# THE KARNATAKA FACTORIES RULES, 1969

## Contents

**1The Karnataka Factories Rules, 1969**

(1) These Rules may be called the **Karnataka Factories Rules, 1969.**

(2) They shall extend to the whole of the State of Karnataka.

(3) They shall come into force at once. (a) **"Act"** means the Factories Act, 1948;

(b) **"Artificial Humidification"** means the introduction of moisture into the air of a room by any artificial means whatsoever except the unavoidable escapes of steam or water vapour into the atmosphere directly due to a manufacturing process:

(c) **"Belt"** includes any driving strap or rope;

(d) **"Degrees"** (of temperature) means degrees on the centigrade scale;

(e) **"District Magistrate"** includes such other officials as may be appointed by Government in that behalf;

(f) **"Form"** means a form appended to these rules;

(g) **"Fume"** includes gas or vapour;

(h) **"Health Officer"** means the Municipal Health Officer or District Health Officer or such other official as may be appointed by the State Government in that behalf;

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

(j) 2[**"Inspector"** x x x x x;]

**GSR 118 -** In exercise of the powers conferred by Section 112 of the Factories Act, 1948 (Central Act No. LXIII of 1948) and in supersession of Karnataka Factories Rules, 1952, Madras Factories Rules, 1950, Bombay Factories Rules, 1950, and Hyderabad Factories Rules, 1950, as in force in the respective Areas of the State, the Government of Karnataka hereby makes the following Rules the draft of the same having been previously published in Part IV, Section 2-C of the Karnataka Gazette (Extraordinary), dated 31st August, 1966 as required by Section 115 of the said Act, namely:

**Chapter I**

**Preliminary**

**1. Title, extent and commencement**

**2. Definitions**

In these Rules, unless the context otherwise requires:

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 80 degrees or more, shall not be deemed to be artificial humidification;

(1) No site shall be used for the location of a factory nor shall any building be constructed, reconstructed, or extended or taken into use as a factory or part of a factory, nor shall any manufacturing process be carried on in any building constructed, reconstructed or extended without the previous permission in writing of the Chief Inspector. The previous permission, in writing, of the Chief Inspector shall also be obtained for the installation of additional machinery or for the installation of prime movers exceeding the horse power already installed in the factory.

(2) Application for permission under sub-rule (1) shall be made in Form No. 1 (in triplicate) 4[or through department online portal "e-surakshate] along with a fee of 5[6[rupees five hundred] for factories employing upto

500 workers and rupees [7][Rupees one thousand] for factories employing [8][501 to 1000] workers] [9][Rupees two thousand for factories employing above 1000 workers] and shall be accompanied by the following documents, namely: (a) A flow chart of the manufacturing process supplemented by a detailed 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;
(ii) the plan, elevation and necessary cross sections of the various buildings, indicating all relevant details relating to natural lighting, ventilation, and means of escape in case of fire; and
(iii) The position of the plant and machinery, aisles and passageways;
(c) A certificate from the Karnataka State Pollution Control Board, to the effect that arrangements are made for the disposal of industrial liquid wastes, effluents and air pollutants in the case of [10][factories engaged in hazardous processes] and that the steps taken for proper disposal of waste and effluents are effective.

(k) **"Maintained"** means maintained in an efficient state in efficient working order and in good repair;
(l) **"Manager"** means the person responsible to the occupier for the working of the Factory for the purposes of the Act;
(m) **"Public Health Authority"** means the local Health Officer having jurisdiction over the area and includes the Director of Health Services;
(n) **"Section"** means a section of the Act.

**3. [3][Approval of site, construction or extension of a factory**
[11][Provided that in respect of industrial undertakings whose projects are approved either by State High Level Clearance Committee or State Level single

(3) The Chief Inspector may call for such other particulars as he may require.
(4) After examination of the documents referred to in sub-rule (2) and particulars called for, if any, under sub-rule (3), [12][and ensuring the compliance of Building Bye-Laws of the Karnataka Industrial Area Development Board or any Local Authority, as the case may be] the Chief Inspector may accord the permission applied for, subject to such conditions as he may consider necessary.
(5) 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. One copy of the said plans and specifications shall be returned to the applicant.
(6)
(7) The plans and layouts of factory building shall be prepared by a person possessing a degree or a diploma in Civil Engineering or an equivalent qualification.

(8) After the date of commencement of the Karnataka Factories (Amendment) Rules, 1993, no manufacturing process shall be carried on in any factory constructed, extended or taken into use as a factory or part of a factory unless a certificate of stability in Form No. 1-A in respect of the building is issued by a person possessing a degree in Structural or Civil Engineering.
(9) [13][No manufacturing Process shall be carried out in any premises of a factory unless a fresh certificate to stability in Form - IA is obtained from a competent person processing a degree in Structural or Civil Engineering, once in every five years.]
(1) Every person or institution who is desirous of getting recognised as a competent person shall make an application in Form No. 1-B or 1-C as may be appropriate to the Chief Inspector who shall register such application and shall, within a period of 60 days from the date of receipt of such application, either recognise the applicant as a competent person and issue certificate in Form No. 1-D, [15][for a period of 12 months] or reject the application specifying the reasons therefore.

Window Clearance Committee or District Level Single Window Clearance Committee, application for permission under sub-rule (1) shall be in the Combined Application Form along with the fee and documents specified in this rule.]
(a) A factory or a part of a factory constructed, reconstructed, extended or taken into use as a factory, shall be in accordance with the plans approved by the Chief Inspector, 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, shall be installed, fixed or used in any factory except in replacement of any machine, prime mover or permanent fixture not occupying more floor area than that already shown in the approved plans.

**3-A. [14][Recognising a Competent Person**

(2) [17][Every application for recognition or renewal as a competent person in Form No. 1-B or 1-C as the case may be shall be accompanied by a treasury challan [18][or online credit to the head of account of the department] for having credited fees as specified in the table below:

[16][provided that no person or institution is eligible to be certified as competent person, unless he or persons employed in such institution is within the age of 62 years and possess the qualification of Degree in Mechanical or Electrical or Metallurgical or prescribed by the Central Government and experience specified by the Chief Inspector or Central Government in this regard.]
19Table C
**[See Rule 3-A (2)]**

| Sl. No. | Competency Certificate | Scope | Section/rule under which competency certificate to be issued | Fees for registration or annual Renewal |
|---|---|---|---|---|

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| 1. | To an individual | State | (1) Section 28 and 29 | 4000 |
| (2) Section 31 | | | 4000 | |
| (3) Clause 2(c) of schedule 5 under Rule 57 | | | 1000 | |
| (4) Clause 6 of Schedule VI under Rule 57 | | | 1000 | |
| (5) Schedule V of Rule 129 | | | 1000 | |
| (6) Clause 13 of Schedule XVII under Rule 129 | | | 1000 | |
| (7) Rule 69(4) | | | 1000 | |
| (8) Rule 88-B (4) | | | 1000 | |
| 2. | To an institution | State | (1) Section 28 and 29 | 5000 |
| (2) Section 31 | | | 5000 | |
| (3) Clause 2(c) of schedule 5 under Rule 57 | | | 1000 | |

| | |
|---|---|
| (4) Clause 6 of Schedule VI under Rule 57 | 1000 |
| (5) Schedule V of Rule 129 | 1000 |
| (6) Clause 13 of Schedule XVII under Rule 129 | 1000 |

| | | | | |
|---|---|---|---|---|
| (7) Rule 69(4) | | | 1000 | |
| (8) Rule 88-B (4) | | | 1000 | |
| 3. | To an individual | Factory | (1) Section 28 and 29 | Rs. 25000/- (Irrespective of the provisions for which the competency certificate is applied for) |
| (2) Section 31 | | | | |
| (3) Clause 2(c) of schedule 5 under Rule 57 | | | | |
| (4) Clause 6 of Schedule VI under Rule 57 | | | | |
| (5) Schedule V of Rule 129 | | | | |

| |
|---|
| (6) Clause 13 of Schedule XVII under Rule 129 |
| (7) Rule 69(4) |
| (8) Rule 88-B (4) (3) A certificate issued under Rule 3-A(l) shall be renewed for a period of 12 months on payment of a renewal fee as specified at column (5) of the Table C]<br>(4) 20[The Chief Inspector may, after giving an opportunity to the competent person of being heard, revoke the certificate of competency if he has reason to believe that a competent person:<br>(5) 22[The Competent persons shall submit the Test Certificates to the jurisdictional officer within seven days from the date of inspection, along with such other information as required by the chief inspector.]<br>(1) 24[The occupier of every factory shall submit, to the Chief Inspector or Jurisdiction officer an application in Form No-2 (in triplicate) or through department online portal "e-surakshate" for registration of factory and grant of license along with the list of Partners or Directors.]<br>(2) No premises shall be used as a factory nor any manufacturing process be carried on in any factory except and in accordance with, the registration and licence granted under these rules. |

(a) has violated any condition stipulated in the certificate of competency; or
(b) has carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of this Act or the Rules made there under;
(c) has omitted to act as required by or under the Act.]
21[The Chief Inspector may call for such other particulars as he may require.]

**4. 23[Application for registration and grant of licence**

(3) The plans approved by the Chief Inspector under Rule 3, and the licence granted by him under Rule 5 shall be readily available in the factory for inspection of the Inspector.
(1) A licence for a factory may be granted by the Chief Inspector in Form No. 3, on payment of fees specified in the Tables A and B annexed to this rule.
(2) 26[A licence may be granted or renewed, under this chapter, for period of ten years or more but not exceeding fifteen years at a time, on payment of fees specified in sub-rule (1) for each year.]
(3) In case of factories working for part of a year and commencing work on or after First day of July, the fees to be charged for the first time shall be half of that specified in the Tables A and B subject to a minimum of rupees forty-five.
(4) Where the Chief Inspector refuses to grant or renew a licence, he shall record, I writing, the reasons for such refusal and communicate the same to the occupier.
(5) If, on an application for registration and grant of licence, sent to the Chief Inspector by registered post, no order is communicated to the applicant within three months from the date on which it is so sent, the registration and grant of licence applied for in the said application shall be deemed to have been granted.



**5. 25[Grant of licence**

27[Table A

**[See Rule 5(1)]**

**Scale of fees payable for Licence and annual renewal of licence by factories**

| Quantity of H.P. installed | Maximum number of persons to be employed on any day during the year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Up to 20 | From 21 to 50 | From 51 to 100 | From 101 to 250 | From 251 to 500 | From 501 to 750 | From 751 to 1000 | From 1001 to 5000 | From 5001 to 10000 | From 10001 and above | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | | Rs. |
| Nil | 540 | 1080 | 3240 | 3480 | 8100 | 11880 | 15600 | 19440 | 23280 | 24300 |
| Upto 10 HP | 1080 | 2160 | 3360 | 7560 | 14580 | 21600 | 28320 | 32400 | 40500 | 50220 |
| Above 10 HP upto 50 HP | 2160 | 3120 | 4320 | 8640 | 15960 | 23040 | 30000 | 34020 | 43740 | 51840 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Above 50 HP upto 100 HP | 3120 | 4320 | 5640 | 9960 | 16080 | 24840 | 32400 | 36180 | 46440 | 55080 |
| Above 100 HP | 4860 | 5400 | 6420 | 11340 | 18900 | 27000 | 36120 | 38400 | 48840 | 57780 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| upto 250 HP | | | | | | | | | | |
| Above 250 HP upto 500 HP | 5400 | 6480 | 8100 | 13380 | 22140 | 30960 | 39720 | 44820 | 56700 | 66960 |
| Above 500 HP upto 1000 HP | 8640 | 9960 | 11880 | 18360 | 29160 | 40500 | 50760 | 57240 | 61020 | 84780 |
| Above 1000 HP upto 5000 HP | 10800 | 12960 | 16200 | 25440 | 41040 | 56700 | 71505 | 79800 | 102600 | 121200 |
| Above 5000 HP upto 10000 HP | 21600 | 25920 | 32400 | 50880 | 82080 | 113400 | 142995 | 159600 | 205200 | 242400 |
| Above 10000 HP | 36600 | 43200 | 48600 | 76320 | 123120 | 170100 | 214500 | 239400 | 307800 | 363600 |

28[Table B

Scale of fees for licence and annual renewal of licence by electricity generating transforming or transmitting factories or attached power house and for heating circuits in addition to the scale of fees payable in table "A"

| **Total installed capacity (in K.W.)** | | **Fee Payable (in Rs.)** |
|---|---|---|
| A. | 50 K.W. or less | 1080 |
| B. | 50 K.W. to 100 K.W. | 1320 |
| C. | 100 KW to 150 K.W. | 1680 |
| D. | 151 KW to 300 K.W. | 2400 |
| E. | 301 KW to 700 K.W. | 5400 |
| F. | 701 KW to 1000 K.W. | 9600 |
| G. | 1,001 KW to 5,000 K.W. | 13980 |
| H. | 5,001 KW to 10,000 K.W. | 23340 |
| I. | 10,001 KW to 50,000 K.W. | 38820 |

| | | |
|---|---|---|
| J. | 50,001 KW to 60,000 K.W. | 46560 |
| K. | 60,001 KW to 80,000 K.W. | 54360 |
| L. | 80,001 KW to 1,00,000 K.W. | 62100 |
| M. | 1,00,001 KW to 1,50,000 K.W. | 77640 |
| N. | 1,50,001 KW to 2,00,000 K.W. | 92520 |

(1) A licence granted under rule 5 may be amended by the Chief Inspector.
(2) (a) A licensee shall be required to have his licence amended if there is change in the name of the Factory, or if the Factory for which the licence is granted exceeds [29][increase or decrease the limits] the limits specified in the licence in regard to horse-power or the number of persons employed. The licensee whose licence is required to be amended shall submit it to the Chief Inspector with an application stating the nature of the amendment sought and reasons therefore.
(b) An application for amendment shall be made at least fifteen days prior to the date on which the licensee desires to increase the amount of horse-power or the number of employees specified in the licence.

