitted to be used in the process area where there could be fire and explosion hazards.

(2) All hot exhaust pipes shall be installed outside a building and other hot pipes or hot surface or surfaces likely to become hot shall be suitably protected

(3) The classification of work areas in terms of its hazard potential and the selection of electrical equipment or other equipment that could constitute a source of ignition shall be in accordance with the respective Indian Standard.

(4) Where flammable atmosphere may be prevalent or could occur, the soles of footwear worn by workers shall have no metal on them, and the wheels of trucks or conveyers shall be conductive type.

(5) All tools and appliances used for work in this area shall be of non-sparking type.

(6) Smoking in process areas where there are risks of fire and explosion shall be prohibited, and warning notices in the language understood by majority of workers shall be posted in the factory prohibiting smoking in the specified areas.

2. Static Electricity

(1) All machinery and plant, particularly pipe lines and belt drives, on which static charge is likely to accumulate, shall be effectively earthed. Receptacles for flammable liquids shall have metallic connections to the earthed supply tanks to prevent static sparking. Where necessary, humidity shall be regulated.

(2) Mobile Tanker-wagons shall be earthed during filling and discharge, precautions shall be taken to ensure that earthing is effective before suck filling or discharge takes place.

3. Lightning protection

Lightning protection arrangement shall be fitted where necessary, and shall be maintained.

4. Process heating

The method of providing heat for a process likely to result in fire and explosion shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping flammable gas, vapour, or dust coming into contact with the flame, or exhaust gases, or other sources likely to cause ignition. Wherever possible, the heating arrangement shall be automatically controlled at a pre-determined temperature below the danger temperature.

5. Leakage of flammable liquids

(1) Provision shall be made to confine by means of band walls, dykes, sumps, etc., possible leakages from storage vessels containing flammable liquids.

(2) Waste material in contact with flammable substances shall be disposed off suitably under the supervision of knowledgeable and responsible person.

(3) Adequate and suitable fire fighting appliances shall be in-stalled in the vicinity of such vessels.

6. Safety valves

Every still and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise above the atmospheric pressure, shall have attached to it a pressure guage and a proper safety valve or other equally efficient means to relieve the pressure. These appliances shall be maintained in good condition.

7. Installation of pipe lines, etc

All pipe lines carrying flammable or explosive substances shall be protected from mechanical damage and shall be examined by a responsible person once in a week to detect any deterioration or defects, or accumulation of flammable or explosive substances, and record kept of any defects found and repairs made.

8. Fire fighting system

(1) Every factory employing 500 or more persons and carrying out processes listed in Appendix 'A' shall provide

(a) Trained and responsible fire fighting squad so as to effectively handle the fire-fighting and life saving equipment in the event of fire or other emergency. Number of persons in this squad will necessarily depend upon the size of risk involved, but in no case shall be less than eight such trained persons to be available at any time. The squad shall consist of watch and ward personnel, fire pump man and departmental supervisors and operators trained in the operation of fire and emergency services.

(b) Squad leaders shall preferably be trained in a recognised Government institution and their usefulness enhanced by providing residence on the premises.

(c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.

(2) A muster roll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each leader as well as displayed in prominent places so as to be easily available for reference in case of emergency.

(3) The pump man shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all firefighting equipment in proper working order. Any defect coming to his notice shall be immediately brought to the notice of squad leader.

(4) As far as is practicable, the fire pump room and the main gate(s) of the factory be connected to all manufacturing or storing areas through telephone interlinked and placed in a convenient location near such areas.

PART IV

RISKS OF TOXIC SUBSTANCES

1. Leakage

(1) All plants shall be so designed and constructed as to prevent the escape of toxic substance. Where necessary, separate buildings, rooms, or protective structures shall be used for the dangerous stages of the process and the buildings shall be so designed as to localize any escape of toxic substances.

(2) Catch pits, band walls, dykes, or other suitable safeguards shall be provided to restrict the serious effects of such leakages. Catch pits shall be placed below joints in pipelines where there is danger involved to maintenance and other workers from such leakage.

2. Drainage

Adequate drainage shall be provided and shall lead to collection tanks specifically provided for this purpose wherein deleterious material shall be neutralized, treated or otherwise rendered safe before it is discharged into public drains or sewers.

3. Covering ofvessels

(1) Every fixed vessel or structure containing any toxic substance and not so covered as to eliminate all reasonable risk of accidental contact of any portion of the body of a worker, shall be so constructed as to avoid physical contact.

(2) Such vessel shall, unless its edge is atleast 90 centimeters above the adjoining ground or platform, be securely fenced to a height of atleast 90 centimeters above such adjoining ground or platform.

(3) Where such vessels adjoin and the space between them, clear of any surrounding brick or other work is either less than 45 centimeters in width or is 45 or more centimeters in width, but is not securely fenced on both sides to a height of atleast 90 centimeters, secure barriers shall be so placed as to prevent passage between them:

Provided that sub-paragraph (2) of this paragraph shall not apply to --

(a) saturators used in the manufacture of sulphate of ammonia ; and

(b) that part of the sides of brine evaporating pans which require raking, drawing or filling.

4. Continuous exhaust arrangement

(1) Any process evolving toxic vapour, gas, fume and substance shall have efficient continuous exhaust draught. Such arrangement shall be interlocked in the process control wherever possible.

(2) In the event of failure of continuous exhaust arrangement, means shall be provided to automatically stop the process.

5. Work bench

All the work benches used in process involving the manipulation of toxic substances, shall be waded properly and shall be made of smooth impervious surface which shall be washed daily after the completion of work.

6. Waste disposal

(1) There shall be provided a suitable receptacle made of non-absorbable material with a tightly fitting cover for depositing waste material soiled with toxic substances and the contents of such saturators shall be destroyed by burning or using other suitable receptacle methods under the supervision of a responsible person.

(2) During the course of manufacture, whenever any batch or intermediate products having toxicity is rejected on considerations of quality, sufficient precautions shall be taken to render them innocuous or otherwise treat them or inactivate them, before disposal

(3) The empty containers of toxic substances shall be cleaned thoroughly before disposal under the supervision of a responsible person.

PART V

SPECIAL PROVISIONS

1. Special precautions for Nitro or Amino Processes

(1) Unless the crystallized nitro or amino substances or any of its liquor is broken or agitated in a completely enclosed process so as not to give rise to dust or fume, such process shall be carried on under an efficient exhaust draught or by adopting any other suitable means in such a manner as to prevent the escape of dust or fume in the working atmosphere.

(2) No part of the plant or equipment or implements which was in contact with intro or amino compounds shall be repaired, or handled unless they have been emptied and thoroughly cleaned and decontaminated.

(3) Filling of containers with nitro or amino compounds shall be done only by using a suitable scoop to avoid physical contact and the drying of the containers in the stove shall be done in such a manner that the hot and contaminated air from the stove is not drawn into the work room.

(4) Processes involving the steaming into or around any vessel contain g nitro or amino compounds or its raw materials shall be carried out in such a manner that the steam or vapour is effectively prevented to be blown back into the working atmosphere.

(5) Suitable antidotes such as methylene blue injections shall always be available at designated places of work for use during emergency involving the poisoning with nitro or amino compounds.

2. Special precautions for chrome processes

(1) Grinding and sieving of raw materials in chorine processes shall be carried on In such a manner and under such condition as to secure effective separation from any other processes and under an efficient exhaust draught.

(2) There shall be washing facilities located very near to places where wet chrome processes such as leaching, acidification, sulphate settling, evaporation crystallization, centrifugation or packing arc carried out, to enable quick washing of affected parts of body with running water.

(3) Weekly inspection of hand and fat of all persons employed in chrome pawns shall be done by a qualified nurse and record of such inspections shall be maintained in a form approved by the Chief Inspector of Factories.

(4) There shall be always available at designated places of work, suitable ointment such as glycerine, Vaseline, etc., and water proof plaster in a separate box readily accessible to the workers so as to protect against perforation of nasal septum.

3. Special precautions for processes carried out in all glass vessels

(1) Processes and chemical reactions such as manufacture of vinyl chloride, benzyl chloride, etc., which are required to be carried out in all glass vessels shall have suitable means like substantial wire mesh covering to protect persons working nearby in the event of breakage of glass vessel.

(2) Any spillage or emission of vapour from all glass vessel due to breakage, shall be immediately inactivated or rendered innocuous by suitable means such as dilution

with water or suitable solvents so as to avoid the risk of fire or explosion or health hazards.

4. Special precautions for processes involving chlorate manufacture

(1) Crystallization, grinding or packing of chlorate shall not be done in a place used for any other purpose and such places shall have hard, smooth and impervious surface made of non-combustible material. The place shall be thoroughly cleaned daily.

(2) The personal protective equipment like overall, etc., provided for the chlorate workers shall not be taken from the place of work and they shall be thoroughly cleaned daily.

(3) Adequate quantity of water shall be available near the place of chlorate process for use during fire emergency.

(4) Wooden vessels shall not be used for the crystallization of chlorate or to contain crystallized ground chlorate.

5. Special precautions In the use of plant and equipment made from reinforced plastics

(1) All plant and equipments shall conform to appropriate Indian or any other National Standard.

(2) Care shall be taken during storage, transport, handling and installation of plant and equipments to avoid accidental damage.

(3) All plant and equipments shall be installed in such a way as to ensure that loads are distributed as intended in design or as per the recommendations of the manufacturers.

(4) All pipe work shall be supported so that total loads local to the branches on the vessel or tank do not exceed their design values.

(5) After erection, all plant and equipments shall be subjected to a pressure test followed by a thorough examination by a competent person. The test and examination shall be as per relevant standard. A certificate of test and examination by competent person shall be obtained and kept available at site.

(6) All plant and equipments shall be subjected to periodical test and examination and record maintained as per paragraph 15 in Part II of this schedule.

(7) Plant and equipments during their use shall not be subjected to over filling or overloading beyond rated capacity.

PART VI

MEDICAL REQUIREMENTS

1. Decontamination facilities

In all places where toxic substances are used in processes listed in Appendix 'A', the following provisions shall be made to meet an emergency:

(a) fully equipped first-aid box.

(b) readily accessible means of drenching with water persons, part of body of persons, and clothing of persons who have been contaminated with such toxic and corrosive substances, and such means shall be as shown in the table below:

Number of persons employed Number at any time	Number of drenching showers
Upton 50 persons	2
between 51 to 100	3
101 to 200	3+ 1 for every 50 persons thereafter
201 to 400	5+ 1 for every100 persons thereafter
401 and above	7+ 1 for every 200 persons thereafter

(c) a sufficient number of eye wash bottles filled with distilled water or suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

2. Occupational health centre

In all the factories carrying out processes covered in Appendix 'A' there shall be provided and maintained in good order an occupational health centre with facilities as per scale laid down hereunder

(1) For factories employing up to 50 workers

(a) the services of a qualified medical practitioner hereinafter known as Factory Medical Officer, available on retainer ship basis, in his notified clinic near to the factory for seeking medical help during emergency. He will also carry out the pre-employment and periodical medical examinations as stipulated in paragraph 4 of this part.

(b) A minimum of five persons trained in first-aid procedures, amongst whom atleast one shall always be available during the working period

(c) A fully equipped first-aid box.

(2) For factories employing 51 to 200 workers

(a) The occupational health centre shall have a room having a minimum floor area of 1.5 sq. m. with floors and walls made of smooth, hard and impervious surface and shall be adequately illuminated, ventilated and equipped.

(b) A part-time Factory Medical Officer will be in overall charge of the Centre who shall visit the factory minimum twice in a week and whose services shall be readily available during emergencies.

(c) There shall be one qualified and trained dresser-Cum-compounder on duty throughout the working period.

(d) A fully equipped first aid box.

(3) For factories employing above 200 workers

(a) There shall be one full-time factory Medical Officer for factories employing up to 500 workers and one more Medical Officer for every 1,000 workers or part thereof.

(b) The occupational health centre in this case shall have a minimum of 2 rooms each having a minimum floor area of 15 square meter with floors and walls made of smooth, hard and impervious surface and shall be adequately illuminated, ventilated and equipped.

(c) There shall be one trained nurse, one dresser-Cum-compounder and one sweeper-cum-ward boy throughout the working period.

(d) The occupational Health Centre in this case shall be suitably equipped to manage medical emergencies.

3. Ambulance Van

(1) In every factory carrying out processes covered in Appendix 'A', there shall be provided and maintained in good condition, a suitably constructed and fully equipped ambulance van as per Appendix 'C' manned by a fulltime driver-cum-mechanic and a helper, trained in first-aid for the purposes of transportation of serious cases of accidents or sickness unless arrangements for procuring such facility at short notice during emergencies have been made with the nearby hospital or other places. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will always be available near the occupational health centre.

(2) The relaxation to procure Ambulance Van from nearby places provided for in sub-paragraph (1) above will not be applicable to factories employing more than 500 workers.

4. Medical examination

(1) Workers employed in processes covered in Appendix 'A' shall be medically examined by a Factory Medical Officer in the following manner:

(a) Once before employment, to ascertain physical suitability of the person to do the particular job;

(b) Once in a period of 6 months, to ascertain the health status of the workers ; and

(c) The details of pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the register in Form No. 39 or in Form No. 17 as the case may be.

(2) Any finding of the Factory Medical Officer revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the Certifying Surgeon who shall in turn, examine the concerned workers and communicate his findings within 30 days. If the Certifying Surgeon is of the opinion that the person so examined is required to be suspended from the process for health protection he will direct the occupier accordingly, who shall not employ the said worker in the same process. However, the person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated:

Provided that the Certifying Surgeon on his own may examine any other worker whom he feels necessary to be examined for ascertaining the suitability of his employment in the process covered in Appendix 'A' or for ascertaining the health status of any other worker and his opinion shall be final.

(3) No person shall be newly appointed without the Certificate of Fitness granted by the Factory Medical Officer. If the Factory Medical Officer declares a person unfit for being appointed to work in the process covered in Appendix 'A', such person shall have a right of appeal to the Certifying Surgeon, whose opinion shall be final in this register.

(4) The worker suspended from the process owing to the circum-stances covered in sub-paragraph (2) shall be employed again in the same process only after obtaining the fitness certificate from the Certifying Surgeon and after making entries to that effect in the health register.

PART VII

ADDITIONAL WELFARE AMENITIES

1. Washing facilities

(1) There shall be provided and maintained in every factory for the use of all the workers taps for washing, at the rate of one tap for every 15 persons including liquid soap in a container with tilting arrangements and nail brushes or other suitable means for effective cleaning. Such facilities shall be conveniently accessible and shall be kept in a clean and hygienic condition.

(2) If washing facilities as required above are provided for women, such facilities shall be separate for them and adequate privacy at all times shall be ensured in such facilities.

2. Messroom facilities

(1) The occupier of all the factories carrying out processes covered in Appendix 'A' and employing 50 workers or more shall provide for all the workers working in a shift, mess room facilities which are well ventilated and provided with tables and sitting facilities along with the provision of cold and hygienic drinking water facilities.

(2) Such facilities shall include suitable arrangements for cleaning and washing and shall be maintained in a clean and hygienic condition.

3. Cloak room facilities

(1) The occupier of every factory carrying out any process covered in appendix 'A' shall provide for all the workers employed in the process, cloak room facilities with lockers. Each worker shall be provided with two lockers, one for work clothing and another separately for personal clothing and the lockers should be such as to enable the keeping of the clothing in a hanging position.

(2) The cloak room facilities so provided in pursuance of sub-paragraph (1) shall be located as far as possible near to the facilities provided for washing in pursuance of paragraph 1 (1). If it is not possible to locate the washing facilities, the cloak room facilities shall have adequate and suitable arrangements for cleaning and washing.

4. Special bathing facilities

(1) The occupier of any factory carrying out the process covered under Appendix 'B. shall provide special bathing facilities for all the workers employed and such facilities shall be provided at the rate of 1 for 25 workers and part thereof, and shall be maintained in a clean and hygienic condition.

(2) The occupier shall insist all the workers employed in the processes covered in Appendix 'B' to take bath after the completion of the day's or shift work using the bathing facilities so provided and shall also effectively prevent such of those workers taking bath in any place other than the bathing facilities.

(3) Notwithstanding anything contained in sub-paragraph (1) above, the Chief Inspector may require in writing the occupier of any factory carrying out any other process for which in his opinion bathing facilities are essential from the health point of view, to provide special bathing facilities.

PART VIII

1. Duties of workers

(1) Every worker employed in the processes covered in Appendix 'A' and Appendix ' B' shall not make safety device or appliance or any guarding or fencing arrangement, inoperative or defective and shall report the defective condition of the aforesaid arrangement as soon as he is aware of any such defect.

(2) Before commencing any work, all workers employed in processes covered in Appendix 'A' shall check their work place as well as the machinery, equipment or appliance used in the processes and report any malfunction or defect immediately to the supervisor or any responsible person of the management.

(3) All workers shall co operate in all respects with the management while carrying out any work or any emergency duty assigned to them in pursuance of this schedule and shall always use all the personal protective equipments issued to them in a careful manner.

(4) All workers employed in the processes covered in Appendix 'A' or Appendix 'B' shall not smoke in the process area or storage area. If special facilities are provided by the management, only such facilities should be used:

(5) All workers employed in the processes covered in Appendix 'A' shall not remain in unauthorized place or carry out unauthorized work or improvise any arrangements or adopt short cut method or misuse any of the facilities provided in pursuance of the Schedule, in such a manner as to cause risk to themselves as well as or to others employed.

(6) The workers shall not refuse undergoing medical examination as required under these rules.

PART IX

RESTRICTIONS ON THE EMPLOYMENT OF YOUNG PERSONS UNDER 18 YEARS OF AGE AND WOMEN

(1) The Chief Inspector of Factories may by an order in writing restrict or prohibit the employment of women and young persons under the age of 18, in any of the processes covered in Appendix 'A' of this schedule on considerations of health and safety of women and young persons.

(2) Such persons who are restricted or prohibited from working in the process due to the order issued in pursuance of sub-paragraph (1) above shall be provided with alternate work which is not detrimental to their health or safety.

PART X

EXEMPTIONS

1. Power of exemption

The State Government or, subject to the control of the State Government, the Chief Inspector may exempt from the compliance with any of the requirements of this Schedule partly or fully any factory carrying out processes covered in Appendix 'A' if it is clearly and satisfactorily established by the occupier that the compliance with any of the requirements is not necessary to ensure the safety and health of persons employed as suitable and effective alternate arrangements are available to the requirements covered in this schedule.

APPENDIX 'A'

Any works or that part of works in which

(a) the manufacture, manipulation or recovery of any of the following is carried on :

(i) Sodium, potassium, iron, aluminium, cobalt, nickel, copper, arsenic, antimony, chromium, zinc, selenium, magnesium, cadmium, beryllium and their orgainic and inorganic salts, alloys, oxides and hydroxides;

(ii) ammonia, ammonium hydroxide and salts of ammonium;

(iii) the organic or inorganic compounds of sulphurous, sulpude, nitric, nitrous, hydrochloric, hydrofluoric, hydroiodic, hydrosulphuric, hydrobromic, boric ;

(iv) cynagen compounds, cyanide compounds, cyanate compounds;

(v) Phosphorous and its compounds, other than organic phosphorous insecticides;

(vi) chlorine.

(b) Hydrogen sulphide is evolved by the decomposition of metallic sulphides, or hydrogen sulphide is used in the production of such sulphides;

(c) bleaching powder is manufactured or chlorine gas is produced in chloroalkali plants;

(d)

(i) gas tar or coal tar or bitumen or shale oil, asphalt or any residue of such tar is distilled or is used in any process of chemicals manufacture;

(ii) tar based synthetic colouring matters or their intermediates are produced;

(e) nitric add is used in the manufacture of nitro compounds;

(f) explosives are produced with the use of nitro compounds;

(g) aliphatic or aromatic compounds or their metallic and non-metallic derivatives or substituted derivatives, such as chloroform, ethylene, glycol, formaldehyde, benzyle, chloride, phenol, methyl othyl keytone peroxide, cobalt carbonyl, fungsten carbide etc, are manufactured or recovered.

APPENDIX 'B'

CONCERNING SPECIAL BATHING ACCOMMODATION IN PURSUANCE OF PARAGRAPH 4 OF PART IV

1. Nitro or amino processes.
2. All chrome processes.
3. Processes of distilling gas or coal tar or processes of chemical manufacture in which tar is used.
4. Processes involving manufacture, manipulation, handling or recovery of cyanogen compound, cyanide compound, cyanate compounds.
5. Processes involving manufacture of bleaching powder or production of chlorine gas in chlotoalkali plants.
6. Manufacture, manipulation or recovery of nickel and its compounds.

7. All processes involving the manufacture, manipulation or recovery of aliphatic or aromatic compounds or their derivatives o substituted derivatives.

APPENDIX 'C'

Ambulance

Ambulance should have the following equipments

General

A wheeled stretcher with folding and adjusting devices ; Head of the stretcher must be capable of being tilted upwards;

Fixed suction unit with equipments;

Fixed oxygen supply with equipments;

Pillow with case;

Sheets;

Blankets;

Towels;

Emesis bag;

Bed pan;

Urinal;

Glass.

Safety equipment

Flares with life of 30 minutes ;

Flood lights;

Flash lights;

Fire extinguisher dry powder type;

Insulated gauntlets

Emergency care equipments

Resuscitation

Portable suction unit;

Portable oxygen unit;

Bag valve-mask, hand operated artificial ventilation unit;

Airways;

Mouth gags;

Tracheostomy adaptors;

Short spine board;

I.V. Fluids with administration unit;

B.P. Manometer;

Cugg;

Stethoscope

Immobilization

Long and short padded boards ;

Wire ladder splints ;

Triangular bandage;

Long and short spine boards.

Dressings

Gauze pads — 4 inches x 4 inches;

Universal dressing 10 inches x 36 inches;

Roll of aluminum foils;

Soft roller bandages 6 inches x 5 yards;

Adhesive tape in 3 inches roll;

Safety pins;

Bandage sheets;

Burn sheet

Poisoning

Syrup of Ipecac and Activated charcoal Pre-packeted in doses

Snake bite kit ;

Drinking water.

Emergency medicines

As per requirement (under the advice of Medical Officer only).

SCHEDULE XVII

MANUFACTURE OF DICHROMATES

(1) Application

The provisions of this schedule shall apply to all factories or parts of factories in which the manufacture of dichromates is carried on.

(2) Prohibition of the employment of women and young persons

No women or young person shall be employed or permitted to work in any factory on the operation specified in paragraph 1.

(3) Provision of protective clothing

The occupier shall provide and maintain in good condition, loose-fitting rubber gloves of suitable length for the use of all persons coming into contact with chrome solution suitable protective clothing, and also for persons handling the crystals or Immersing their hands in chrome solutions or handling textile materials saturated with chrome solution.

(4) First aid boxes or cupboards

The occupier shall provide in readily accessible positions a sufficient number of special "First-Aid" boxes or cupboards.

Each box or cupboard shall be distinctly marked, and shall contain, besides any other medical appliances or requisites, a supply of:

(i) Collodion and Brushes.

(ii) Impermeable Waterproof Plaster

(iii) Ointment, Lint, Bandages and Scissors.

(iv) A 2 percent alcoholic solution of Iodine.

Nothing except appliance or requisites for First-Aid shall be kept in a "First-Aid" box or cupboard.

Each "First-Aid" box or cupboard shall be placed under the charge of a person who possesses the certificate granted by the St. John Ambulance Association, for rendering first-aid and such person shall be readily available during working hours of the factory.

A notice or notices shall be affixed in every workroom stating the name of the person in charge of a box or cupboard provided in respect of that room.

(5) Cautionary notice and inspection of workmen

The occupier shall see that the Official Cautionary Notice as to the effects of chrome on the skin is kept posted up in the works and shall arrange for an inspection of the fingers and toes of all persons coming into contact With chrome solutions to be made at the works twice a week by the person in charge of the "First-Aid" box or cupboard.

If any person whose work brings him into contact with chrome solution or crystals shows a tendency to develop, or is known to be susceptible to chrome eczema he shall, if practicable, be transferred to other work not exposing him to such contact.

(6) Accommodation for clothing

The occupier shall provide and maintain for the use of all the persons employed suitable accommodation of clothing, put off during working hours, with adequate arrangements for drying the clothing, if wet.

The accommodation so provided shall be placed in the charge of an official not lower in rank than a member of the supervisory staff and shall always be kept dean.

(7) Provision and maintenance of mess-rooms

The occupier shall provide and maintain for the use of all the persons employed and remaining on the premises during the meal intervals a suitable mess-room, which shall be furnished as follows:

(a) sufficient tables and chairs or benches with back-rests;

(b) adequate means of warming food and boiling water;

(c) suitable facilities for washing, comprising a sufficient supply of clean towels, soap and warm water.

(8) Processes relating to noxious dust, fume, etc.

Processes that give rise to noxious dust, fume, vapour or mist shall be isolated from others and shall either be totally enclosed or provided with hoods and suitable exhaust ventilation.

(9) Operations which set free vapors containing particles of chromium

The operations which set free vapors containing particles of chromium are -

(i) fusing of raw materials ;

(ii) dyeing the melted mass before cooling ; and

(iii) concentration and evaporation methods to obtain crystals of bichromates;

The operations referred to in the first paragraph shall be carried out by

(a) using a closed apparatus furnished with efficient exhaust, and

(b) using an automatic system to eliminate manual handling.

(10) Collection of roast batch

A separate space shall be set apart to collect the "roast batch" when it is drawn out from the furnace.

If the cooled "roast batch" has to be transported, it shall be done in covered receptacles.

(11) Processes relating to solution at temperature higher than 50°C

The following processes, where solutions at temperature higher than 50°C arc carried out shall be provided with exhaust ventilating cowls to carry away the vapors:

(i) Vats for lixiviation

(ii) Evaporating tanks.

(iii) Acidifying vats.

(12) Receptacles containing corrosive liquids

Receptacles containing corrosive liquids shall be effectively dosed to prevent spillage of solutions.

(13) Circulation of salines

The circulation of salines shall be carried out in a water-tight system of pipes.

(14) Dusty operations

The following dusty operations shall be carried out under exhaust ventilation or in separate rooms with adequate ventilation:

(i) Grinding of raw materials;

(ii) emptying of containers;

(iii) furnace cleaning and withdrawal of roast ;

(iv) sifting of ingredients;

(v) mixing of ingredients ;

(vi) drying of crystals ; and

(vii) packing of products.

(15) Provision of respiratory protection

All workmen shall be provided with efficient respiratory protection.

(16) Maintenance and supervision of protective equipment

Proper maintenance and supervision of all protective clothing equipment shall be provided.

(17) Collection of waste materials

All waste materials shall be collected in tanks or store-houses and protected from rain so that the soil may not be contaminated.

(18) Cautionary notices

Cautionary notices as to the dangers associated with "Chromates" shall be conspicuously displayed in the factory where they may be easily and conveniently read by the workers.

(19) Examination of workmen

The worker shall be examined daily to see that they do not have any lesions of the skin.

(20) Examination of workmen by the Certifying Surgeon

Every workman shall be examined once in a month by the Certifying Surgeon and the result entered in the Health Register in Form No. 17.

(21) Supply of protective ointment or cream

Protective ointment or cream for application on limbs and in the nose shall be supplied to all workers.

(22) Provision of washable working clothes and washing facilities

All workmen shall be provided with washable working clothes; kept in good order.

Adequate provision of washing facilities shall also be provided.

(23) Maintenance of tools

All tools issued to the maintenance staff shall be washed daily and kept clean. No fee or charge shall be realized from any worker for this purpose.

(24) Provision of protective footwear

All workers on furnaces shall be provided with protective footwear such as wooden sandals.

SCHEDULE XVIII

COMPRESSION OF OXYGEN AND HYDROGEN PRODUCED BY THE ELECTROLYSIS OF WATER

1. The room in which electrolyser plant is installed shall be separate from the plant for storing and compressing the oxygen and hydrogen and also the electric generator room.

2. [212][The purity of oxygen and hydrogen shall be tested by a competent person at least once in every shift at the following points

   (i) in the electrolysis room;

   (ii) at the gas-holder inlet; and

   (iii) at the suction end of the compressor.

   The purity figures shall be entered in the register and signed by the persons carrying out such tests:

   Provided, however, that if the electrolyser plant is fitted with automatic recorded to purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of the gases is tested at the suction end of the compressor only.]

3. The oxygen and hydrogen gases shall not be compressed if their purity as determined under clause 2 above falls below 98 percent at any time.

3-A. The bell of any gas-holder shall not be permitted to go within 30 cms of its lowest position when empty and a limit switch shall be fitted to the gas-holder in such a manner as to switch off the compressor motor when this limit is reached.