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

| | | |
|---|---|---|
| O. | 2,00,001 KW to 3,00,000 K.W. | 108720 |
| P. | Above 3,00,000 K.W. | 124200 |

**6. Amendment of Licence**
**7. Renewal of Licence**
(1) A licence may be renewed by the Chief Inspector; or by an Inspector authorised by the Chief Inspector:
(2) [31][Every application for renewal shall be made in Form 2 (in triplicate) or through department online portal "e-surakshate" such application shall be made not less than two months before the date on which the license expires.]
(3) The same fees shall be charged for the renewal of licence as for the grant thereof:

Provided that, if the application is not received within the time specified in sub-rule (2) the licence shall be renewed only on payment of a fee 25 per cent in excess of the ordinarily fee payable for the licence per year.

(4) Where the application for renewal is made the premises shall be held to be duly licensed until such date as the Chief Inspector renews the licence.
(5) [32][Licensee may surrender his license temporarily due to closure during the ensuing year not less than two months on which the license expires, for claiming exemption from renewal of license by post or through department online on the department web-site "e-surakshate]

**7-A. [33][Revocation of licence**
The Chief Inspector or the Deputy Chief Inspector may, at any time before the expiry of the period for which the licence has been granted or renewed, revoke the licence on any of the grounds:

Provided before revoking any licence, the licensee shall be given an opportunity to show cause, as to why the licence should not be revoked.]

**8. Transfer of Licence**
(1) [34][The holder of the license shall, within thirty days from date of change in the Proprietor, Partners or Directors apply for permission to transfer his license to another person and also an addition or deletion of any person or persons on the license, make an application in Form No.2 (in triplicate) or through department online portal "e-surakshate" with all the required documents.]
(2) Such application shall be made to the Chief Inspector who shall, if he approves of the transfer, make under his signature, an endorsement on the licence to the effect that the licence has been transferred to the person named.
(3) The fee on each application for transfer shall be [35][rupees five hundred].

**9. Procedure on death or disability of licensee**
If a licensee dies or becomes an 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 amendment of the licence under rule 6 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 on payment of a fee of [36][rupees five hundred].

**11. Payment of Fees**
(1) Every application under these rules shall be accompanied by a Treasury Receipt snowing that the appropriate fee has been paid into the local treasury under the head of account [37][0230 Labour and Employment, 104 fees realised under the Factories Act, 1948 [38][or through online payment to the head of account of the department]]
(2) Where an application for the grant, renewal, transfer or amendment of a licence is rejected, the fee paid for duration shall be refunded.
(3) It shall be the obligation of the occupier of the factory premises or the licensee, as the case may be, to submit to the Chief Inspector an application for registration and grant of licence or renewal, transfer or amendment of the licence as may be necessary within the time specified in the foregoing rules:

[39][Provided that the appropriate fee may alternatively be paid by a crossed cheque or a bank draft on any nationalised Bank or by a Postal Order drawn in favour of the Chief Inspector of Factories and Boilers.]

**12. Notice of occupation and change of Manager**

(1) [40][the notice of Occupation shall be in Form No.2 submitted in Duplicate by post or through department online portal "e-surakshate"]

(2) The notice of Occupation shall be submitted in duplicate to the Chief Inspector and a copy thereof to the Inspector concerned.

(3) [41][The Notice of Change of Manager shall be in Form 3A submitted in Duplicate by post or through department online portal "e-surakshate"]

**Chapter II**

**Inspecting Staff**

**13. Appointment of Inspectors**

No person shall be appointed as Inspector for the purposes of the Act, unless he possesses the qualifications prescribed for such Inspectors, in the Factories and Boilers Branch of the Karnataka Labour Service Recruitment Rules of the time being in force.

**14. Powers of Inspectors**

(1) An Inspector shall, in the administration of the Act, nave power to do all or any of the following things, namely: (a) to photograph any worker, to inspect, examine, endorse, measure, copy, photograph, sketch or test, as the case may be, any building or room, the plant, machinery, appliance or apparatus, any registers or document or anything provided for the purpose of securing the health, safety or welfare of the workers employed in a factory and require or investigate the cause of any accidents or disease specified in the Schedule;

(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.

[42][x x x x x.]

(2) The Inspectors shall keep a file of the records of Inspections, visits, enquiries and orders as may be ordered by the Chief Inspector.

(3) [43][ x x x x x.]

(4) [44][Every order passed under the Act and these rules shall be served on the occupier or manager of the factory, as the case may be: (a) by delivering a copy of it to him personally or at his office; or

(b) by registered post with acknowledgement due or through e-mail id of the persons or through online service of the department online portal "e-surakshate".]

(1) For the 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

**15. Duties of Certifying Surgeons**

such arrangements to the managers of factories situated within the local limits assigned to him.
(2) The Certifying Surgeon shall issue his certificates in Form 4. The foil and counterfoil shall be filled in and the left hand 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 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 of fitness was granted 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) A fee of [45][Rupees twenty five] shall be payable for the issue of every certificate of fitness issued under sub-rule (2) and shall be paid by the occupier.
(4) A certifying Surgeon revoking a certificate under sub-section (4) of section 69 shall write the word "Revoked" in red ink on the foil and counterfoil.
(5) Any authority granted by a certifying Surgeon under sub-section (2) of section 10 to a qualified Medical Practitioner (hereinafter referred to as Examining Surgeon) to exercise the powers of the Certifying Surgeon under the Act shall be made in writing and shall state the factories or area to which the jurisdiction of the Examining Surgeon is limited, and any cancellation of such authority shall be made by the Certifying surgeon in writing.
(6) An Examining Surgeon shall grant or reject certificates in the manner provided in sub-rule (2). The word 'Provisional' shall be printed or stamped in red ink at the top of each foil or counterfoil.
(7) (a) A person who loses a certificate of fitness which has been granted to him may apply to the Surgeon who granted it for a copy of the certificate and the said Surgeon after making such enquiry from such persons (or, if such person is unemployed from his last employer) and from such other sources as he deems fit, may grant a duplicate of the lost certificate. The word "Duplicate" shall be clearly written in red ink across such duplicate certificate and initialed by the said Surgeon. The counterfoil in the bound book of forms shall be similarly marked "Duplicate" and initialed.
(b) For every copy of a duplicate certificate granted under clause (a) a fee of [46][rupees five] shall be charged which shall be paid by the occupier which shall be credited to the Certifying Surgeon or Examining Surgeon.
(c) No duplicate of a certificate shall be granted to any person otherwise than in accordance with the provisions of this sub-rule.

(8)

(a) The certifying Surgeon shall visit every factory within the local limit for which he is appointed, in which adolescents or children are known to be employed, at least once in three months and shall give previous notice to the Manager of the

Factory concerned of his visit. At each of these visits, the Manager shall produce before him, at such time as the Certifying Surgeon may fix, all adolescents and children employed in the Factory, whether actually at work or not, who are in possession of provisional certificates of fitness.
(b) The Certifying Surgeon shall personally examine every adolescent and child who is in possession of "Provisional Certificate" granted under sub-rule (6) and shall if satisfied that a certificate of fitness should be granted, destroy the provisional certificate and issue certificate of fitness in place of it.
(c) If on such examination, the Certifying Surgeon is of opinion that a person in possession of Child's Provisional Certificate of fitness is under the age of 14 years or is not fit for employment as a child in a factory, or that a person in possession of an adult's "Provisional Certificate" of fitness is less than 15 years of age or is unfit to work as an adult he shall impound the certificate, write on to the word, "cancelled" and sign the same and shall forward the certificate with such remarks, if any, as he may offer to the Inspector of Factories for information and inform the Examining Surgeon who granted such provisional certificate. (9) If the Certifying Surgeon refuses to grant any person a certificate of fitness, or if he cancels a provisional certificate of fitness, no fresh application for a certificate for such person shall be entertained until after the lapse of three months from the date of such refusal, unless the Certifying Surgeon otherwise gives permission in writing at the time of refusing to grant the certificate or at the time of cancelling the "Provisional Certificate":
(10) The Certifying Surgeon or the Examining Surgeon, as the case may be at his periodical visits shall satisfy himself as to the fitness of all the adolescents and children employed in the factory and shall revoke the certificate of fitness of any one whom he deems to be unfit.
(11) The Certifying Surgeon and the Examining Surgeon shall hand over to the Manager a note in Form 27 detailing the result of each visit to the factory, who shall forward it to the Chief Inspector.
(12) The Certifying Surgeon shall, on the request of the Chief Inspector, carry out such examination and furnish him with such reports 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 substance used therein or by reason of the adoption of any new manufacturing

Provided that this sub-rule shall not prevent the immediate granting of a certificate of fitness as a child to a person whose certificate of fitness as an adult has been revoked under clause (b) of sub-rule (8) if, in the opinion of the Certifying Surgeon, such person is of age and fit to work in a factory as a child.

process or of any new substance for use in the manufacturing process, there is a likelihood of injury to the health of the workers employed in that manufacturing process; or

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

(13) For the purpose of the examination of persons employed in processes covered by these 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.
(14) At such visits the Certifying Surgeon shall examine the persons employed in such processes and shall record the results of each examination in a Register known as the Health Register in Form 26, which shall be kept by the manager and produced to the Certifying Surgeon at each visit.
(15) 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 that 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.
(16) For every examination of a worker employed on a dangerous operation under these rules, the occupier shall pay a fee of fifty paise per worker, per examination, to the Certifying Surgeon or Examining Surgeon.
(17) The Certifying Surgeon on his own motion or upon due demand by an Inspector under the Act, may examine any child or adolescent and issue a declaration as to his age.
(18) 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.
(19) The Manager of a factory shall provide for the purpose of any medical examination which the Certifying Surgeon wishes to conduct at the factory (for the 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.
(20) The Certifying Surgeon or the Examining Surgeon as the case may be shall maintain a register of all fees received by him for issue of certificates or for conducting medical examination in Form No. 26, with initials against each entry; and shall remit the amount of fees collected to a Government Treasury under the Head of Account "087 Labour and Employment (4) Fees realised under the Factories Act, 1948" as may be directed.

## Chapter III
## Health
### 16. Cleanliness of walls and ceilings

(1) Clause (d) of sub-section (1) of Section 11 of the Act shall not apply to the class or description of factories or parts of factories specified in the Table below: (i) as respects factories or parts of factories in Part A of the Table, to work-rooms in which the amount of cubic space allowed for every person employed in the room is less than 43 cubic metres;

(ii) as respects factories or parts of factories specified in Part B of the Table to work rooms in which the amount of cubic space allowed for every person employed in the rooms is less than 70 cubic metres;
(iii) to engine houses, fitting shops, lunch rooms, canteens, shelters, creches, 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 3 metres 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 (1), any of the provisions of the said clause (d) do not apply or apply as varied by sub-rule (1), is not being kept in a clean state, he may, by written notice, require the occupier to whitewash or colourwash, 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 (1) shall cease to apply to such part of a factory, unless the Chief Inspector otherwise determines.

Provided that such factories or classes of factories 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—
**Table**
**Part A**
(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.

The following parts of Factories:
• Rooms used only for the storage of parts.
• Rooms in which the walls or ceilings consists of galvanised iron, glazed bricks, glass, slate, asbestos, bamboo, thatch.
• Parts in which dense steam is continuously evolved in the process.

• Parts in which pitch, tar or like material is manufactured or 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.
• Parts in which coal, coke, oxide of iron, ochre, limestone is crushed or ground.
• Parts of walls, partitions, ceilings, or tops of rooms which are at least 6 metres above the floor.
• Ceilings or tops of rooms in print works, bleach works or dye works with the exception of finishing rooms or warehouses.

• Inside walls of oil mills, below a height of 1.5 metres from the ground floor level. (1) Coach and motor body works.
(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) Those parts of factories where unpainted or unvarnished wood is manufactured.
(7) Gun factories and ship building works.
(1) In every room in a factory in which workers are ordinarily employed and which is not ventilated by Mechanical means, there shall be sufficient openings in the walls or roof, for the admission or egress of air, to maintain the atmosphere in the room in a fresh and reasonably cool condition.
(2) If in any part of a factory, the Inspector having due regard to weather conditions, then prevailing, considers the atmosphere to be unduly vitiated or stagnant and that this is due to insufficient openings, he shall by written order require the Manager to

**Part B**

**17. Record of whitewashing, etc.**

The record of dates on which whitewashing, varnishing, etc., are carried out, shall be entered in a Register maintained in Form 6.

**18. 47[Disposal of trade wastes and effluents**

The arrangements made in every factory for the treatment of wastes and effluents due to the manufacturing process carried on therein, shall be in accordance with the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 and the rules made there under.]

**19. General Ventilation**

increase the openings in the walls or in the roof to such an extent as he deems reasonable in the circumstances. (a) Electric or other fans to be used to produce adequate movement of air over the workers. The Chief Inspector may require such movement to be such that the rate of cooling by evaporation at the height of 1.5 metres from the floor level, as found by the use of a Kata thermometer, is two and half times what it would be if the air were not moved by such fans.
(b) The height of the room from floor to roof or ceiling to be increased to a height of 5.5 metres or such less height as the Chief Inspector deems reasonable in the circumstances.
(c) A layer of tiles, wood or other substance which is a bad conductor of heat to be added to the roof or substituted for other materials.
(d) Sun shades of specified size to be placed before or fitted to such openings as admit direct sunlight upon the workers.

(1) If no mechanical means of general ventilation is employed, the ventilating openings in every room where workers are ordinarily employed shall not be less than 15 per cent of floor area.

(2) If the ventilation is by mechanical power, the fans or other means employed shall be of such capacity as to pass through the rooms ten times in every hour a volume of air equal to the cubic capacity of the room.
(3) Where no other room is superimposed, the roof or ceiling shall be adequately high above the floor to reduce heat due to radiation or in the alternative shall have a false ceiling below the roof of suitable insulating material and with an air gap permitting egress either at the eves or at the apex of sloping roof:

**20. Measures required for cooling**

If, in any room of a factory, the cooling properties of the air appear to the Chief Inspector to be at times insufficient to secure workers against injury to health or serious discomfort, and he considers that they can be to a great extent increased at a reasonable cost, he may, by written order, require the Manager to carry out any or all of the following measures before a specified date:

**21. Ventilation in new Factories or Rooms**

Provided that where the Chief Inspector is satisfied that the Rule may be relaxed with due regard to the health of the workers employed, he may, by an order in writing exempt the factory or a specified part thereof from the provisions of this rule to such extent and on such conditions as he considers suitable in the circumstances.

**22. When artificial humidification not allowed**

(a) By the use of steam during any period when the dry bulb temperature of that room exceeds 29.4 degree centigrade:
(b) At any time when the wet bulb reading of the hygrometer is higher than that specified in the Table below in relation to the dry bulb reading of the hygrometer at that time; or as regards a dry bulb reading, intermediate between any two dry bulb readings indicated consecutively in the Schedule when the dry bulb reading does not exceed the wet bulb reading to the extent indicated in relating to the lower of these two dry bulb readings:

There shall be no artificial humidification in any room of a cotton spinning or weaving factory: Provided however that clause (b) shall not apply when the difference between the wet bulb temperature indicated by the hygrometer in the department concerned and the wet bulb temperature taken with a hygrometer outside in the shade is less than 15.8 degree centigrade.

**Table**

| Dry bulb | Wet bulb | Dry bulb | Wet bulb | Dry bulb | Wet bulb |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| 15.6 | 14.4 | 25.0 | 23.9 | 34.4 | 30.0 |
| 16.1 | 15.0 | 25.6 | 24.4 | 35.0 | 30.6 |
| 16.7 | 15.6 | 26.1 | 25.0 | 35.6 | 30.9 |

| | | | | | |
|---|---|---|---|---|---|
| 17.2 | 16.1 | 26.7 | 25.6 | 36.1 | 31.1 |
| 17.6 | 16.7 | 27.2 | 26.1 | 36.7 | 31.4 |
| 18.3 | 17.2 | 27.8 | 26.7 | 37.2 | 31.7 |
| 18.9 | 17.8 | 28.3 | 27.0 | 37.8 | 32.0 |
| 19.4 | 18.8 | 28.9 | 27.2 | 38.3 | 32.2 |
| 20.0 | 18.9 | 29.4 | 27.8 | 38.9 | 32.2 |
| 20.6 | 19.4 | 30.0 | 28.1 | 39.4 | 32.5 |
| 21.1 | 20.0 | 31.6 | 28.3 | 40.0 | 32.5 |
| 21.7 | 20.6 | 31.1 | 28.6 | 40.6 | 32.8 |
| 22.2 | 21.1 | 31.7 | 28.9 | 41.1 | 32.8 |
| 22.6 | 21.7 | 32.2 | 29.2 | 41.7 | 33.1 |
| 23.3 | 22.2 | 32.8 | 29.4 | 42.2 | 33.1 |
| 23.9 | 22.6 | 33.3 | 29.7 | 42.8 | 33.3 |
| 24.4 | 23.3 | 33.9 | 30.0 | 43.3 | 33.3 |

**23. 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

(a) **Weaving Department: -** One hygrometer in departments with less than 500 looms, and one additional hygrometer for every 500 or part of 500 looms in excess of 500.
(b) **Other Department: -** One hygrometer for each room of less than 8,490 cubic meters capacity and one extra hygrometer for each 5,660 cubic metres 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.

(1) Each hygrometer shall comprise of two mercurial thermometers of wet bulb and dry bulb of similar construction and equal in dimensions, scale and divisions of scales. 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 wet by means of a wick attached to it and dropping into the water in the reservoir. The muslin covering and 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 centimetres from the dry bulb or less than 2.5 centimetres from the surface of the water in the reservoir and the water reservoir shall be below it, on 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 in the room.

by the inspector. The number of hygrometers shall be regulated according to the following scale:

**24. Exemption from maintenance of hygrometers**

When the Inspector is satisfied that the limits of humidity allowed by the table in rule 22 are never exceeded he may, for any department other than the Weaving Department, grant exemption from the maintenance of the hygrometer.

**25. Copy of table in rule 22 to be affixed near every hygrometer**

A legible copy of the table in rule 22 shall be affixed near each hygrometer.

**26. Temperature to be recorded at each hygrometer**

In every hygrometer maintained in accordance with rule 23, correct wet and dry bulb temperature shall be recorded thrice daily during each working day by competent persons nominated by the Manager and approved by the Inspector. Such 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 between 4 p.m. and 5.30 p.m. Such additional readings and between such hours as the Inspector may specify shall also be taken. All temperatures taken shall be entered in a Humidity Register in Form 5. The persons who have actually taken the readings shall sign the register and certify the correctness of the entries therein at the end of each month. The register shall always be available for inspection by the Inspector.

**27. Specifications of Hygrometer**

(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 centimetres.

(6) Each thermometer shall be graduated so that accurate readings may be taken between 10 and 50 degrees centigrade.

(7) Every degree from 10 to 50 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, i.e.,10, 20, 30, 40, 50, 60, 70, 80.

(8) The markings as above shall be accurate, that is to say, at no temperature between 10 and 8 degrees centigrade shall 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, or some competent authority appointed by the Chief Inspector and such certificate shall be attached to Humidity Register. (a) The wick and 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.

(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 1.3 centimetre in thickness and distant at least 2.5 centimetres from the bulb of each thermometer.

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

**28. 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—

**29. 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 and until it has been re-examined as prescribed and a fresh certificate obtained which certificate shall be kept attached to the Humidity Register.

**30. Hygrometer not to be affixed to wall, etc., unless protected by wood**

**31. No reading to be taken within fifteen minutes of renewal of water**

(a) the diameter of such pipes shall not exceed 5 centimetres and in the case of pipes installed after the date of commencement of these rules, the diameter shall not exceed 2.5 centimetres:
(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 1.3 centimetres in thickness;
(d) no uncovered jet from such pipes shall project more than 11 centimetres beyond the outer surface of any cover;
(e) the steam pressure shall be as low as practicable and shall not exceed 4.9 k.G. per sq. cm.;
(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.

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

**32. Introducing steam for humidification**

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

**33. 48[Provisions of rules 34 to 37 to apply in certain cases**

(1) The general illumination over such interior parts of a factory where persons are regularly employed shall be not less than 3 footcandles measured in the horizontal plane at level of 1 meter above the floor: (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 0.5 foot-candles at floor level.
(3) Lighting in accordance with the following standards shall be provided and used in interior of cotton ginning factories at times when lighting is required and ordinarily used:

x x x x.]

**34. Lighting of interior parts**

Provided that in any such parts in which the mounting height of the light source for general illumination necessarily exceeds 7.3 meters measured from the floor or where the structure of the room or the portion or construction of the fixed machinery or plants prevent the uniform attainment of this standard the general illumination at the said level shall be not less than one foot-candles and where work is actually being done, the illumination shall be not less than 3 foot-candles.

(i) By means of electricity to the satisfaction of the Inspector, one lamp for four gins, each lamp of not less than 40 watts power or fluorescent tube lights of convenient lengths and number may be used.
(ii) By candles placed in glass lanterns of patterns approved by Inspector, not less than one such lantern on each gin should be placed.

(4) The standards specified in these rules 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.

**35. Prevention of Glare**
(1) Where any source of light in the factory is less than 5 meters above floor level, no part of the light source or of the lighting fitting having a brightness greater than 10 candles per sq.cm. shall be visible to persons whilst normally employed within 30 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 degrees.
(2) Any local light, that is to say, 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 light source is completely screened from the eyes of every person employed at a normal working place, or shall be so placed that no such persons is exposed to the glare there from. (a) [51][x x x x x x;] or
(b) any other source approved, in writing by the Health Officer [52][or by any agency Authorized by State Government or Central Government or certified by Bureau of Indian Standards]

**36. 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 work room or process, that any requirements [49][of Rules 34 and 35] is inappropriate or is not reasonably practicable, he may, by order in writing exempt the factory or part thereof or description of work room or process from such requirement to such extent and subject to such conditions as he may specify.
**37. 50[Exemption from rule 34**
x x x x x]
**38. Quantity of drinking water**

The quantity of drinking water to be provided for the workers in every factory shall be at least five times as many litres a day as there are workers employed in the factory and such drinking water shall be readily available at all times during working hours.

**39. Source of supply**

The water provided for drinking shall be supplied from:

(1) Drinking water shall not be supplied from any open well or reservoir unless it is so 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 sterilised once a week or more frequently if the Inspector, by written order, so requires and the date on which sterilising is carried out shall be recorded: (a) the drinking water supplied to the workers shall from the 1st March to the 30th June of every year that is during the hot season, be cooled by ice or any other effective method;

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

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

(d) the number of water centres to be provided shall be one "centre" for every 150 persons employed in the factory at any one time:



**40. 53[Storage of water**

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 the 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.]

**41. Cleanliness of Well or Reservoir**

Provided that this requirement shall not apply to 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.

**42. Report from Health Officer**

The Inspector may, by order in writing direct the Manager to obtain, at such times or at such intervals as he may direct, a report from the Health Officer 54[or by any agency Authorized by State Government or Central Government or certified by Bureau of Indian Standards] as to the fitness for human consumption of the water supplied to the workers, and in every case, to submit to the Inspector a copy of such report as soon as it is received from the Health Officer 55[or by any agency Authorized by State Government or Central Government or certified by Bureau of Indian Standards]

**43. Cooling of Water**

In every factory wherein more than two hundred and fifty workers are ordinarily employed: 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 upto the first 500 persons and one for every 500 persons thereafter:

(e) [57][every water centre shall be maintained in a clean and hygienic condition; and
(f) the means of supply of cooled drinking water shall be, either directly through taps connected to water coolers, or any other system for cooling of water, or by means of vessels, receptacles or tanks fitted with taps, and having dust proof covers, and placed on the raised stands or platforms in shade, and having suitable arrangement of drainage to carry away the spilt water. Such vessels, receptacles or tanks shall he kept clean and the water renewed at least once every day;]
(g) clauses (a) and (b) shall not apply to any factory situated in climatic zones which will keep the water cold enough due to weather, as may be directed by Chief Inspector.

(1) Latrine accommodation shall be provided in every factory on the following scale: (a) where women are employed, there shall be at least one latrine for every 25 women;
(b) where males are employed, there shall be atleast one latrine for every 25 males provided that where the number of males employed exceeds 100, it shall be sufficient if there is one latrine for every 25 males up to the first 100 and one for every 50 thereafter.

(2) In calculating the number of latrines required under sub-rule (1), any odd number of workers below 25 or 50, as the case may be, shall be reckoned as 25 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.

[56][Provided further that the distance between the place of work of any worker, shall not be more than 50 metres away from the nearest water centre, or any distance as may be specified by the Inspector.]

**44. Latrine Accommodation**

**45. Latrines to conform to Public Health requirements**

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

**46. Privacy of Latrines**

Every latrine shall be under cover and so partitioned off so as to secure privacy, and shall have a proper door and fastenings.

**47. Sign boards 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 indicating "For Men only" and "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.

**48. Urinal accommodation**

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 persons employed exceeds 500, it shall be sufficient if there is one urinal for every 50 workers upto

the first 500 employed and one for every 100 thereafter. Where women are employed, separate screened urinal accommodation shall be provided on the same scale as mentioned above.

**49. Urinals to conform to public health requirements**

Urinals, other than those connected with an efficient water-borne sewage system, and urinals in factory wherein more than 250 workers are ordinarily employed shall comply with the requirements of the Public Health authorities.

**50. Certain latrines and urinals to be connected to sewerage System**

(1) 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 of a factory situated in such locality shall, if the factory is situated within 30 metres of an existing sewer, be connected with that sewerage system.

(2) No worker shall make use of any other place within the factory as latrine or urinal other than the latrine and urinal accommodation provided under these rules.

(3) The design and the site or situation of latrine and urinal accommodation shall be subject to the approval of the Director of Health and Family Planning Services, and the construction shall be subject to the approval of the Chief Inspector.

(4) They shall be situated, unless otherwise approved in writing by the inspector, within the factory precincts and so situated that (a) every worker may have ready access thereto and (b) no effluvia there from can arise within a workroom.

**51. Whitewashing, colour washing of latrines and urinals**

The walls, ceilings and partitions of every latrine and urinal shall be whitewashed or colourwashed and the whitewashing or colourwashing shall be repeated at least once in every period of four months. The walls shall be coal tarred to a height of 1 meter. The dates on which the whitewashing, colourwashing is carried out shall be entered in the prescribed Register in Form 6:

Provided that this rule shall not apply to latrines and urinals, the walls, ceiling of 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.

**52. Construction and maintenance of drains**

All drains carrying waste or sullage water shall be constructed in masonry or other impermeable material and shall be regularly flushed and the effluent disposed off 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 of in a suitable manner to the satisfaction of the Health Officer.

**53. Water taps in latrines**

(a) A galvanised iron container with a conical funnel shaped cover. A layer of suitable disinfectant liquid shall always be maintained in the container;
(b) a container filled with dry, clean and sand and covered with a layer of bleaching powder;
(c) any other type approved by the Chief Inspector.

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

**54. Number and location of Spittoons**

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

**55. Type of Spittoons**

The Spittoons shall be either of the following types:

**56. Cleaning of Spittoons**

The spittoons mentioned in clause (a) of rule 55 shall be emptied, cleaned and disinfected at least once every day, and the spittoon mentioned in clause of rule 55 shall be cleaned by scraping out the top layer of sand as often as necessary or at least once every day.

**Chapter IV**

**Safety**

**57. Further Safety Precautions**

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 below shall apply to the machines noted therein:

**58Schedule 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. This schedule shall not apply to machinery in factories engaged exclusively in the manufacture of synthetic fibres.

**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) **"Card"** means a machine consisting of cylinders of various sizes and in certain cases flats covered with card clothing, and set in relation to each other so that

fibres in staple form may be separated into individual relationship. The speed of the cylinders and their direction of rotation varies. The finished product is delivered as a silver. Cards of different types are, the revolving flat card, the roller and clearer card, etc.