4. [213][In addition to the limit switch in the gas-holder, a sensitive negative pressure switch shall be provided in, or adjacent to the suction main for hydrogen, close to the gas-holder and between the gas-holder and the hydrogen compressor to switch off the compressor motor in the event of the gas-holder being emptied to the extent as to cause vacuum.]

5. [214][Omitted.]

6. The water and caustic soda and caustic potash used for making electrolytes shall be of standards suitable for electrolysis.

7. Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude the possibility of wrong connections leading to the

reversal of polarity and in addition an automatic device shall be provided to cut off power in the event of reversal of polarity owing to wrong connections either at the switch board or at the electric generator terminals.

8. Oxygen and hydrogen gas pipes shall be painted with distinguishing colors. Whenever an hydrogen pipe is opened for repairs or any other work, on re-connection the pipe shall be purged of &I air before hydrogen is allowed to pass through that pipe :

   Provided that after repairs, hydrogen pipes shall preferably be purged by an inert gas like nitrogen, whenever possible, before introducing hydrogen for final purging.

9. All electrical wiring and apparatus in the electrolyser tooth and hydrogen compression room shall be of flame-proof construction or enclosed in flame-proof fittings and no naked light or flame shall be allowed to be taken either in the electrolyser room or where compression and filling of the gases is carried on and such warning notices shall be exhibited in prominent places.

10. No part of the electrolyser plant and the gas-holders and compressor shall be subjected to welding, bracing, soldering or cutting until steps have been taken to remove any explosive substance from that part and render the part safe for such operations and after the completion of such operation no explosive substance shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.

11. No work of operation, repair or maintenance shall be undertaken except under the direct supervision of a person who by his training, experience and knowledge of the necessary precautions against risk of explosion is competent to supervise such work. No electric generator after erection or repairs shall be switched on to the electrolysers unless the same is certified by the competent persons under whose direct supervision erection or repairs arc carried on to be in a safe condition and the terminals have been checked for The polarity as required by clause 7.

12. Every part of the electrolyser plant and the gas-holders and compressor shall have a regular schedule of overhaul and checking and every defect noticed shall be rectified forthwith.

[215][SCHEDULE XIX

MANIPULATION OF STONE OR ANY OTHER MATERIAL CONTAINING FREE SILICA

1. Application

This Schedule shall apply to all factories or parts of factories in which manipulation of stone or any other material containing free silica is carried on.

2. Definitions

For the purpose of this Schedule

(a) "manipulation" means crushing, breaking, chipping, dressing, winding, sieving, mixing, grading or handling of stone or any other material containing free silica or any other operation involving such stone or material ;

(b) "Stone or any other material containing free silica" means a stone or any other solid material containing not less than five percent by weight of free silica

3. Precautions In manipulations

No manipulation shall be carried out in a factory or part of a factory unless one or more of the following measures, namely :-

(a) damping the stone or other material being processed,

(b) providing water spray,

(c) enclosing the process,

(d) isolating the process, and

(e) providing localized exhaust ventilation,

are adopted so as to effectively control the dust in any place in the factory where any person is employed, at a level equal to, or below the maximum permissible level for silica dust as laid down in Table 2 appended to Rule 102-A :

Provided that such measures as above said are not necessary if the process or operation itself is such that the level of dust created and prevailing does not exceed the permissible level referred to.

4. Maintenance of floors

(1) All floors or places where fine dust is likely to settle on and whereon any person has to work or pass shall be of impervious material and maintained in such condition that they can be thoroughly cleaned by a moist method or any other method which would prevent dust being airborne in the process of cleaning.

(2) The surface of every floor of every work-room or place where any work is carried on or where any person has to pass during the course of its work, shall be cleaned of dust once at least during each shift after being sprayed with water or by any other suitable method so as to prevent dust being airborne in the process of cleaning.

5. Prohibition relating young persons

No young person shall be employed or permitted to work in any of the operations, involving manipulation or at any place where such operations are carried on.

6. Medical facilities and records of examination and tests

(1) The occupier of every factory to which the schedule applies shall

(a) employ a qualified medical officer for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical officer all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate tests carried out by the said Medical Officer shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

7. Medical examination by Certifying Surgeon

(1) Every worker employed in the processes specified in paragraph 1, shall be examined by a Certifying Surgeon within fifteen days of his first employment. Such medical examination shall include pulmonary function tests and chest X-ray. No worker shall be allowed to work after fifteen days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said process shall be re-examined by a Certifying Surgeon at least once in every twelve months. Such examination shall, wherever the Certifying Surgeon considers appropriate, include all the tests as specified in sub-paragraph (1) except chest X-ray which will be once in three years.

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form No. 27. The record of re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Manager of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests shall also be entered by the Certifying Surgeon in a Health Register in Form No. 17.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for, employment in those processes.

8. Exemptions

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this Schedule is not necessary for protection of the workers in the factory, the Chief Inspector may issue a certificate in writing, which he may in his discretion revoke

at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.]

[216][SCHEDULE XX

HANDLING AND PROCESSING OF ASBESTOS, MANUFACTURE OF ANY ARTICLE OF ASBESTOS AND ANY OTHER PROCESS OF MANUFACTURE OR OTHERWISE IN WHICH ASBESTOS IS USED IN ANY FORM

1. Application

This Schedule shall apply to all factories or parts of factories in which any of the following processes is carried on

(a) breaking, crushing, disintegrating opening, grinding, mixing or sieving of asbestos and any other processes involving handling and manipulating of asbestos incidental thereto

(b) all processes in the manufacture of asbestos textiles including preparatory and finishing processes ;

(c) making of insulation slabs or sections, composed wholly or partly of asbestos and processes incidental thereto ;

(d) making or repairing of insulating mattresses, composed wholly or partly of asbestos and processes incidental thereto ;

(e) manufacture of asbestos card-board and paper ;

(f) manufacture of asbestos cement goods ;

(g) application of asbestos by spray method ;

(h) sawing, grinding, turning, abrading and polishing in dry state of articles composed wholly or partly of asbestos ;

(i) cleaning of any room, vessel, chamber, fixture or appliance for the collection of asbestos dust ; and

(j) any other processes in which asbestos dust is given off into the work environment.

2. Definitions

For the purpose of this schedule

(a) "Asbestos" means any fibrous silicate mineral and any admixture containing actionlite, amosite, anthophyllite, dhrysotile, crocidolite, tremolite or any mixture thereof, whether crude, crushed or opened ;

(b) "asbestos textiles" means yarn or cloth composed of asbestos or asbestos mixed with any other materials;

(c) "approved" means approved for the time being in writing by the Chief Inspector;

(d) "breathing apparatus" means a helmet or face piece with necessary connection by means of which a person using it breathes air free from dust, or any other approved apparatus;

(e) "efficient exhaust draught" means localized ventilation by mechanical means for the removal of dust so as to prevent dust from escaping into air of any place in which work is carried on. No draught shall be deemed to be efficient which fails to control dust produced at the point where such dust originates ;

(f) "preparing" means crushing, disintegrating, and any other processes in or incidental to the opening of asbestos ;

(g) "protective clothing" means overalls and head covering which (in either case) will, when worn, exclude asbestos dust.

3. Tools and equipment

Any tools or equipment used in processes to which this schedule applies shall be such that they do not create asbestos dust above the permissible limit or are equipped with efficient exhaust draught.

4. Exhaust draught

(1) An efficient exhaust draught shall be provided and maintained to control dust from the following processes and machines

(a) manufacture and conveying machinery, namely :

(i) preparing, grinding or dry mixing machines ;

(ii) carding, card waste and ring spinning machines and looms ;

(iii) machines or other plant fed with asbestos ; and

(iv) machines used for the sawing, grinding, turning, drilling, abrading, or polishing ; in the dry state of articles composed wholly or partly of asbestos ;

(b) cleaning and grinding of the cylinders or other parts of a carding machine;

(c) chambers, hoppers or other structures into which loose asbestos is delivered or passes ;

(d) work-benches for asbestos waste sorting or for other manipulation of asbestos by hand ;

(e) work places at which the filling or emptying of sacks, skips or other portable containers, weighing or other process incidental thereto which is effected by hand, is carried on ;

(f) sack cleaning machines;

(g) mixing and blending of asbestos by hand ; and

(h) any other process in which dust is given off into the work environment.

(2) Exhaust ventilation equipment provided in accordance with sub-paragraph (1) shall, while any work of maintenance or repair to the machinery apparatus or other plant or equipment in connection with which it is provided is being carried on, be kept in use so as to produce an exhaust draught which prevents the entry of asbestos dust into the air of any workplace.

(3) Arrangements shall be made to prevent asbestos dust discharged from exhaust apparatus being drawn into the air of any workroom.

(4) The asbestos bearing dust removed from any workroom by the exhaust system shall be collected in suitable receptacles or filter bags which shall be isolated from all work areas.

5. Testing and examination of ventilating system

(1) All ventilating systems used for the purpose of extracting or suppressing dust as required by this schedule shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations or test shall be rectified forthwith.

(2) A register containing particulars of such examinations and tests and the state of the plant and the repairs or alterations (if any) found to be necessary shall be available for inspection by an Inspector.

6. Segregation in case of certain process

Mixing of blending by the hand of asbestos, or making or repairing of insulating mattresses composed wholly or partly of asbestos shall not be carried on in any room in which any other work is done.

7. Storage and distribution of loose asbestos

All loose asbestos shall while not in use, be kept in suitable closed receptacles which prevent the escape of asbestos dust there from such asbestos shall not be distributed within a factory except in such receptacles or in a totally enclosed system of conveyance.

8. Asbestos sacks

(1) All sacks used as receptacles for the purpose of transport of asbestos within the factory shall be constructed of impermeable materials and shall be kept in good repair.

(2) A sack which has contained asbestos shall not be cleaned by hand beating but by a machine, complying with paragraph 3.

9. Maintenance of floors and workplaces

(1) In every room in which any of the requirements of this schedule apply

(a) the floors, work-benches, machinery and plant shall be kept in a clean state and free from asbestos debris and suitable arrangements shall be made for the storage of asbestos not immediately required for use ; and

(b) the floors shall be kept free from any materials, plant or other articles not immediately required for the work carried on in the room, which would obstruct the proper cleaning of the floor.

(2) The cleaning as mentioned in sub-rule (1) shall, so far as is practicable, be carried out by means of vacuum cleaning equipment so designed and constructed and so used that asbestos dust neither escapes nor is discharged into the air of any workplace.

(3) When the cleaning is done by any method other than that mentioned in sub-paragraph (2), the persons doing cleaning work and any other person employed in that room shall be provided with respiratory protective equipment and protective clothing.

(4) The vacuum cleaning equipment used in accordance with provisions of sub-paragraph (2) shall be properly maintained and after each cleaning operation, its surface kept in a clean state and free from asbestos waste and dust.

(5) Asbestos waste shall not be permitted to remain on the floors or other surface at the work place at the end of the working shift and shall be transferred without delay to suitable receptacles. Any spillage of asbestos waste occurring during the course of the work at any time shall be removed and transferred to the receptacles maintained for the purpose without delay.

10. Breathing apparatus and protective clothing

(1) An approved breathing apparatus and protective clothing shall be provided and maintained in good condition for use of every person employed

(a) in chambers containing loose asbestos;

(b) in cleaning, dust settling or filtering chambers of apparatus;

(c) in cleaning the cylinders, including the doffer cylinders, or other parts of a carding machine by means of hand-stickler ; and

(d) in filling, beating or leveling in the manufacture or repair of insulating mattresses ; and

(e) in any other operation or circumstances in which it is impracticable to adopt technical means to control asbestos dust in the work environment within the permissible limit.

(2) Suitable accommodation in conveniently accessible position shall be provided for the use of persons when putting on or taking off breathing apparatus and protective clothing provided in accordance with this rule and for the storage of such apparatus and clothing when not in use.

(3) All breathing apparatus and protective clothing when not in use shall be stored in the accommodation provided in accordance with sub-rule (2) above.

(4) All protective clothing in use shall be de- dusted under an efficient exhaust draught or by vacuum cleaning and shall be washed at suitable intervals. The cleaning schedule and procedure should be such as to ensure efficiency in protecting the wearer.

(5) All breathing apparatus shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by a responsible person.

(6) A record of the cleaning and maintenance and of the condition of the breathing apparatus shall be maintained in a register provided for that purpose which shall be readily available for inspection by an Inspector.

(7) No person shall be employed to perform any work specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under the sub-paragraph unless he has been fully instructed in the proper use of that equipment.

(8) No breathing apparatus provided in pursuance of sub-paragraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

11. Separate accommodation for personal clothing

A separate accommodation shall be provided in a conveniently accessible position for all persons employed in operations to which this schedule applied for storing of personal clothing. This should be separated from the accommodation provided under sub-paragraph (2) to prevent contamination of personal clothing.

12. Washing and bathing facilities

(1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the processes covered by the schedule, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 15 persons employed.

(2) The washing places shall have stand pipes placed at intervals of not less than one meter.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of dean towels made of suitable material shall be provided :

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushes shall be provided.

13. Messroom

(1) There shall be provided and maintained for the use of all workers employed in the factory covered by this schedule, remaining on the premises during the rest intervals, a suitable messroom which shall be furnished with

(a) sufficient tables and benches with back rest ; and

(b) adequate means for warming food.

(2) The messroom shall be placed under the charge of a responsible person and shall be kept clean.

14. Prohibition of employment of young persons

No young person shall be employed in any of the process covered by this schedule.

15. Prohibition relating to smoking

No person shall smoke in any area where processes covered by this schedule are carried on. A notice in the language understood by majority of the workers shall be posted in the plant prohibiting smoking at such areas.

16. Cautionary notices

(1) Cautionary notices shall be displayed at the approaches and along the perimeter of every asbestos processing area to warn all persons regarding:

(a) hazards to health from asbestos dust,

(b) need to use appropriate protective equipment,

(c) prohibition of entry to unauthorized persons or authorised persons but without protective equipment.

(2) Such notices shall be in the language understood by the majority of the workers.

17. Air monitoring

To ensure the effectiveness of the control measures, monitoring of asbestos fiber in air shall be carried out once at least in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purpose. [217][All Factories should adopt membrane filter test without fail.

Explanation: "Membrane Filter Test" is defined as the method of determination of airborne asbestos fiber concentration in work environment by light microscopy (Membrane Filter Method).

18. [218][Medical facilities and records of medical examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories;

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief

Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

19. Medical Examination by Certifying Surgeon

(1) Every worker employed in the processes specified in paragraph (I) shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function tests, for detecting asbestos body in sputum and chest X-ray. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months. Such examinations shall, wherever the Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (I) except chest X-ray which will be carried out once in three years.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in [219][Form 27]. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.[220][The said register containing the health record of every worker shall be maintained by the occupier of the factory for a minimum period of forty years from the date of beginning of the employment or fifteen years after retirement or cessation of employment, whichever is later]

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.)

20. Exemptions

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief Inspector may by a certificate in wilting, which he may at his discretion revoke at anytime, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein]

SCHEDULE XXI

HANDLING AND MANIPULATION OF CORROSIVE SUBSTANCES

1. Definitions

For the purpose of this Schedule

(a) "Corrosive operation" means any manufacturing process, storing, handling, processing, packing or using any corrosive substance in a factory.

(b) "Corrosive substance" includes sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric acid, carbolic acid, phosphoric acid, liquid chlorine, liquid bromine, ammonia, sodium hydroxide and potassium hydroxide and a mixture thereof, and any other substance which the State Government by notification in the Official Gazette specify to be corrosive substance.

2. Flooring

The floor of every workroom of a factory in which corrosive operation is carried on shall be made of impervious, corrosion and fire resistance material and shall be so constructed as to prevent collection of any corrosive substance. The surface of such flooring shall be smooth and cleaned as often as necessary and maintained in a sound condition.

3. Protective equipment

(a) The occupier shall provide for the use of all persons employed in any corrosive operation suitable protective wear for hands and feet, suitable aprons, face shields, chemical safety goggles and respirators. The equipments shall be maintained in good order and shall be kept in clean and hygienic condition by suitably treating to get rid of the ill-effects of any absorbed chemicals and by disinfecting. The occupier shall also provide suitable protective creams and other preparations wherever necessary.

(b) The protective equipment and preparations provided shall be used by the persons employed in any corrosive operations.

4. Water facilities

Where any corrosive operation is carried on, there shall be provided as close to the place of such operation as possible, a source of clean water at a height of 210 cm. (7 feet) from a pipe 1.25 cm. (1/2 inch) diameter and fitted with a quick acting valve so that in case of injury to the worker by any corrosive substance the injured part can be thoroughly flooded with water. Whenever necessary, in order to ensure continuous watts supply, a

storage tank having minimum length, breadth and height of 210 cm, 120 cm., and 60 cm. respectively or such dimensions as are approved by the Chief Inspector shall be provided as the source of clean water.

5. Cautionary notice

A cautionary notice in the following form and printed in the language which is understood by majority of the workers employed, shall be displayed prominently and close to the place where any corrosive operation is carried out and where it can be easily and conveniently read by the worker. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

CAUTIONARY NOTICE

Corrosive substances cause severe burns and the vapors thereof, may be extremely hazardous. In case of contact, immediately flood the part affected with plenty of water for at least 15 minutes.

Get medical-attention quickly.

6. Transport

(a) Corrosive substances shall not be filled, moved or carried except in [containers or through pipes and when they are to be transported in containers,] they shall be included in crates of sound construction and of sufficient strength.

(b) a container with a capacity of 11.5 liters (2- 1/2 gallons) or more of a corrosive substance shall be placed in receptacle or crate and then carried by more than one person at a height below the waist line unless a suitable rubber wheeled truck is used for the purpose.

(c) Containers for corrosive substance shall be plainly labeled.

7. Devices for handling corrosives

(a) [221][Tilting, lifting or pumping arrangements] shall be used for emptying jars, carboys and other containers of corrosives.

(b) Corrosive substances shall not be handled by bare hands but shill be handled by means of a suitable scoop or other device.

8. Opening of valves

Valves fitted to containers holding a corrosive substance shall be -opened with great care. If they do not work freely, they shall not be forced open. They shall be opened by a worker suitably trained for that purpose.

9. Cleaning tanks, stills, etc

(a) In cleaning out or removing residues from stills or other large chambers used for holding any corrosive substance, suitable implements made of wood or other material shall be used to prevent production of arseniuretted hydrogen (Arsine).

(b) Whenever it is necessary for the purpose of cleaning or other maintenance work for any worker to enter chamber, tank, vat, pit or other confined space where a corrosive substance had been stored, all possible precautions required under section 36 of the Factories Act, 1948 shall be taken to ensure the worker's safety.

(c) Wherever possible, before repairs arc undertaken to any part of equipment in which a corrosive substance was handled, such equipment or part thereof shall be freed of any adhering corrosive substance by adopting suitable methods.

10. Storage

(a) Corrosive substances shall not be stored in the same room with other chemicals, such as turpentine, carbides, metallic powders and combustible materials, the accidental mixing with which may cause a reaction which is either violent or gives rise to toxic fumes and gas.

(b) Pumping or filling overhead tanks, receptacles, vats or other containers for storing corrosive substances shall be so arranged that there is no possibility of any corrosive substance overflowing and causing injury to any person.

(c) Every container having a capacity of twenty liters or more on every pipe line, valves, and fitting used for storing or carrying corrosive substances shall be thoroughly examined every year for finding out any defects and defects shall be removed forthwith. A register shall be maintained of every such examination made and shall be produced before the Inspector whenever required.

11. Fire extinguishers and fire-fighting equipment

An adequate number of suitable type of fire extinguishers or other firefighting equipment, depending on the nature of chemicals stored shall be provided. Such extinguishers or other equipment shall be regularly tested and refilled. Clear instructions as to how the extinguishers or other equipment should be used printed in the language which majority of the workers employed understand, shall be affixed near each extinguisher or ether equipment.

12. Exemption

If in respect of any factory on an application made by the manager, the chief Inspector is satisfied that owing to the exceptional circumstances or the infrequency of the process or for any other reason to be recorded by him in writing, all or any of the provisions of this schedule are not necessary for the protection of the persons employed therein, he may by a certificate in writing, which he may at any time revoke, exempt the factory from such of the provisions and subject to such conditions as he may specify therein.)

SCHEDULE XXII

MANUFACTURE OR MANIPULATION OF CARCINOGENIC DYE INTERMEDIATES

1. Application

This Schedule shall apply in respect of all factories or any part thereof in which process of manufacturing or manipulation of a Carcinogenic Dye Intermediates (hereinafter referred to as the said manufacturing process) is carried on:

Provided that paragraphs 25 and 26 shall only apply to a process involving manufacture or manipulation of compounds mentioned in Appendix B (hereinafter referred to as the said manufacturing process B).

PART I

2. Definitions

For the purposes of this Schedule

(a) "Air Line Respirator" means a helmet or face piece with necessary connections by means of which a person using it in a poisonous, or irritant atmosphere breathes ordinary air or any other suitable apparatus approved in writing by the Chief Inspector ;

(b) "Approved" means approved by the Chief Inspector of Factories ;

(c) "Efficient Exhaust Draught" means localized ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air or any place in which work is carried on. No draught shall be deemed to be efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originates;

(d) "First employment" means first employment in the said manufacturing process and also re- employment in such manufacturing process following any cessation of employment for continuous period exceeding three calendar months ;

(e) "Manipulation" includes mixing, blending, filling, emptying. grinding, sieving, drying, packing, sweeping, handling, using or chemical processing of a nitro or amino compound ;

(f) "Nitro or amino compound" means a nitrated or aminated compounds of aromatic hydrocarbons mentioned in Appendix A or B attached thereto.

3. Cautionary Placard

Cautionary placard in the form specified in Appendix C attached to this Schedule and printed in the language of the majority of the workers employed shall be affixed in prominent places frequented by them in the factory where the placards can be easily and conveniently read by the workers; and arrangement shall be made by the occupier to instruct periodically all workers employed in the said manufacturing proms regarding the precautions contained in the cautionary placard.

4. Prohibition relating to employment of women and young persons

No woman or young person shall be employed or permitted to work in any room in which the said manufacturing process is carried on or in which a nitro or amino compound is stored.

5. Air space

In every room in which the said manufacturing process is carried on there shall be at least 15 centimeters of air space excluding any space occupied by machinery, equipments or any other article for each person employed therein and in computing this air space no height over 4.25 meters shall be taken into account.

6. Efficient exhaust draught

Unless the said manufacturing process is completely enclosed so as not to give rise to dust or fume it shall not be carried on without the use of an efficient exhaust draught when a nitro or amino compound

(a) is introduced into a tank, hopper, machine or container or filled into cartridge ; or

(b) is ground, crushed, mixed, sieved or blended.

7. Floor of workrooms

The floor of every workroom in which the said manufacturing process is carried on shall be (a) smooth and impervious to water provided that asphalt or tar shall not be used in the composition of the floor, (b) maintained in sound condition, (c) slope and provided gutters and (d) thoroughly washed daily by means of hose pipe and drain water shall be led into a sewer through a closed channel.

8. Work-benches

Work-benches on which a nitro or amino compound is manipulated shall (a) have a smooth impervious surface preferably of stainless steel ; and (b) shall be washed daily with a hose-pipe or cleaned by means of a suction cleaning apparatus at a time when no other work is being carried on there.

9. Waste

(1) A suitable receptacle made of non-absorbable material with a tightly fitting cover shall be provided and used for depositing waste, like cloth, paper or other material soiled with a nitro or amino compound.

(2) All such contaminated waste material shall be destroyed by burning at least once a week.

10. Empty containers

Empty containers used for holding com-pounds included under Appendix A shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded.

11. Decontamination of pit, tank, etc

(a) Before a worker enters a tank, pit, kettle or any other confined space which contained a nitro or amino compound, it shall be thoroughly washed and decontaminated.

(b) No part of the plant which has contained a nitro or amino compound shall be repaired or opened for repairs unless it has emptied of such compound, thoroughly cleaned and decontaminated.

(c) Records of such treatment shall be maintained in a register approved by the Chief Inspector and the register shall be made available for inspection when required by an Inspector.

12. Manual handling

A nitro or amino compound shall not be required or allowed to be mixed, filled, emptied or handled except by means of a scoop with a handle which shall be thoroughly cleaned daily.

13. Protective wear

The occupier shall provide, maintain clean and in good repair protective clothing and other equipments as specified m the table below

THE TABLE

Process	Protective clothing and other equipment
For manipulation of compounds mentioned in Appendices A and B	(a) Long pants and shirts or overalls with long sleeves and head coverings. The shirt or overalls shall cover the neck completely (b) Rubber gloves, rubber gum boots, rubber aprons and air line respirator
For manipulation of compounds mentioned in Appendix B	(c) White clean clothing mentioned in (a) Above, in addition to white clean shirts, singlet and protective equipment as in (b) (d) White long sleeved aprons above

14. Instructions as regards risks

Every worker on his first employment shall be fully instructed on the properties of the chemical he has to handle and of the dangers involved. Workers shall also be instructed in the measures to be taken to deal with any emergency.

15. [222][Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said Medical Practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

16. Medical Examination by the Certifying Surgeon

(1) Every worker employed in the said processes shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for detection of methemoglobin in blood (Heamatological tests), paranitrophenol in urine, Pulmonary function tests and C.NS. tests. No worker shall be allowed to work after 15 days of hi, first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every six calendar months and such re-examinations shall, wherever the Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said process unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes]

17. Washing and bathing facilities

(1) The following washing and bathing facilities shall be provided and maintained in cleanly state and in good repair for the use of all persons employed in the said manufacturing process:

(a) A wash place under cover with clean towels, soap and nail brushes and with atleast one stand- pipe for every five such persons having constant supply of water.

(b) Fifty percent of the stand-pipes provided under item (a) above shall be located in bathroom where both hot and cold water shall be made available, during the working hours of the factory and for one hour thereafter.

(c) The washing and bathing facilities shall be within a radius of 15 meters from the area housing the said manufacturing process.

(d) Clean towels shall be provided individually to each worker if so ordered by an Inspector.

(e) In addition to taps mentioned under item (a), one stand-pipe in which warm water made available shall be provided on each floor.

(2) Arrangement shall be made to wash factory uniforms clothes compulsorily every day.

18. Washing and bathing

(a) All workers employed in the said manufacturing process shall carefully wash their hands and face before partaking of food or leaving the factory.

(b) Bath Register. — Workers employed in the said manufacturing process shall take a bath daily at the factory premises and enter their names in the bath register in token of having done so.

19. Food, drinks, etc., prohibited in workroom

No worker shall consume food, drink, pan, supari or tobacco or shall smoke in any workroom in which the said manufacturing process is carried on and no worker shall remain in any such room during intervals for meals or rest.

20. Cloak-room

There shall be provided and maintained in a clean state and in good repair for the use of the persons employed in the said manufacturing process (a) a cloak-room with lockers having two compare meats, one for street clothes and the other for factory clothes and (b) a place separate from the locker room and from the mess-room for the storage of protective equipment provided under paragraph 13. The accommodation so provided shall be under the care of a responsible person and shall be kept clean.

21. Mess-room

There shall be provided and maintained for use of all persons employed in the factory and remaining in the premises during the meal intervals, a mess-room which shall be furnished with (a) tables and benches, and (b) means for warming food.

The mess-room shall be placed under the charge of a responsible person and shall be kept clean.

22. Time allowed for washing

Before each meal and before the end of the day's work at least ten minutes in addition to the regular intervals shall be allowed for washing to each person who has been employed in the said manufacturing process.

23. Drying stoves

(1) Every drying stove shall be efficiently ventilated to the outside air in such a manner that hot air from the stove shall not be drawn into any workroom.

(2) No person shall enter stove to remove the contents until a free current of air has been passed through it by mechanical means.

24. Non-sparking tools

Non-sparking tools shall be provided for the purpose of cleaning or repairing machinery or operating any process where vapors of betanaphthylamine are evolved.

25. Testing of atmosphere, etc

Aminos in the atmosphere of the workroom where the manufacturing process is carried on shall be estimated once every week and records of results of such estimations shall be made available when required by an inspector.

PART II

26. Separation of processes

The said manufacturing process B shall be carried on in rooms which shall not communicate with any other room except through a passage open entirely to outside atmosphere.

27. Limitation of exposure

(1) No worker under the age of 40 years shall be engaged in the factory for the said manufacturing process B for the first time after the date on which these rules come into force.

(2) Before the end of the day's work at least one hour shall be allowed for bathing to each person, who is employed in the said manufacturing process B including the lime allowed under paragraph 19.

28. Exemption

If in respect of any factory the Chief Inspector is satisfied that (owing to the exceptional circumstances or infrequency of the process or for any other reason) all or any of the provisions of this Schedule arc not necessary for the protection of persons employed in the factory, he may by certificate in writing, exempt such factory from all or any of such provisions subject to such conditions as he may specify therein. Such certificates may at any time be revoked by the Chief Inspector.