(c) **"Card clothing"** means the material with which the surfaces of the cylinder, doffer, flats, etc., and consists of a thick foundation material made of, either textile fabrics through which of a card are covered, are pressed many fine closely spaced, specially bent wires, or mounted saw toothed wire.
(d) **"Comber"** means a machine for combing fibres of cotton, wool, etc. The essential parts are devices for feeding forward, a fringe of fibres at regular intervals and an arrangement of combs or pins, which, at the right time, pass through the fringe. All tangled fibres, short fibres, and raps are removed and the long fibres are laid parallel.
(e) **"Combing machinery"** means a general classification of machinery including combers, sliver lap machines, ribbon lap machines, and gill boxes, but excluding cards.
(f) **"Continuous bleaching range"** means a machine for bleaching of doth in rope or open width form with the following arrangement. The cloth, after wetting out, passes through a squeeze roll into a saturator containing a solution of caustic soda and then to an enclosed J-Box. A V-shaped arrangement is attached to the front part of the J-Box for uniform and rapid saturation of the doth 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 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 the open-width cloth.
(g) **"Embossing Calendar"** means a calendar with two or more rolls, one of which is engraved for producing figure effects of various kinds on a fabric.
(h) **"Garnett machine"** means 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 competent worker and stripper rolls; and a fancy roll and doffer. The action of such machines is somewhat like that of a wool card, but it is much more severe in that the various rolls are covered with garnett wire instead of card clothing.
(i) **"Gill box"** means a machine used in the worsted system of manufacturing yarns. Its function is to arrange fibres 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) **"Loom"** means a machine for effecting the interlocking of two series of yarns crossing one another at right angles. The warp yarns are wound on a warp beam and pass through headless and reeds. The filling is shot across in a shuttle and settled in place by reeds and slay, and the fabric is wound on a doth beam.

(n) **"Mercerizing range"** means a 3-bowl mangle, a tenter frame, and a number of boxes for washing and scouring. 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 wash out most of the caustic before releasing tension.
(o) **"Mule"** means a type of spinning frame having a headstock and a carriage as its two main sections. The headstock is stationary. The carriage is movable and it carries the spindles which draft and spin the roving into yarn. The carriage extends over the whole width of the machine and moves slowly toward and away from the headstock during the spinning operation.
(p) **"Nip"** is the danger zone between two rolls or drums which by virtue of their positioning and movement create a nipping hazard.
(q) **"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 stock for further processing.
(r) **"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.
(s) **"Plaiting machine"** means a machine used to lay cloth into folds of regular length for convenience of subsequent process or use.
(t) **"Ribbon lapper"** means a machine or part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibres have been straightened as much as possible.

(u) **"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, etc. The machine is used for printing fabrics.
(v) **"Rotary staple"** means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibres into staple lengths.
(w) **"Sanforising machine"** means a machine consisting of a large steam-heated cylinder, and endless, thick, woollen belt 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.
(x) **"Shearing machine"** means a machine used for shearing doth. 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.
(y) **"Singeing 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 fuzz or hairiness by burning.
(z) **"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 and for winding the yarn on the loom beams.

(aa) **"Sliver lapper**" means a machine or a part of a machine in which a number of parallel card slivers are drafted slightly, laid side by side in a compact sheet, and wound into a cylindrical package.
(bb) **"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.
(cc) **"Tenter frame"** means a machine for drying cloth under tension. It essentially consists of a pair of endless travelling chains fitted with dips of fine pins and carried on tracks. The doth is firmly held at the selvages, by the two chains which diverge as they move forward, so that the doth is brought to the desired width.
(dd) **"Warper"** means a machine for preparing and arranging the yarns intended for the warp of a fabric, specifically a beam warper.
(ee) **"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.

**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 shafting, 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 are 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 or openings, giving access to any 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 beater 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 rollers 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, mat 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 from 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 by sub-section (1) 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 pulley 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 keeps worker rolls reasonably accessible for removal or adjustment.
(3) The underside of the Garnett 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 fallers.
(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 under any circumstances, the maximum width of the opening shall not exceed the following:

| Distance of opening from nip point | Maximum width 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 215 mm | 32 mm |

**8. Sliver and ribbon lappers (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 headstock 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 6 mm of the rails.

**11. Warpers**

Swivelled double-bar gates shall be installed on all warpers operating in excess of 410 metres/min. These gates shall have interlocking arrangement, except for the purpose of inching or jogging:

Provided that the top and bottom bars of the gate shall be at least 1.05 and 0.53 metres high from the floor or working platform, and the gate shall be located 38 mm from the vertical tangent to the beam head.

**12. Slashers**

(1) Cylinder dryers

(a) All open nips of in-running rolls shall be guarded by nip guards conforming to their requirements in paragraph 7.

(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 specified 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 sub-paragraph (2) of Paragraph 7.

(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 buttons located on both sides of the machines, at intervals, spaced not more than 1.83 metres on centres.

**13. Looms**
(1) Each loom shall be equipped with suitable guards designed to minimize the danger from flying shuttles.
(2) Beam weights for tension in beam shall be of such construction so as to prevent it railing during its adjustment.
**14. Valves of kiers, 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 provided 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 kier, 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 of splash, shall be provided to prevent danger.

**15. Shearing machines**

All revolving blades on shearing machines 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)**

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 or the machine.
(2) A guard shall be provided at each end of the frame between the in-running chain and the clip 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 sub-paragraph (2) of Paragraph 7.

**18. Tenter frames** (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 clip opener.

**19. Paddlers**

Suitable nip guards conforming to the requirement in sub/-paragraph (2) of Paragraph 7 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 interlocking 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, back-washer (worsted yarn) crabbing machines and decanting machines**

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

**22. Sanforizing and palmer machine** (1) Nip guards shall be provided on all accessible in-running rolls, and these shall conform to the requirements in sub-paragraph (2) of Paragraph 7.
(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 face 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 the operator stands and shall be readily accessible.

**23. Rope washers** (1) Splash guards shall be installed on all rope washers unless the machine is designed so as to prevent the water or liquid from splashing the operator, the floor, or working surface.
(2) A safety trip rod, cable or wire centre cord shall be provided across the front and 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 interlocking 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 subparagraph (2) of Paragraph 7.
(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 roll, and so constructed that the cloth can be fed into the rolls safely.

**27. Rotary staple cutters**

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

**28. Plaiting machines**

Access to the trap 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 as to prevent the handle from travelling beyond the vertical position till the handle slips 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 feed 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 metres.



**59Schedule II**

**Cotton ginning**

**Line shaft**

The line shaft or second motion in cotton ginning factories, when below floor lever, shall be completely enclosed by a continuous wall or unclimbable 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.

**60Schedule III**

**Wood working machinery**

**1. Definitions**

For the purpose of this schedule:

(a) **"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 re-sawing machine; and

(b) **"Circular saw"** means a 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) **"Planning machine"** means a machine for overhand planning or for thicknessing or for both operations.

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

**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 in such a position as to be readily and conveniently operated by the person in charge of the machine.

**3. Space around machine**

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 and 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 mm and

(iii) For a saw of a diameter of less than 60 centimetres, the knife shall extend upwards from the bench table to within 25 millimetres of the top of the saw, and for a saw of a diameter 60 centimetres or over shall extend upwards from the bench table to a height of at least 23 centimetres:

(b) The top of the saw shall be covered by a strong and easily adjustable guard, with 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; and
(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 centimetres apart, and shall extend from the axis of the saw outwards to a distance of not less than 5 centimetres beyond the teeth of the saw. Metal plates, if not beaded, shall be of a thickness of at least2.5 millimetres, or, if beaded be of a thickness of at least 1.25 millimetres.

**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 material;
(b) The front of the top pulley shall be covered with sheet or expanded metal or other suitable material; and
(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 a 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.
(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.

**10. Vertical spindle moulding machines**

**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**

Paragraphs 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.

**61Schedule IV**

## Rubber Mills

**1. Installation of machines**

Mills for breaking down, tracking, grating, mixing, refining and warming rubber or rubber compounds shall be so installed that the top of the front roll is not less than 105 centimetres above the floor or working level:
Provided that in existing installations where the top of the front roll is below the height, a strong-rigid distance-bar guard shall be fitted across the front of the machine, in such a 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; or

(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 rolls.
(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 175 centimetres 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.

**62Schedule V**

## Centrifugal Machines

**1. Definition: - "Centrifugal machines"**

Include centrifugal extractors, separators and driers.

**2. Every part of centrifugal machine shall be**

(a) of good design and construction and of adequate strength;
(b) properly maintained; and
(c) examined thoroughly by a intervals.

**3. Interlocking guard for drum or basket** (1) The cage housing, rotating drum or basket or every centrifugal machine shall be provided with strong lid. The design and construction of the cage as well as the lid should be such that no access is possible to the drum or basket when the lid is closed.
(2) Every centrifugal machine shall be provided with an efficient interlocking device, that will effectively prevent the lid referred to in sub-paragraph (1) from being opened, while the drum or basket is in motion, and prevent the drum or basket being set in motion, while the lid is in the open position.

**4. Braking arrangement**

Every centrifugal machine shall be provided with an effective braking arrangement capable of bringing the drum or basket to rest within a short period or time as reasonably practicable after the power is cut off.

**5. Operating speed**

No centrifugal machine shall be operated at a speed in excess of the manufacturer s rating which shall be legibly stamped at easily visible places, both on the inside of the basket and on the outside of the machine casing.

**6. Exceptions**

Sub-paragraph (2) of Paragraph 3 and Paragraphs 4 and 5 shall not apply in case of top lung machines or similar machines used in the sugar manufacturing industry.]

**63Schedule VI**

**Power Press**

**1. Application**

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

**2. Definitions**

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 fenced 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 overrunning of the press, or descent of the ram during tool setting, etc.

**4. Protection of tool and die** (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 die shall be provided with a fixed 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 worker's hand or fingers reaching the danger zone.
(4) The machine shall be fed through a small aperture at the bottom of the die guard, but a wider aperture may be permitted for second or subsequent operations if feeding is done through a chute.
(5) Notwithstanding anything contained in sub-paragraphs (1) and (2) an automatic or an interlocked guard may be 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 sub-paragraph (4), no person shall set, reset, 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 die proving, or carry out an inspection and test or any safety device thereon required by Paragraph 8, unless he:

(a) has attained the age of eighteen years;
(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 or 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 is entered in a register in Form No. 30. (2) The training shall include suitable and sufficient practical instruction in the matters in relation to each 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 be taken into use in any factory for the first time in that factory, and no safety device shall be taken into use for the first time on any power press unless there was a thorough examination and test of the power press, after its installation in the factory and that of the safety device when in position on the power press in connection with which it is to1 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 period of 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:
(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 safety 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 effecting 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 test** (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 safety 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 sub-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 of 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 period notified under sub-paragraph (1) and till the defect has been remedied. (4) As soon as is practicable after any defect of which notification has been given under subparagraph (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 while it 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 in the opinion of such a person as aforesaid, the safety device remain in efficient working order even after the adjustment of the tools.
(2) Every power press and every safety device thereon shall, 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 same to the Manager forthwith.
(2) Except as provided in sub-paragraph (3), 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 same to the Manager forthwith.
(3) The requirement in sub-paragraph (2) of this paragraph shall not be applicable to the defect notified under sub-paragraph (1) of Paragraph 7 till the period specified therein has expired.

**10. Identification of power presses and safety devices**

Every power press and every safety device shall be distinctively and plainly marked, for the purpose of identification.

**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 the 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 or 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.



**Shears, Slitters and Guillotine Machines**

**1. Definitions**

For the purpose of this Schedule:
(a) "Guillotine" means a machine ordinarily equipped with straight, bevel-edged blade operating vertically against a stationery 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 edges, 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; and includes bread or other food slicers equipped with rotary knives or cutting discs.

**2. Guillotine and Shears** (1) Where practicable, a barrier metal guard of adequate strength shall be provided at the frame and shall be so fixed as to 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:
(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:



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 hands 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.
(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 at least 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 Machines** (1) Circular disc-type knives on machines for cutting metal and leather, paper, rubber, textiles or other non-metallic substances shall, if they due within reach of operators standing on the floor or working level, be 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 at any time. (2) Portion of blades underneath the tables or benches of slitting machines shall be covered by guards.

**4. Index cutters and vertical paper slotters**

Index cutters, and other machines for cutting strips from the ends of books, 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 completely enclosed with hinged guards of sheet metal not less than 4 mm in thickness or of other material of equal strength.]

**58. Register of specially trained adult workers**

Register of workers attending to machinery in motion, as provided under sub-section (1) of Section 22 shall be in Form No. 33, supported by declaration in Form No. 30 at the time of first appointment by the Manager.

**59. Employment of young persons on dangerous Machinery**

The following machines shall be deemed to be of such dangerous character that young persons 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 metal trades;
- Guillotine machines;
- Circular saws;
- Platen printing machines;
- Decorticators;
- Oil expellers;
- Band saws used in wood working;
- Planning machines used in wood working.

**60. Guarded Machinery**

The following parts of machines shall be deemed to be machinery to be guarded by the makers for the purpose of Section 26(1):

(1) Back gears, wheels and head stock gears of lathes.

(2) Back gears and bevel gears of drilling machines.

(3) Gear wheels and bevel gear drives of planning, shaping, slotting and milling machines.

(4) All spur gear drives and bevel gears of oil expellers.

**61. Hoists Examination—Particulars of**

A register shall be maintained to record particulars of Examination of hoists or lifts and shall give particulars as shown in Form 31.

**62. 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 column of the said table and set opposite to that class or description of hoist or lift shall not apply:

**Table**

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

(2) (i) Every jib-crane so constructed that safe working load may be varied by the raising or lowering of the jib, shall nave 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.

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

(3) The register to be maintained under clause (a) (iii) of sub-section (1) of Section 29 of the Act shall be in Form 32. The register shall be kept readily available for inspection.

| **Class or description of hoist or lift** | **Requirements which shall not apply** |
|---|---|

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

**63. Cranes and other lifting machinery**

A register shall be maintained to record particulars of examinations of cranes and other lifting machinery and shall give particulars in Form No. 32 and shall be available to the Inspector.

**64. Examination required**

(4) 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.

(5) 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 and hooks, shackles and swivels used in connection with molten metal or molten slag or when they are made of half inch bars 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 months:

(6) Nothing in the foregoing sub-rule (5) shall apply to the following clauses and lifting tackles:
(i) Chains made of malleable cast iron;
(ii) Plate link chains;
(iii) Chains, rings, hooks, shackles and swivels made of steel or of an non-ferrous metal;
(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) Bordeaus connections.

(7) All lifting machines, chains, ropes and lifting tackle, except a fibre rope or fibre rope sling, which have been lengthened, altered or repaired by welding or otherwise, shall before being taken into use again, be adequately re-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 Rule 64(3).

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 in Form 32.
Such chains and lifting tackle shall be thoroughly examined by a competent person once at least in every twelve months and particulars entered in Form 32.

(8) 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.
(9) Passage ways for cranes. (i) To provide access to rail tracks of over-head travelling cranes suitable passage-ways of at least 50 cm. (20 in.) width, toe boards, and double hand rail 90 cm. (3ft.) high shall be provided alongside, and clear of, the rail tracks of over-head travelling cranes, such that no moving part of the crane can strike persons on the ways, and the passageway 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.

(10) [65][The Chief Inspector may for reasons to be specified in writing exempt any factory in respect of any overhead travelling cranes from the operation of any provision of clause (1) subject to such conditions as he may specify]
(11) [66][Where the Chief Inspector of Factories is satisfied that in a factory due to shut down or for any other reason it is not practicable to maintain a minimum distance of twenty feet between the person employed or working on or near the wheel track of a travelling crane and the crane, he may on the request of the Manager, reduce the distance to such extent as he may consider necessary and also prescribe further precautions indicating appointment of suitable number of Supervisors to ensure the safety of the persons while they are employed or working on or near the track.]
(1) Interpretation in this rule: (a) **"Designed pressure"** means the maximum pressure, that a pressure vessel or plant is designed to withstand safely when operating normally;
(b) **"Maximum permissible working pressure"** means 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 a vessel that may be used for containing, storing, distributing, transferring, distilling, processing or otherwise 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.

(2) Nothing in this rule shall apply to— (a) vessels made of ferrous material having an internal operating pressure not exceeding 1 kilogram per square centimeter;

**65. 67[Pressure vessels or plant**

(b) steam boilers, steam and feed pipes and their fittings coming under the purview of Boilers Act, 1923;
(c) 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, 1981 made under the Explosives Act, 1884;
(d) vessels in which internal pressure is due solely to the static head of liquid;
(e) vessels with a nominal water capacity not exceeding 500 litres connected in a water-pumping system containing air that is compressed to serve as a cushion;
(f) vessels for nuclear energy application;
(g) refrigeration plant having a capacity of 3 tons or less of refrigeration in 24 hours; and
(h) working cylinders of steam engines or prime movers, feed pumps and steam traps, turbine casings, compressor cylinders, steam separators on dryers, steam strainers, steam de-super-heaters, oil separators, air receivers for fire sprinkler installations, air receivers of monotype machines, provided the maximum working pressure of the air receiver does not exceed 1.33 kilograms per square centimetre and the capacity of 85 litres 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^ interlocking type of guards, vessels with liquids subjected to static head only and hydraulically operating cylinders other than any cylinder communicating with an air loaded accumulator.

(3) Every pressure vessel or plant used in a factory shall be: (a) properly designed on sound engineering practice,
(b) of good construction, sound material, adequate strength and free from any patent defects, and
(c) properly maintained in a safe condition:

(4) 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 and shall be set to operate at a pressure not exceeding the maximum permissible working pressure and when more than one protective device is provided, only one of the devices need be set to

Provided that the 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 a certificate thereof shall be obtained from the manufacturer or from the competent person which shall be kept and produced on demand by an Inspector.

operate at the maximum permissible working pressure and the additional device shall be set to discharge at a pressure not more than 5 per cent 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);
(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 and 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 pressure vessel for the discharge of the liquid or other substances, that may collect in the pressure vessel:

(5)
(6)



Provided that it shall be sufficient for the purpose of this sub-rule ii 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.
(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.
(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 competent person externally and internally, if practicable, and has been hydrostatically tested by the competent person at a pressure which shall be 1.5 times the maximum permissible working pressure:

Provided, 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 when even some traces of water cannot be tolerated, shall be pneumatically tested at a pressure not less than 1.3 times the design pressure or 1.5 times 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 1.3 times the design pressure or 1.5 times the maximum permissible working pressure, as the case may be.
**Note**
(a) Design pressure shall be not less than the maximum permissible working pressure and shall take into account the possible fluctuations of pressure during actual operation.
(b) No pressure vessel or plant shall be used in a factory unless there has been obtained from the maker of the pressure vessel or plant or from the competent 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, has been obtained from the maker of the pressure vessel or plant, from the competent person.
(c) Every pressure vessel or plant 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.
(d) No pressure vessel or plant shall be permitted to be operated or used at a pressure higher than its design pressure, or the maximum permissible working pressure as shown in the certificate. (7)

(a) Every pressure vessel or plant in service shall be thoroughly examined by a competent person: (i) externally, once in every period of six months;
(ii) internally, once in every period of twelve months:

Provided that, 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 period of two years:

(iii) hydrostatically tested once in every period of four years:

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

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 sub-clause (i) or if owing to its construction and use a pressure vessel or plant cannot be hydrostatically tested as required in sub-clauses (ii) and (iii) of this clause, a thorough external examination of the pressure vessel or plant shall be carried out at least once in every period of two years, and a thorough systematic non-destructive test like ultrasonic test for metal 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 at least once in four years.
(b) The pressure for the hydrostatic test to be carried out for the purpose of this sub-rule shall be 1.3 times the design pressure or 1.5 times the maximum permissible working pressure, whichever is less. (8)

(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 five 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 be 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 competent 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)

(a) If during any examination any doubt arises as to the ability of the pressure vessel or plant to work safely until the next examination, the competent person shall enter in the relevant register, his observations, findings and conclusions

with other relevant remarks with reasons and may authorise 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 every examination or test carried out shall be completed in Form No. 7 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 specifies any condition for securing the safe working of any pressure vessel or plant, the pressure vessel or plant shall not be used unless such, condition is fulfilled.
(d) The competent 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 measure is taken. (10)

(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), (8) and (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]

**65-A. [68][Reaction vessels and Kettles**
(1) This rule applies to reaction vessels and kettles (hereinafter 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 getting out of control or any other circumstances.
(2) In the event of the vessel being heated by electrical means a suitable thermostatic control device shall be provided to prevent the temperature exceeding the safe limit.
(3) Where steam is used for heating purpose in reaction vessels it shall be supplied through a suitable pressure reducing valve or any other suitable automatic device to prevent the maximum permissible steam pressure reducing valve or 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, vapours, liquids or dusts as the case may be are led away and disposed of through suitable pipes without causing any hazards, where inflammable gases or vapours are likely to be vented out from the vessel the discharge 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 foregoing 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 may be considered as dangerous.
(7) Where necessary, an effective system for cooling, flooding or blanketing shall be provided, for the purpose of controlling the reaction and process conditions with the safe limits of temperature and pressure.
(8) Automatic auditory and visual warning device shall be provided for clear warning wherever 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 vessels, the dangers involved and the precautions to be taken by the operations shall be displayed at a conspicuous place near the vessel.] (1) No person shall be employed to operate a crane, locomotive or fork-lift truck, or to give signals to a

crane or locomotive operator unless his eyesight and colour vision have been examined and declared fit by a qualified ophthalmologist to work whether with or without the use of corrective glasses.
(2) The eyesight and colour vision of the person referred to in sub-rule (1) shall be examined at least once in every period of twelve months upto the age of forty-five years, and once in every six months beyond that age.
(3) Any fee payable for an examination of a person under this sub-rule shall be paid by the occupier and shall not be recoverable from that person.
(4) The record of examination or re-examination carried out as required under sub-rule (1) shall be maintained in Form No. 39.
(1) This rule shall apply to Railways in the precincts of a factory which are not subject to Indian Railways Act, 1890.
(2) A gateway through which a railway track passes shall not be used for the general passage of workers entering into or going out of factory.
(3)

**65-B. 69[Examination of eyesight of certain workers**
**65-C. Railways in factories**

(a) Where the building or walls contain doors or gates which open to a railway track, a barrier of about one-metre-high shall be fixed parallel to and about 60 cm. away from the building or wall outside the opening and extending several metres 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.
(b) If the traffic on the nearest track is all in one direction, the barrier shall be in the form of an "L" with the end of the short leg abutting on to the wall and the other end opening towards the approaching train.
(c) If the distance between wall and track cannot be made to accommodate such a barrier, the barrier or a turn gate shall be placed at the inside of the opening.
(d) Where a footway passes close to a building or other obstruction as it approaches a railway track, a barrier or a turn gate 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)
(5)
(6)

(a) Workers, pay-windows, 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 railway traffic shall cease for not less than five minutes.

(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 intervals and those that are worn out replaced at once.
(c) Water-guage glasses of every locomotive, whatever its boiler pressure, shall be protected with substantial glass or metal screens.
(d) Suitable steps and handholds 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 languages, understood by the majority of the workers in the factory, for what weight of load and at what radius the crane is safe.
(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 three metres of any authorised crossing.
(c) No wagon shall be moved with the help of crow bars or pinch bars. (7) No person shall be permitted to be upon (whether inside or outside) any locomotive, wagon or other rolling stock except where secure foothold and handhold are provided.
(8) (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 the shunting Jamadar has satisfied himself that all wagon doors are securely fastened.

(9)

(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 jib 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 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, livestock or explosives.
(11) Fly-shunting shall not be permitted on any factory railway.
(12)

(a) Every locomotive or wagon in motion in a factory shall be in charge of properly trained Jamadar.
(b) Before authorising a locomotive or wagon to be moved, the shunting Jamadar shall satisfy himself that no person is under or in between or in front of the locomotive or wagon.
(13) The hand signals used by the shunting Jamadar by day and night shall be those specified by the shunting rules of railways, working under the Indian Railways Act (Central Act IX of 1890).
(14)

(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 ten lux as measured at the horizontal plane at the ground level.
(b) A locomotive or train shall not be moved between sunset and sunrise or when there is fog, unless it carries a white headlight and a red rear light.

(15)
(16)

(a) A locomotive or train shall not be permitted to move at a speed greater than seven kilometres 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 ten metres 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.
(a) The distance between:
(i) Tracks from centre to centre of parallel tracks shall not be less than the overall width of the widest wagon of that guage plus twice the width of the door of such a wagon when opened directly outward plus one metre.
(ii) Tracks and buildings one blind wall or other structures from a building or structure other than a loading platform to the centre of the nearest tracks shall be not less than half the overall width of the widest wagon of that guage plus the width of its door opened outward, plus 1.5 metres.
(iii) Tracks and materials stacked or deposited on the ground from material, material stacked or deposited alongside the track; on the ground or on a loading platform to the centre of the nearest track shall be not less than half the overall width of the widest wagon of that guage, plus half the width of its door when opened directly outward, plus 1 metre.
(b) Sleepers of a track shall be in level with the ground and at the crossings of the track with 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 specified in clause (a) of sub-rule (3).

(e) Where track are carried on a gantry or other elevation, a safe footway or footways with handrails 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 a elevated track for the dropping of material to a lower level/ the position shall

Ix adequately fenced or the opening itself provided with a grill through which a person cannot fall.
(f) All point levers shall have their movements parallel to, not across, the direction of the track.
(g) All loading platforms which are more than 60 cm. above the level of the ground on which the track is laid and more than fifteen metres in length, shall be provided with stops at intervals not greater than fifteen metres 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)

(a) At all crossings of a track with a road or 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 watchmen 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) 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) No person who is under eighteen years of age and no person who is not sufficiently competent and reliable, shall be employed as a driver of a 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."

**65-D. Quality of personal protective equipment**
All personal protective equipments provided to workers as required under any of the provisions or the Act or the rules shall have certification by I.S.I, or any equivalent standard approved by the State Government.
**65-E. Protective equipment**
The Inspector may, having regard to the nature of the hazards involved in work and process being carried out, order the occupier or the Manager in writing to supply to the workers exposed to particular hazard any personal protective equipment as may be found necessary.]
**66. 70[Excessive weights**

(1) No woman or young person unaided by another person, shall lift, carry or move by hand or on head, any material, article, tool or appliance exceeding the maximum limit in weight specified in the table below:

(2) No woman or young person shall engage, in conjunction with others, in lifting, carrying, or moving by hand or on head, any material, article, tool or appliance, if the weight thereof exceeds the lowest weight fixed in sub-rule (1) for any of the persons engaged, multiplied by the number of persons engaged.] (a) The process specified in Schedule I to this Rule, being processes which involve risk of injury to the eyes from particles or fragments thrown in the course of the process.
(b) the processes specified in Schedule II to this rule, being processes which involve risk of injury to the eyes by reason of exposure to excessive light.
**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 or a portable tool driven by mechanical power and the grinding of surfaces of any materials by means of a wheel or disc driven by mechanical power, wherein any such of the foregoing cases, particles or fragments are 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 applying 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 a high speed 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 article of metal where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.



**Table**

| Persons | Maximum weight of material, article, tool or appliance |
|---|---|
| Adult male | 50 Kilograms |
| Adult female | 30 Kilograms |
| Adolescent male | 30 Kilograms |
| Adolescent female | 20 Kilograms |
| Male child | 16 Kilograms |
| Female child | 14 Kilograms |

### 67. 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:
**71Schedule I**

**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 ah electric, oxyacetylene or similar process.
**7.** The hot fettling of metal casting, by means of a flux injected burner or air torch, and the de-seaming of metal.
**8.** The fettling of 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 metals, and the chipping, knocking out, cutting out or cutting off of cold rivets, bolts, nuts, Tugs, 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 and tool, or by means of a portable tool driven by mechanical power.
**10.** The chipping, or surfing 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 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 are 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 op plant or any part of the 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 insolation, 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 process.]

**Schedule II**
Welding or cutting of metals by means of an electric oxyacetylene or similar process.

(a) in the case of a rectangular or oval shape, be not less than 40 centimeter long and 30 centimeter wide.
(b) in the case of a circular shape, be not less than 40 in centimeter in diameter.

72[All work on furnaces where there is risk of exposure to excessive light.]
All processes in connection with metal melting and pouring or casting and in connection with metal spraying.