APPENDIX [223][A]

(See paragraphs 2, 10, 13 and 15)

The benzenes, toluenes, xylenes, having undergone nitration once or several times (nitro, dinitro and trinitro benzene and its homologues) and their chlorinated compounds, naphthalenes, having undergone nitration once or several times, aniline, and its homologues (toludine, syncline, cumidine) anisdine, phenetidine and their chlorinated, nitrated and alkeylated compounds (demethylenillin toluylendiamine, toludine, phynylhydrazine, toluylhydrazin).

APPENDIX [224] [B]

(See paragraphs 2, 13, 15, 25 and 26)

Alphanaphthylamine.

Betanaphthylamine.

Henozidine and its salts

Dianisidinc.

Tolidine.

Dichlorobenzidine.

APPENDIX [225] [C]

(SEE PARAGRAPH 3)

CAUTIONARY PLACARD

Advice to workers:

(1) Nitro and amino compounds or aromatic hydrocarbons are dangerous. In this factory you have to handle them frequently.

(2) All items of protective wear provided should be made use of to safeguard your health.

(3) Maintain scrupulous cleanliness at all times. Before meal, wash hands and feet. A bath before leaving the factory is essential, taking care to wash the head well.

(4) If any chemical falls on your body, wash it off immediately with soap and water, change clothing at once, if soaked with a cyanotic nitro or amino compound. Contact the appointed doctor immediately.

(5) Do not handle any nitro or amino compound with bare hands. Use a long handled scoop.

(6) Avoid alcoholic drinks as these increase risk of poisoning.

(7) In case of illness contact the Factory Manager and the appointed doctor.

(8) Do not chew, eat, drink or smoke in the workroom or with soiled hands. Keep food and drink away from the workplace.

(9) If you work with Betanaphthylamine or benzidine or its salts, alphanaphthylamine or dianisidine

(a) remember the serious effects will follow after a number of years if great care is nor taken to observe absolute cleanliness of body, clothes, machinery and tools;

(b) at mealtime, wash face and hands twice with soap and water to remove all chemicals ; wear a long-sleeved clean apron while eating;

(c) before leaving the factory take a bath using soap and water twice ; after this put on your home clothes.

[226][SCHEDULE XXIII

[227][PROCESS OF EXTRACTING OILS AND FATS IN SOLVENT EXTRACTION PLANTS]

1. Definitions

(a) " Competent Person " for the purpose of this Schedule shall be at least a member or an Associate Member of the Institution of Engineers (India) with ten years experience in a responsible position as may be approved by the Chief Inspector :

Provided that a Graduate in Mechanical Engineering or Chemical Technology with specialized knowledge of Oils and Fats and with a minimum experience of live years in a solvent extraction plant shall also be considered to be a competent person:

Provided further that the State Government may accept any other qualifications, if in its opinion, they are equivalent to the qualifications aforesaid ;

(b) “Flame-proof enclosure as applied to electrical machinery or apparatus means an enclosure that will withstand, when covers or other access doors are properly secured, an internal explosion of the inflammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating the internal inflammation (or explosion) to the external flammable gas or vapour.

(c) "Solvent " means an inflammable liquid such as Pentane and Hexane and Heptane used for the extraction of vegetable oils;

(d) “Solvent Extraction Plant ", means a plant in which the process of extracting oils and fats [228][* * *] by the use of solvents is carried on.

2. Location and lay out

(a) No solvent extraction plant shall be permitted to be constructed or extended within a distance of thirty meters from the nearest residential locality.

(b) A continuous wire fencing shall be provided around the solvent extraction plant up to a minimum distance of 15 meters from the plant and the fencing so provided shall be not less than 1.5 meters in height.

(c) No person shall be allowed to carry any matches or an open flame or fire inside the area bound by the fencing.

(d) Boiler houses and other buildings where open flame processes are carried on shall be located at least thirty meters away from the solvent extraction plant.

(e) If godowns and preparatory processes are within a distance of thirty meters from the solvent extraction plant, these shall be at least fifteen meters distance from the plant, and a continuous barrier wall of non-combustible material of a height of 1.5 meters from ground level shall be erected at a distance of not less than fifteen meters from the solvent extraction plant so that it extends to at least thirty meters of vapour travel around its ends from the plant to the possible sources of ignition.

3. Electrical Installation

(a) All electrical motors, electrical wiring system, the electric lamps, switches, circuit breakers and all other electrical equipment used within the premises of a factory where extraction of oil is being carried on with the help of solvents shall be of flame proof construction and should be suitable for use in areas where Hexane or similar types of solvents or vapors are likely to exist.

(b) All metal parts of the plant and building including various tanks and containers where solvents arc stored or are likely to be present and all parts of electrical equipments not required to be energized shall be properly connected to earth so as to avoid accidental rise in the electrical potential of such parts above the earth potential.

4. Restriction on smoking

Smoking shall be strictly prohibited within a distance of 15 meters from the solvent extraction plant. For this purpose 'No Smoking' signs shall be permanently displayed in the area.

5. Precautions against friction

(a) All tools and equipment including ladders, chains and other lifting tackle required to be used in the solvent extraction plant shall be of non-sparking type ;

(b) [229][No machinery or equipment in any solvent extraction plant shall be belt driven unless the belt used is of such a type that it does not permit accumulation of static electricity to a dangerous level] ;

(c) No person shall be allowed to enter and work in the solvent extraction plant wearing clothes made of nylon or such other fiber that can generate static electrical charge or wear footwear which is likely to cause sparks by friction.

6. Fire-fighting apparatus

(a) An adequate number of portable fire extinguishers suitable for use against flammable liquid fire shall be provided in the solvent extraction plant;

(b) An automatic water spray sprinkler system on a wet pipe or open head deluge system with a sufficient supply of storage water shall be provided over the solvent extraction plant and throughout the building housing such plant.

7. Precautions against power failure

Provision shall be made for the automatic cutting off of steam in the event of power failure and also for emergency overhead water supply for feeding water by gravity to condensers which shall come into play automatically upon a power failure.

8. Magnetic separators

Oil-cake shall be fed to the extractor by a conveyor through a hopper and a magnetic separator shall be provided to remove any piece of iron during its transfer.

9. Venting

(a) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fife.

(b) All emergency relief vents shall terminate at least six meters above the ground and be so located that the vapors will not re-enter the building in which the solvent extraction plant is located.

10. Waste-water

Process waste water shall be passed through a flash evaporator to remove any solvent before it is discharged into a sump which should be located within the fenced area but should not be closer than eight meters to the fence.

11. Ventilation

The solvent extraction plant shall be well ventilated and if the plant is housed in a building, the building shall be provided with mechanical ventilation with provision for at least six air changes per hour.

12. House-keeping

(a) Solvent shall not be stored in an area covered by the solvent extraction plant except in small quantities which shall be stored in approved safety cans;

(b) Waste materials such as oily rags, other wastes and absorbents used to wipe off solvent and paints and oils shall be deposited in approved containers and removed from the premises at least once a day;

(c) Space with the solvent extraction plant and within 15 meters from the plant shall be kept free from any combustible materials and any spills of oils or solvent shall be cleaned up immediately.

13. Examination and repairs

(a) The solvent extraction plant shall be examined by the competent person to determine any weakness or corrosion and wear once in every 12 months. Report of such examination shall be supplied to the Inspector with his observation as to whether or not the plant is in safe condition to work ,

(b) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.

(c) Facility shall be provided for purging the plant with inert gas [230][or steam] before opening for cleaning or repairs and before introducing solvent after repairs.

14. Operating personnel

The operation of the plant and machinery in the solvent extraction plant shall be in the charge of such duly qualified and trained persons as are certified by the competent person to be fit for the purpose and no other person shall be allowed to operate the plant and machinery.

15. Employment of women and young persons

No woman or young person shall be employed in the solvent extraction plant.

16. Vapour detection

A suitable type of flame- proof and portable combustible gas indicator shall be provided and maintained in good working order and a schedule of routine sampling of atmosphere at various locations as approved by the Chief Inspector shall be drawn out and entered in a register maintained for the purpose.

17. Exemption

[231][If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the process or for any other reasons, all or any of the provisions of this Schedule are not necessary for the [232][protection and welfare of workers] in the factory, the Chief Inspector may by a certificate in writing (which he may in his discretion revoke at any time) exempt such factory from all .or any of such provisions subject to such conditions, if any, as he may specify therein.

SCHEDULE XXIV

FIRE WORKS MANUFACTORIES AND MATCH FACTORIES

1. Application

The provisions of this Schedule shall apply to all manufactories and processes incidental thereto carried on in any Fire Works Manufactory or a match works and shall be in addition to and not in derogation of any provisions of the Factories Act, 1948 and the

Tamil Nadu Factories Rules, 1950 or of any other Act or Rules that are applicable to fireworks manufactories and match factories.

2. Definition

(a) "Fire Works Manufactory" means any factory or such parts of any factory wherein the following chemicals or combination of chemicals and materials are being used for the manufacture or crackers, sparklers, caps, fuses, blasting powder and fireworks

Saltpetre;	Pyrotechnic aluminium Powder;
Barium Nitrate;	Charcoal;
Potassium chloride;	Red Phosphorus;
Gum;	Dextrine;
Strontium Nitrate;	Magnesium Powder;
Copper Coated Wires;	Steel filings or iron filings;
G.I. Wire;	Gun Powder (Black Powder);

(b) "Match works" means any establishment which manufactures safety matches or colour matches by the use of chemicals mentioned in clause (a).

(c) "Breathing apparatus" means a device covering mouth or nose with necessary connections by means of which a person using it in a poisonous asphyxiating or irritant atmosphere breathes ordinary air or any other suitable apparatus approved in writing by the Chief Inspector in this behalf.

3. Buildings

(a) The building of any fireworks manufactory or match factory shall conform to the standards prescribed under the Indian Explosives Act 1884 (Central Act IV of 1884), and the height of such buildings shall at no time be less than 3 meters;

(b) No building inside a fireworks manufactory shall have a first floor at any time:

(c) In Match works, provided with a first floor, there shall be 2 staircases leading from the first floor to the ground floor irrespective of the number of persons employed in the first floor and one of the staircases shall be of masonry construction or of non-inflammable materials;

(d) All doors shall open outwards and all the doorways shall be kept free from obstructions;

(e) All doors of workrooms shall not be less than 1.2 meters in width or less than 2 meters in height;

(f) [233][The floors of all work rooms including mixing sheds shall be completely covered by a rubber sheet having a smooth surface and having a thickness of atleast 3 mm. If the floor cannot be covered by a single rubber sheet, more than one rubber sheet may be used, so that each sheet is overlapped by the other atleast 150 mm; and]

(g) [234][Mixing sheds in a fireworks manufactory shall be at a distance of 18 meters away from all other sheds if the quantity of chemical stored, handled or used in the mixing shed is less than 50 kilograms and be separated by baffle walls opposite to each exit of the mixing shed:

Provided that the distance shall be at least 21 meters, if the quantity of chemical stored, handled or used in the mixing shed exceeds 50 kilograms.]

4. House-keeping

(a) Every part of ways, works, machinery and plant shall be maintained in a clean and tidy condition;

(b) Any spillage of materials shall be cleaned without delay;

(c) Close platforms, passages and gangways shall be kept free of temporary obstructions.

5. Electrical Equipment

(a) If at any time, use of electricity is allowed in the factory, all leads, etc., shall be in conduits with flame-proof junctions;

(b) Electrical supply shall never be through a lamp even with a non-conducting handle.

6. Protective clothing

(a) Under no circumstances clothes made of artificial fiber like terelene, etc., be allowed inside the factory;

(b) All workers shall be supplied with asbestos aprons especially to cover the chest, gonads and thighs

(c) Breathing apparatus shall be used in mixing sheds to avoid workers inhaling poisonous fumes in the event of an untoward reaction.

(d) In mixing sheds where aluminium and magnesium powders arc used "anti-stat" foot-wear to combat static electricity shall be supplied.

(e) All protective equipments shall be maintained in an efficient condition and also shall be maintained in a clean and hygienic condition.

7. Match Factories

In mach factories --

(i) the residue of the head composition shall not in any way be mixed with the residue of the friction composition;

(ii) the rooms comprising the two mixing departments, namely, (a) head composition and (b) friction composition shall be entirely separated from each other and the drains from these two departments shall be kept entirely separate ;

(iii) rubbish containing the residues of the head composition and friction composition shall be kept and burnt separately ;

(iv) department in which completed matches (matches with heads on) are stored shall be separated from all other departments by means of fire-proof walls and doors providing adequate means of escape in case of fire :

Provided that the Chief Inspector may, subject to such conditions, as he may deem necessary, exempt any factory in existence on the first January 1935 , from the provisions of this clause ;

(v) Splints, veneers and other materials in excess of the quantity required for the day's manufacture shall be kept in separate rooms of the factory where no manufacturing process is carried on. No manufactured material shall be stored anywhere in the factory compound for more than five days after the manufacture except in the storage godowns:

Provided that nothing contained in this clause shall apply to splints and veneers in cases stored in peeling and box making departments;

(vi) Store room for matches shall be entirely separated by fire-proof walls from the buildings used for manufacture [235][* * *]

(vii) [236][The racks in the dipped splints room shall have sides top and the rear part provided with non-inflammable materials.]

(viii) [237][The process of packing shall be done in an area away from the place of manufacture to the satisfaction of the Inspector ; and

(ix) No child shall be employed or permitted to work [238][in any process] directly connected with the manufacturing process up to final production of match sticks.]

8. Precautions to be taken in connection with manufacture of fuses used in crackers, etc

(a) Bundles of fuses shall be handled by carrying and not dragging them on the floor;

(b) Drying of fuses after wrapping shall be carried out on platforms away tram workrooms ;

(c) Cutting shall be done by experienced workers employed only for this purpose and under proper supervision ;

(d) Cutting shall be done on a large masonry platform covered with a tarpaulin and kept free from grit and pebbles ;

(e) Cutting shall be done on a raised platform so that workers can work standing. Cutting must be done by placing the fuse on wooden sleepers kept over blocks of wood. Brick shall not be used beneath the wooden reapers; and

(f) Workers, while on dangerous operations, shall not wear clothing sewn with ferrous or steel buttons, buckles or attachments. They shall not carry on their persons, iron knives, keys, etc.

9. Employment of women and children

[239][Women workers and Young persons shall not be employed on operation where chemicals arc mixed and where fuses are cut. Children shall not be employed or permitted to work in the manufacturing process or any work or operation or process connected therewith or incidental thereto in fireworks manufactory.]

10. General

(a) No person other than a factory worker and/or an inspecting officer or others connected with the manufacturing process shall be allowed to enter the working area;

(b) Cardboard containers and trays without steel nails shall be used for storage and day-to-day working purposes.

(c) During the manufacture of fuses only brass or non-ferrous knives shall be used and drying of fines shall be away from all workrooms.

(d) Door mats shall be provided outside the workroom and near all drying platforms and where fuses are cut for the workers to clean their feet.

(e) At no time, mixing materials shall exceed the quantity that is required for the manufacture of mixing for half an hour operation only.

(f) For filling up chemicals in the inner tubs of crackers, only aluminium or plastic rings shall be used and not galvanized iron rings.

(g) Buckets, containers, hoops, locks, nails, screws, bolts, nuts, knives, scissors, i[hinges, latches] etc., made up of iron shall not be used within the factory premises.

(h) Wooden racks without iron nails shall be used for drying paper cap sheets, in amorcess factories.

(i) Wooden racks used for drying paper cap sheets shall be provided with asbestos or other fire resistant sheets on the three sides leaving the front side open.

(j) Dried paper cap sheets shall be carried in wooden trays with four compartments (partitions) each compartment (partition) carrying a single sheet.

(k) Each manufacturing shed of fireworks shall have atleast two doors facing each other. The doors provided to the work sheds of adjacent rows shall not face each other.

(l) Not more than four persons shall be employed or allowed at any one time in any one building in which explosive is being manufactured.]

(m) Copper plates shall be fixed on the baffle wall of the chemical mixing shed and chemical filling shed; and the workers before entering those sheds, shall place their

hands on the copper plates in order to discharge the electrostatic charges from their body and to protect them from any untoward fire or explosion.

(n) Workers aged above 55 years shall be employed only in non-explosive areas.

(o) No person, aged 50 years and above shall be employed in Fireworks Manufactory unless his eyesight including colour vision and his hearing capacity are examined and declared fit by a qualified ophthalmologist and ENT specialist, respectively, to work whether with or without use of corrective appliances. Such examinations shall be made atleast once in every two years. Record of examination or re-examination carried out shall be produced on demand to Inspectors at the time inspection.

(p) Work benches and tables shall be provided for mixing and filling operations.

(q) Blast walls shall be provided around the drying platform at a distance of 2 meters away from the drying platform. The height of the blast wall shall be atleast one foot more than that of the height of the drying platform.

(r) In every Fireworks Factory, there shall be appointed a Supervisor with minimum qualification of B.Sc. (Chemistry) or Diploma in Chemical Engineering or its equivalent. He shall be fully conversant with the process of manufacture of fireworks and the associated hazards. These Supervisors shall undergo special training of fireworks safety as approved by the Chief Inspector of Factories. Number of Supervisors shall be at the rate of 1 for every 50 workers. Manufacture of fireworks shall be carried out under the supervision of such Supervisors.

(s) Factories which make fancy crackers shall have,

  (i) separate colour pellet machine shed ;

  (ii) separate colour pellet drying shed ; and

  (iii) separate transit rock for storing colour pellets.

(t) Not more than one manufacturing activity at any one item of crackers shall be allowed or required to be done in any working shed at a time.

(u) The workers involved in mixing and filling operations shall have an education qualification of atleast Higher Secondary Course.

(v) The drying platform meant for Rockets and Fire Works of flying nature shall be provided with a temporary roof of a strong aluminium mesh cover resting on the baffle wails, for protection from direct sunlight.

(w) There shall be provided atleast two burning pits in every factory and each burning pit shall be at a minimum distance of 62 meters away from the working sheds.

(x) The collected waste shall be disposed in the burning pit after the working hours of the factory on the same day in the presence of the Foreman by a trained worker.

(y) Wind direction indicator shall be provided in each factory.

(z) No electronic appliances such as mobile phones, transistors etc., shall be allowed in the premises, where fireworks are manufactured, handled, stored or used.

(aa) The mixed chemicals shall be used on the same day. No mixed chemical (fireworks) composition, dry or wet shall be kept in the factory at the close of any working day. Such residual composition shall be safely destroyed at the close of the day.

(ab) Fireworks factory ordinarily employing 250 workers or more shall appoint a qualified Safety Officer as per the Tamil Nadu Safety Officer (Duties, Responsibilities and Conditions of Serves, 2005 at the rate of one Safety Officer for 250 workers.

(ac) No manufacturing activity shall be carried on in Fireworks factory between 6.00 pm. And 6.00 am.]

11. Display of notices

The following notices in the local language understood by the majority of workers shall be displayed at a conspicuous place in the factory.

(a) Smoking is strictly prohibited.

(b) No one shall carry matches or other igniting materials into the factory.

(c) No worker shall be in a workroom or area where no work has been assigned to him.

(d) If anything untoward happens in any shed all workers shall dash to the gates which serve as outgates of the factory and in no circumstances be curious to see what has happened in the affected shed.

(e) Any spillage of materials should be cleaned without any delay.

(f) Wearing of clothes made of artificial fiber like terene, etc., is prohibited. Clothing's sewn with ferrous or steel buttons or buckles or attachments should not be worn.

(g) Foot wears with iron nails should not be used-(It) Workers should not carry with themselves iron knives and iron keys, etc.

12. First-aid boxes

(a) The materials required under rule 65 shall be kept in the First-Aid Box. In addition, four stretchers shall be available for every twenty persons employed in the premises.

(b) Adequate amount of burn dressings and 24 ounces of coconut oil to be used as the first remedy for burns shall be kept in the First-Aid Box.

(c) Persons who are in charge of First-Aid Boxes shall be those who possess the certificate granted by the St. John's Ambulance Association for rendering first-aid.

12-A Personal Accident Insurance

[240][The occupier of every factory wherein the manufacture of match or fire work is carried on shall prepare a report containing the details of the insurance coverage in respect of the workers employed, in such factory in Form No. 41 and sent it to the Chief Inspector once

in sex months through the Deputy Chief Inspector of Factories having jurisdiction over the area where the factory is situated]

13. Exemption

If the Chief Inspector is satisfied in respect of any factory or any process that, owing to the special conditions or special methods of work or by reason of the frequency of the process or for other reason the application of all or any of the provisions of the schedule to the factory or process, or for the persons employed in such factory or process is not necessary, he may by order in writing exempt such factory or part of the factory or process or any part of the factory or person from all or any of these provisions subject to such conditions as he may deem expedient to ensure safety and health of the workers.

The Chief Inspector may at any time in his discretion revoke such order without assigning any reason.

SCHEDULE XXV

MANUFACTURE OR MANIPULATION OF MANGANESE AND ITS COMPOUNDS

1. Definitions

For the purpose of this Schedule

(a) "Manganese Process" means processing, manufacture or manipulation of manganese or any compound of manganese or any ore or any mixture containing manganese.

(b) "First employment" means first employment in any manganese process and includes also re- employment in any manganese process following any cessation of employment for a continuous period exceeding 3 calendar months ;

(c) "Manipulation" means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping or otherwise handling of manganese or a compound of manganese or any mixture containing manganese ;

(d) “Efficient exhaust ventilation" means localized ventilation effected by mechanical means for the removal of dust or fume or mist at its source of origin so as to prevent it from escaping into the atmosphere of any place where any work is carried on. No draught shall be deemed to be efficient which fails to remove the dust or fume or mist at the point where it is generated and fails to prevent it from escaping into and spreading into the atmosphere of a work place.

2. Application

The Schedule shall apply to every factory in which or in any part of which any manganese process is carried on.

3. Exemption

If in respect of any factory, the Chief Inspector is satisfied that owing to any exceptional circumstances, or infrequency of the process, or for any other reason, application of all or any of the provisions of this Schedule is not necessary for the protection of the persons employed in such factory he may, by an order in writing which he may at this discretion revoke, exempt such factory from all or any of the provisions on such conditions and for such period as he may specify in the said order.

4. Isolation of a process

Every manganese process which may give rise to dust, vapour or mist containing manganese shall be carried on in a totally enclosed system or otherwise effectively isolated from other processes so that other plants and process and other parts of the factory and persons employed on other work or process may not be affected by the same.

5. Ventilation of process

No process, in which any dust, vapour or mist containing manganese is generated, shall be carried out except under an efficient exhaust ventilation which shall be applied as near to the point of generation as practicable.

6. [241][Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.)

7. Medical Examination by Certifying Surgeon

(1) Every worker employed in any manganese processes shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for detection of serum calcium, serum phosphate and manganese in blood and urine and also include steadiness tests and other neuromuscular co-ordination tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in a manganese process shall be re-examined by a Certifying Surgeon at least once in every three calendar months and such examinations shall, wherever the Certifying Surgeon considers appropriate, include all the tests in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) if at any time the Certifying Surgeon is of the opinion that the worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said process unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes]

8. Personal Protective Equipment

(1) The Occupier of the factory shall provide and maintain in good and clean condition suitable overalls and head coverings for all persons employed in any manganese process and such overalls and head coverings shall be worn by the persons while working on a manganese process.

(2) The Occupier of the factory shall provide suitable respiratory protective equipment for use by workers in emergency to prevent inhalation of dusts, fumes or mists sufficient number of complete sets of such equipment shall always be kept near the workplace and the same shall be properly maintained and kept always in a condition to be used readily.

(3) The Occupier shall provide and maintain for the use of all persons employed, suitable accommodation for the storage and make adequate arrangements for cleaning and maintenance of personal protective equipment.

9. Prohibition relating to women and young persons

No woman or young person shall be employed or permitted to work in any manganese process.

10. Food, drinks prohibited in the workrooms

No food, drink, pan and supari or tobacco shall be allowed to be brought into or consumed by any worker in any work room in which any manganese process is carried on.

11. Mess-room

There shall be provided and maintained for the use of the persons employed in a manganese process a suitable mess-room which shall be furnished with sufficient tables and benches and adequate means for warming of food. The mess room shall be placed under the charge of a responsible person and shall be kept clean.

12. Washing facilities

There shall be provided and maintained in a clean state and in good condition, for the use of persons employed on manganese process a wash place under cover, with either

(1) a trough with a smooth impervious surface fitted with a waste pipe without plug. The trough shall be of sufficient length to allow at least 60 centimeters for every ten such persons employed at any one time, and having a constant supply of water from tap or jets above the trough at intervals of not more than 60 centimeters, or at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water ; and

(2) sufficient supply of soap or other suitable cleaning material and nail brushes and clean towels.

13. Cloak-room

If the Chief Inspector so requires there shall be provided and maintained for the use of persons employed in manganese process a cloak-room for the clothing put off during working hours with adequate arrangement for drying the clothing.

14. Cautionary placard instructions

Cautionary notices in the following form and printed in the language of the majority of the workers employed, shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangements shall be made by the occupier to instruct periodically all workers employed in a manganese process regarding the health hazards connected with their duties and the best preventive measures and methods to protect themselves. The notices shall always be maintained in a legible condition.

CAUTIONARY NOTICE

Manganese and Manganese Compounds

1. Dust fumes and mists of Manganese and Compounds are toxic when inhaled or when ingested.
2. Do not consume food or drink near the work place.
3. Take a good wash before taking meals.
4. Keep the working area clean.
5. Use the protective clothing and equipments provided.

6. When required to work in situations where dusts, fumes, or mists are likely to be inhaled, use respiratory protective equipments provided for the purpose.

7. If you get severe headaches, prolonged sleeplessness or abnormal sensations on the body, loose gait, speech interference and loss of virility, report to the Manager who would make arrangements for your examination and treatment.

[242][SCHEDULE XXVI

CARBON DISULPHIDE PLANTS

1. Application

This Schedule shall apply to all electric furnaces in which carbon disulphide is generated and all other plants where carbon disulphide, after generation is condensed, refined and stored.

These rules are in addition to and not in derogation of any of the provisions of the Act and the rules made thereunder.

2. Construction, installation and operation

(a) The buildings in which electric furnaces are installed and carbon disulphide after generation is condensed and refined shall be segregated from other parts of the factory and shall be of open type to ensure optimum ventilation and the plant layout shall be such that only a minimum number of workers are exposed to the risk of any fire or explosion at any one time.

(b) Every electric furnace and every plant in which carbon disulphide is condensed, refined and stored with all their fittings and attachments shall he of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected and shall be so designed that carbon disulphide liquid and gas are in closed system during their normal working.

(c) The electric furnace supports shall be firmly grouted about 61 centimeters in concrete or by other effective means.

(d) Every electric furnace shall be instilled and operated according to manufacturers' instructions and these instructions shall be clearly imparted to the personnel in charge of construction and operation.

(e) The instructions regarding observance of correct furnace temperature, sulphur dose, admissible current/power consumption and periodical checking of charcoal level shall be strictly complied with.

3. Electrodes

(a) Where upper ring electrodes made of steel or used in the electric furnace, they shall be of seamless tube construction and shall have arrangement for being connected to cooling water system through a siphon builts in the electrodes or through a positive pressure water-pump.

(b) The arrangement for cooling referred to in clause (a) shall be connected with automatic alarm system which will actuate in the event of interruption of cooling water in the electrodes and give visible and audible alarm signals in the control room and simultaneously stop power supply for the furnace operation and to stop the further supply of water. The alarm system and the actuating device shall be checked every day.

4. [243]**[Maintenance of charcoal level**

When any electric furnace is in operation, it shall be ensured that the electrodes are kept coveted with charcoal bed.]

5. Charcoal separator

(a) Cyclone type of charcoal separator shall be fitted on the off take pipe between the electric furnace and sulphur separator to prevent entry of pieces of char-coal into the condensers and piping.

(b) Any other design for gas off take pipe which dues tic• allow charcoal pieces into the condensers and piping may be adopted.

6. Rupture Discs and Safety Seal

(a) At least two rupture discs of adequate size which shall blow off at a pressure twice the maximum operating pressure shall be provided on each furnace and shall either be mounted directly on the top of the furnace or each through an independent pipe as close as possible to the furnace.

(b) A safety water seal shall be provided at the best possible location to ensure the maximum and effective operation of the rupture discs mentioned in (a) above.

7. Pyrometer and Manometers

(a) Each electric furnace shall be fitted with adequate number of pyrometers Ito give an indication of the temperature as correctly as reasonably practicable) at various points in the furnace. The dials for reading the temperature shall be located in the control room.

(b) [244][Manometers or any other suitable devices) shall be provided for indicating pressure

(i) in the off take pipe before and after the sulphur separator ; and

(ii) in primary and secondary condensers.

(iii)

8. Check Valves or Water Seals

All piping carrying carbon disulphide shall be fitted with check valves or water seals at suitable positions so as to prevent gas from flowing back into any electric furnace in the event of its shut down.

9. Inspection and maintenance of Electric Furnaces

(a) Every electric furnace shall be inspected internally by a competent person

(i) before being placed in service after installation:

(ii) before being placed in service after reconstruction or repairs ; and

(iii) periodically every time the furnace is opened for cleaning or (or replaced electrodes.

In respect of item (iii) if it is felt by operators that during dashing it is not necessary to inspect internally so as to conserve the heat in the furnace, internal inspection can be done away with.

(b) When an electric furnace is shut down for cleaning,

(i) if removal of any part of the lining is resorted to, the condition of the shell shall be closely inspected, and

(ii) any plates forming shell found corroded to the extent that safety of the furnace is endangered shall be replaced:

10. Maintenance of Records

The following hourly records shall be maintained in a logbook

(i) Manometer reading at the points specified in clause (b) of rule 7.

(ii) Gas temperature indicated by pyrometers and all other vital points near the sulphur separator and primary and secondary condensers.

(iii) Water temperature and flow of water through the siphon in the electrodes.

(iv) Primary and secondary voltages and current and energy consumed.

11. Electrical apparatus, wiring and fittings

All buildings in which carbon disulphide is refined or stored shall be provided with electrical apparatus, wiring and fittings which shall afford adequate protection from fire and explosion.

12. Prohibition relating to smoking

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in buildings in which carbon disulphide is refined or stored, and a notice in the language under-stood by a majority of the workers shall be posted in the plant prohibiting smoking and carrying of matches, fire or naked light of other means of producing naked light or spark into such rooms.

13. Means of escape

Adequate means of escape shall be provided and maintained to enable persons to move to a safe place as quickly as possible in case of an emergency. At least two independent staircases of adequate width shall be provided in every building housing the furnaces at reasonable intervals at opposite ends. These shall always be kept clear Mall obstructions and so designed as to afford easy passage.

14. Warnings In case of fire

There shall be adequate arrangements for giving warnings in case of fire or explosion which shall operate on electricity and, in case of failure of electricity, by some mechanical means.

15. Firefighting equipment

(a) Adequate number of suitable fire extinguishers or other fire-fighting equipment shall be kept in constant readiness for dealing with risks involved and depending on the amount and nature of materials stored :

(b) Clear instructions as to how the extinguishers or other equipment should be used shall be printed in the language which the majority of the workers employed understand. The instructions shall be affixed to each extinguisher or other equipment and the personnel trained in their use shall be supplied with the instructions.

16. Bulk sulphur

(a) Open or semi-enclosed space for storage of bulk sulphur shall be sited with due regard to the dangers which may arise from sparks given off by nearby locomotive, etc., and precautions shall be taken to see that flames, smoke and matches and other sources of ignition do not come in contact with the clouds of dust arising during handling of bulk sulphur.

(b) All enclosures for bulk sulphur shall be of non-combustible construction, adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge.

(c) The bulk sulphur in the enclosures shall be handled in such a manner as to minimize the formation of dust clouds and no flame, smoke and matches or other sources of ignition shall be employed during handling and non-sparking tools shall be used whenever sulphur is shovelled or otherwise removed by band.

(d) No repairs involving flames, beat or use of hand or power tools shall be made in the enclosure where bulk sulphur is stored.

17. Liquid sulphur

Open flames, electric sparks and other sources of ignition, including smoke and matches, shall be excluded from the vicinity of molten sulphur.

18. Training and supervision

(a) All electric furnaces and all plants in which carbon disulphide is condensed, refined or stored shall be under adequate supervision at all times while the furnaces and plant are in operation.

(b) Workers in charge of operation and maintenance of electric furnaces and the plants shall be properly qualified and adequately trained.

19. Washing facilities

The occupier shall provide and maintain in a clean state and in good repair, for the use of all persons employed a wash-place under cover with atleast one tap or stand-pipe, having a constant supply of clean water for every five such persons, the taps or stand-pipes being spaced not less than 120 centimeters apart with a sufficient supply of soap and clean towels, provided that towels shall be supplied individually to each worker if so ordered by the Inspector. All the workers employed in sulphur storage handling and inching operations shall be provided with a nail brush.

20. Personal Protective equipment

(a) Suitable goggles and protective clothing consisting of overalls without pockets, gloves and foot-wear shall be provided for the use of operatives:

(i) when operating valves or cocks controlling fluids, etc.

(ii) drawing off of molten sulphur from sulphur pots, and

(iii) handling charcoal or sulphur.

(b) Suitable respiratory protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(c) Arrangements shall be made for the proper and efficient clearing of all such protective equipment.

21. Cloak-rooms

There shall be provided and maintained for the use of all persons employed in the processes a suitable cloak-room for clothing put off during work hours and a suitable place separate from the cloak-room for the storage of overalls or working clothes The accommodation so provided shall be placed in the charge of a responsible person and shall be kept clean.

22. Unauthorized persons

Only maintenance and repair personnel, persons directly connected with the plant operation and those accompanied by authorised persons shall be admitted into the plant.]

SCHEDULE XXVII

MANUFACTURE, HANDLING AND USE OF BENZENE

1. Application

The provisions of this Schedule shall apply to all factories or parts thereof in which Benzene or substances containing Benzene are manufactured, handled or used.

2. Definitions

For the purpose of this Schedule,

(a) 'Substances containing benzene' means substances wherein benzene content exceeds 1 percent by volume;

(b) 'Substitute' means a chemical which is harmless or less harmful than benzene and can be used in place of benzene;

(c) 'Enclosed system' means a system which will not allow escape of benzene vapors to the working atmosphere;

(d) 'Efficient exhaust draught ' means localized ventilation effected by mechanical means for the removal of gases, vapors, dusts or fumes so as to prevent them from escaping into the air of any workroom. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gases, vapors, fumes or dusts originate.

3. Prohibition and substitution

(a) [245][Use of benzene and substances containing benzene is prohibited in the following processes:

(i) Manufacture of varnishes, paints and thinners; and

(ii) cleaning and degreasing operations.]

(b) [246][Benzene or substances containing Benzene shall not be used as a solvent or diluent unless the process in which it is used is carried on in an enclosed system or unless the process is carried on in a manner which is considered equally safe as if it were carried out in an enclosed system ;]

(c) [247] [Where suitable substitutes are available, they shall be used instead of Benzene or substances containing Benzene. This provision, however, shall not apply to the processes specified in Appendix A ;]

(d) [248] [The Chief Inspector may, subject to confirmation by the State Government, permit exemptions from the percentage laid down in clause 2 (a) and also from the provisions of sub-clause (b) temporarily under conditions and within limits of time to be determined after consultation with the employers and workers concerned.]

4. Protection against inhalation

(a) The process involving the use of Benzene or substances containing Benzene shall as far as practicable, be carried out in an enclosed system;

(b) Where, however, it is not practicable to carry out the process in an enclosed system, to workroom in which Benzene or substances containing Benzene are used, shall be

equipped with an efficient exhaust draught or other means for the removal of Benzene vapors to prevent their escape into the air of the workroom so that the concentration of Benzene in the air does not exceed 25 parts per million by volume or 80 mg/m3;

(c) Air analysis for the measurement of concentration of Benzene vapors in air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector at places where process involving use of Benzene is carried on and the result of such analysis shall be recorded in a register specially maintained for this purpose. If the concentration of Benzene vapors in air as measured by air analysis, exceeds 25 parts per million by volume or 80 mg/m3 the Manager shall forthwith report the concentration to the Chief Inspector stating the reasons for such increase;

(d) Workers who for special reasons are likely to be exposed to concentration of Benzene in the air of the workroom exceeding the maximum referred to in clause (b) shall be provided with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.

5. Measures against skin contact

(a) Workers who are likely to come in contact with liquid Benzene or liquid substances containing Benzene shall be provided with suitable gloves, aprons, boots and where necessary, vapour-tight chemical goggles made of material not affected by Benzene or its vapors.

(b) The protective wear referred to in sub-clause (a) shall be maintained in good condition and inspected regularly.

6. Prohibition relating to employment of women and young persons

No woman or young person shall be employed or permitted to work in any workroom involving exposure to Benzene or substance containing Benzene.

7. Labelling

Every container holding Benzene or sub-stances containing Benzene shall have the word Benzene" and approved danger symbols clearly visible on it and shall also display information on Benzene content, warning about leaky and warning about inflammability of the chemical.

8. Improper use of Benzene

(a) The use of Benzene or substances containing Benzene by workers for cleaning their hands or their work clothing shall be prohibited;

(b) Workers shall be instructed on the possible dangers arising from such misuse.

9. Prohibition of consuming food, etc., in workrooms

No worker shall be allowed to store or consume food or drink in the workroom in which Benzene or substances containing Benzene are manufactured, handled, or used. Smoking and chewing tobacco or pan shall be prohibited in such workrooms.

10. Instruction as regards risks

Every worker on his first employment shall be fully instructed on the properties of Benzene or substances containing Benzene which he has to handle and of the dangers involved. Workers shall also be instructed on the measures to be taken to deal with in an emergency.

11. Cautionary notices

Cautionary notices in the form specified in Appendix B and presented in the language easily read and understood by the majority of the workers shall be displayed in prominent places in the workrooms where Benzene or substances containing Benzene are manufactured, handled or used.

12. Washing facilities, cloak-room and mess-room

In factories in which Benzene or substances containing Benzene are manufactured, handled or used, the Occupier shall provide and maintain in clean state and in good repair

(a) Washing facilities under cover of the standard of at least one tap for every 10 persons having constant supply of water with soap and a clean towel provided individually to each worker if so ordered by the Inspector;

(b) A cloak-room with lockers for each worker, having two compartments - one for street-clothing and one For work-clothing;

(c) A mess-room furnished with tables and benches with means for warming food, provided that where a canteen or other proper arrangements exist for the workers to take their meals, the requirements of mess-room shall be dispensed with.

13. [249][Medical facilities au d records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

14. Medical Examination by the Certifying Surgeon

(1) Every worker employed in processes mentioned in paragraph 1, shall be examined by a Certifying Surgeon within 15 days of his rust employment. Such examination shall include tests for detection of Phenol in urine and determination of urinary sulphide ratio and C.N.S. and Haemotologyical tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months and such examinations shall, wherever the Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (1). Further, every worker shall also be examined once in every three months by the factory Medical Officer.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the workers, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.]

15. Exemption

If in respect of any factory, the Chief Inspector of Factories is satisfied that (owing to the exceptional circumstances or infrequency of the process or for any other reasons) all or any of the provisions of the schedule are not necessary for the protection of persons employed in the factory, he may be certified in writing, exempt such factory from all or any of such provisions subject to such conditions as he may specify therein. Such certificates may at any time be evoked by the Chief Inspector

APPENDIX A

[See Clause 3(b)]

1. Production of Benzene
2. Process where Benzene is used for chemical synthesis.
3. Motor spirits (used as fuel)

APPENDIX B

(See Clause II)

(a) The hazards—

(i) Benzene and substances containing Benzene are harmful;

(ii) Prolonged or repeated breathing of Benzene vapors may result in acute or chronic poisoning;

(iii) Benzene can also be absorbed through skin which may cause skin and other diseases

(b) The preventive measures to be taken

(i) Avoid breathing of benzene vapors;

(ii) Avoid prolonged or repeated contact of benzene with the skin;

(iii) Remove benzene soaked or wet clothing promptly;

(iv) If any time you are exposed to high concentration of benzene vapors and exhibit the sign and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your Factory Manager;

(v) Keep all the containers of benzene closed;

(vi) Handle, use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor;

(vii) Maintain good house-keeping;

(c) The protective equipment to be used

(i) the respiratory protective equipment in places where benzene vapors are present in high concentration;

(ii) In emergency, use self-generating oxygen mask or oxygen or air cylinder masks;

(iii) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and body parts.

(d) The first-aid measure to be taken in the case of acute benzene poisoning.

(i) Remove the clothing immediately if it is wetted with benzene.

(ii) If liquid benzene enters eyes, flush thoroughly for at least fifteen minutes with clean running water and immediately secure medical attention.

(iii) In case of usual exposure to benzene vapour, call a physician immediately. Until he arrives do the following

If the exposed person is conscious:

(A) Move him to fresh air in open;

(B) Lay down without a pillow and keep him quiet and warm.

If the exposed person is unconscious

(a) Lay him down preferably on the left side with the head low;

(b) Remove any false teeth, chewing gum, tobacco or other foreign objects which may be in his mouth;

(c) Provide him artificial respiration in case difficulty is being experienced in breathing;

(d) In case of shallow breathing or cyanosis (blueness of skin, lips, ears, finger nails beds) he should be provided with medical oxygen or oxygen carbondixide mixture. If needed, he should be given artificial respiration. Oxygen should be administered by a trained person only.

[250][SCHEDULE XXVIII

OPERATIONS INVOLVING HIGH NOISE LEVELS

1. Application

This schedule shall apply to all operations in any manufacturing process having high noise level.

2. Definitions

For the purpose of this schedule

(a) 'Noise' means any unwanted sound.

(b) 'High noise level' means any noise level measured on the A weighted scale is 90 dB or above.

(c) 'Decibel' means one-tenth of 'Bel' which is the fundamental divisions of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of 'Bels' denoting such a ration being the logarithm to the base of 1 of this ratio. The noise level (or the sound pressure level) corresponds to a reference pressure of 20 X 10.6 newtons per square meter or 0.0002 dynes per square centimeter which is the threshold of hearing , that is the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviated form is dB.

(d) "Frequency" is the rate of pressure variations expressed in cycles per second or hertz.

(e) 'dBA' refers to sound level in decibels as measured on a sound level meter operating on the A-weighting net work with slow meter response.

(f) 'A-weighting' means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measured by an instrument reflects the actual response of the human ear to the sound measured.

3. Protection against noise

(1) In every factory, suitable engineering control or administrative measures shall be taken to ensure, so far as is reasonably practicable, that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2.

TABLE 1

PERMISSIBLE EXPOSURE IN CASES OF CONTINUOUS NOISE.

Total time of exposure (continuous or a member of short term exposures) per day, in hours.	Sound pressure level in dBA
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
¾	107
½	110
¼	115

Explanation

(1) No exposure in excess of 115 dBA is to be permitted.

(2) For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

TABLE 2

PERMISSIBLE EXPOSURE LEVELS OF IMPULSIVE OR IMPACT NOISE

Peak sound pressure level In dB	Permitted number of impulses or Impacts per day
140	100
135	315
130	1,000
125	3,160
120	10,000

Explanation

(1) No exposure in excess of 140 dB peak sound pressure level is permitted.

(2) For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.

(2) For the purposes of this schedule, if the variations in the noise level involve maximum at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in Table I would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in the Table 2 would apply.

(3) When the daily noise exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions

$$C1/T1 + C2/T2 + Cn/Tn \ldots\ldots \text{ Exceeds unit p-1}$$

Where the C1, C2, etc., indicate the total time of actual exposure at a specified noise level and T1, T2, etc. denote the time of exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculation.

(4) Where it is not possible to reduce the noise exposure to the levels specified in sub-rule (1) by reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures and each worker so exposed shall be provided with suitable ear protectors so as to reduce the exposure to noise to the levels specified in sub-rule (1).

(5) Where the ear protectors provided in accordance with sub-paragraph (2) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by

subtracting the attenuation value in dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under Table I or fable 2 as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).

(6)

(a) In all cases where the prevailing sound levels exceed the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical audit surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places where noise levels are relatively less or by any other suitable means.

(b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-rule (1) shall be subjected to an auditory examination by a Certifying Surgeon within 14 days of his first employment and thereafter shall be re-examined at least once in every 12 months. Such initial and periodical examinations shall include tests which the Certifying Surgeon may consider appropriate, and shall include determination of auditory thresholds for pure tones of 125, 250, 500, 1,000, 2,000, 4,000 and 8,000 cycles per second.]

[251][SCHEDULE XXIX

MANUFACTURE OR MANIPULATION OF DANGEROUS PESTICIDES

1. Application

This schedule shall apply in respect of all factories or any part thereof in which the process of manufacture or manipulation of dangerous pesticide thereinafter referred to as the said manufacturing process) is carried on.

2. Definition

For the purpose of this schedule

(a) "dangerous pesticides" means any product proposed or used for controlling, destroying or repelling any pest or for preventing growth or mitigating effects of such growth including any of its formulations which is considered toxic under and is covered by the Insecticides Act, 1968 and the rules made thereunder and any other products as may be notified from time to time by the State Government;

(b) "manipulation" includes mixing, blending, formulating, filling, emptying, packing or otherwise handling;

(c) "efficient exhaust draught" means localized mechanical ventilation for removal of smoke, gas, vapour dust, fume or mist so as to prevent them from escaping into the air of any workroom in which work is carried on. No exhaust draught shall be

considered efficient if it fails to remove smoke generated at the point where such gas, fume, dust, vapour or mist originates from the processes;

(d) "first employment" shall mean first employment in any manufacturing process to which this schedule applies and shall also include re-employment in the said manufacturing process following any cessation of employment for a continuous period exceeding three calendar months ; and

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3. Instruction to workers

Every worker on his first employment shall be fully instructed on the properties including dangerous properties of the chemicals handled in the said manufacturing process and the hazards involved. The employees shall also be instructed in the measures to be taken to deal with any emergency. Such instructions shall be repeated periodically.

4. Cautionary notice and placards

Cautionary notices and placards in the form specified in the Appendix to this Schedule and printed in the language of the majority of the workers shall be displayed in all work places in which said manufacturing process is carried on so that they can be easily and conveniently read by the workers. Arrangements shall be made by the occupier and the manager of the factory to periodically instruct the workers regarding the health hazards arising in the said manufacturing proem and methods of protection. Such notices shall include brief instructions regarding the periodical clinical tests required to be undertaken for protecting health of the workers.

5. Prohibition relating to employment of women or young persons

No woman or young person shall be employed or permitted to work in any room in which the said manufacturing process is carried on or in any room in which dangerous pesticide is stored.

6. Food, drink and smoking prohibited

(1) No food, drink, tobacco, pan or supari shall be brought into or consumed by any worker in any workroom in which the said manufacturing process is carried out.

(2) Smoking shall be prohibited in any workroom in which the said manufacturing process is carried out.

7. Protective clothing and protective equipment

(1) Protective clothing consisting of long pants and shirts or overalls with long sleeves and head coverings shall be provided for all workers employed in the said manufacturing process.

(2)

(a) Protective equipment consisting of rubber gloves, gum boots, rubber aprons, chemical safety goggles and respirators shall be provided for all workers employed in the said manufacturing process.

(b) Gloves, boots, aprons shall be made from synthetic rubber where a pesticide contains oil.

(3) Protective clothing and equipment shall be worn by the workers supplied with such clothing and equipment.

(4) Protective clothing and equipment shall be washed daily from inside and outside if the workers handle pesticides containing nicotine or phosphorous and shall be washed frequently if handling other pesticides.

(5) Protective clothing and equipment shall be maintained in good repair.

8. Floors and work-benches

(1) Floors in every work-room where dangerous pesticides are manipulated shall be of cement or other impervious material giving a smooth surface.

(2) Floor shall be maintained in good repair, provided with adequate slope leading to a drain and thoroughly washed once a day with hose pipe.

(3) Work-benches where dangerous pesticides are manipulated shall be made of smooth, non-absorbing material preferably stainless steel and shall be cleaned at least once daily.

9. Spillage and waste

(1) If a dangerous pesticide during its manipulation splashes or spills on the work-bench, floor or on the protective clothing worn by a worker, immediate action shall be taken for thorough decontamination of such areas or articles.

(2) Cloth, rags, paper or other material soaked or soiled with a dangerous pesticide shall be deposited in a suitable receptacle with tight fitting cover. Contaminated waste shall be destroyed by burning at least once a week.

(3) Suitable deactivating agents, where available shall be kept in a readily accessible place for use while attending to a spillage.

(4) Easy means of access shall be provided to all parts of the plant for cleaning, maintenance and repairs.

10. Empty containers used for dangerous pesticides

Containers used for dangerous pesticides shall be thoroughly cleaned of their content and treated with an inactivating agent before being discended or destroyed.

11. Manual handling

(1) A dangerous pesticide shall be required or allowed to be manipulated by and except by means of a long handled scoop.

(2) Direct contact of any part of the body with a dangerous pesticide during its manipulation shall be avoided.

12. Ventilation

(1) In every workroom or area where a dangerous pesticide is manipulated, adequate ventilation shall be provided at all times by the circulation of fresh air.

(2) Unless the process is completely enclosed, the following operations during manipulation of a dangerous pesticide shall not be undertaken without an efficient exhaust draught

(a) emptying a container holding a dangerous pesticide;

(b) blending a dangerous pesticide;

(c) preparing a liquid or powder formulation containing a dangerous pesticide; and

(d) changing or filling a dangerous pesticide into a container, tank hopper or machine or small sized containers.

(3) In the event of a failure of the exhaust or draught provided on the above operation, the said operations shall be stopped forthwith.

13. Time allowed for washing

(1) Before each meal and before the end of the day's work at least ten minutes in addition to the regular rest interval shall be allowed for washing to each worker engaged in the manipulation of dangerous pesticide.

(2) Every worker engaged in the manipulation of dangerous pesticides shall have a thorough wash before consuming any food and also at the end of the day's work.

14. Washing and bathing facilities

(1) There shall be provided and maintained in a dean state and in good repair for the use of all workers employed in the factory where the said manufacturing process is carried on, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 5 persons employed.

(2) The washing places shall have stand pipes placed at intervals of not less than one meter.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of clean towels made of suitable material shall be provided :

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushes shall be provided.

15. Cloakroom

There shall be provided and maintained for the use of all workers employed in the factory where the said manufacturing process is carried on:

(a) a cloakroom for clothing put off during working hours with adequate arrangements for drying clothing, if wet and

(b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 7.

16. Mess-room

(1) There shall be provided and maintained for the use of all workers employed in the factory in which the said manufacturing process is carried on and remaining on the premises during the rest intervals, a suitable mess-room which shall be furnished with --

(a) sufficient tables and benches with back rest, and

(b) adequate means for warming food.

(2) The mess room shall be placed under the charge of a responsible person and shall be kept clean.

17. Manipulation not to be undertaken

Manufacture or manipulation of a pesticide shall not be undertaken in any factory unless a certificate regarding its dangerous nature or otherwise is obtained from the Chief Inspector.

18. [253][Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

19. Medical Examination by Certifying Surgeon

(1) Every worker employed in the processes mentioned in paragraph 1 shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination in respect of Halogenated Pesticides, shall include tests for determination of the chemical in blood and in fat tissues, EEG abnormalities and memory tests, in respect of or gano phosphorous compounds, such examination shall include test for depression of cholinesterase in plasma and red blood cells. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every six calendar months. Such examinations shall, wherever the Certifying Surgeon considers appropriate, include the tests specified in sub-paragraph (1). Further every worker employed in the said processes shall also be examined once in every three months by the factory Medical Officer.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.]

20. Exemption

If in respect of any factory the Chief Inspector is satisfied that owing to the exceptional circumstances or the infrequency of the said manufacturing process or for any other reason which he shall record in writing all or any of the provisions of this schedule are not necessary for the protection of the workers employed in the factory, he may, by a certificate in writing exempt such factory, from all or any of the provisions on such condition as he may specify therein, such certificate may at any time be revoked by the Chief Inspector after recording his reason therefor.

APPENDIX

(SEE PARAGRAPH 4)

CAUTIONARY NOTICE

INSECTICIDES AND PESTICIDES

1. Chemicals handled in this plant are poisonous substances
2. Smoking, eating food or drinking, chewing tobacco in this area is prohibited. No food stuff or drink shall be brought in this area.
3. Some of these chemicals maybe absorbed through skin and may cause poisoning.
4. A good wash shall be taken before meals.
5. A good bath shall be taken at the end of the shift.
6. Protective clothing and equipment supplied shall be used while working in this area.
7. Containers of pesticides shall not be used for keeping food stuffs.
8. Spillage of the chemicals on any part of the body or on the floor or work bench shall be immediately washed away with water.
9. Clothing contaminated due to splashing shall be removed immediately.
10. Scrupulous cleanliness shall be maintained in this area.
11. Do not handle pesticides with bare hands; use scoops provided with handle.
12. In case of sickness like nausea, vomiting, giddiness, the manager should be informed who will make necessary arrangements for treatment.
13. All workers shall report for the prescribed medical tests regularly to protect their own health.)

[254][SCHEDULE XXX

MANUFACTURE OF RAYON BY VISCOSE PROCESS

1. Definitions

For the purpose of this schedule

(a) "approved" means approved for the time being in writing by the Chief Inspector;

(b) "breathing apparatus" means a helmet or face piece with necessary connections by means of which the person using it in a poisonous, asphyxiating or irritant atmosphere breathes unpolluted air ; or any other approved apparatus ;

(c) "churn" means the vessel in which alkali cellulose pulp is treated with carbon disulphide;

(d) "dumping" means transfer of cellulose xanthate from a dry churn to a dissolver ;

(e) "efficient exhaust draught" means a localized ventilation by mechanical means for the removal of any gas or vapour, so as to prevent it from escaping into the air or any place in which work is carried on. No draught shall be deemed to be efficient if it fails to control effectively any gas or vapour generated at the point where such gas or fume originates;

(f) "fume process" means any process in which carbon disulphide or hydrogen sulphide is produced, used or given off;

(g) "life belt" means a belt made of leather or other suitable material which can be securely fastened round the body with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man ;

(h) "protective equipment" means apron, goggles, face shields, footwear, gloves and overalls made of suitable materials.

2. Ventilation

(1) In all workrooms where a fume process is carried on, adequate ventilation by natural or mechanical means shall be provided so as to control, in association with other control measures, the concentration of carbon-disulphide and hydrogen sulphide in the air of every work environment within the permissible limits.

(2) Notwithstanding the requirements in sub-paragraph (1), an efficient exhaust draught shall be provided and maintained to control the concentration of carbon-disulphide and hydrogen sulphide in the air at the following locations :

(a) dumping hoppers of dry churns;

(b) spinning machines;

(c) trio rollers and cutters used in staple fiber spinning ;

(d) hydro-extractors for yarn cakes;

(e) after treatment processes ; and

(f) spin baths.

(3) In so far as the spinning machines and trio rollers and cutters used in staple fiber spinning are concerned, they shall be, for the purpose of ensuring the effectiveness of the exhaust draught to be provided as required in sub-paragraph (1), enclosed as fully as practicable and provided with suitable shutters in sections to enable the required operations to be carried out without giving rise to undue quantities of carbon-di-sulphide and hydrogen sulphide escaping to the work environment

(4) No dry churn shall be opened after completion of reaction without initially exhausting the residual vapors of carbon-di- sulphide by operation of a suitable and efficient arrangement for exhausting the vapors which shall be continued to be operated as long as the churn is kept opened.

(5) Whenever any ventilation apparatus normally required for the purpose of meeting the requirements in sub-paragraphs (2), (3) and (4) is ineffective, fails, or is stopped for any purpose whatsoever, all persons shall be required to leave the work areas where the equipment or processes specified in the above said sub- paragraphs are in use, as soon as possible, and in any case not later than 15 minutes after such occurrence.

(6)

(i) All ventilating systems provided for the purposes as required in sub-paragraphs (2), (3) and (4) shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations of test shall be rectified forthwith.

(ii) A register containing particulars of such examinations and tests, and the state of the systems and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

3. Waste from spinning machines

Waste yarn from the spinning machines shall be deposited in suitable containers provided with close fitting covers. Such waste shall be disposed off as quickly as possible after decontamination.

4. Linking of dry churns

The inside surface of all dry churns shall be coated with a non-sticky paint so that cellulose xanthate will not stick to the surface of the churn, such coating shall be maintained in good condition.

5. Air monitoring

(1) To ensure the effectiveness of the control measures, monitoring of carbon-disulphide and hydrogen sulphide in air shall be carried out once at least in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purposes.

(2) For the purpose of the requirement in sub-paragraph (1), instantaneous gas detector tubes shall not be used. Samples shall be collected over a duration of not less than 10 minutes and analyzed by an approved method. The locations where such monitoring is to be done shall be as directed by the Inspector.

(3) If the concentration of either carbon disulphide or hydrogen sulphide exceeds the permissible limits for such vapour or gas as laid down in Rule 102A suitable steps shall be taken for controlling the concentrations in air of such containers. A report of such occurrences shall be sent to the Chief Inspector forthwith.