**68. Minimum Dimensions of Manholes**
Every chamber, tank, vat, pipe, flue or other confined spaces in which persons may have to enter and which may contain dangerous fumes to such an extent as may involve risk of the person 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:

**69. Water sealed Gasholder**
(1) The expression “gasholder" means a water-sealed gasholder which has a storage capacity of not less than 150 cubic meters (5,000 cubic feet).
(2) Every gasholder shall be of adequate material and strength, sound construction and shall be properly maintained.
(3) Where there is more than one gasholder in the factory, every gasholder shall be marked in a conspicuous position with a distinguishing number or letter.
(4) Every gasholder shall be thoroughly examined externally by a competent person at least once in a period of 12 months.
(5) In the case of gasholder 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 operation of these rules and thereafter at least once in every period of four years, be examined by a competent 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 the holder:
Provided further, that if the above 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 gasholder.
(7) No gasholder shall be repaired or demolished except under the direct supervision of a person who, by his training and experience and 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 above, shall be kept readily available for inspection.
(ii) A permanent register in Form 34 duly signed by the occupier or manager shall be maintained giving the following particulars; (a) The serial number of the gasholder, vide sub-rule 3 above and the particulars of manufacture, i.e., maker's name, date of manufacture, capacity, number of lifts, pressure shown by holder when full of gas.
(b) The date of inspection carried out as required under sub-rules 4 and 5 above and by whom carried out.
(c) The method of inspection used.
(d) Date of painting, etc.
(e) Nature of repairs and name of persons carrying out repairs, and
(f) Remarks.

(iii) The results of examinations by a competent person carried out under sub-rules 4 and 5 shall be in the Form 35.
(9) The Inspector shall inspect the gasholder at least once in a period of 12 months. (a) The operation of repairing a water-sealed gasholder by the electric welding process subject to the following conditions:

**70. Exemptions**
The requirements of sub-section (4) of Section 37 shall not apply to the following processes carried on in any factory:
(i) the gasholder 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 gasholder containing acetylene or mixture of gases to which acetylene has been added intentionally.
(ii) Welding shall only be done by the electric welding process and shall be carried out by experienced operatives under constant supervision of a competent person. (b) The operations

of cutting or welding of steel or wrought iron gas mains and service pipes by the application of heat, subject to the following conditions:

(i) The main or service pipe 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, town gas, coke oven gas, producer gas, blast furnace gas, or gases other than air, used in their manufacture.
(ii) the main or service pipes 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 eighteen 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 pipes, they shall be pierced or drilled and the escaping gas ignited. (c) The operation of repairing an oil tank 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 degrees F (close 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.
(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 one foot 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.

**71. 73[Fire protection**
(1) Processes, equipment, plant, etc., involving serious explosion and serious fire hazards: (a) All processes, storages, equipments, plants, etc., involving serious explosion and flash fire hazard shall be located in segregated buildings 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 conveyers 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 or smoke detectors and the air-conditioning plant system.
(e) In all work places 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.
(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) substation buildings and outdoor transformers and switch yards.
(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 are 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 be
(f) all other precautions, as are reasonably practicable, shall b taken to 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.

(2)
(a) Buildings and plants shall be so laid out and roads, passageways, etc., so maintained as to permit unobstructed access for firefighting.
(b) Doors and window openings shall be located in suitable positions on all external walls of the building to provide easy access to the entire area within the building for firefighting.
(3) Protection against lightning shall be provided for:
(4) Wherever there is danger of fire or explosion from accumulation of flammable or explosive substances in air:
(5) 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 ten metres away from process or storage buildings.
(6) 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 processes. The room where such cylinders are stored shall have adequate ventilation.
(7) (a) The quantity of flammable liquids in any workroom shall be the minimum required for the process or processes carried on in such room. Flammable liquids shall be stored in suitable 4 containers with close fitting covers: (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 remaining 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, sumps or drains and to confine any escaping liquid within safe limits.

Provided that not more than twenty litres of flammable liquids having a flash point of 21 degree centigrade or less shall be kept or stored in any work room.
(8)
(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 at least once in a day or shift, and more often, when possible. Such materials shall be placed in suitable metal containers with covers wherever possible.
(9)
(a) In this sub-rule:
(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 internal or external stairway or to a verandah or to an internal stairway segregated from the rest of the building by fire resisting walls which shall provide continuous and protected means or 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 exists for the purpose of this sub-rule.
(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. Artificial lighting shall be adopted for this purpose, to maintain the required illumination in case of failure or 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 exit staircases.

(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 degree 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 at least one of them on the floor shall not exceed thirty metres.
(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 metres and there shall be at least 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 fifty for stairs and seventy-five 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 ten square metres 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 at least one of them shall be an internal enclosed stairway.
(q) Every building or structure used for storage only, and every section thereof considered separately, shall have access to at least one exit so arranged and located as provide to a suitable means of escape for any person employed therein, and in any such room wherein more than ten persons may be normally present, at least two separate means of exit shall be available, as remote from each other as practicable.
(r) Every storage area shall have access to at least 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 passageway providing continuous and protected means of egress.
(t) No exit doorway shall be less than one hundred cm. in width. Doorways shall be not less than two hundred cm. in height.
(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 ninety 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 at least 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 open able from the side which they serve without the use of a key.

(x) Exit corridors and passageways shall be of a width not less than the aggregate required width of exit doorways leading from there in the direction or travel to the exterior.
(y) Where stairways discharge through corridors and passageways, the height of the corridors and passageways shall not be less than 2.4 metres.
(z) A staircase shall not be arranged around 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 constructions of the former.
(aa) Hollow combustible construction shall not be permitted.
(bb) The minimum width of an internal staircase shall be one hundred cm.
(cc) The minimum width of treads without nosing shall be twenty-five cm., for an internal staircase. The treads shall be constructed and maintained in a manner to prevent slipping.

(dd) The maximum height of a riser shall be nineteen cm. and the number of risers shall be limited to twelve per flight.
(ee) Handrails shall be provided with a minimum height of one hundred centimetres and shall be firmly supported.
(ff) The use of spiral staircase shall be limited to low occupant load and to a building of height of nine metres, unless they are connected to platforms such as balconies and terraces to allow escapes to pause. A spiral staircase shall be not less than three hundred centimetres in diameter and have adequate head room.
(gg) The width of a horizontal exit shall be same as for the exit doorways.
(hh) The horizontal exit shall be equipped with at least one fire door of self closing type.
(ii) 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 metre 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.
(jj) Where there is difference in level between connected areas for horizontal exit, ramps not more than one in eighth slope shall be provided for this purpose steps shall not be used.
(kk) Doors in horizontal exits shall be open able at all times.
(ll) Ramps with a slope of not more than one in ten may be substituted for the requirements of staircase. For all slopes exceeding one in ten and wherever the use is such as to involve danger of slipping, the ramp shall be surfaced with non-slipping material.
(mm) 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 five hundred persons, or if more than twenty-five persons are employed above or below the ground floor. 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)
(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) The types of first-aid firefighting equipment to be provided shall be determined by considering the different types of fire risk which are classified in clause (i):

(i) "Class A fire" - Fire due to combustible materials such as wood, textiles, paper, rubbish and the like.

(1) "Light hazard" — Occupancies like offices, assembly halls, canteens, restrooms, ambulance rooms and the like;
(2) "Ordinary hazard" — Occupancies like saw mills, carpentry shop, small timber yards, book binding shop, engineering workshop and the like;
(3) "Extra hazard" — Occupancies like large timber yards, godowns storing fibrous materials, flour mills, cotton mills, jute mills, large wood working factories and the like;
(ii) "Class B fire" — Fire in flammable liquids like oil, petroleum products, solvents, grease, paint, etc.
(iii) "Class C fire" — Fire arising out of gaseous substances.
(iv) “Class D fire" — Fire from reactive chemicals, active metals and the like.
(v) "Class E fire" — Fire involving electrical equipment and delicate machinery and the like.
(c) The number and types if first-aid firefighting equipments to be provided for “light hazard” occupancy shall be as given in Schedule I. This rule for “Ordinary hazard or extra hazard” occupancies equipments as given in Schedule II shall be provided in addition to that given in Schedule I.
(d) The first aid firefighting equipments shall conform to the relevant Indian Standards.
(e) As far as possible all the first-aid firefighting equipments shall be all similar in shape and appearance and shall have the same method of operation.
(f) All first aid firefighting equipments shall be placed in a conspicuous position and shall be readily and easily accessible for immediate use. Generally, these equipments 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 firefighting equipments shall be allotted 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 filling; and
3. Date of last inspection.

(j) First aid firefighting equipment shall be placed on platforms or in cabinets in such a way that their bottom is 750 mm above the floor level. Fire buckets shall

be placed on hooks attached to a suitable stand or wall in such a way that their bottom is 750 mm above the floor level. Such equipment if placed outside the building, shall be under sheds or covers.
(k) All extinguishers shall be thoroughly cleaned and recharged immediately after discharge. Sufficient refill material shall be kept readily available for this purpose at all times.

(l) All first-aid firefighting equipments 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) (a) In every factory, adequate provision of water supply for firefighting shall be made and where the amount of water required in litres per minute as calculated from the formula A+B+C+D divided by 20 (twenty) is 550 (five hundred and fifty) or more, power driven trailer pumps of adequate capacity to meet the requirement of water as calculated above shall be provided and maintained.

In the above formula—
A = The total area in square metres of all floors including galleries in all buildings of the factory;
B = The total area in square metres of all floors and galleries including open spaces in which combustible materials are handled or stored;
C = The total area in square metres of all floors over 15 metres above ground level and
D= The total area in square metres of all floors of all buildings other than those of fire resisting construction:
Provided that in areas where the fire risk involved does not require use of water, such areas under B, C or D may, for the purpose of calculation, be halved:
Provided further that where the areas under B, C or D are protected by permanent automatic firefighting installations approved by any fire association or fire insurance company, such areas may, for the purpose of calculation, be halved:
Provided also that where the factory is situated at not more than three kilometres from an established city or town fire service, the pumping capacity based on the amount of water arrived at by the formula above may be reduced by 25% but no account shall be taken of this reduction in calculating water supply required under clause (a).

(b) Each trailer pump shall be provided with equipment as per Schedule II appended to this rule. Such equipment shall be conform to the relevant Indian Standards.
(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 that it 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) Water supply shall be provided to give flow of water as required under clause (a) for at least one hundred minutes. At least fifty per cent of this water supply or 4,50,000 litres whichever is less, shall be in the form of static tanks of adequate capacities (not less than 4,50,000 litres each) distributed round the factory with due regard to the potential fire risks in the factory, (where piped supply is provided, the size of the main shall not be less than fifteen centimetres diameter and it shall be capable of supplying a minimum of 4,500 litres per minute at a pressure of not less than seven kilograms per square centimetre).

(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)
(a) The first aid and other firefighting equipment to be provided as required in sub-rules (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-rule (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) Firefighting drills shall be held as often as necessary and at least once in every period of two months.
(13) Automatic sprinklers and fire hydrants shall be in addition and not in substitution of the requirements in sub-rules (10) and (11).
(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 process or 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 this rule subject to the conditions as he may by such order specify. 1. The different types of fires and first aid firefighting equipments suitable for use on them are as under: 2. The following provisions shall be complied with where Class 'A' fires are anticipated.
(a) One 9-litres water bucket for every 100 square metres of floor area or part thereof and one 9-litre water type (soda-acid or gas pressure or bucket pump), extinguisher shall be provided for every 6 buckets or part thereof with a minimum of one extinguisher and two Buckets per compartment of the building. These equipments shall be so distributed over the entire floor areas that a person shall have to travel not more than 25 metres from any point to reach the nearest equipment.
(b) One 9-litres bucket for every 100 square metres of floor area or part thereof and one 9-litre water type (soda-acid, gas pressure or bucket pump) extinguisher shall be provided for every six buckets or part thereof, with a minimum of 2 extinguishers and 4 buckets per compartment of the building. These equipment shall be so distributed of the entire floor area that a person shall have to travel not more than 15 metres from any point to reach the nearest equipment.

(c) The scale of equipment would be what is prescribed for ordinary hazard and, in addition, such extra equipment, as in the opinion of the Inspector, are necessary, having regard to the special nature of occupancy:

**Schedule I**
**[See Rule 71(10)(c)]**
**First aid firefighting equipments**

| **Class of fire** | | **Suitable type of appliances** |
|---|---|---|
| A. | Fires in ordinary combustible (wood, vegetable fibres, paper and the like) | Chemical extinguishers of Soda-acid Gas/expelled water and anti-freeze types, and water buckets |
| B. | Fires in flammable liquids, paints, grease, solvents and the like | Chemical extinguishers of foam, carbon dioxide and dry powder types and sand buckets |
| C. | Fires in gaseous substances under pressure | Chemical extinguishers of carbon dioxide and dry powder types |
| D. | Fires in Reactive Chemicals, active metals and the like | Special type of dry powder extinguishers and sand buckets |
| E. | Fires in electrical equipments | Chemical extinguishers of carbon dioxide and dry powder type and sand buckets |



3. Acceptable replacements for water buckets and water type extinguishers in occupancies where Class B, C and D fires are anticipated, are as under:
4. The following provisions shall be complied with where class E fires are anticipated.
(a) For rooms containing electrical transformers, switchgears, motors and/or other electrical apparatus, dry powder or carbon dioxide type extinguishers shall be provided within fifteen m. of the apparatus which are not less than 2 numbers of 2 Kg. each.
(b) Where motors and/or other electrical equipment are installed in rooms other than those containing such equipment, one five Kg., dry powder or carbon dioxide extinguisher shall be installed within fifteen m. of such equipment in addition to the requirements mentioned at Paragraphs 3 and 4. For this purpose, the same extinguishers may be deemed to afford protection to all apparatus within fifteen m., thereof.
(c) Where electrical motors are installed on platforms, one 2 Kg., dry powder or carbon dioxide type extinguisher shall be provided on or below each platform. In case or a long platform with a number of motors, one extinguisher shall be acceptable as adequate for every three motors on the common platform. The above requirements shall be in addition to the requirements mentioned in Paragraphs 3 and 4.
5. The first aid firefighting equipments shall be so distributed over the entire floor area that a person has to travel not more than fifteen m., to reach the nearest equipment.
6. Selection of sites for the installation of first-aid firefighting equipments shall be as follows:

Provided that in special cases, the Inspector may, after taking into consideration the circumstances, authorise that the buckets specified in this sub-paragraph may be dispensed with, if the number of the extinguishers provided is double that what is specified.

| **Acceptable replacements** | **Buckets of water** | | **Water type extinguishers** |
|---|---|---|---|
| **For one bucket** | **For three buckets** | | **For each 9 litters extinguishers** |
| **1** | **2** | **3** | **4** |
| Dry sand | Bucket | 3 buckets | - |
| Carbon dioxide extinguishers | 3 Kg. | 9Kg. (In not less than 2 extinguishers) | 9Kg. |
| Dry powder extinguishers | 2Kg. | 5 Kg. (In one or more extinguishers) | 5Kg. |
| Foam | 9 Litres | 9 litres | 9 Litres |

(1) While selecting sites for first aid firefighting equipments, due consideration shall be given to the nature of the risk to be covered. The equipments shall be placed in conspicuous positions and shall be readily accessible for immediate use in all parts of the occupancy. It should always be borne in mind while selecting sites that first-aid firefighting equipments are intended only for use on incipient fires and their value may be negligible if the fire is not extinguished or brought under control in the early stages.
(2) Buckets and extinguishers shall be placed at convenient and easily accessible locations either on hangers or on stands in such a way that their bottom in 750 mm. above the floor level. 7. The operating instructions of the extinguishers shall not be defaced or obliterated. In case the operating instructions are obliterated or have become illegible due to passage of time fresh transfers of the same shall be obtained from the manufacture of the equipments and affixed to the extinguishers.

**Schedule II**
**[See Rule 71(10)(c)]**
**Equipment to be provided with trailer pump**
**For light trailer pump of a capacity of 680 litres/minute**
1 Armoured suction hose of 9 metres length, with wrenches
1 Metal suction strainer
1 Basket strainer
1 Two-way suction collecting-head

1 Suction adaptor
10 Unlined or rubber lined 70 mm. delivery hose of 25 metres 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 (prevent or) with cutting edge
1 25 mm. manila rope of 30 metres length
1 Extension ladder of 9 metres length (where necessary)
1 Heavy axe
1 Spade

1 Pickaxe
1 Crowbar
1 Saw
1 Hurricane lamp
1 Electric torch
1 Pair rubber gloves

**For large trailer pump of a capacity of 1800 litres/minute**

1 Armoured suction hose of 9 metres length, with wrenches
1 Metal strainer
1 Basket strainer
1 Three-way suction collecting-head
1 Suction adaptor
14 Unlined or/of rubber lined 70 mm. delivery hose of 25 metres 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 metres length
1 Extension ladder of 9 metres length (where necessary)
1 Heavy axe
1 Spade
1 Pickaxe
1 Crowbar
1 Saw
1 Hurricane lamp

1 Electric torch
1 Pair rubber gloves

**Note:** If it appears to the Chief Inspector that in any factory the provision of breathing apparatus is necessary he may, by 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.]

**72. [74][Proof against fire**

x x x x x.

**73. [75Buckets**

x x x x x.

**74. 76[Chemical Extinguishers**

x x x x x.

**75. 77[Provision for Chemical Fire Extinguisher**

x x x x x.

**76. 78[Special provision for match factories**

x x x x x.

**77. 79[Fire Fighting Apparatus and Water Supply**

x x x x x.]

**78. Means of escape for Cotton Ginning Factories**

Notwithstanding anything contained in Rule 71, cotton ginning factories shall be provided with at feast two suitable earthern ramps or two flights of stairs made of brick work or other resisting material.

**79. Buildings and structures**

No buildings, wall, chimney, bridge road, gallery, stairway, ramp, floor, platform, staging or structure whether of a permanent or temporary character shall be constructed, situated or maintained in any factory, in such manner as to cause risk of bodily injury.

**79-A. [80][Fragile roofs: Provisions of crawling boards etc.**

In any factory, no person shall be required to stand or pass over, or work, 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 metres:

(a) Without the use of sufficient number of suitable ladders, duck ladders or crawling boards, which are securely supported, provided by the Occupier or manager for this purpose;

(b) Unless a permit to work on the fragile roof is issued to such person each time he is required to work thereon by an officer of the factory authorised for this purpose by the Occupier or Manager.]

**80. Belts, etc., to be regularly examined**

All belts shall be regularly examined to ensure that the joints are safe and the belts are at proper tension.

**81. Tight fitting clothing**

(1) A dhoti wrapped round the body in any manner shall not be deemed to be tight fitting clothing within the meaning of sub-section (1) of Section 22.

(2) A worker required to wear tight fitting sub-section (1) of Section 22 shall be provided by the clothing which shall consist of at least a pair of closely fitting shorts and a closely fitting half sleeve shirts or vest. Such clothing shall be returned to the Occupier on the termination of service or when new clothing is provided.

**82. Service Platforms, etc.**
(1) Whenever practicable and demanded necessary by the Inspector, service platforms and gang-ways shall be provided for overhead shafting, and where required by him these shall be securely fenced with guard-rails and toe-boards.
(2) Safe access shall be provided to all bearings, clutches, belt shifting levers and all such other appliances which are required to be handled or operated while the machinery is in motion.
(3) All ladders used in replacing belts or in attending similar overhead machinery shall be specially made for that work and provided with hooks or an effective non-skid device.
(4) No transmission machinery in motion shall be cleaned with cotton waste, rags or similar materials held in hand.
(5) Every such person while oiling or attending to prime movers shall wear tight fitting clothing.
(6) Each water-gauge glass of a boiler shall be fitted with an efficient guard.

**83. Machinery and Plant**
No machinery, plant, or equipments shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily injury.
**84. Methods of work**
No process of work shall be carried on in any factory in such a manner as to cause risk of bodily injury.
**85. Stocking and storing of materials, etc.**
No material or equipment shall be stocked or stored in such a manner as to cause risk of bodily injury.
**86. Electricity**
(1) [81][No electric installation shall be provided in a factory, so as to be dangerous to human life or safety in the opinion of the Inspector:]

Provided that the Inspector may issue an order in writing, specifying the arrangements necessary for adequate safety, in addition to what is provided under the provisions of Indian Electricity Act or Rules there under.
(2) [82][In the main switch board or switch boards of factories, there shall be provided earth leakage and over load relays. The earth leakage relay shall be so provided that the leakage current shall not cause electrocution or other hazard.]

**87. Motor Vehicles Speed and light**
(1) No Motor vehicle shall be permitted to be driven at a speed exceeding 16 k.m. per hour within the precincts of a factory:

Provided that in case of large factories separated by considerable distances and having roads of ample width, the Chief inspector may grant exemption by an Order in writing from this rule, to such extent and on such terms as he deems suitable.
(2) No motor vehicle shall be driven at night within the precincts of a factory unless it confirms in respect of lights to the law in force on public roads in that locality.

**88. Means of internal transport and layout**
No railway or other electrical or mechanical means of transport or system of roadways or railways within the precincts of a factory, shall be constructed, situated, operated or maintained in such a manner as to cause risk or bodily injury to workers:
Provided that the Inspector may issue an order in writing, when he has reason to believe that there is imminent danger to human life, prohibiting use of such railway or roadways, till it is proved to his satisfaction that the danger is eliminated, notwithstanding the provisions of any other Act.
**88.-A. 83[**
(1) Qualifications
(a) A person shall not be eligible for appointment as a Safety Officer unless he—
(i) Possesses a recognised degree in any branch of engineering or technology and has had practical experience of working in a factory in a Supervisory capacity for a period of not less than 2 years, or

a recognised degree in physics or chemistry and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years, or a recognised diploma in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period not less than 5 years;
(ii) Possesses a degree or diploma in industrial safety recognised by the State Government in this behalf; and
(iii) has adequate knowledge of the language spoken by majority of the workers in the region in which the factory where he is to be appointed is situated.
(b) Notwithstanding the provisions contained in clause (a), any person who

possesses a recognised degree or diploma in engineering or technology and has had experience of not less than 5 years in a department of the Central or State Government which deals with the administration of the Factories Act, 1948, or the Indian Dock Labourers Act, 1934, or possesses a recognised degree or diploma in engineering or technology and has had experience of not less than 5 years, full time, on training, education, consultancy, or research in the field of accident prevention in industry or in any institution;
shall also be eligible for appointment as a Safety Officer:
Provided that the Chief Inspector may, subject to such conditions as he may specify, grant exemption from the requirements of this sub-rule, if in his opinion, suitable person possessing the necessary qualification and experience is not available for appointment:
Provided further that, in the case of a person who has been working as a safety officer for a period not less than 3 years on the date or commencement of this rule, the Chief Inspector may subject to such conditions as he may specify relax all or any or the above said qualifications.

(2) Conditions of Service
(a) Where the number of safety officers to be appointed in a factory as required by notification in the official gazette exceeds one, one of them shall be designated as the Chief Safety Officer and shall have a status higher than that of the others. The Chief Safety Officer shall be in overall charge of the Safety functions as envisaged in sub-rule (3) of the other safety officer working under his control.
(b) The Chief Safety Officer or the Safety Officer in the case of factories where only one Safety Officer is required to be appointed; shall be given in status of a senior executive and he shall work directly under the control of the Chief Executive of the factory. All other Safety Officers shall be given appropriate status to enable them to discharge their functions effectively.
(c) The scale of pay and the allowance to be granted to the Safety Officers including the Chief Safety Officer, and the other conditions of their service shall be the same as those of the other officers of corresponding status in the factory.
(d) In the case of dismissal or discharge, a Safety Officer shall have a right to appeal to the State Government whose decision thereon shall be final.
(3) Duties of Safety Officers (a) The duties of Safety Officers shall be to advise and assist the factory management in the fulfilment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintaining a safe working environment. Those duties shall include the following, namely—

(i) to advise the concerned departments in planning and organising measures necessary for the effective control of personal injuries;
(ii) to advise on safety aspects in all job studies and to carry out detailed job safety studies of selected jobs;
(iii) to check and evaluate, the effectiveness of the action taken or proposed to be taken to prevent personal injuries;
(iv) to advise the purchase and stores departments in ensuring high quality and availability of personal protective equipment;
(v) to provide advice on matters related to carrying out plant safety inspections;
(vi) to carry out plant safety inspections in order to observe the physical conditions or work and the work practices and procedures followed by workers and to render advice on measures to be adopted for removing the unsafe physical conditions and preventing unsafe action by workers;
(vii) to render advice on matters related to reporting and investigation of industrial accidents and diseases;
(viii) to investigate selected accidents;
(ix) to investigate the cases of industrial diseases contacted and dangerous occurrences reportable under rule 131.
(x) to advise on the maintenance of such records as are necessary relating to accidents, dangerous occurrences and industrial diseases;
(xi) to promote setting up of Safety Committees and act as adviser and catalyst to such committees;

(xii) to organise in association with the concerned departments, campaigns, competitions, contests and other activities which will develop and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedure; and
(xiii) to design and conducting either independently or in collaboration with the training department, suitable training and educational programmes for the prevention of personal injuries.
(4) Facilities to be provided to safety officers

An occupier of the factory shall provide each safety officer with such facilities, equipment and information as are necessary to enable him to discharge his duties effectively.
(5) Prohibition of performance of other duties

No safety officer shall be required or permitted to do any work which is inconsistent with or detrimental to the performance of the duties prescribed in sub-rule (3).]

(6) [84][Appointment of Safety Officer - Every occupier, when required by the State Government by notification in the Official Gazette issued under sub-section (1) of section 40-B of the Factories Act, 1948 (Central Act LXIII of 1948), shall within a period of six months from the date of publication of the notification, appoint the requisite number of Safety Officers, as specified in that notification: Provided that, the Chief Inspector of Factories may, on an application in writing by an occupier, extend the period further by a maximum of six months for making such appointment.
(7) Recruitment of Safety Officer (1) The occupier of the factory concerned shall notify the vacancies of the post of safety officer and shall invite applications at least in two leading newspapers having wide circulation in the State, out of which one newspaper shall be in Kannada language and other in English language:
(2) Selection for appointment to the post of Safety Officer shall be made among the candidates applying for the post, by a committee appointed by the occupier of the factory concerned.
(3) The Appointment of the Safety Officer, when made, shall be notified by the occupier of the factory to the Chief Inspector of Factories, giving full details about the qualifications, age, pay and allowances, previous experience and other relevant particulars of the officer appointed and the terms and conditions of the service applicable to him.]

Provided that, the vacancies in the post of Safety officers in the Government establishments, Quasi-Government establishments and public undertakings shall be filled up through the Government Employment Exchange. Vacancies in the said establishments shall also be advertised in the newspaper inviting applications and shall be filled considering them together. Provided further, that the post of safety officers in private factories may be filled up from the Department of Inspectorate of Factories on deputation basis.

**88-B. [85][Ovens and driers**

(1) 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 three hundred and twenty-five litres.

(2) 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) Electrical power supplied to every oven or drier shall be by means of a separate circuit provided with an isolation switch.
(4)

(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 are required, to establish that the necessary safe systems and controls provided for safety in operation for the processes 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 parts 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 be used unless a thorough examination and tests referred to in clause (b) have been carried out by a competent person, and a certificate of such
(5)
(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 safe level of dilution referred to in clause (a) shall be to achieve a concentration of the concerned flammable substance in air of not more than twenty-five per cent of its lower explosive limit:

Provided that a level of concentration in air upto fifty 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 substances 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 fifty 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 or the flammable substance in any part of the oven or drier reaches a level of sixty per cent of its lower explosive limit, is provided to the oven or drier and 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 systems should be so designed and placed that their ducts discharge the mixture of air and flammable substance away from the workrooms, and not near windows or doors or other openings from where the mixture could re-enter the workrooms.
(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 me 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)
(a) Every oven or drier having an internal total space of not less than half cubic metre 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 vents together with the area of openings 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 centimetres for every one cubic metre of volume of the oven or drier. The design or the explosion panels and doors as above said shall be such as to secure their complete release under an internal pressure of 0.25 Kg. per square centimetre.
(b) The explosion releasing panels, shall as far 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)

In each 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 or flow pattern, are in operation before any mechanical conveyer 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) and also stop fuel as may be provided as well as stop the fuel supply by closing the shut off valve and by shutting off the ignition in the case of gas or oil fired ovens, and switch off the electrical supply to the heaters in the case of electrically heated ovens;

(iii) the mechanical conveyor is set in operation before the above said shut off valve can be energised; and

(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 out off the electrical heaters in the case of electrically heated ovens or furnace.
(8) Every oven or drier heated by oil, gas, steam, or electricity shall be provided with an efficient arrangement for automatic ore-ventilation consisting of at least three 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 or 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) Every oven or drier shall be provided with an automatic arrangement to ensure that the temperature within does not exceed a safe upper present limit to be decided in respect of the particular processing being carried on.
(10) 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) 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) (a) All parts of every oven and drier shall be properly maintained and thoroughly examined and the various controls as mentioned in this rule, and the working 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 of 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 such entry made shall be signed by the person making the tests.