6. Prohibition to remain in fume process room

No person during his intervals for meal, or rest shall remain in any room wherein fume process is carried on.

7. Prohibition relating to employment of young persons

No young person shall be employed or permitted to work in any fume process or in any room in which any such process is carried on.

8. Protective equipment

(1) The occupier shall provide and maintain in good condition protective equipment as specified in the Table for use of persons employed in the processes referred to therein.

THE TABLE

Process	Protective equipment
(1)	(2)
1. Dumping	Overalls, face-shields, gloves and footwear - all made of suitable material
2. Spinning	Suitable aprons, gloves and footwear
3. Process involving or likely to involve contact with viscose solution	Suitable gloves and footwear
4. Handling of Sulphur	Suitable Chemical goggles
5. Any other process involving contact with hazardous chemicals	Protective equipment as may be directed by the Chief Inspector by an order in writing

(2) A suitable room, rooms or lockers shall be provided exclusively for the storage of all the protective equipment supplied to workers and no such equipment shall be stored at any place other than the room, rooms or lockers so provided.

9. Breathing apparatus

(1) There shall be provided in every factory where fume process is carried on, sufficient supply of,

(a) breathing apparatus;

(b) oxygen and suitable appliances for its administration ; and

(c) life belts.

(2)

(i) The breathing apparatus and other appliances referred to in sub-paragraph (1) shall be maintained in good condition and kept in appropriate locations so as to be readily available.

(ii) The breathing apparatus and other appliances referred to in clauses (a) and (b) of sub-paragraph (1) shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by a responsible person.

(iii) A record of the maintenance and of the condition of the breathing apparatus and other appliances referred to in sub- clause (1) shall be entered in a register provided for that purpose which shall be readily available for inspection by an Inspector.

(3) Sufficient number of workers shall be trained and periodically re-trained in the use of breathing apparatus and administering artificial respiration so that at least two such trained persons would be available during all the working hours in each room in which (tune process is carried on.

(4) Breathing apparatus shall be kept properly labeled in clean, dry, light proof cabinets and if liable to be affected by fumes, shall be protected by placing them in suitable containers.

(5) No person shall be employed to perform any work specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under that sub-paragraph unless he has been fully instructed in the proper use of that equipment.

(6) No breathing apparatus provided in pursuance of subparagraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

10. Electric fittings

All electric fittings in any room in which carbon-disulphide is produced, used or given off or is likely to be given off into the work environment, other than a spinning room, shall be of flame-proof construction and all electric conductors shall either be enclosed in metal conduits or be lead sheathed.

11. Prohibition relating to smoking, etc

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in a room in which fume process is carried on. A notice in the language understood by the majority of the workers shall be posted in prominent locations in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

Provided that fire, naked light or other means of producing a naked light or spark may be carried on in such room only when required for the purpose of the process itself under the direction of a responsible person.

12. Washing and bathing facilities

(1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the processes covered by the schedule, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 25 persons employed.

(2) The washing places shall have stand pipes placed at intervals of not less than one meter.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of clean towels made of suitable material shall be provided:

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushes shall be provided.

13. Rest room

(1) A rest room shall be provided for the workers engaged in doffing operations of filament yarn spinning process.

(2) Such rest room shall be provided with fresh air supply and adequate seating arrangement.

14. Cautionary notice and instructions

(1) The following cautionary notice shall be prominently displayed in each fume process room :-

CAUTIONARY NOTICE

1. Carbon disulphide (CS) and Hydrogen Sulphide (H_2S) which may be present in this room are hazardous to health.
2. Follow safety instructions.
3. Use protective equipment and breathing apparatus as and when required.
4. Smoking is strictly prohibited in this area.

This notice shall be in a language understood by the majority of the workers and displayed where it can be easily and conveniently read. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

(2) Arrangements shall be made to instruct each worker employed in any room in which a fume process is carried on regarding the health hazards connected with their work and the preventive measures and methods to protect themselves. Such instructions shall be given on his first employment and repeated periodically.

(3) Simple and special instructions shall be framed to ensure that effective measures will be carried out in case of emergency involving escape of carbon disulphide and hydrogen sulphide. Those instructions shall be displayed in the concerned areas and workers shall be instructed and trained in the actions to be taken in such emergencies.

15. Medical facilities and records of examinations and tests

(1) The occupier of each factory to which the schedule applies, shall

(a) employ a qualified medical officer for medical surveillance of the workers employed in the fume process whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) provide to the said medical officer all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate tests carried out by the said medical officer shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

16. Medical examination by the Certifying Surgeon

(1) Every worker employed in the finite process shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for estimation of exposure co-efficient (iodine azide test in urine) and cholesterol, as well as Electrocardiogram (ECG) and Central Nervous System (CNS) tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the fume process shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months. Such examination shall wherever the Certifying Surgeon considers appropriate, include all the tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Manager of the factory. The record of each examination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Manager of the factory. The records of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 17A.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the fume process on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the fume process.

[255][The persons so suspended from the process shall be provided with alternative placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.]

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the fume process unless the Certifying Surgeon, after further examination again certifies him fit for employment in such process.

17. Exemptions

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief inspector may, by a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

[256][SCHEDULE XXXI

FLAMMABLE LIQUEFIED OR COMPRESSED GASES AND HIGHLY FLAMMABLE LIQUIDS

1. Application

Provisions of this Schedule shall apply to all factories where flammable liquefied or compressed gases or highly flammable liquids are manufactured, stored, handled used (sic.).

2. Definitions

For the purposes of this Schedule

(a) "bulk storage " means bullet or Horton sphere or mounded vessel used for storage of flammable liquefied or compressed gases or highly flammable liquids, which are having capacity exceeding one thousand liters of water capacity;

(b) "bullet" means a horizontal cylindrical pressure vessel with hemispherical or dished ends used for storage of flammable liquefied or compressed gas;

(c) “explosive mixture” means a mixture of combustion agent (oxidizing substance in gaseous, liquid or solid state) and a fuel (oxidisable substance in gaseous, liquid or solid state) in such proportions that it could give rise to a very rapid and violent oxidation reaction, liberating more kinetic energy than is dissipated through conduction and convection, ultimately causing practical effect of explosion ;

(d) "fire proof " means a passive means of protection of a structure or equipment or vessel from exposure to direct fire or flame impingement or prolonged exposure to high intensity radiant thermal flux, by the application of a coating of certain heat-resistant substance or mixture of a specified rating ;

(e) "fire safe " means a provision of dual seating to control leakage to acceptable level, even after damage, due to fire, as applied to valves ;

(f) "flammable compressed gas " means flammable compressed gas as defined in rule 2 of the Static and Mobile Pressure Vessels (Unfired) Rules, 1981 framed under the Explosives Act, 1884 (Central Act IV of 1884) ;

(g) "flammable liquefied gas " means a flammable gas kept in liquefied state by the application of pressure at normal ambient temperature, 13% (thirteen percentage) or less of which by volume with air forms a flammable mixture or which has a flammable range with air of atleast 12% (twelve percentage) points regardless of the lower flammable limits;

(h) "gas free " means a condition when the concentration of a flammable gas in an equipment or a vessel is well below the threshold limits (lower explosive limit), so, that it is safe for a man to enter into the equipment or vessel or to conduct "hot work" there, as the case may be ;

(i) "highly flammable liquid " means any liquid including its solution, emulsion or suspension which when tested in a manner specified by sections 14 and 15 of the Petroleum Act, 1934 (Central Act XXX of 1934) gives off flammable vapors at a temperature less than 32 degrees Centigrade:

(j) "Horton sphere" means a spherical Pressure Vessel, supported vertically and is used for the storage of flammable liquefied' or compressed gas;

(k) "hot work " means an activity which may produce enough heat or spark to ignite a flammable or explosive mixture;

(l) "Mounded vessel" means a pressure vessel for the storage of flammable liquefied or compressed as, which is sited above ground and is completely covered by a mound of earth or similar inert material except for nozzles, manhole covers, inspection covers fitted on the top of the vessel ;

(m) "purging" means an act of replacing the atmosphere inside a vessel or a container by an inert gas in such a manner as to prevent the formation of an explosive mixture.

(n) "purging into service" means the replacement of air in a closed system by an inert gas and then replacement of the inert gas by the flammable gas, vapour or liquid;

(o) "purging out of service" means the replacement of normal flammable content of a closed system by an inert gas and then replacement of the inert gas by air to such an extent that it is gas free and safe for any person to work ;

(p) "remote operated emergency valve" means a shut-off valve capable of remote operation which closes automatically on loss of the actuating power or fire engulfment and which is fire-safe.

3. Storage

Every highly flammable liquid, flammable liquefied or compressed gas used in every factory shall be stored in bulk in suitable fixed storage tank made of adequate fire-resistant construction and located in a safe position under the ground or in the open.

4. Location and spacing

Before siting the location of any storage vessel, risk analysis study shall be carried out. Based on the risk analysis study, every storage vessel shall be located in the manner specified below:

(a) the location shall not interfere with the movement of vehicles. The Risk Contour shall not intercept the public places such as assembly points, canteen, rest sheds and similar other locations;

(b) before locating any storage vessel, the soil- condition shall be assessed for the suitability of the superstructure ;

(c) the storage vessel shall be sited above ground in open air and well-ventilated place ;

(d) mounded vessels shall be so located that the manholes and pressure relief valves are in a well-ventilated position;

(e) the minimum safety distance between the storage vessels and from buildings, boundary or fixed ignition source shall be in accordance with the Static and Mobile Pressure Vessels (Unfired) Rules, 1981, as amended from time to time ;

(f) the storage vessels shall not be installed one above the other ;

(g) the bullets shall be so located that their longitudinal axes do not points towards other vessels, vital process equipment, control rooms, loading stations, nearby buildings or storage tanks containing hazardous materials;

(h) weeds, long grass, deciduous shrubs and trees and any combustible materials shall be removed from the storage vessel area within the licensed premises;

(i) the storage vessels shall not be located within the blinded enclosure of any heat source or other flammable liquids, gases or oxidizers ;

(j) the storage vessels, pumping equipment, loading and unloading facilities and vaporizers shall be located in an exclusive fenced compound of atleast 2 meters high along the perimeter of the safety zone'; such fenced compound shall have atleast two gates for the safe exit of persons and vehicles in case, of any emergency ;

(k) the number of storage vessels in one group shall not exceed six ;

(l) storage vessels within a group shall be so located that their longitudinal axes are parallel to each other;

(m) spheres and bullets shall not be grouped together and shall be provided with separate piping manifold, so as to avoid overfilling of a vessel due to gravitation from the other;

(n) the top surface of the storage vessels installed in a group shall be on the same plane so that the pressure safety valve blow-out from them do not affect the other;

(o) the flooring of the bullets or spheres shall be sloped in such a way that the spilled liquid or gas from any vessel shall not pass through any other vessel;

(p) the storage vessels shall not be located in such a way that the high tension electrical cables shall not pass through or near the licensed premises;

(q) storage vessels shall not be sited in places which are susceptible to flooding;

(r) the grade for the storage vessels shall be elevated slightly above the surrounding terrain in order to ensure complete drainage of water from beneath the bottom of the vessels; and

(s) every container, vessel or tank used for storing highly flammable liquid or flammable liquefied or compressed gas shall be clearly and in bold letters marked Danger — Highly Flammable Liquid " or - Danger — Flammable liquefied or Compressed Gas ", as the case may be.

5. Design of storage vessels

(1) General: Each static vessel for the storage of flammable liquefied or compressed gas shall be provided with the following finings and instruments which are suitable for use at pressures not less than the design pressure of the vessel and for the temperatures appropriate to the worst operating conditions namely:

(a) at least two pressure safety valves connected independently to the vapour space;

(b) two independent liquid level indicators;

(c) a high level switch with alarm;

(d) a pressure gauge, connected to the vapour space; and

(e) a temperature gauge for measuring the temperature of the contents of the vessel.

(2) Vessel connections: In every flammable liquefied or compressed gas storage vessel

(i) all the connections to the vessel shall be designed and fitted in accordance with the Design Code of Indian Standard-2825 or equivalent duly approved by the Chief Controller of Explosives;

(ii) not more than one nozzle shall be provided at its bottom for inlet and outlet purpose, apart from the drainage pipe

(iii) the nozzle shall be a full-welded pipe and shall extend to a minimum distance of 3 (three) meters from the shadow of the vessel. A combination of manual and remote operated shut-down valve shall be provided on this bottom nozzle at a distance of atleast 3 (three) meter beyond the shadow of the vessel. The nozzle shall have a slope of 1.5 degree ;

(iv) the nozzle shall be stress-relieved along with the vessel ;

(v) (sic) there shall not be any flange, instrument tapping or manhole fitted on this nozzle up to the combination of manual and remote operated valve ; and

(vi) an excess flow valve shall be provided for the nozzle on the body of the vessel.

(3) Pressure Safety Valve: In every storage vessel

(i) the pressure safety valves provided shall be of spring-loaded type (weight-loaded safety valves shall not be used). Each of the pressure safety valves shall have 100% (hundred percent.) relieving capacity;

(ii) the pressure safety valves shall be set to discharge at a pressure not more than 110 (one hundred and ten) per cent. of the design pressure of the vessel and shall have a total relieving capacity adequate for limiting the pressure build-up in the vessel not more than 120 (one hundred and twenty) per cent. of the design pressure;

(iii) the discharge of the pressure safety valves shall be connected to flare system. if available. In case the flare system is not available, the discharge from the pressure safety valve shall be vented vertically upwards to atmosphere at a minimum elevation of 3 meter above the top of the vessel for effective dispersion of the discharge. A loose-fitting rain cap with a non-sparking chain attached to the vent pipe shall be fitted on top of the pressure safety valve;

(iv) an isolation valve shall be provided in between each pressure safety valve and the vessel. The arrangement of such isolation valve shall be so designed as to afford full required capacity flow through atleast one of the pressure safety valves ; and

(v) each pressure safety valve shall be visibly marked with the "set pressure" in Kg/Sq.Cm. (gauge) at which it will discharge, with its actual rate of discharge in cubic meter per minute of the gas at a pressure of 120 (one hundred and twenty) per cent. of the design pressure of the vessel.

(4) Emergency shut-off valve: In every storage vessel

(i) all liquid and vapour connections, except those for pressure safety valves and the drainage connections of diameter less than 25 (twenty five) mm., shall have an emergency shut-off valve, such as an excess flow check valve or a remote operated valve:

Provided that the emergency shut-off valve is not required in cases where the connection to a vessel is not greater than three centimeter in diameter for liquid and eight centimeter in diameter for vapour ;

(ii) where the emergency shut-off valve provided is of 'excess flow check valve' type, its closing rate of flow shall be below the rate which is likely to result due to a fracture of the line which it is protecting, calculated under the worst conditions. Excess flow check valve shall have a flow capacity sufficiently above the normal flow requirements to prevent valve chatter.

(5) Bottom water draw-off or drain valve- In every storage vessel

(i) there shall be provided two drain valves at the bottom of the vessel between the remote operated valve and the first isolation valve. The length of the

pipeline between the two drain valves shall be atleast 0.5 meter to minimize the risk of simultaneous obstruction of both valves due to freezing of any water present in the liquefied gas. The drain connections shall be not more than 50 (fifty) millimeter in diameter;

(ii) the first drain valve from the vessel shall be of gate type (throttle type), while the second drain valve shall be of quick shut-off type;

(iii) the material of construction for the drain pipeline and the related connections shall be suitable for cryogenic application.

(6) Sampling valve: In every storage vessel, two valves with suitable distance-pipe of not less than 0.5 meter in length between them shall be fitted at its bottom between the remote operated valve and the first isolation valve for sampling purpose. (The provision of a distance-pipe is for the purpose of avoiding icing problem in the upstream valve)

(7) Liquid level gauging device: In every storage vessel, out of two level indicators provided, one shall be of "float" type and the other shall be of "differential pressure" type in case of Horton Spheres. Magnetic float type gauge shall be used for bullets in the place of "differential pressure" type "High Level" alarm shall be set on the level indicators to operate at not more than 85% (eighty five percent.) of the volumetric capacity of the vessel. An audio-visual indication as regards the high level alarm shall be provided at the normal place of operator's seat.

(8) Pressure gauge: In every storage vessel, there shall be provided atleast one pressure gauge, duly calibrated and having a dial range not less than 1.5 times the design pressure, easily visible and designed to show the correct internal pressure at all times. It shall be provided in the vapour space at the top. A suitable stop valve shall be provided in between the vessel and the pressure gauge.

(9) Gas sensors: In every storage vessel for flammable liquefied or compressed gas, gas sensors with alarm shall be provided at vulnerable areas and in the event of gas leakage, such sensor shall trip the compressor or pump if in operation.

(10) Bonding: Electrical continuity shall be maintained between the flanges by means of bonding in every storage vessel and its pipe lines.

(11) Pop off valves: "Pop off" valves shall be provided in between isolation valves on the pipelines carrying flammable liquefied or compressed gases.

(12) Capacity of vaporizer: The vaporizer, connected to the flammable liquefied gas storage vessels shall have adequate capacity to meet the required flow rate of flammable liquefied gas in the process.

6. Prevention of ignition

In every location where highly flammable liquid or flammable liquefied or compressed gas is stored, conveyed, handled or used or where there is danger of fire or explosion from accumulation of highly flammable liquid or liquefied compressed gas in air, all practicable

measures shall be taken to exclude the sources of ignition. Such precautions shall include the following:

(a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;

(b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;

(c) no person shall wear or be allowed to wear any footwear having iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;

(d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited;

(e) transmission bolts with iron fasteners shall not be used ; and

(f) all other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames frictional sparks. Over heated surfaces of machinery or plant, chemical or physical-chemical reaction and radiant heat.

7. Enclosed system for conveying highly flammable liquids:

Wherever it is reasonably practicable, highly flammable liquids shall be conveyed within a factory in totally enclosed system consisting of pipe lines, pumps and similar appliances from the storage tank or vessel to the point of use. Such enclosed system shall be so designed, installed, operated and maintained as to avoid leakage or the risk of spilling.

8. Prohibition of smoking:

No person shall smoke in any place where a highly flammable liquid or flammable liquefied or compressed gas is present in circumstances that smoking would give rise to a risk of fire. The occupier shall take all practicable measures to ensure compliance with this requirement including display of a bold notices indicating prohibition of smoking at every place where this requirement applies.

9. Fire protection:

In every factory

(1) no vehicular traffic shall be permitted within the risk area of lower flammable limit of the highly flammable liquid or flammable liquefied or compressed gas stored. When required, vehicles filled with approved spark arrestors shall only be allowed with valid vehicle entry permit.

(2) all the vessels used for bulk storage or handling of highly flammable liquid or flammable liquefied or compressed gases shall be protected against the hazards of fire as follows:

(a) medium velocity water spray system shad be provided for all above ground storage vessels, cylinder storage or filling or repair sheds, pump houses, bulk lorry and tank wagon gantries;

(b) detection of fire for automatic actuation of medium velocity water sprinkler system shall be provided at all critical locations. such as bulk storage, tank truck or tank wagon gantry, pump or compressor house and vapourisers ;

(c) medium velocity water sprinkler system shall be based on heat and other detection.

(d) Quartzoid Bulb protection designed to blow at 79 (seventy nine) degree centrigrade (maximum) shall be provided in open areas or in the sheds ;

(e) medium velocity water sprinkler system shall function in such a way that the actuation of fire detectors shall initiate the following:

(i) opening of deluge valve ;

(ii) audio-visual alarm at the fire pump house or control panel ;

(iii) fire siren ; and

(iv) the diesel pump will get started based on the "Set pressure" to supplement or to maintain the fire water pressure in the ring main ; and

(f) The medium velocity water sprinkler system shall have a minimum spray density of ten liters per minute per square meter in the case of flammable liquefied or compressed gas and in the case of highly flammable liquid it shall have minimum spray density of 3 (three) liters per minute per square meter for the single largest risk area.

For the purpose of calculation of a single risk area, the following shall be taken into account:

(i) in case of bulk storage, adjoining vessels within the distance of R + 30 (thirty) meter, where R is the radius of the vessel and 30 (thirty) meter shall be measured from the periphery of the vessel

(ii) in case of tank lorry gantry, a maximum of 8 (eight) bays shall be taken as a single risk area ; and

(iii) in case of tank wagon gantry, a minimum of one gantry (600 (six hundred) Metric Tonnes) shall be taken as a single risk area

(3)

(a) a fire water ring main shall be provided all around the locations of storage and handling of flammable liquefied or compressed gases with hydrants or monitors spaced at 30 (thirty) meter centre to centre. Fire hydrants and monitors shall be installed outside the licensed premises ;

(b) the fire water pressure system shall be designed for a Minimum residual pressure of 7 (seven) Kgf/Sq. Cm. (gauge) at the remotest place of application in the plant ;

(c) fire hydrant network shall be provided in closed loops to ensure multi-directional flow in the system. Isolation valves shall be provided to enable isolation of any section of the network without affecting the flow in the rest ; and

(d) the fire water system in the plant shall be designed to meet the highest fire-water flow requirement of medium velocity water sprinkler for a single largest risk area at a time plus 288 (two hundred and eighty eight) meter/hour for operating 2 (two) numbers fire water monitor or supplementary hose requirements.

(4)

(a) water for the hydrant service shall be stored in any easily accessible surface of underground concrete reservoir or above ground tank of steel or concrete;

(b) the effective fire water storage capacity available for fire-fighting shall be for four hours ; and

(c) storage tank or reservoir for fire water shall be in two interconnected compartments to facilitate cleaning and repair.

(5) Portable fire extinguishers as approved by Bureau of Indian Standards shall be located at convenient places as indicated in the Table below : —

THE TABLE

AREA	PORTABLE FIRE EXTINGUISHER
(1)	(2)
1. Flammable liquefied gas or storage vessels (each)	2 Numbers 10 Kg. DCP
2. Tank wagon loading or unloading gantries	1 Number 10 Kg. DCP. extinguisher for every 15/20 meters of gantry
3. Tank truck loading or unloading gantries	1 Number 10 Kg. DCP, fire extinguisher in each Bay and t Number 50 Kg. Mobile DCP unit/gantry

The dry chemical powder used in the extinguishers shall be potassium or Urea based or Sodium Bicarbonate as per IS: 4308. The expellant gas ie., N2/CO2 should be of good quality.

10. Loading and unloading facilities for flammable liquefied or compressed gas

(1) Loading: In every factory, where the loading of flammable liquefied or compressed gas is carried on, the loading station shall consist of the following:

(a) a filling line with an isolation valve and check valve ;

(b) a vapour return line with a check valve and an isolation valve to be connected back to the storage vessel from which the loading pump is drawing flammable liquefied gas ;

(c) suitable loading arm or flexible hoses shall be provided at the end of filling line and vapour return line for connecting to the tank truck vessels or tank wagons ; and

(d) suitable thermal pressure relief valve(s) shall be provided between the shut-off valves to protect against excessive pressure which may develop due to thermal expansion of the trapped liquid .

(2) Unloading: In every factory, where unloading of flammable liquefied or compressed gas is carried on, the compressor used for unloading of flammable liquefied gases by means of a differential pressure between the receiving and discharging vessels by withdrawing vapour from the receiving vessel and forcing it at high pressure into the discharging vessel shall have the following facilities:

(a) liquid unloading check valve line with isolation valve; and

(b) vapour line with isolation valves ;

(3) Loading and unloading operations: In every factory, where the loading or unloading of flammable liquefied or compressed gas is carried on

(a) written operating procedures for loading or unloading operation, clearly defining the safety checks and precautions to be observed as well as the responsibilities of the personnel involved in such operation, shall be prepared both in English and in Tamil and shall be given to them and also displayed at the site;

(b) flexible hoses used for transfer of flammable liquefied or compressed gas to or from a tank truck or tank wagon shall be,

(i) designed and constructed in accordance with the Static and Mobile Pressure Vessels (Unfired) Rules, 1981;

(ii) having a means of identification ; and

(iii) periodically checked for electrical and mechanical continuity and recorded in the register;

(c) for connecting and disconnecting hoses, only non-sparking type of tools shall be used;

(d) the tank truck shall have the starter motor which shall be of non-sparking or flame-proof type;

(e) the tank truck shall be positioned on a levelled ground and blocks (checks) shall be placed at front and rear wheels in order to prevent the risk of accidental vehicle movement;

(f) the engine of the vehicle shall be stopped and all the electrical equipment shall be switched off, before commencing the loading or unloading operation;

(g) before commencing the loading or unloading operation, static charge shall be effectively discharged by bonding and earthing of the storage vessels and the road tankers or wagons;

(h) the road tanker or wagon shall be electrically bonded at, specified point to the fixed grounding system;

(i) an authorised person shall supervise the transfer operation and respond immediately in the event of an emergency;

(j) during loading operation, the pressure within the receiving tank truck vessel shall be observed to ensure that it does not approach the " start-to-discharge " pressure of the relief valve. Filling rate shall be regulated as required;

(k) the receiving vessel which is having an internal pressure of less than 1(one) Kg/Sq.Cm (g) shall not be permitted to be filled, such vessel shall be checked for Oxygen content or explosive mixture and purged, if necessary ;

(l) filling or transfer operation shall be done only during day time ;

(m) filling or transfer operation shall be stopped immediately in the event of—

(a) uncontrolled leakage occurring;

(b) a fire occurring in the vicinity;

(c) lightning and thunder-storm;

(n) the "Safe Operating Procedure " for unloading shall be displayed conspicuously in English and Tamil near the unloading area.

11. Maintenance and Inspection

In every factory where highly flammable liquid or flammable liquefied or compressed gas is stored in bulk.

(1) the storage vessels and the safety fittings and instruments shall be tested periodically as per the requirements under various statutes as applicable and relevant records with the particulars of such testing shall be maintained ;

(2) loading or unloading hoses shall be tested atleast once in every six months ;

(3) the earth pits shall be maintained well and the earth resistance shall be measured atleast once in every 12 (twelve) months ; and records shall be maintained in this regard ;

(4) the foundation and supports of the storage vessels shall be checked once in a year for differential settlement due to disturbance in the sub-soil ;

(5) the cathodic protection, if provided, shall be monitored periodically and maintained well for its effectiveness ;

(6) the gas detection system shall be checked and calibrated periodically ; and

(7) the fire water system which includes fire water pumps, fire hydrant or monitor, piping network and water sprinkler or deluge system shall be checked periodically and maintained well for its fail-safe operation.

12. Training

The occupier of every factory in which highly flammable liquid or flammable liquefied or compressed gas is stored in bulk shall ensure that

(1) the supervisory or managerial personnel are adequately trained in all aspects of safe storage and handling of highly flammable liquid or flammable liquefied or compressed gas as well as disaster control or preparedness and response

(2) regular raining programmes are conducted in loading or unloading operation, drafting procedure, commissioning and decommissioning procedures," hot work" permit system, fire-fighting or emergency combat operation, health hazards etc., for

(a) regular workers;

(b) contract workers; and

(c) security staff.

(3) Full-scale emergency mock drill, simulating leakage of flammable gas and the consequent major fire, are conducted in the plant atleast once in every six months in order to assess the level of preparedness and the adequacy of combat measures. Any deviations or defects observed during such mock-drill shall be rectified forthwith

13. Exemption

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the process or for any other reason, all or any of the provisions of this Schedule is not necessary for protection of the workers in the factory, the Chief Inspector may be certificate in writing, which he may at his discretion, revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.]

[257][SCHEDULE XXXII

OPERATIONS IN FOUNDARIES AND FURNACES

1. Application

Provisions of this schedule shall apply to all parts of factories where any of the following operations or process are carried on:

(a) The production of iron casting or, as the case may be, steel castings by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell moulding or by centrifugal casting and any process incidental to such production;

(b) the production of non-ferrous castings by casting metal in moulds made of sand, loam, metal, moulding composition or other material or mixture or materials, or by shell mouldings, die-casting (including pressure die-casting), centrifugal casting or continuous casting and any process incidental to such production ;

(c) the melting and casting of non-ferrous metal land/or ferrous metal) for the production of ingots, billets, slabs or other similar products and the stripping thereof ; but shall not apply with respect to

(i) any process with respect to the smelting and manufacture of lead and the Electric Accumulators ;

(ii) any process for the purposes of a printing we ; or

(iii) any smelting process in which metal is obtained by a reducing operation or any process incidental to such operation ; or

(iv) the production of steel in the form of ingots; or

(v) any process in the course of the manufacture of solder or any process incidental to such manufacture ; or

(vi) the melting and casting of lead or any lead-based alloy for the production of ingots, billets, slabs or other similar products or the stripping thereof, or any process incidental to such melting, casting or stripping.

2. Definition

For the purpose of this Schedule

(a) "approved respirator" means a respirator of a type approved by the Chief Inspector ;

(b) " Cupola or furnace " includes a receiver associated there with ;

(c) "dressing or fettling operations "includes stripping and other removal of adherent sand, corers, runners, risers, flash and other surplus metal from a casting and the production of reasonably clean and smooth surface, but does not include

(i) the removal of metal from a casting when performed incidentally in connection with the machining or assembling of castings after they have been dressed or fettled, or

(ii) any operation which is a knockout operation within the meaning of this Schedule ;

(d) "foundry" means those parts of a factory in which the production of iron or steel or non-ferrous castings (not being the production of pig iron or the production of steel in the form of ingots) is carried on by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by steel moulding or by centrifugal casting in metal moulds lined with sand, or die casting including pressure die castings, together with any part of the factory in which any of the following processes arc carried on as incidental processes in connection with and in the course of, such production, namely, the preparation and mixing of materials used in foundry process, the preparation of moulds and cores, knock-out operations and dressing or fettling operations ;

(e) "knock-out operations" means all methods of removing castings from moulds and the following operations, when done in connection therewith, namely, stripping, coring out and the removal of runners and risers ;

(f) "pouring aisle" means an aisle leading from a main gangway or directly from a cupola or furnace to where metal is poured into moulds.

(g) “qualified supervisors” means a person possessing a Bachelor’s Degree in Science or Diploma or Degree in Engineering with Certificate in ferrous/non-ferrous technology from any institution recognised by the Chief Inspector.

3. Prohibition of use of certain materials as parting materials

(1) A material shall not be used as a parting material if it is a material containing compounds of silica calculated as silica to the extent more than five per cent, by weight of the dry material:

Provided that this prohibition shall not prevent the following being used as a parting material if the material does not contain an admixture of any other silica:

(a) Zirconium silicate (zircon).

(b) Calcined china clay.

(c) Calcined aluminious fireclay.

(d) Sillimanite.

(e) Calcined or fused alumina.

(f) Olivine.

(g) Natural sand.

(2) Dust or other matter deposited from a fettling or blasting process shall not be used as a parting material or as a constituent in a parting material.

4. Arrangement and storage

For the purposes of promoting safety and cleanliness in workrooms, the following requirements shall be observed :

(a) moulding boxes, loam plates, ladles, patterns, pattern plates, frames, boards, box weights, and other heavy articles shall be so arranged and placed as to enable work to be carried on without unnecessary risk ;

(b) suitable and conveniently accessible racks, bins or other receptacles shall be provided and used for the storage of other gear and tools;

(c) where there is bulk storage of sand, fuel, metal scrap or other materials or residues, suitable bins, bunkers or other receptacles shall be provided for the purpose of such storage.

5. Construction, Installation and Operation

(1) The precinct in which induction furnace is installed shall be of adequate strength and shall be segregated from the other parts of the factory in such a way so that minimum number of workers is exposed to the risk of any fire or explosion at any time;

(2) Furnace shed shall be well ventilated

(3) All the fitting and attachment of Induction furnace shall be of good construction, sound material and adequate strength;

(4) Adequate arrangements shall be made to avoid tilting of the ladles while transportation

(5) Ladle shall not be filled with molten metal more than $3/4^{th}$ of its volume to avoid spillage of molten metal while being carried by the crane;

(6) The refractory material of the induction furnace shall be strong at high temperature, resistant to thermal shock, chemically inert, low thermal conductivity and co-efficient of expansion and of adequate uniform thickness.

(7) The lining of the induction furnace shall be checked by qualified supervisor every week for any wear and tear and damage as per relevant Bureau of Indian Standards.

(8) Adequate precautions shall be taken during repair of induction furnace as per relevant bureau of Indian Standards.

6. Construction of floors

(1) Floors or indoor workplaces in which the processes are carried on, other than parts which are of sand, shall have an even surface of hard material.

(2) No part of the floor of any such indoor workplace shall be of sand except, where this is necessary by reason of the work done.

(3) All parts of the surface of the floor of any such indoor workplace which are of sand shall, so far as practicable, be maintained in an even and firm condition.

7. Means of escape

There shall be atleast two ways of escape with adequate width at opposite ends of the furnace platforms.

8. Display of Notice

Notice regarding non-use of water, etc. near induction furnace shall be displayed

9. Charging of scrap in Induction Furnace

(1) No scrap material with close cavities shall be charged in the induction furnace. Scrap to be charged shall be dry and shall not contain oil or any other liquid or moisture.

(2) No scrap material shall be fed into induction furnace unless it is thoroughly checked in the presence of qualified Supervisor.

(3) No closed container scrap shall be fed into the furnace unless it is cut into pieces. Such container shall be rendered safe by suitable means.

(4) No wet scrap material shall be charged into the induction furnace.

(5) Scrap received in the form of pressed bundle should be opened, sorted and only then fed into furnace.

10. Cleanliness of Indoor workplaces

(1) All accessible parts of the walls of every indoor workplace in which the processes are carried on and of everything affixed to those wall shall be effectively cleaned by a suitable method to a height of not less than 4.2 meters from the floor at least once in every period of fourteen months. A record of the carrying out of every such effective cleaning in pursuance of this paragraph including the date (which shall be not less than five months nor more than nine months after the last immediately preceding washing, cleaning or other treatment).

(2) Effective cleaning by a suitable method shall be carried out atleast once every working day of all accessible parts of the floor of every indoor workplace in which the processes arc carried on, other than pans which are of sand; and the parts which are of sand shall be kept in good order.

11. Manual operations Involving molten metal

(1) There shall be provided and properly maintained for all persons employed on manual operations involving molten metal with which they are liable to be splashed, a working space for that operation

(a) which is adequate for the safe performance of the work and

(b) which, so far as reasonably practicable, is kept free from obstruction.

(2) Any operation involving the carrying by hand of a container holding molten metal shall be performed on a floor all parts of which were any person walks while engaged in the operation shall be on the same level :

Provided that, where necessary to enable the operation to be per-formed without undue risk, nothing in this paragraph shall prevent the occasional or exceptional use of a working space on a different level from the floor, being a space provided with a safe means of access from the floor for any person while engaged in the operation.

12. Gangways and pouring aisles

(1) In every workroom to which this paragraph applies constructed, reconstructed or converted for use as such after the making of this schedule and, so far as reasonably practicable, in every other workroom to which this paragraph applies, sufficient and dearly defined main gangways shall be provided and properly maintained which

(a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage ;

(b) shall be kept, so far as reasonably practicable, free from obstruction ;

(c) if not used for carrying molten metal, shall be atleast 920 millimeters in width ;

(d) if used for carrying molten metal shall be

(i) Where truck ladles are used exclusively, atleast 600 millimeters wider than the overall width of the ladle;

(ii) Where hand shanks are carried by not more than two men, atleast 920 millimeters in width ;

(iii) Where hand shanks are carried by more than two men, atleast 1.2 meters in width ; and

(iv) Where used for simultaneous travel in both directions by men carrying hand shanks, atleast 1.8 meters in width.

(2) In workroom to which this paragraph applies constructed, reconstructed or converted for use as such after the making of this Schedule, sufficient and clearly defined pouring aisles shall be provided and properly maintained which

(a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage;

(b) shall be kept so far as reasonably practicable free from obstruction ;

(c) if molten metal is carried in hand ladles or bull ladles by not more than two men per ladle, shall be atleast 460 millimeters wide, but where any moulds alongside the aisle arc more than 510 millimeters above the floor of the aisle, the aisle shall be not less than 600 millimeters wide;

(d) if molten metal is carried in hand ladles or bull ladles by more than two men per ladle, shall be atleast 760 millimeters wide ;

(e) if molten metal is carried in crane, trolley or truck ladles, shall be of a width adequate for the safe performance of the work.

(3) Requirements of sub-paragraphs (1) and (2) shall not apply to any workroom or part of a workroom if, by reason of the nature of the work done therein, the floor of that workroom or, as the case may be, that part of a workroom has to be of sand.

(4) In this paragraph "workroom to which this paragraph applies" means a part of a ferrous or non-ferrous foundry in which molten metal is transported or used, and a workroom to which this paragraph applies shall be deemed for the purposes of this paragraph to have been constructed, reconstructed or converted for use as such after the making of this schedule if the construction, reconstruction or conversion thereof was begun after the making of this Schedule.

13. Work near cupolas and furnaces

No person shall carry out any work within a distance of four meters from a vertical line passing through the delivery and of any spout of a cupola or furnace, being a spout used for delivering molten metal, or within a distance of 2.4 meters from a vertical line passing through the nearest part of any ladle which is in position at the end of such a spout, except in either case where it is necessary for the proper use or maintenance of a cupola or furnace that work should be carried out within that distance of that work is being carried out at such a time and under such conditions that there is no danger to the person carrying it out from molten metal which is being obtained from the cupola or furnace or is in a ladle in position at the end of the spout.

14. Dust and fumes

(1) Open coal, coke or wood fires shall not be used for heating or drying ladles inside a workroom unless adequate measures are taken to prevent, so far as practicable, fumes or other impurities from entering into or remaining in the atmosphere of the workroom.

(2) No open coal, coke or wood fires shall be used for drying moulds except in circumstances in which the use of such fires is un-avoidable.

(3) Mould stoves, core stoves and annealing furnaces shall be so designed, constructed, maintained and worked as to prevent, so far as practicable, offensive or injurious fumes from entering into any workroom during any period when a person is employed therein

(4) All knock-out operations shall be carried out

(a) In a separate part of the foundry suitably partitioned off, being a room or part in which, so far as reasonably practicable, effective and suitable local exhaust ventilation and a high standard of general ventilation are provided ; or

(b) In an area of the foundry in which, so far as reasonably practicable, effective and suitable local exhaust ventilation is provided, or where compliance with this requirement is not reasonably practicable, a high standard of general ventilation is provided.

(5) All dressing or fettling operations shall be carried out

(a) in a separate room or in a separate part of the foundry suitably partitioned off ; or

(b) in an area of the foundry set apart for the purpose ; and shall, so far as reasonably practicable, be carried out with effective and suitable local exhaust ventilation or other equally effective means of suppressing dust, operating as near as possible to the point of origin of the dust.

15. Maintenance and examination of exhaust plant

(1) All ventilating plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be properly maintained.

(2) All ventilation plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be examined and inspected once every week by a responsible person. This shall be thoroughly examined and tested by a competent person atleast once in every period of twelve months ; and particulars of the results of every such examination and test shall be entered in a register approved by the Chief Inspector of Factories which shall be kept readily available for inspection by an inspector. Any defect found on any such examination and test shall be immediately reported in writing by the person carrying out the examination and test to the Occupier or Manager of the Factory.

16. Protective equipment

(1) The occupier shall provide and maintain suitable protective equipment specified for the protection of workers,

(a) suitable gloves or other protection for the hands for workers engaged in handling any hot material likely to cause damage to the hands by burn, scald or scar, or in handling pig iron, rough castings or other articles likely to cause damage to the hands by cut or abrasion;

(b) approved respirators for workers carrying out any operations creating a heavy dust concentration which cannot be dispelled quickly and effectively by the existing ventilation arrangements.

(2) No respirator provided for the purposes of sub-paragraph (1) (b) has been worn by a person shall be worn by another person if it has not since been thoroughly cleaned and disinfected.

(3) Persons who for any of their time

(a) work at a spout of or attend to, a cupola or furnace in such circumstances that material there from may come into contact with the body, being material at such a temperature that its contact with the body would cause a burn ; or

(b) are engaged in, or in assisting with, the pouring of molten metal ; or

(c) carry by hand or move by manual power any ladle or mould containing molten metal ; or

(d) are engaged in knocking-out operations involving material at such a temperature that its contact with the body would cause a burn; shall be provided with suitable footwear and gaiters which worn by them prevent, so far as reasonably practicable, risk of burns to his feet and ankles.

(4) Where appropriate, suitable screens shall be provided for protection against flying materials (including splashes of molten metal and sparks and chips thrown off in the course of any process).

(5) The occupier shall provide and maintain suitable accommodation for the storage and make adequate arrangements for cleaning and maintaining of the protective equipment supplied in pursuance of this paragraph.

(6) Every person shall make full and proper use of the equipment provided for his protection in pursuance of sub-paragraphs (1) and (4) and shall without delay report to the Occupier, Manager or other appropriate person any defect in, or loss of, the same.

(7) Workers working in the furnace/casting pit area shall be provided with cotton clothes. Safety shoes, leg guards, apron, face shield, hand gloves and safety helmet.

(8) Workers employed for segregation of scrap shall be provided with safety shoes and hand gloves

(9) Five retardant and heat retardant clothing shall be provided to all the workers working on platform of induction furnace

17. Training and Supervision

(1) All operations under this Schedule shall be carried out under the supervision of qualified supervisors at all times.

(2) Workers carrying out operations and maintenance activities in foundries and furnaces shall be adequately trained

18. Washing and bathing facilities

(1) There shall be provided and maintained in clean state and good repair for the use of all workers employed in the foundry,

(a) a wash place under cover with either

(i) a trough with impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least sixty centimeters for every 10

such persons employed at any one time and having a constant supply of dean water from taps or jets above the trough at intervals of not more than sixty centimeters ; or

(ii) atleast one tap or stand pipe for every ten such persons employed at any one time, and having a constant supply of dean water, the tap or stand pipe being spaced not less than 1.2 meters apart ; and

(b) not less than one-half of the total number of washing places provided under clause (a) shall be in the form of bathrooms ;

(c) a sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

(2) The facilities provided for the purposes of sub-paragraph (1) shall be placed in-charge of a responsible person or persons and maintained in a clean and orderly condition.

19. Disposal of dross and skimming

Dross and skimming's removed from molten metal or taken from a furnace shall be placed forthwith in suitable receptacles.

20. Disposal of waste

Appropriate measures shall be taken for the disposal of all waste products from shell moulding (including waste burnt sand) as soon as reasonably practicable after the castings have been knocked-out.

21. Material and equipment left out of doors

All material and equipment left out of doors (including material and equipment so left only temporarily or occasionally) shall be so arranged and placed as to avoid unnecessary risk. There shall be safe means of access to all such material and equipment and, so far reasonably practicable, such access shall be by roadways or pathways or which shall be properly maintained. Such roadways or pathways shall have a firm and even surface and shall, so far as reasonably practicable be kept free from obstruction.

22. Medical facilities and records of examinations and tests

(1) The occupier of every factory to which the schedule applies, shall

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories ; and

(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in sub-paragraph (a);

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

23. Medical Examination by Certifying Surgeon

(1) Every worker employed in a foundry shall be examined by a Certifying Surgeon within fifteen days of his first employment. Such medical examination shall include pulmonary function tests and chest X- ray. No worker shall be allowed to work after fifteen days of his first employment in the factory, unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re- examined by a Certifying Surgeon at least once in every 12 months. Such examination shall, wherever the Certifying Surgeon considers appropriate, include all the tests as specified in sub-paragraph (1) except chest X-ray which will be once in three years.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the Factory. There cord of each examination carried out under sub-paragraphs (1) and (2) including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

(4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

24. Exemption

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief Inspector may by a Certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.]

96. Notification of accidents

(1) When any accident or dangerous occurrence specified in the Schedule occurs in a factory the manager of factory shall forthwith send notice thereof by telephone, special messenger or telegram to the Inspector and the Chief Inspector :

Provided that in respect of any accident or dangerous occurrence specified in sub-item (a) of item 1 and item 2 of the Schedule, notice as aforesaid shall also be sent to:

(a) The District Magistrate or Sub-Divisional Officer ; and

(b) The Officer-in-charge of the Police Station having jurisdiction over the area :

Provided further that in respect of any accident specified in item t of the Schedule, notice as aforesaid shall also be sent to the next of kin of the injured or deceased person.

(2) The notice so given under sub-rule (1) in respect of an accident shall be confirmed by the manager of the factory by sending to the above-mentioned authorities within 12 hours of the accident, a separate written report in respect of each person killed or injured in the prescribed Form No. 18.

(3) The notice so given under sub-rule (1) in respect of a dangerous occurrence specified in paragraph 2 of the Schedule shall be confirmed by the manager of the factory by sending to the above-mentioned authorities within 12 hours of the dangerous occurrence a written report in the prescribed [258][Form No. 18- A]

(4) When any accident occurs in a factory which causes such bodily injury as prevents the person injured from working for a period of 48 hours immediately following the accident, the Manager of the factory shall send to the Inspector, within 24 hours of the expiry of 48 hours after the occurrence of the accident, a separate report thereof in respect of each person injured, in the prescribed Form No.18:

Provided that it shall be open to the Chief Inspector of Factories to accept a report in any other form if he is satisfied that the form contains all the particulars specified in Form No. 18 aforesaid.

(5) Wherever the person injured returns to work in the factory without any disablement before the expiry of 21 days after the occurrence of the accident, the Manager of the factory shall send to the Inspector within 7 days of the return to work of the person injured a written report giving the particulars of

(a) the Registration Number of the factory ;

(b) the relevant serial running number of the accident in the factory for the calendar year and calendar year as reported against item 2 in the report in Form No. 18 ;

(c) the name of the person injured;

(d) the date of accident ;

(e) the date of return to work ; and

(f) the number of days the person injured was away from work.

Such reports may also be sent in convenient batches for a number of accidents together at a time within the time prescribed.

(6) Wherever the person injured does not return to work in the factory before the expiry of 21 days after the occurrence of the accident with or without disablement and wherever the person injured returns to work in the factory after sustaining compensable disablement as a result of the accident, the Manager of the factory shall send to the Inspector within 28 days of the occurrence of the accident, a written report in the prescribed Form No. 18-B and follow it up as necessary with further reports in the same Form No. 18-B once every fortnight thereafter, until the final report on the date of return to work of the person injured is made. In the event of the person injured not returning to work of his own accord or otherwise the full circumstances of the same should also be reported to the Inspector by the Manager of the factory within seven days of his name being removed from muster roll of the factory. Even if the person injured were to be covered by the Employees' State Insurance Scheme it shall be the responsibility of the Manager of the factory to obtain the relevant information for the purpose of this rule and Form No. 18-B and report the same to the Inspector as prescribed.

THE SCHEDULE

1.

(a) An accident which causes death to any person or is of such a serious nature that it is likely to prove fatal.

(b) An accident of a serious nature which is likely to result in loss of limbs or vision or permanent disablement to any person.

2. The following classes of dangerous occurrence whether or not they are attended by personal injury or disablement

(a) Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.

(b) Collapses or failure of a crane, derrick, winch, hoist or other appliance used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.

(c) Explosion or fire or bursting out, leakage or escape of any hot (molten) metal, liquid or gas causing damage to any person or any room or place in which persons are employed, or fire in rooms of cotton pressing factories when a cotton opener is in use.

(d) Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.

(e) collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

(f) Bursting of centrifugal machines.

97. Notice of poisoning or disease

A notice in Form No. 19 should be sent forthwith both to the Chief Inspector and to the Certifying Surgeon, by the Manager of a factory in which there occurs a case of lead, phosphorus, mercury, manganese, arsenic, carbon bisulphide or benzene poisoning ; or poisoning by nitrous fumes; or by halogen or halogen derivatives of the hydrocarbons of the aliphatic series or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundice, primary opithelomatous cancer of the skin, or pathological manifestations due to radium or other radio-active substances or X-rays.

CHAPTER X

SUPPLEMENTAL

98. Procedure in appeals

(1) [259][An appeal presented under section 107 shall lie to the Chief Inspector, or in cases where the order appealed against is an order passed by the Chief Inspector, to the State Government and shall be in the form of memorandum setting forth concisely the grounds of objection to the order and bearing court fee stamp in accordance with Article 11 of Schedule II to the Court-fees Act, 1870, and shall be accompanied by a copy of the order appealed against certified correct and attested by the Inspector concerned and duly stamped under the same Act.]

(2) Appointment of assessors - On receipt of the memorandum of appeal, the appellate authority shall, if it thinks fit or if the appellant has requested that the appeal should be heard with the aid of assessors, call upon the body declared under sub-rule (3) to be representative of the industry concerned, to appoint an assessor within a period of 14 days. If an assessor is nominated by such body, the appellate authority shall appoint a second assessor itself. It shall then fix a date for the hearing of the appeal and shall give due notice of such date to the appellant and to the Inspector whose order is appealed against, and shall call upon the two assessors to appear upon such date to assist in the hearing of the appeal

(3) The appellant shall state in the memorandum presented under sub-rule (1) whether he is a member of one or more of the following bodies. The body empowered to appoint the assessor shall

(a) if the appellant is a member of one of such bodies, be that body;

(b) if he is a member of two such bodies, be the body which the appellant desires should appoint such assessor ; and

(c) if the appellant is not a member of any of the aforesaid bodies or if he does not state in the memorandum which of such bodies he desires should appoint the assessor, be the body which the appellate authority considers as the best fined to represent the industry concerned:

(1) Employers' Federation of Southern India.

(2) Tamil Nadu State Board of the All-India Manufacturers' Organization.

(3) Tamil Nadu Small Scale Industries Association.

(4) The South India Mill Owners' Association.

(5) Tamil Nadu Mill Owners' Association.

(6) The South India Sugar Mills Association.

(7) The South India Tanners' and Dealers' Association.

(8) The Southern India Skin and Hide Merchants Association.

(9) [260][Association of Indian Engineering Industry.]

(10) The United Planters' Association of Southern India.

(11) The Planters' Association of Tamil Nadu.

(12) The South India Textile Research Association.

(13) Cement Service Bureau.

(14) Madras Productivity Council.

(15) The Coimbatore Productivity Council.

(16) Tiruchirappalli Productivity Council.

(17) Salem Productivity Council.

(18) Madurai Productivity Council.

(19) Tirunclvcli Productivity Council.

(20) The Southern India Chamber of Commerce.

(21) The Hindustan Chamber of Commerce.

(22) The Madras Chamber of Commerce.

(23) The Coimbatore Chamber of Commerce.

(24) The Madura-Ramnad Chamber of Commerce.

(25) The Tuticorin Chamber of Commerce.

(26) Andhra Chamber of Commerce, Madras-1.

(27) [261][Tamil Nadu Spinning Mills Association, Dindigul]

(4) Remuneration of assessorsAn assessor appointed in accordance with the provisions of sub-rules (2) and (3) shall receive for the hearing of the appeal, a fee to be fixed by the appellate authority, subject to a maximum of fifty rupees per diem. He shall also receive the actual travelling expenses. The fees and travelling expenses shall be paid to the assessor by Government; but where assessors have been appointed at the request of the appellant and the appeal has been decided wholly or partly

against him, the appellate authority may direct that the fees and travelling expenses of the assessor shall be paid in whole or in part by the appellant.

99. Display of notices

An abstract of the following provisions of the Act and Rules shall be displayed in a conspicuous and convenient place at or near the main entrance in every factory:

100. Returns

The Manager of every factory shall furnish to the Inspector the following returns, namely:

(1) A half-yearly return for the first half of every calendar year, in duplicate in Form No. 21 so as to reach the Inspector on or before the 31st July of the year.

(2) [262][a combined annual return for every calendar year, in duplicate in Form No. 22 so as to reach the inspector on or before the 31st January of the following year.]

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[264][In the case of a factory in which work is carried on only during certain period or periods of the year, the Manager shall, if so required by the State Government or if the State Government so directs, through the Chief Inspector, submit the annual or half-yearly returns mentioned in rule 100 within fifteen days after the close of that period or after the close of the last of those periods in the year as the case may be.

101. Service of Notice

The dispatch by post under registered cover of any notice or order shall be deemed sufficient service on the Occupier, Owner or Manager of a factory of such notice or order.

102. Information required by the Inspector

The Occupier, Owner or Manager of a factory shall furnish any information that an Inspector may require for the purpose of satisfying himself whether any provision of the Act has been complied with or whether any order of an Inspector has been duly carried out. Any demand by an Inspector for any such information, if made during the course of an inspection, shall be complied with forthwith if the information is available in the factory, or if made in writing, shall be complied with within seven days of receipt thereof.

102-A Permissible levels of certain chemical substances in work environment

[265][Without prejudice to the requirements in any other provisions in the Act or the rules, requirements specified in this schedule shall apply to all factories.

SCHEDULE

1. Definitions

For the purpose of this schedule

(a) "mg/m3" means milligrams of a substance per cubic meter of air ;

(b) "mppcm" means million particles of a substance per cubic meter of air ;

(c) "ppm" means parts of vapour or gas per million parts of air by volume at 250C and 760mm of mercury pressure;

(d) "Time weighted average concentration" means the average concentration of a substance in the air at any work location in a factory computed from evaluation of adequate number of air samples taken at that location spread over the entire shift on an day, after giving weightage to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

Time weighted average concentration = [(C1T1+ C2T2+.... + CnTn)/1+T2+...Tn]

Where C1 represents the concentration of the substance for duration T1 (in hours);

C2 represents the concentration of the substance for duration T2 (in hours); and

Cn represents the concentration of the substance for duration Tn (in hours);

(e) " Work location " means a location in a factory at which a worker works or may be required to work at any time during any shift on any day.

2. Limits of concentrations of substance at work locations

(1) The time weighted average concentration of any substance listed in Table 1 or 2 of the schedule, at any work location in a factory during any shift on any day shall not exceed the limit of the permissible time weighted average concentration specified in respect of that substance:

Provided that in the case of a substance mentioned in Table 1 in respect of which a limit in terms of short term maximum concentration is indicated, the concentration of such a substance may exceed the permissible limit of the time weighted average concentration for the substance for short periods not exceeding 15 minutes at a time, subject to the condition that

(a) such periods during which the concentration exceeds the prescribed time weighted average concentration are restricted to not more than 4 per shift;

(b) the time interval between any two such periods of higher exposure >hail not be less than 60 minutes ; and

(c) at no time the concentration of the substance in the air shall exceed the limit of short term maximum concentration.

(2) In the case of any substance given in Table 3, the concentration of the substance at any work location in a factory at any time during any day shall not exceed the limit of exposure for that substance specified in the Table.

(3) In the cases where the word " skin" has been indicated against certain substance mentioned in Tables 1 and 3, appropriate measures shall be taken to prevent absorption through cutaneous routes particularly skin, mucous membranes and eyes as the limits specified in these Tables are for conditions where the exposure is only through respiratory tract.

(4)

(a) In case, the air at any work location contains a mixture of such substances mentioned in Tables 1, 2 or 3, which have similar toxic properties, the time weighted concentration of each of these substances during the shift should be such, that when these time weighted concentration divided by the respective permissible time weighted average concentration specified in the abovementioned tables, and the fractions obtained are added together, the total shall not exceed unity, i.e. $C^1/L^1+C^3/L^3+ C_n/L_n$ should not exceed unity when

When CI, C2,….,Cn are the time weighted concentration of toxic substances 1,2 and in respectively, determined after measurement at work location;

and LI, L2 Ln are the permissible time weighted average concentration of the toxic substances 1, 2..... and in respectively.

(b) In case the air at any work location contains a mixture of substances mentioned in Table 1, 2 or 3, and these do not have similar toxic properties, then the time weighted concentration of each of these substances shall not exceed the permissible time weighted average concentration specified in the above mentioned tables, for that particular substance.

(c) The requirements in clauses (a) and (b) shall be in addition to the requirements in paragraphs 2 (1) and (2).

3. Sampling and evaluation procedures

(1) Notwithstanding provisions in any other paragraphs, the sampling and evaluation procedures to be adopted for checking compliance with the provisions in the schedule shall be as per standard procedures in vogue from time to time.

(2) Notwithstanding the provisions in paragraph 5, the following conditions regarding the sampling and evaluation procedure to be adopted checking compliance with the provision in this schedule are specified.

(a) For determination of the number of particles per cubic meter in item 1 (a) (i) (1) in Table 2, samples are to be collected by standard or midget impringer and the counts made by light field technique.

(b) The percentage of quartz in the 3 formulae given in item 1 (A) (i) of Table 2 is to be determined from airborne samples.

(c) For determination of number of fibers as specified in item 2(A) of Table 2, the membrance filter method [at 430 x magnification (4 mm objective) with phase contrast illumination] should be used.

(d) Both for determination of concentration and percentage of quartz for use of the formula given in item 1 (a) (i) (2) of Table 2, the fraction passing through a size selector with the following characteristics should only be considered.

Aerodynamic diameter (Unity density sphere)	Percentage allowed by size-selector
2.0	20
2.5	75
3.5	50
5.0	25
10.0	0

4. Power to require assessment of concentration of substances

(1) An Inspector may, by an order in writing, direct the occupier or manager of a factory to get before any specified date the assessment of the time weighted average concentration at any work location of any of the substances mentioned in tables 1, 2 or 3 carried out.

(2) The results of such assessment as well as the method followed for air sampling and analysis for such assessment shad be sent to the Inspector within three days from the date of completion of such assessment and also a record of the same kept readily available for inspection by an Inspector

5. Exemption

If in respect of any factory or a part of a factory, the Chief Inspector is satisfied: that, by virtue of the pattern of working time of the workers at different work locations or on account of other circumstances, no worker is exposed, in the air at the work locations, to a substance or substances specified in Tables I, 2 or 3 to such an extent as is likely to be injurious to his health, he (the Chief inspector) may by an order in writing, exempt the factory or a part of the factory from the requirements in paragraph 2, subject to such conditions, if any, as he may Specify therein.

[266][TABLE 1

Sl.No	Substances	Permissible limits of exposure			
		Time weighted average concentration (TWA) (8 hrs)		Short term maximum concentration (STEL) (15 min).*	
		ppm	Mg/m3**	ppm	Mg/m3**
(1)	(2)	(3)	(4)	(5)	(6)
1	Acetaldehyde	100	180	150	270
2	Acetic acid	10	25	15	37

3	Acetone	750	1,780	1,000	2,375
4	Acrolein	0.1	0.25	0.3	0.8
5	Acrylonitrile-skin (S.C)	2	4.5	-	-
6	Aldrin-skin	-	0.25	-	-
7	Allyl Chloride	1	3	2	6
8	Ammonia	25	18	35	27
9	Anilline-skin	2	10	-	-
10	Anisidine (o,p-isomers)-Skin	0.1	0.5	-	-
11	Arsenic & soluble compounds (as As)	-	0.2	-	-
12	Benzene (HC)	0.5	1.5	25	7.5
13	Beryllium & compounds (as Be) (S.C.)	-	0.002	-	-
14	Boron trifluoride-C	1	3	-	-
15	Bromine	0.1	0.7	0.3	2
16	Butane	800	1,900	-	-
17	2-Butanone (Methyl ethyl Ketone-MEK)	200	590	300	885
18	n-Butyl acetate	150	710	200	950
19	n-Butyl alcohol-Skin-C	50	150	-	-
20	Sec/Tert Butyl acetate	200	950	-	-
21	Butyl mercaptan	0.5	1.5	-	-
22	Cadmium Dusts and salts (as Cd)	-	0.05	-	-
23	Calcium Oxide	-	2	-	-
24	Carbaryl (Sevin)	-	5	-	-
25	Carbofuran (Furadan)	-	0.1	-	-
26	Carbon disulphide-Skin	10	30	-	-
27	Carbon Monoxide	50	55	400	440
28	Carbon tetrachloride-Skin(S.C)	5	30	-	-
29	Chlordane-Skin	-	0.5	-	2
30	Chlorine	1	3	3	9

31	Chlorobenzence (Monochlorobenzene)	75	350	-	-
32	Chloroform (S.C)	10	50	-	-
33	Bis (Chlororomethly) ether (H.C.)	0.001	0.005	-	-
34	Chromic acid and chromates (as Cr)	-	0.05	-	-
35	Chromous salts (as Cr)	-	0.5	-	-
36	Copper Fume	-	0.2	-	-
37	Cotton dust, raw	-	0.2+	-	-
38	Cresol, all isomers-Skin	5	22	-	-
39	Cyanides (as CN)-Skin	-	5	-	-
40	Cyanogen	10	10	-	-
41	DDT (Dichlorodiphenyl trichloroethane)	-	1	-	-
42	Demeton Skin	0.01	0.1	-	-
43	Diazinon Skin	-	0.1	-	-
44	Dibutyl phthalate	-	5	-	-
45	Dichlorvos (DDVP)-Skin	0.1	1	-	-
46	Dieldrin-Skin	-	0.25	-	-
47	Dinitrobenezene (all isomers)Skin	0.15	1	-	-
48	Dinitrotoluene-Skin	-	1.5	-	-
49	Diphenyl (Biphenyl)	0.2	1.5	-	-
50	Endosulfan (Thipdan)-Skin	-	0.1	-	-
51	Endrin-Skin	-	0.1	-	-
52	Ethyl acetate	400	1,400	-	-
53	Ethyl alcohol	1,000	1,900	-	-
54	Ethylamine	10	18	-	-
55	Flurorides (as F)	-	2.5	-	-
56	Fluorine	1	2	2	4
57	Formaldehyde (S.C)	1.0	1.5	2	3
58	Formic acid	5	9	-	-
59	Gasoline	300	900	500	1,500

60	Hydrazine-Skin(S.C)	0.1	0.1	-	-
61	Hydrogen Chloride-C	5	7	-	-
62	Hydrogen cyanide Skin C	10	10	-	-
63	Hydrogen Fluoride (as F)-C	3	2.5	-	-
64	Hydrogen peroxide	1	1.5	-	-
65	Hydrogen sulphide	10	14	15	21
66	Iodine C	0.1	1	-	-
67	Iron Oxide Fume (F_e2O_3) (as Fe)	-	5	-	-
68	Isoamyl acetate	100	525	-	-
69	Isomyl alchohol	100	360	125	450
70	Isobutyl alcohol	50	150	-	-
71	Lead, inorg dusts and fumes (asPb)	-	0.15	-	-
72	Lindane-Skin	-	0.5	-	-
73	Malathion –Skin	-	10	-	-
74	Manganese (as Mn) dust and compounds-C	-	5	-	-
75	Manganese fume (as Mn)	-	1	-	3
76	Mercury (as Hg)-Skin				
	(i) Alkyl compounds	-	0.01	-	0.03
	(ii) All forms except alkyl vapour	-	0.05	-	-
	(iii) Aryl and inorganic compounds	-	0.1	-	-
77	Methyl alcohol (Methanol)-Skin	200	260	350	310
78	Methyl cellosolve (2-Methoxyethanol)-Skin	5	16	-	-
79	Methyl isobutyl ketone	50	205	75	300
80	Methyl isocyanate-Skin	0.02	0.05	-	-
81	Nephthalene	10	50	15	75
82	Nickel carbonyl (as Ni)	0.05	0.35	-	-
83	Nitric acid	2	5	5	10

84	Nitric oxide	25	30	-	-
85	Nitrobenzene-Skin	1	5	-	-
86	Nitrogen dioxide	3	6	5	10
87	Oil mist mineral	-	5	-	10
88	Ozone	0.1	0.2	0.3	0.6
89	Parathion skin	-	0.1	-	-
90	Phenol-skin	5	19	-	-
91	Phorate (Thimet)-Skin	-	0.05	-	0.2
92	Phosgene (Carbonyl chloride)	0.1	0.05	-	0.2
93	Phosphine	0.3	0.4	1	1
94	Phosphoric acid	-	1	-	3
95	Phosphorous (yellow)	-	0.1	-	-
96	Phosphorous Pentechloride	0.1	1	-	-
97	Phosphorous trichloride	0.2	1.5	0.5	3
98	Picric acid – Skin	-	0.1	-	0.3
99	Phridine	5	15	-	-
100	Silane 9Silicon tetrahydride)	5	7	-	-
101	Sodium hydroxide-C	-	2	-	-
102	Styrene, monomer (phenylethlene0	50	215	100	425
103	Sulphur dioxide	2	5	5	10
104	Sulphur hexafluoride	1,000	6,000	-	-
105	Sulphuric acid	-	1	-	-
106	Tetraethyl lead (as Po)-Skin	-	0.1	-	-
107	Toluene (Toluol)	100	375	150	560
108	O-Toludine-Skin (S.C)	2	9	-	-
109	Tributyl Phosphate	0.2	2.5	-	-
110	Trichloroethylene	50	270	200	1080
111	Uranium, natural (as U)	-	0.2	-	0.6
112	Vinyl chloride 9H.C)	5	10	-	-
113	Welding fumes	-	5	-	-

114	Xylene (o-, m-, p-isomers)	100	435	150	655
115	Zinc Oxide				
	(i) Fume	-	5.0	-	10
	(ii) Dust (Total dust)	-	10.00	-	-
116	Zicronium compounds (as Zr0	-	5	-	10

ppm: Parts of vapour or gas per million parts of contaminated air by volume at 25^0C and 760 (mm of mercury)

mg/m^3: milligram of substance per cubic meter of air

*Not more than 4 times a day with at least 60 min. interval between successive exposure

** : mg/m^3= (Molecular weight X ppm)/24.45

Lint : free dust as measured by the vertical elutriator cotton-dust sampler

C : denotes ceiling limit

Skin: denotes potential contribution to the overall exposure by the cuteous route including mucous membrane and eye

S.C : denotes suspected human carcinogens

H.C: denotes confirmed human carcinogens]

[267][TABLE 2

Substance	Permissible time weighed average concentration
Silica, Si O_2	
(a) Crystalline	
(i) Quartz	
(1) In terms of dust count	(10600)/(%Quartz+10) mppcm
(2) In terms of respirable dust	10/(% respirable Quartz+2 mg/m^3
(3) In terms of total dust	30/ (% Quarts+3) mg/m^3
(ii) Cristobalite	Half the limits given against quartz
(iii) Tridymite	Half the limits given against quartz
(iv) Silica, fused	Same limits as for quartz

(v) Tripoli	Same limit as in formula in item (2) given against quartz. 10 mg/m^3, total dust
(b) Amorphous	

Silicates

[Asbestos (H.C)	(a) Amosite	0.5 fiber/cc***
	(b) Chrystolite	1.0 fiber/cc ***
	(c) Crocidolite	0.2 fiber/cc ***

(i) For fier greater than 5 um in length and less than 5 um in breadth with length to breadth ration equal to or greater than 3:1

(ii) As determined by the membrane filter method at 400-450x magnification (4 mm objective) phase contrast illumination]

Portland Cement 10 mg/m^3, Total dust containing less than 1% quartz

Coal Dust 2 mg/m^3, respirable dust fraction containing less than 5% quartz

Mppcm = Million particles per cubic meter of air, based on impinge samples by light-field techniques

*As determined by the membrane filter method at 400-450 x magnification (4mm objective) phase contrast illumination.

Respirable Dust:

Fraction passing a size-selector with the following characteristics

Aerodynamic Diameter (um) (unit) (density sphere)	% passing selector
2	90
2.5	75
305	50
5.0	25
10	0.1

103. Muster roll

The Manager of every factory shall maintain a muster-roll of all the workers employed in the factory in Form No. 25 [268][and entries shall be made at the commencement of each period of work]

Provided that, if the daily attendance is noted in the Register of Adult Workers in Form No. 12, or the particulars required under this rule are noted in any other register, a separate muster-roll required under this rule need not be maintained.

[269][The Manager shall make it readily available for inspection to the inspector at all times during working hours, or when any work is being carried on in the factory and such muster roll shall be preserved for a period of three years after the last entry.]

103-A

In every factory in which all or any class of adult workers are exempted from all or any of the provisions of sections 51, 52, 54, 55 and 56 of the Act, a muster-roll shall be maintained in Form No. 25-A. This roll shall show the time of beginning and ending of each period of work during the day or night or both and shall be entered at the commencement of each period of work.

Further in the case of urgent repairs full particulars should be given of work done by each worker on each day of such repairs including periods of normal work, if any.

The Manager shall make it readily available for inspection during all working hours of the factory and such muster-roll shall be preserved for a period of three years after the last entry.

[270][103-B. Service Card

(1) The Manager of every factory shall maintain, in addition to maintaining a Muster-Roll in Form No. 25, a [service card] for each worker employed in the factory in Form No. 25B.

(2) The [271][service card] after all entries are made therein for a calendar month, shall be issued to the worker concerned within a week after the expiry of the calendar month to which the [272][service card] pertains and his acknowledgement obtained therefor. It shall be the property of the worker thereafter:

Provided that the Chief Inspector of Factories may, by order in writing exempt any factory or class of factories from the provisions of this rule, subject to such conditions as he may impose if he is satisfied that any alternative system followed therein is adequate to meet the requirements of this rule.

(3) [273][The acknowledgements obtained from the workers for the issue of [service card] should be produced on demand to the Inspectors at the time of inspection.]

[274][103-C . Identity Card

(1) The Manager of every factory shall issue Photo Identity Card to each worker employed in the (sic.) Form No. 25-C.

(2) The Photo Identity Card shall be issued to the worker within one month from the date of entry into service and acknowledgement obtained therefor.

(3) The validity of the Photo Identity (sic.)shall be of permanent nature.

(4) The acknowledgements obtained from the workers for having issued the photo identity card shall be produced on demand by the Inspector.].

104. [275][Register of accidents and Dangerous Occurrence - * * *]

105. Maintenance of Inspection Book

The Manager of every factory shall maintain a bound inspection book containing the following particulars and shall produce it when so required by the Inspector or Certifying Surgeon:

(a) the exemptions granted or availed of by the factory in Form No. 28 ;

(b) the particulars of rooms in the factory in Form No. 29 ; and

(c) the particulars of lime-washing, colour-washing, painting, varnishing or tarring, as the case may be, in Form No. 7.

The book referred to in this rule shall be readily available for inspection during all working hours of the factory and such book shall be preserved for a period of three years after the last entry.

106.

The particulars of measurements of each room in the factory in which workers are employed shall be entered in Form No. 29.

107.

(1) The maximum number of workers who may be employed in each workroom or work hall shall be posted prominently by means of a notice painted on the internal wall in each such room or hall. When determining the maximum number of persons permissible in addition to the breathing space required to be provided by section 16 (2), floor space of [276][2.3 square meters' in the case of existing factories and [277][3.3 square meters) in factories built after the commencement of the Act, shall also be provided for each worker working at any one time in the room, but such floor space shall be exclusive of the space occupied by machinery, fixtures and the materials in the room.

(2) The Chief Inspector may, for reasons to be recorded in writing, relax the provisions of this rule to such extent as he may consider necessary, where in his opinion, such relaxation can be made having regard to the health of the persons employed in any room.

108. [278]**[Intimation of intended closure of factory**

(1) The occupier or manager of every factory shall report to the Inspector any intended closure of the factory or any section or department thereof fifteen days before such closure :

Provided that in the event of a factory or any section or department thereof being forced to be closed for reasons beyond the control of the Occupier or the Manager, the report shall be sent as early as possible and at any rate within twenty-four hours of the closure.

(2)

(a) The report shall contain the following particulars, namely :

(i) the date of closure of the factory, department or section;

(ii) the reasons for the closure ;

(iii) the number of workers on the register on the date of the report ;

(iv) the number of workers likely to be affected by the closure ; and

(v) the probable period of the closure ;

(vi) [279][information as to the particulars and quantity of stored chemicals and action taken or proposed to be taken to ensure safety from these chemicals while in storage during such closure.)

(b) In the event of a factory, closing permanently and ceasing to exist or closing for over two months, such report shall be accompanied by the licence granted or renewed under the provisions of these rules.

(3) In the event of the closure referred to in sub-rule (1) being in respect of a section or department of a factory, if that section or department should start working again, the Occupier or the Manager shall submit a report within 24 hours of its re-opening furnishing the following particulars, namely:

(i) the date of resumption of work ;

(ii) the number of workers on the register on the date of resumption of work ; and

(iii) the number of workers on the register on the date of closure now re-employed.

109. Power to cancel the licence and registration upon receipt of report

[The Chief Inspector may, on the receipt of a report in respect of any factory under sub rule (1) of rule 108, and after making such enquiry as he thinks fit, by order, cancel the licence and registration in respect of such factory with effect from such date as may be specified in the order.]

110. Preservation of records

[280][The records specified in column (I) of the Table below shall be preserved in the office of the Chief Inspector of Factories, Madras, for the periods specified in the corresponding entries in column (2) thereof:—

THE TABLE

Records	Period of retention
Applications presented under rules 4 and 7 of the Tamil Nadu Factories Rules, 1950	Five years from the date of disposals of the applications
Counterfoils and licenses issued under the said rules	Five years from the date of issue of licenses
Challans	Five years from the date of issue of licenses

111. Manner of destruction of records

After the period of retention specified in rule 110, the records shall be destroyed either by tearing or by burning in the presence of the head of the office.]

112. Language in the registers and records

[281][The registers and records required to be maintained in a factory under the provisions of the Act and these rules shall be either in English or in a language understood by the majority of the workers working in the factory.]

113. Exhibition of name board

[282][The name board of a factory shall be displayed conspicuously at the entrance of the factory premises. The name board shall be in Tamil and wherever other languages are also used, the version in such other languages shall be below the Tamil version.

Appendix 1

Form of application for grant of Certificate of Competency to a person under sub-rule (I) of rule 2-A

1. Name
2. Date of Birth
3. Name of the Organization (if not self-employed)
4. Designation
5. Educational qualification (copies of testimonials to be attached).
6. Details of professional experience (In chronological order)
   (1) Name of the organization

(2) Period of service

(3) Designation

(4) Area of responsibility.

7. Membership, if any, of professional bodies

8.

(i) Details of facilities (examination, testing etc.) at his disposal

(ii) arrangements for calibrating and maintaining the accuracy of these facilities

9. Purpose for which competency certificate is sought (section or sections of the Act should be stated).

10. Whether the applicant has been declare d as a competent person under any statute (if so, the details).

11. Any other relevant information.

12. Declaration by the applicant. I…….. hereby declare that the information furnished above is true.

I undertake

(a) that in the event of any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organization, I will promptly inform the Chief Inspector ;

(b) to maintain the facilities in good working order, calibrated periodically as per manufacturers' instructions or as per National Standards; and

(c) to fulfill and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief inspector from time to time.

Place:

Date: Signature of the applicant.

DECLARATION BY THE INSTITUTION (IF EMPLOYED)

I, certify that Shri……. whose details are furnished above, is in our employment and nominate him on behalf of the organization for the purposes of being declared as an competent person under the Act. I also undertake that

I will-

(a) notify the Chief Inspector in case the competent person leaves our employment;

(b) provide and maintain in good order all facilities at his disposal as mentioned above;

(c) notify the Chief Inspector any change in the facilities (either addition or deletion).

Signature……

Designation……..

Telephone No……..

Date: Office Seal……..

FORM OF APPLICATION FOR GRANT OF CERTIFICATE OF COMPETENCY TO ANY INSTITUTION UNDER

SUB-RULE (2) OF RULE 2-A

1. Name and full address of the organization
2. Organization's status (specify whether Government, Autonomous Co-operative, Corporate or Private)
3. Purpose for which competency certificate is sought (specify Section (s) of the Act)
4. Whether the organization has been declared as competent person under this or any other statute. If so, give details
5. Particulars of persons employed and possessing qualification and experience as set out in Schedule annexed to rule 2-A
6. Details of facilities (relevant to item 3 above and arrangements made for their maintenance and periodic calibration
7. Any other relevant information
8. Declaration :

   I……. here by, on behalf of..... Certify that the details furnished above arc correct to the best of my knowledge.

   I undertake to --

   (i) Maintain the facilities in good working order, calibrated periodically as per manufacturer's instructions or as per National Standards; and

   (ii) to fulfill and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief Inspector from time to time.

Place: Signature of Head of the Institution

Date: or of the persons authorised to

Sign on his behalf.

FORM OF CERTIFICATE OF COMPETENCY ISSUED TO A PERSON OR AN INSTITUTION IN PURSUANCE TO RULE 2-A MADE UNDER SECTION 2(ca)

I,……. in exercise of the powers conferred on me under Section 2(ca) of the Factories Act and the rules made thereunder, hereby recognize (Name of the Institution) or Thiru (Name of the

person) employed in (Name of the Organization) to be a competent person for the purpose of carrying out tests, examinations, inspection and certifications for such buildings, dangerous machinery, lifts and hoists, lifting machines and lifting tackles, confined space, ventilation system and process or plant and equipment as the case may be used Ma factory located in under sect ion and the rules made thereunder.

This certificate is valid from..... To .....

This certificate is issued subject to the conditions stipulated thereunder

(i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act and the rules made thereunder.

(ii) Tests, examination and inspections shall be carried out under direct supervision of the competent person or by a person so authorised by an institution recognised to be a competent person.

(iii) The certificate of competency issued in favour of a person shall stand cancelled if the person leaves the organization mentioned in his application.

(iv) The institution recognised as a competent person shall keep the Chief Inspector informed of the names, designations and qualifications of the person authorised by it to carry out tests, examinations and inspections.

(v)

(vi)

(Strike out the words not applicable)

Station:

Office Seal: Signature of the Chief Inspector

Date:

Note: A separate certificate should be issued under each relevant section. A person or an institution may be recognised competent for the purpose of more than one section of the Act.

THE SCHEDULE

Sl. No	Section or rule under which competency is recognised	Qualification required	Experience for the purpose	Facilities at his command
1	Rules made under Section 6 and Section 112-Certificate of Stability for buildings	Degree in Civil or Structural Engineering or Equivalent	(i) A minimum of ten years experience in the design of construction or testing or repairs of structures (ii) Knowledge of non-destructive testing, various codes of practices that are current and the effect of the vibrations and	

			natural forces on the stability of the buildings ; and (iii) Ability to arrive at a reliable conclusion with regard to the safety of the structure or the building.	
2	Rules made under Section 21 (2) "Dangerous Machines"	Degree in Electrical or Mechanical or Textile Engineering or Equivalent	(i) A minimum of seven years experience In- (a) design or operation or maintenance; or (b) Testing, examination and inspection of relevant machinery, their guards; safety devices and appliances. (ii) He shall (a) be conversant with safety devices and their proper functioning (b) be able to identify defects and any other cause leading to failure ; and (c) have ability to arrive at a reliable conclusion with regard to proper functioning of safety device and appliance and machine guard.	Gauges for measurement; instruments for measurement of speed and any other equipment or device to determine the safety in the use of the dangerous machines.
3	Section 28 Lifts and Hoists	A degree in Electrical and/or Mechanical Engineering or its equivalent.	(i) A minimum experience of seven years in (a) Design or erection or maintenance ; or (b) Inspection and test procedures; of lifts and hoists. (ii) He shall be (a) Conversant with relevant codes of practices and test	Facilities for load testing, testing tensile gauges; equipment/gadgets for measurement and any other equipment required for determining the safe working conditions of Hoists and Lifts.

			procedures that are current; (b) conversant with other statutory requirements covering the safety of the Hoists and Lifts ; and (c) able to identify defects and arrive at a reliable conclusion with regard to the safety of Hoists and Lifts.	
4	Section 29-Lifting Machinery and Lifting Tackle	Degree in Mechanical or Metallurgical Engineering or its equivalent.	(i) A minimum experience of seven years in (a) Design or erection or maintenance; or (b) testing, examination and inspection, of lifting machinery, chains, ropes and lifting tackles. (ii) He shall be (a) conversant with the relevant codes of practices and test procedures that are current (b) conversant with fracture mechanics and metallurgy of the material of construction (c) conversant with heat treatment ; stress relieving techniques as applicable to stress boaring components and parts of lifting machinery and lifting tackles; and (d) capable of identifying defects and arriving at a reliable conclusion with regard to the safety of lifting machinery, chains,	Facilities for load testing, tensile testing, heat treatment, equipment, gadget for measurement. Gauges and such other equipment to determine the safe working conditions of the lifting machinery tackle.

			ropes and lifting tackles.	
5	(i) Section 36 - Pre-cautions against dangerous fumes. (ii) Rules made under Sections 41 and 112 concerning ship-building and ship repairs.	Master's degree in Chemistry or a degree in Chemical Engineering	(i) A minimum of seven years in collection and analysis of environmental samples and calibration of monitoring equipment; (ii) He shall (a) be conversant with the hazardous properties of Chemicals and their permissible limit values; (b) be conversant with the current techniques of sampling and analysis of the environmental contaminants ; and (c) be able to arrive at a reliable conclusion as regards the safety in respect of entering and carrying out hot work	Meters, instruments and devices duly calibrated and certified for carrying out the tests and certification of safety in working in confined spaces.
6	Ventilation system as required under various Schedules framed under Section 87, such as Schedules on (i) Grinding or glazing of metals and processes incidental thereto; (ii) Cleaning or smoothing, roughening, etc., of articles by a jet of sand, metal shot or grit, or other abrasive	Degree in Mechanical or Electrical; Engineering or Equivalent.	(i) A minimum of seven years in the design, fabrication, installation. testing or ventilation system and systems used for extraction and collection of dusts, fumes and vapors and other ancillary equipment; (ii) He shall be conversant with relevant codes of practice and tests procedures that are current in respect of ventilation and extraction system for fumes, and shall be able to arrive at a reliable conclusion with regard to effectiveness of the system	Facilities for testing the ventilation system, instruments and gauges for testing the effectiveness of the extraction systems for dusts, vapors and fumes, and any other equipment needed for determining the efficiency and adequacy of these systems. He shall have the assistance of a suitable qualified technical person who can come to a

	propelled by a blast of compressed air or steam (iii) Handling and processing of asbestos; (iv) Manufacture of Rayon by Viscose process ; and; (v) Foundry operations			reasonable conclusion as to the adequacy of the system.
7	[283][Rule 61-A-Testing and Examination of Safety belts	Bachelor's degree in Mechanical Engineering or Electrical Engineering or its equivalent.	A minimum experience of seven years in testing, examination and inspection of safety belts and shall be conversant with relevant standards of industrial Safety Belts and harnesses and their specifications	Guages for measurement and instruments for magnifying.
8	Rule 61-B-Examination and Testing of ovens and driers.	Bachelor's degree in Mechanical Engineering or Electrical Engineering or its equivalent	(i) A minimum experience of seven years in design or maintenance or operation or testing and examination of ovens and driers. (ii) Knowledge of relevant codes of practices and test procedures that are current. (iii) Conversant with statutory requirements regarding the safety of ovens and driers. (iv) Conversant with safety devices and	(i) Meters, instruments and devices duly calibrated and certified for carrying out tests and certification of safety. (ii) Facilities for carrying out non-destructive test

			their proper functioning to ensure the safety of ovens and driers (v) Be able to identify defects and other causes leading to failure of ovens and driers (vi) Ability to arrive at a reliable conclusion as to the safety of ovensa and driers.	
9	(i) Rule 61-P (i) sub-rule (16) Testing of heater coil (ii) Sub-rule (18) Testing of Thermic fluid.	Bachelor's degree in Mechanical Engineering or Electrical Engineering or its equivalent Master's degree in Chemistry or a Bachelors' degree on Chemical Engineering	A minimum experience of seven years in design or operation or maintenance or testing and examination of thermic fluid heater A minimum experience of seven years in testing of thermic fluids	Facilities for pressure testing Laboratory facilities to test acidity, suspended matter, ash contents, viscosity and flash point of thermic fluid.
10	Rule 95, Schedule XVI, Part II, Pam 7, Examination of instruments and safety devices	Bachelor's degree in Chemical Engineering or Technology or Instrumentation Engineering or Techno-logy or Mechanical Engineering.	(i) A minimum experience of seven years in (a) operation of maintenance; (or) (b) testing, examination and inspection of the process instruments and safety devices (ii) Must be thoroughly conversant with the relevant codes of practices and test procedures that are current, and be able to arrive at a reliable conclusion as regards the reliability and proper functioning of the process instruments and safety devices	Meters, instruments, devices and other appropriate facilities duly calibrated and certified for carrying out the tests of process instruments and safety devices.

11	Rule 95, Schedule XVI. Part II, Para I5, Testing, Examination and repair of plants and equipments	Bachelor's degree in Chemical Engineering or Technology or Instrumentation Engineering or Techno-logy or Mechanical Engineering	(i) A minimum experience of seven years in (a) the operation or maintenance of process plant in a chemical industry : (or) (b) testing examination and inspection or plant equipment and machinery in a chemical process industry (ii) He shall- (a) Be thoroughly conversant with the process of hazard involved; (b) Be able to identify the defects and other causes which may be lead to failure of the plant equipment and machinery in chemical process industry (c) Have ability to arrive at a reliable conclusion with regard to the safety and integrity of the plant equipment and machinery	Non-destructive testing equipment such as ultrasonic thickness gauging instrument and flaw detector hydraulic pump portable toxic and flammable gas detectors (Multi gas detector)
12	Rule 95, Schedule XVI. Part II, Para I8, Entry into or work in confined space	Master's degree in Chemistry or a Bachelor's degree in Chemical Engineering	(i) A minimum experience of seven years in collection and analysis of environmental samples and calibration of monitoring equipments. (ii) He shall (a) Be conversant with the hazardous properties of chemicals and their permissible limit values. (b) Be conversant with the current techniques of sampling and analysis of contaminants; and	Portable Multi gas Detectors as applicable to the Chemical gases or fumes in the confined space, oxygen level meter.

			(c) Be able to arrive at a reliable conclusion as regards the safety in respect of entering the confined space and carrying out hot work or other maintenance work.	
13	Rule 95, Schedule XVI. Part V, Para 5, Testing and examination of plant and equipment made from reinforced plastics.	Bachelor's degree in Plastic Technology or Chemical Engineering or Techno logy or Mechanical Engineering or Electrical Engineering	(i) A minimum experience of seven years in (a) Operation or maintenance of process plant in a chemical industry; (or) (b) Testing examination and inspection of plant and equipment made from reinforced plastics in a chemical industry (ii) He shall (a) Be thoroughly knowledgeable about the Indian Standards or any other National Standards as regards the plant and equipment made of reinforced plastics (b) Be fully conversant with the chemical compatibility of reinforce plastics; (c) Be able to identify the defects and other caused which may lead to failure of the plant and equipment made of reinforced plastics (d) Have ability to arrive at a reliable conclusion with regard to the safety and integrity of the plant and equipment made of reinforced plastics.	Non-destructive testing equipment such as ultrasonic thickness gauging equipment, flaw detector and hydraulic pump.

1 Sub. For “80 degrees ", by Go. Ms. No. 127, Labour and Employment (M-2) dated 31st August, 2005 (deemed to have come into effect from 9th November, 2005)

2 Sub. for “Fahrenheit Scale” and

3 Omitted by G.O. Ms. No. 1523, Labour and Employment, dated the 10th July,1980

4 Ins by G.O. Ms. No. 113, Labour and Employment (M2), dated the 23rd April

5 Rules 3 and 4, substituted by GO. Ms. No. 866, Industries, Labour and Co-operation, dated the 13th February, 1961

6 Subs. by GO. Ms. No. 1523, Labour and Employment, dated the 10th July, 1980

7 Sub-rule (I), re-numbered as (I) (a), by GO. Ms. No. 2013, Labour and Employment, dated the 30th August, 1980

8 Subs. by GO. Ms. No. 2844, Labour and Employment, dated the 17th December, 1980, for" Chief Inspector"

9 Ins. by GO. No. 2013, Labour and Employment, dated the 30th August, 1980

10 Ins. by GO. No. 2013, Labour and Employment, dated the 30th August, 1980, for "Application for such permission shall be made in Form No.1 in triplicate"

11 Clause (a), substituted by GO. Ms. No. 3681, Industries, Labour and Housing (Labour), dated the 31st October, 1969.

12 Proviso to clause (b) initially added by GO. Ms. No. 3681, Industries, Labour and Housing (Labour), dated the 3lst October. 1969, subsequently omitted by GO. Ms. No. 1523, Labour and Employment, dated the 10th July, 1980

13 Clause (c), omitted by notification

14 Clause " (d)", inserted after the initial clause" (d)" along with its contents re-lettered as clause (e) ", by GO. MS. No. 3681. Industries, Labour and Housing (Labour), dated the 31st October, 1969

15 Subs. by GO. Ms. 1462, Labour, dated the 14th July, 1987, for" Director of Health Services and Family Planning, Madras

16 Re-lettered for the then existing clause " (d)", by GO. Ms. No. 3681, Industries. Labour and Housing (Labour), dated the 31st October, 1969

17 Subs. by go. Ms. No. 2844, Labour and Employment, dated the 17th December, 1980, for "Chief Inspector".

18 Added by GO. Ms. No. 148, Labour and Employment (M-2), dated the 12th October, 2009

19 Subs. by GO. Ms. No. 2844, Labour and Employment, dated the 17th December, 1980, for" Chief Inspector "

20 Subs. by GO. Ms. No. 2844, Labour and Employment, dated the 17th December, 1980, for" Chief Inspector "

21 Subs. by GO. Ms. No. 2844, Labour and Employment, dated the 17th December, 1980, for" Chief Inspector "

22 Subs. by GO. Ms. No. 150, Labour and Employment (M-II), dated the 14th July, 1993, for "by a treasury receipt"

23 Subs. by GO. Ms. No. 149. Labour and Employment (M-2). dated the 25th July, 1995, for "crossed demand"

24 Ins. by GO. Ms. No. 150, Labour and Employment (M-II), dated the 14th July, 1993

25 Subs. by GO. Ms. No. 24, Labour and Employment (M-2), dated the 12th February, 1993, for" rule 109"

26 Subs. by O.O. Ms. No.2844 Lab. & Emp.. dated 17-12-1980

27 Subs. by O.O. Ms. No.2844 Lab. & Emp.. dated 17-12-1980

28 Subs. by O.O. Ms. No.2844 Lab. & Emp.. dated 17-12-1980

29 Subs. by G.O. Ms. No.150, Lab & Emp. (M-II), dated 14-7-1993

30 Subs. by G.O. Ms. No.74. Lab. & Emp (M-11), dated 164-1993

31 Ins. by O.O. Ms. No.109, Labour. dated the 23rd January, 1985

32 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

33 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

34 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

35 Subs. by G.O. Ms. No.l50. Lab. & (M-11), dated 14.7-1993

36 Omitted by G.O. Ms. No.149, Lab. & Emp. (M-II) dated 25-7-1995

37 Subs. Ibid

38 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

39 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

40 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

41 Subs. by (1.0. Ms. No.2844, Lab. & Emp, dated 1,7.12-1980

42 Ins. by G.0.. Ms. No.1280. Lab. & Emp. (M-11), dated the 17th June, 1981

43 Subs. by G.O. Ms. No.150, Lab. & Emp. (M-11), dated the 14th July, 1993

44 Ins. by G.O. Ms. No.24, Lab. & FAIT. (M-11), dated the 12th February, 1993

45 Ins. by G.O. Ms. No.150. Lab. & Emp. (M-11), dated the 14th July, 1997

46 Subs. by G.O. Ms. No. 2844 Lab. & Emp dated the 17th member, 1980

47 Subs. by G.O. Ms. No. 2844 Lab. & Emp dated the 17th member, 1980

48 Subs. By G.O. Ms. No. 241, Lab. & Emp., dated the 13th September, 1991

49 Subs. by G.O. Ms. No. 2844 Lab. & Emp dated the 17th member, 1980

50 Subs. by G.O. Ms. No. 2844 Lab. & Emp dated the 17th member, 1980

51 Subs. by G.O. Ms. No. 2844 Lab. & Emp dated the 17th member, 1980

52 Subs. by G.O. Ms. No. 2844, Lab & Emp 17.12.1980

53 Subs, by G.O. Ms. No. 241. Lab. & Emp. 13-9-1991

54 Subs. by G.O. Ms. No. I50, Lab. & Emp. (M-II).14-7-1993

55 Ins. by G.O. Ms. No. 150, Lab. & Emp. (M-11). 14.7.1993

56 Omitted by G.O. Ms. No.149. Lab & Emp (M-II) 25.7.1995

57 Ins. by G.O. Ms. No. 150, Lab. & Emp. (M-11). 14.7.1993

58 Subs. by G.O. Ms. No. 2844, Lab & Emp 17.12.1980

59 Subs. by G.O. Ms. No. 2844, Lab & Emp, dated the 17.12.1980

60 Subs by G.O Ms.No.133, Lab & Emp, dated the 23rd April 1991

61 Ins by G.O Ms.No 387, Lab & Emp, dated the 17th May 1977

62 Subs. by G.O. MS. No.2562. Lab. & Emp, dated 16th November 1981

63 Ins. by G.O. Ms.No, 133, Lab & Emp, dated the 23rd April 1991

64 Ins. by S.R.O. A.930 of 1971

65 Subs. by G.O. Ms. No. 2223, Labour and Employment, 6th October 1988

66 Subs. by G.O. Ms: No. 387, Labour and Employment, dated the 28th April, 1976

67 Subs. by G.O. Ms. No. 387, Labour and Employment, dated the 28th April. 1976

68 Subs. by GO. Ms. No 127. Labour and Employment (M-2), dated 31-8-2005

69 Subs. By G.O. Ms.No.387, Labour and Employment, dated the 28th April, 1976

70 Subs. by GO. Ms. No. 127. Labour and Employment (M-2) dated the 31-8-2005

71 Subs. by GO. Ms. No. 127. Labour and Employment (M-2) dated the 31-8-2005

72 Subs. by GO. Ms. No. 127. Labour and Employment (M-2) dated the 31-8-2005

73 Subs. by G.O. PAL No. 359, Labour and Employment, dated the 2nd May, 1978

74 Subs. by G.O. PAL No. 359, Labour and Employment, dated the 2nd May, 1978

75 Subs. by G.O. PAL No. 359, Labour and Employment, dated the 2nd May, 1978

76 Subs. by G.O. PAL No. 359, Labour and Employment, dated the 2nd May, 1978

77 Added by G 0. Ms No.2223 , Labour and Employment, dated the 6th October,1988

78 Ins by G.O.Ms. No. 1569, Labour, dated the 1st August, 1985

79 Subs. by G.O. Ms. No. 1250, Labour and Employment, 26th June, 1989

80 Subs. by G.O.Ms. No. 366, Labour, dated the 23rd February. I985

81 Re-cumbered by G.O. Ms. No. 1527. Labour, 20th July. 1988

82 Ins. ibid

83 Ins. by C.O. Ms. No. 35. Labour and Employment, dated the 19th January, 1978

84 Heading subs. by G.O. Ms. No. 3286, Labour, dated the 24th December, 1983

85 Subs. by G.O. Ms. No. 1872, Labour and Employment, dated the 8th November, 1979

86 Added by G.O. Ms No. 1527, labour, dated the 20th July, 1988

87 Added by G.O. Ms. No. 1527, Labour, dated the 20th July, 1988

88 Added by G O. Ms No 154. Labour and employment (M2), dated the 1st June 2004

89 Ins. by GO. Ms. No. 40. Labour and Employment (M-2), dated the 29th March 2006

90 Subs. by GO. Ms. No. 248. Labour & Employment, dated the 26th March, 1976

91 Subs, by S.R.O. A-No. 90/77, dated the 23rd February. 1977

92 Sub. by G.O. Ms. No. 210, Labour and Employment, dated the 18th March. 1978

93 Sub. for " an unfired ". by G.O.Ms. No. 1523. Labour and Employment dated the 10th July. 1980

94 Sub. by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1985

95 Cl. (a) omitted by G.0. Ms. No. 572. Labour. dated the 18th March. 1985

96 Sub. for "competent person", by G.O.Ms. No. 2547, Labour, dated the 3rd December. 1984

97 Sub. for "competent person". by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

98 Sub. for "competent person". by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

99 Sub. for "competent person". by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

100 Sub. for "competent person". by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

101 Sub. for "competent person". by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

102 Sub. for "competent person". by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

103 Subs. for "competent person". ibid.

104 " Sub. for" competent person" by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

105 " Sub. for" competent person" by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

106 " Sub. for" competent person" by G.O. Ms. No. 2547. Labour, dated the 3rd December. 1984

107 Ins. by GO. Ms. No. 204, Labour and Employment (M-2), dated 23rd July, 2004

108 Certain words omitted by GO. Ms. No. 109, Labour and Employment (M-2), dated the 10th September. 2008

109 Subs. By G.O. Ms.No 53, L&E (M-2), dated the 12th April, 2012

110 Subs, by GO. Ms. No.109, L&E (M-2), dated the 10th September, 2008.

111 Amended by G.O. Ms. No. 564. Labour & Employment, dated the 4th August. 1977

112 Sub. by G.O. Ms. No. 368. Labour, dated the 23rd February, 1985

113 Ins. By G.O Ms. No. 1093. Lab. & Emp. (M-11). dated the 23rd December 1976.

114 Subs. by GO. Ms. No. 1093, Labour and Employment (M-II) dated 23.12.1976

115 Subs. by G.O. Ms. No. 1527, Labour, 20th July, 1988

116 Subs for "protection against lightning" by GO.MS.No.121, Labour & Employment, (M-2), dated 31st July 2012

117 Subs by GO. Ms.No.121, Labour & Employment (m-2), dated 31st July 2012.

118 Subs. by GO. Ms. No. 121, Labour & Employment (M-2), dated 31st July, 2012

119 Added by GO. Ms. No. 121, Labour & Employment (M-2), dated 31st July, 2012.

120 Existing Schedule-I, substituted by G.O. Ms. No. 121, Labour & Employment (M-2), dated 31st July, 2012

121 Subs. by G.O. Ms. No. 1074, dated the 14th September, 1978

122 Omitted by GO. Ms. No. 141, Lab. and Emit (M-2), dated 26-10-2005

123 Subs. by GO. Ms. No. 1717, Labour, dated the 2nd September. 1986

124 Subs. by GO Ms. No. 895. Labour and Employment. dated the 16th May, 1989

125 Originally Ins. by G.O. Ms. No. 110, Labour and Employment, dated the 8th December, 1978

126 Subs. by G.O. Ms. No. 3032, Labour, dated the 15th November, 1983

127 Ins by G.O Ms. No. 1106, Labour and Employment, (M-II), dated the 28th December, 1976

128 Ins. by G.O. Ms. No. 988 Labour, dated the 2nd June, 1986

129 Subs.by G.O. Ms.No 121, Labour and Employment (M-2), dated the 31st July, 2012

130 Ins by G.O. Ms. No. 109 Labour, dated the 23rd January. 1985

131 Subs by G.O. Ms. No. 133, Labour& Employed, dated 23rd April, 1991

132 Added by G.O. Ms. No. 2223, Labour & Employment, dated the October, 1988

133 Ins. by G.O. Ms. No. 1527. Labour, dated the 20th July, 1988

134 Added by G.O. Ms. No. 518, Labour & Employment, dated the 15th March, 1989

135 See Errata dated 26th May, 1992

136 Inserted by GO. Ms. No. 40, Labour and Employment (M-2), dated the 29th March 2006

137 Added by GO. Ms, No. 127, Labour and Employment (M-2), dated 31st August, 2005 (with effect from 9th November, 2005

138 Rules 62-B to 62-T, inserted by G.0. Ms. No. 133, Labour and Employment (M-2), dated the 23rd April, 1991.

139 Subs. by G.O.M.s No. 222. Labour and Employment, dated the 21st November, 1995

140 Subs by G.O. Ms. No.222. Labour and Employment, dated the 21st November, 1995

141 Subs. by G.O. Ms. No. 222. Labour and Employment, dated the 21st November, 1995

142 Subs. by G.O. Ms. No. 222, Labour and Employment, dated the 21st November, 1995

143 Subs. by G.O. Ms. No. 150 (Labour and Employment) dated the 14th July, 1993

144 Subs. By G.O. Ms No.150, Lab. & Emp. (M-II). Dated the 14th July. 1993

145 Ins. by G.O. Ms. No. 2013. Lab & Emp, dated the 30th August, 1980

146 Ins. by G.O, Labour & Employment, dated the 23rd January, 1985

147 Subs, by G.O. Ms. No. 2013, Labour and Employment, dated the 30th August, 1980

148 Subs. by G.O. Ms. No. 169. Labour, dated the 23rd January, 1985

149 Ins by GO. Ms. No 1568. Labour, 1st August. 1985

150 Subs. by GO. Ms. No 53. Labour and Employment. (M-2), 12th April, 2012

151 Added by G.O. Ms No 127, Labour and Employment (M-2), dated 31-8-2005.

152 Ins. By G.O. Ms.No.2013, Labour and Employment, 30 August, 1980.

153 Now the Tamil Nadu Co-operative Societies Act, 1983

154 Subs. by G.O. Ms. No. 2013, Labour and Employment, dated the 30th August, 1980

155 Ins. by G.O. Ms. No. 109, Labour, dated the 23rd January, 1985

156 Ins. by G.O. Ms. No. 2743, Labour, 27th December, 1984

157 Subs. by G.O. Ms. No. 2013, Labour and Employment, dated the 30th August, 1980, for "fifty women workers"

158 Subs, by G.O.Ms. No. 2013, Labour and Employment, dated the 30th August 1980

159 Ins. by G.O. Ms. No. 1536, Lab. & Bop. dated the 19th September, 1979

160 Subs. by G.O. Ms.No.109, Labour, dated the 23rd January, 1985

161 Ins. by G.O. Ms. No. 116, Lab. & Emp. (M-II) dated the 28th June, 1994

162 Subs. By G.O.Ms.121, Labour and E,mployment (M-2), dated the 31st July,2012.

163 Subs. For "Register of adult workers", by G.O. Ms. No.121, Labour and Employment (M-2), dated the 31st July, 2012.

164 Inserted (sic) by GO.Ms.217, Labour Employment(M-2), dated the 29th July, 2004 (for Gazette extract, see Digest of Labour Cases, 2005 at P.14) Publisher's note : Prior to this amendment, Rules 81 to 84 were last amended tide G.O. Ms. No. 156. Labour and Employment. dated 3rd August. 1994 (for Gazette extract see 1994 Digest of Labour Cases at p. 871 and prior to that it was substituted by G.O. Ms. No. 2535. Labour. 24th November. 1987 (for Gazette extract sec 1987 Digest of Labour Cases at p.191)]

165 Ins. by G.O. Ms. No. 367. Labour, dated the 23rd February. 1985. (for Gazette extract see 1985 Digest of Labour Cases at p. 13

166 Subs, by G.O Ms. No, 24, Lab.& Emp (M-2), dated, the 12th February. 1993

167 Ins. by G.O. Ms. No. 121, Lab & Emp.(M-2), dated the 31st July, 2012

168 Ins. By G.O. Ms. No. 644, Labour and Employment, dated 25th march, 1982

169 Subs. By G.O. Ms. No.53, Lab & Emp (M-2), dated the 12th April, 2012

170 Renumbered by G.O. Ms. No. 644, Lab and Emp., dated 25th March, 1982.

171 Subs. by GO. Ms. No. 2347, Lab. and Emp, dated the 27th October, 1988

172 Item 7, substituted by GO. Ms. No. 3744, Industries, Labour and Co-operation (Labour), dated the 29th July, 1960

173 Items 15 and 16, added by GO. Ms. No. 2501, Industries, Labour and Co-operation (Labour), dated the 7th May, 1962

174 Item 17, added by GO. Ms. No. 5135, Industries, Labour and Co-operation (Labour), dated the 25th October, 1963

175 Item 18, added by GO. Ms. No. 3461. Industries, Labour and Housing (Labour), dated the 7th October, 1968

176 Items 19 to 21, added by GO. Ms. No. 1195, L& E. dated the 27th November. 1974

177 Item 22, added by GO. Ms. No. 1222, L & E, dated the 10th December, 1974

178 Item 23, added by GO. Ms. No. 680. L & E, dated the 20th July, 1976

179 Item 24, added by GO. Ms. No. 41, L & E, dated the 21st January. 1976

180 Item 25, added by GO. Ms. No. 643. L & E. dated the 24th July, 1975

181 Item 26. added by GO. Ms. No. 314, L & E. dated the 17th April, 1976

182 Item 27. added by GO. Ms. No. 906, L & E, dated the 19th November, 1975

183 Items 28 to 31, added by GO. Ms. No. 185, L & E, dated the 1st March. 1988

184 Subs. by GO. Ms. No. 110, L & E. (M-2), dated the 16th September, 2008, for "31. Highly flammable liquids and flammable compressed gases"

185 Item 32, added by GO. Ms. No. 255. L & E (M-2). dated the 25th October,2013

186 Ins. by GO. Ms. No. 644, L &E, dated the 25th March. 1982

187 Subs. by GO. Ms. No. 153, L & E (M-2), dated the 12th April,2012

188 Added by G.O. Ms. No. 1523, Labour and Employment, dated 10th July 1980

189 Subs, by G.O. Ms. No. 3310, Labour, dated 28th December, 1983

190 Added by G.O. MS No. 366, Labour. dated 23rd February, 1985

191 Ins by G.O. Ms. No. 1852, Labour and Employment, dated 31st August 1988

192 Ins. by G.O. Ms. No. 1252, Labour and Employment, dated the 19th October,1978

193 Subs. by. G.O. Ms. No. 1852 Labour and Employment, dated 31st August, 1988

194 Omitted by G O Ms No 2223 Labour and Employment, dated the 6th October, 1988

195 Subs. vide G.O. Ms. No. 2223, Labour and Employment, dated the 6th October,1988

196 Omitted vide G.O. Ms. No 2223 labour and Employment, dated the 6th October, 1988

197 Subs. vide G.O. Ms-No.2223, Labour and Employment, dated the 6th October,1988

198 Subs. by G.O. Ms. No. 365, Labour and Employment, dated the 10th May, 1977

199 Ins. vide G.O. Ms. No.2223. Labour and Employment, dated the 6th October,1988

200 Subs. vide G O Ms No 2223, Labour and Employment, dated the 6th October, 1988

201 Subs. vide G O Ms No 2223, Labour and Employment, dated the 6th October, 1988

202 Subs. by G.O. Ms. No.1195, Labour and Employment, dated the 27th November, 1974.

203 Subs. by G.O. Ms. No. 579, Labour and Employment, dated the 24th June, 1976

204 Ins. vide G.O. Ms. No 2223, Labour and Employment, dated the 6th October,1988

205 Subs. by G.O. Ms. No. 1069, dated the 29th October, 1974

206 Subs. by G. O. Ms. No 1069, dated the 29th October, 1974

207 Subs. vide G.O. Ms. No. 2223, Labour and Employment, dated the 6th October, 1988

208 Subs. vide G.O. Ms. No. 2223, L& E, dated the 6th October,1988

209 Subs. vide G.O. Ms. No. 2223, L 8 E, dated the 6th October, 1988

210 Subs. vide G.O. Ms. No. 2223, L & E, dated the 6th October. 1988

211 Subs. by G.G. Ms. No. 518, Labour and Employment, data, the 15th April,1989

212 Subs. by G.O. Ms. No. 547, dated the 8th July, 1974

213 Subs. by G.O. Ms. No. 547, dated the 8th July.1974

214 Omitted by G.O. Ms. No.547, dated the 8th July, 1974

215 Subs. by G.O. Ms. No.2223. L & E, dated the 6th October, 1988.

216 Subs. by G.0. Ms. No. 1717, Labour, dated the 2nd September, 1986

217 Added by G.O. Ms. No. 46, L & E (M-2), dated the 28th April, 2006

218 Subs. by GO. Ms. No. 2223, L & E, dated the 6th October. 1988

219 Subs for the expression "Form 27-A", by GO.Ms, 121, Labour & Employment (M-2), dated the 31st July, 2012

220 Added by GO. Ms. No. 46, Labour and Employment (M-2), dated 28th April 2006

221 Subs, by G.O. Ms. No,1717, labour, dated the 2nd September, 1986

222 Subs. vide G.O. Ms. No. 2223, L.& E, dated the 6th October, 1988

223 Re-lettered by G.O. Ms. No. 1278, Labour, dated the l3th June. 1984

224 Re-lettered by G.O. Ms. No. 1278, Labour, dated the l3th June. 1984

225 Re-lettered by G.O. Ms. No. 1278, Labour, dated the l3th June. 1984

226 Added by GO. Ms. No. 680, Labour and Employment, dated the 20th July, 1976

227 The heading" Process of Extracting Oils and Fats from Vegetable and Animal Sources in Solvent Extraction Plants " substituted by GO. Ms. No. 127, Labour and Employment (M-2), dated the 31st August 2005

228 The words " from vegetables and animal sources omitted by GO. Ms. No. 127, Labour and Employment (M-2), dated the 31st August, 2005

229 Subs. by G.O. Ms. No. 1523, Labour and Employment, dated the 10th July, 1980

230 Ins. by G.0. Ms. No. 572, Labour, dated the 18th March, 1985

231 Ins. by G.O.Ms. No 1523, Labour and Employment, dated the 10th July, 1980

232 Subs. by G.O. Ms. No. 3310, Labour, dated the 28th December, 1983

233 Subs. by G.0.145. No., 2742. Labour, dated the 27th December, 1984

234 Subs. by G.O. Ms. No. 28, Labour and Employment (M-2), dated' 18th March. 1997 (w.e.f. 2nd April. 1997)

235 The word "and" omitted by G.O. Ms. No 24, L & E (M-2), 12th February 1993.

236 Subs. By G.O. Ms. No.2457, Labour, dated the 22nd November 1993

237 Ins. By G.O Ms.24.,Lab and Emp (M-2), dated the 12th February 1993

238 Ins by GO.Ms. No.16, Labour and Employment, dated the 3rd March 1997.

239 Subs. By G.O. Ms No. 24, Lab and Emp (M-2), dated the 12th February 1993.

240 Ins. By GO.Ms. No.130,Lab and Emp (M-2), dated the 11th September, 2012.

241 Subs. By G.O. Ms. No 2223. L & E, dated the 6th October, 1988

242 Added by G.O. Ms. No. 314, L & E, dated the 17th April, 1976

243 Subs. by G.O. Ms. No. 288, labour and Employment, dated the 12th April, 1978

244 Subs. by G.O. Ms. No. 288, Labour and Employment, dated the 12th April, 1978

245 Ins. by G.O.Ms. No.366. Labour, dated the 23rd February, 1985

246 Re-lettered by G.O. Ms. No. 366, Labour, dated the 23rd Februarys 1985

247 Re-lettered by G.O. Ms. No. 366, Labour, dated the 23rd Februarys 1985

248 Re-lettered by G.O. Ms. No. 366, Labour, dated the 23rd Februarys 1985

249 Subs. vide O.O. Ms. No. ma. 1. & E. dated the 6th October. 1988

250 Added by G.O. Ms. No,366, Labour, dated the 23rd February,1985

251 Ins. by G.O. Ms. No.885, Labour, dated the 8th May, 1986

252 Omitted by G.O Ms No 2223 L & E., dated the 6th October, 1988

253 Subs. by G.O. MS No. 2223, Labour and Employment, dated the 6th October, 1988.

254 Ins. by G.O. Ms. No.1717. Labour, dated the 2nd September, 1986

255 Added by GO. Ms. No. 1852, Labour and Employment, dated the 31st August, 1988

256 Subs. by GO. Ms. No. 110, Labour and Employment (M-2), dated the 16th September, 2008

257 Originally inserted by G.O MS No 1852, L & E, dated the 31st august 1988 and subsequently by GO. Ms. No.255, L&E (M2), dated the 25th October2013.

258 Sub for "Form 18", by GO. MS.No 121, L & E (M-2) dated the 31st July, 2012.

259 Subs. by G.O. Ms. No.1479, Labour, 6th July. 1988

260 Subs. By GO. MS. No 81, Labour and Employment (M-2), dated 19-02-2013

261 Added by GO. Ms. No 119. Labour and Employment (M-2). dated 9-8-2005

262 Subs. by G.O. Ms. No. 257, Labour and Employment (M-2). dated the 16th August, 2004

263 Omitted by G.O. Ms. No. 698. Labour and Employment, dated the 11th August. 1975

264 Renumbered ibid

265 Ins. By G.O.Ms.No.366, Labour, dated the 23rd February, 1985

266 Subs. By GO.Ms. No.196, L&E (M-2), dated the 22nd august 2013.

267 Subs. By GO. Ms. No. 196, L&E (M-2), dated the 22nd august 2013.

268 Subs. GO. Ms. No. 24, Labour and Employment (M-2), dated the 12th February 1993

269 Subs. GO. Ms. No. 1906, Labour. dated the 6th September, 1985

270 Ins. by notification

271 Subs. for" Time card ", by GO. Ms. No. 127, Labour and Employment (M-2), dated the 31st August, 2005

272 Subs. by GO. Ms. No. 127. Labour and Employment (M-2), dated the 31st August, 2005. for "Time card "

273 Ins. by GO. Ms. No. 291, Labour, dated the 3rd February, 1984

274 Ins. by GO. Ms. No. 205, Labour and Employment (M-2), dated the 4th October, 2010

275 Rule 104, omitted by GO. MS. No 121, L& E (M-2), dated the 31st July 2012. Prior to this rule 104 was substituted by GO.Ms.No.698, Labour and Employment, dated the 11th August, 1975

276 Subs. for " 25 square feet " and " 36 square feet " respectively, by GO. Ms. No. 6751, Industry. Labour and Co-operation (Labour), dated the 30th November, 1961.

277 Subs. for " 25 square feet " and " 36 square feet " respectively, by GO. Ms. No. 6751, Industry. Labour and Co-operation (Labour), dated the 30th November, 1961.

278 For Rule 108, Rules 108 and 109, substituted by GO. Ms. No. 866, Industry, Labour and Co-operation, dated the 13th February, 1961

279 Ins. by GO. Ms. No. 1852. Labour and Employment. dated the 31st August, 1988

280 Rules 110 and 111, added by GO. Ms. No. 6586, Industries, Labour and Co-operation (Labour), dated the 18th November. 1961

281 Rule 112, added by GO. Ms. No. 2385, Industries, Labour and Co-operation (Labour), dated the 27th April. 1964

282 Rule 113, added by GO. Ms. No. 1310, Labour and Employment, dated the 22nd June, 1981

283 Added by GO. Ms. No. 105, Labour and Employment (M-2), dated the 16th June, 2010.