(13) No person shall be assigned any task connected with operation of any oven or drier unless he has completed eighteen years of age and he is properly trained.
(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 polymerising machines.
(b) Infra-red ray heaters of polymerising machines shall be cut off while running the prints.

**88-C.** [86]**[Safety Committee**

(1) In every factory the Safety Committee shall consist of the following persons, namely:
(2) The tenure of the Committee shall be for two years.
(3) Safety Committee shall meet as often as necessary but at least once in three months. The minutes of the meeting shall be recorded and produced before the Inspector on demand. The copy of the minutes of the meeting shall be furnished to the Inspector.
(4) 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 workplace.
(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 safety of the workers.
(5) Functions and duties of the Safety Committee shall include:
(a) assisting and co-operating with 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, safety 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, the 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.

| | | |
|---|---|---|
| (a) | senior official of the management who by his position in the organization can contribute effectively to the functioning of the Committee. | (Chairman) |
| (b) | A factory Medical Officer (wherever) | (Member) |
| (C) | Three representatives of the management one each from the production, maintenance and purchase departments. | (Member) |
| (d) | Equal number of representatives from | (Member) |
| (e) | Safety Officer. | (Secretary) |

**88-D. 87[Application to Site Appraisal Committee**

Applications for appraisal of sites in respect of the factories covered under clause (cb) of Section 2 of the Act shall be submitted to the Chairman of the Site Appraisal Committee in Form No. 41 along with fifteen copies thereof.

**88-E. 88[The Health and Safety Policy**

(1) The occupier of every factory except the factories referred to in sub-rule (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 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 process or operations declared to be Dangerous Operations 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 or 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, subcontractors, 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; and

(g) arrangements for informing, educating and training and retraining its own employees at different levels and the public, wherever required.
(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.
(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 persons exposed to such substances.

(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:
(8) The occupier shall revise the Safety Policy as often as may be appropriate, but it shall necessarily be revised under the following circumstances:

**88-F. 89[Collection and development and dissemination of information**

(1) The occupier of every factory carrying on a 'hazardous process' shall arrange to obtain or develop 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 identity 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 are 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, while obtaining or developing a material safety data sheet in respect of a hazardous substance shall ensure that the information recorded, accurately reflects the scientific evidence used in making the hazard determination. If he becomes 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.

**Schedule**
**[See Rule 90[88-F (1)(c)]**
**Material Safety Data Sheet**
**1. Identity of Material**

| | | | | |
|---|---|---|---|---|
| Product Name | | Chemical | | |
| Trade Name | | Designation | | |
| Formula | Label Class | Category | CAS Number | UN Number |
| Regulated Identification | Shipping Name Codes/Label | | HAZCHEM code | |
| Hazardous Waste Identification 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 of Hg.** |
| Appearance | Melting/Freezing point in degree C | Evaporation rate at 30-degree C |
| Odour | Vapour density (air = 1) | 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 (degree) C<br>Flash point (degree) C | LEL%<br>UEL% | Autoignition Temperature degree C<br>TDG Flammability (Classification) |

## 4. Reactive Hazards:

| | | |
|---|---|---|
| Stability to | Impact | (Hazardous Combustion Products) |
| Static Discharge | (Hazardous Decomposition Product) | |
| Reactivity | (Conditions to avoid) | |

| | | |
|---|---|---|
| Hazardous Polymerisation<br>Incompatibility | May/may not occur | (Conditions to avoid)<br>(Materials to avoid) |

## 5. Health Hazard Data:

| | | | |
|---|---|---|---|
| Routes of Entry | | (Inhalation, skin, mucuous membranes and eye contact and ingestion) | |
| Effects of Exposure/Symptoms | | | |
| LD50 (in rat) (Orally or percutaneous absorption) (mg/kg body weight) | | LC50 (in rat) (mg/l)/4 hour | |
| Permissible Exposure Limit (PEL) | PPm mg/ cu.m | Short term Exposure Limit (STEL) | PPm mg / cu.m |
| Threshold Limit Value (TLV) of ACCGIH | PPm mg/ cu.m | Odour Threshold | PPm mg / cu.m |

## 6. Hazard Specification:

| | | | | |
|---|---|---|---|---|
| NEPA Hazard Signal | Health | Flammability | Stability | Special |
| Known Hazards | | | | |
| Combustible Liquid | | Water Reactive Material | | Irritant |
| Flammable Material | | Oxidiser | | Sensitiser |
| Pyrophonic Material | | Organic Peroxide | | Carcinogen |
| Explosive Material | | Corrosive Material | | Mutagen |
| Unstable Material | | Compressed Gas | | Others (Specify) |

## 7. Safe Usage Data:

| | |
|---|---|
| Ventilation | General / Mechanical |
| Local Exhaust | |
| Eyes (specify) | |
| Protective Equipment Required | Respiratory (specify) |
| Gloves (specify) | |
| Clothing (specify) | |
| Others (specify) | |
| Precautions | Handling and Storage |

| |
|---|
| Others (Specify) |

**8. Emergency Response Data:**

| | |
|---|---|
| Fire | Fire Extinguishing Media |
| Special procedures | |
| Unusual hazards | |
| Exposure (inhalation, skin and eye contact, ingestion) | First Aid Measures |
| Spills | Steps to be taken |
| Waste Disposal Method | |

**9. Additional Information:**

……
……

**10. Sources Used:**

Reference to books, journals, etc.

**11. Manufacturer/Supplier Data:**

| | |
|---|---|
| Firm's Name | Standard packing |
| Mailing Address | : |
| Telephone Number | : |
| Telex Number | Other |
| Telegraphic Address | Other |
| Contact person in | 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 Committee of Fire Brigade Operations
TDG : Transport of dangerous goods-Flammability
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 Industries 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 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.

(2) **Labelling** (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.

Every container of a hazardous substance shall be clearly labelled or marked to identify:

(1) 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, namely:
(a) Requirements of Sections 41-B, 41-C, and 41-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 Rule88-F;
(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 substance as provided under Rule 88-F;
(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.
(2) Any other information considered necessary by the occupier to ensure safety and health of workers.
(3) 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.
(4) The booklets, leaflets and cautionary notices displayed in the factory shall be in the language understood by the majority of the workers, and shall also be explained to them.
(5) The Chief Inspector may direct the occupier to supply further information to the workers as deemed necessary.

(1) 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.

**88-G. [91][Disclosure of information to workers**
**88-H. [92][Disclosure of Information to the Chief Inspector**

(2) A copy of compilation of material safety data sheets in respect hazardous substances used, produced or stored in the factory shall be 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 the Act and these rules.
(1) The information furnished under Rules 88-G and 88-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 arrangements made for controlling pollution of the environment.
(3) The occupier shall also furnish the information specified in sub-rules (1) and (2) to the State Pollution Control Board.



**88-I. [93][Information on Industrial Wastes**
**88-J. 94[Review of the Information furnished to workers, etc.**
(1) The occupier shall review once in every calendar year and modify, if necessary, the information furnished under Rules 88-G and 88-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. (1) The occupier of a factory carrying on 'hazardous process' shall disclose all information needed for protecting safety and health of the workers to:
(a) his workers and
(b) Chief Inspector as required under Rules 88-G and 88-H.
(2) An occupier aggrieved by an order of Chief Inspector may prefer an appeal before the State Government within a period of 30 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.

**88-K. [95][Confidentiality of Information**
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 a 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.

**88-L. [96][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 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 medical examinations carried out as aforesaid shall be recorded in the Health Register in Form No. 16;

(d) The Manager of every hazardous factory shall maintain a sickness, absenteeism register in the Form No. 40 in duplicate;

(e) The copy of Form No. 40 shall be furnished to the Inspector for each calendar month on or before 15th of succeeding month.

(2) No person shall be employed for the first time without a Certificate of Fitness in Form No. 4 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 (1), 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 examine the concerned worker and communicate his findings to the occupier within thirty days. If the Certifying Surgeon is of the opinion that the worker so 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 be 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 be not refuse to undergo such medical examination. (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 upto fifty workers:
(i) the services of a Factory Medical Officer on retainer ship basis, in his clinic to be notified by the occupier. He will carry out the pre-employment and periodical medical examination as stipulated in Rule 88-L and render medical assistance during any emergency.
(ii) a minimum of five persons trained in first-aid procedures amongst whom at least one shall always be available during the working period.
(iii) a fully equipped first-aid box.
(b) For factories employing 51 to 200 workers:
(i) an Occupational Health Centre having a room with a minimum floor area of 15 sq. m., with floors and walls made of smooth and impervious surface and with adequate illumination and ventilation as well as equipment as per 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 at least 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 200 workers:
(i) One full time Factory Medical Officer for factories employing upto 500 workers and one more Medical Officer for every additional 1000 workers or part thereof;
(ii) An Occupational Health Centre having at least 2 rooms each with a minimum floor area of 15 sq. metres with floors and walls made of smooth and impervious surface and adequate illumination and ventilation as well as equipment as per the schedule annexed to this rule.

**88-M. 97[Occupational Health Centres**
**Explanation:** The room facilities include those required under sub-section (4) of Section 45 of the Act read with Rule 92.
(1)

(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.
(v) 98[Where in more than one factory medical officer are appointed or required, they shall be posted in each shift.]

(2) The Factory Medical Officer required to be appointed under sub-rule (1) shall have qualifications included in schedule to the Medical Degrees Act, 1916 or in the schedules to the Medical Council Act, 1956 and shall possess a Certificate of Training in Industrial Health of minimum three months duration recognised 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 DG FASLI.
(4) Within one month of the appointment of 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 provision under which he is appointed. 1. A glazed sink with hot and cold water also available

**Schedule Under Rule [99][88-M**
**Equipment for Occupational Health Centre in Factories**

2. A Table with a smooth top atleast 180 cm x 105 cm.
3. Means for sterlising 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 spiritus ammoniac aromaticus (120 ml.)
8. Two kidney trays
9. Two medium size sponges
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 litre) 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 dressing forceps
28. One scapel
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 metre for lung function measurement
35. One stomach wash set
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 51 to 200 workers:**
**(2) For factories employing above 200 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, pethidine, atropine, adrenaline, coramine, novocan (4 each)
6. Two surgical scissors

(1) In every factory carrying on 'hazardous process', there shall be provided and maintained in good condition, a suitably constructed ambulance van equipped with items under sub-rule (2) and manned by a full-time Driver cum Mechanic and a Helper, trained in first-aid, for the purposes 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 shall normally be stationed at or near to the Occupational Health Centre:
(2) The Ambulance should have the following equipment:
**(a) General**

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. One pair artery forceps
5. Injections — morphia, pethidine, atropine, adrenaline, coramine, novocan (2 each)
6. One surgical scissor

**88-N. 100[Ambulance Van**
Provided that a factory employing less than 200 workers, may make arrangements for a procuring such facility at short notice from a nearby hospital or other places, to meet any emergency.
– 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 and Towels;
– Emesis bag, Bed pan, Urinal and Glass. **(b) Safety Equipment**

– Flares with life of 30 minutes; - Floodlights;
– Flashlights and Fire extinguisher dry powder type;
– Insulated gauntlets. **(c) Emergency Care Equipment**
**(i) Resuscitation**

– Portable suction unit, Portable oxygen units;
– 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, Cugo and Stethoscope. **(ii) Immobilization**

– Long and short padded boards — Wire ladder splints;
– Triangular bandage — Long and short spine boards. **(iii) Dressings**
**(iv) Poisoning**
**(v) Emergency Medicines**

– Gauze pads — 100 mm. x 100 mm. — Universal dressing 25 mm. x 900 mm.
– Roll of aluminium foils; — soft roller bandages 150 mm. 5 mts.;, Adhesive tape in 75 mm. roll, Safety pins;
– Bandage sheets, Burn jelly.
– Syrup of Ipecae and Activated Charcoal
– Pre-packeted in doses and Snake-bite Kit;
– Drinking water.
– As per requirement (under the advice of Medical Officer only)

**88-O. 101[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 drenching with 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 below:

| No. of persons employed at any time | | No. of drenching showers |
|---|---|---|
| (i) | Upto 50 workers | 2 |
| (ii) | Between 51 to 200 workers | 2+1 for every additional 50 or part thereof |
| (iii) | Between 201 to 500 workers | 5+1 for every additional 100 or part 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 or suitable liquid, kept in boxes or cupboards conveniently situated and dearly indicated by a distinctive sign which shall be visible at all times.

**88-P. 102[Making available Health Records to workers**
(1) The occupier of every factory carrying out 'hazardous process' shall make available the health records including the record of worker's exposure to hazardous process or, as the case may be, 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 diseases 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;
(i) The Chief Inspector
(ii) The Health Authority of the Central or State Government
(iii) Commissioner of Workmen's compensation
(iv) The Director General, Employees State Insurance Corporation
(v) The Director, Employees State Insurance Corporation; (Medical Benefits); and
(vi) The Director General, Factory-Advice Service and Labour Institutes.
(2) A copy of the up-to-date health records including the record 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.

**88-Q. 103[Qualifications, etc., of Supervisors**

(1) All persons who are required to supervise the handling or hazardous substances shall possess the following qualifications and experience, namely: (a)
(i) A degree in Chemistry or Diploma in Chemical Engineering or Technology with 5 years' experience; or
(ii) A Master's Degree in Chemistry or a Degree in Chemical Engineering or Technology with 2 years' experience. The experience stipulated above shall be in process operation and maintenance in the Chemical Industry.
(b) The 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 DGFASLI or the State Government in accordance with the guidelines issued by the DGFASLI.]

**Chapter V**
**Welfare**
**89. Washing Facilities**
(1) 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.
(2) 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 cms., or
(b) wash-basins with taps attached thereto, or
(c) taps on stand-pipes, or
(d) showers controlled by taps, or
(e) circular trough 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.
(3)
(a) Every trough and basin shall have a smooth impervious surface and shall be fitted with a waste-pipe and plug.

(b) the floor of 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.
(4) For person 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 |
|---|---|
| 1 | 2 |

| | |
|---|---|
| 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. |

(5) 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 this shall also be indicated pictorially.
(6) The water supply to the washing facilities shall be capable of yielding at least 27 litres a day for each person employed in the factory and shall be from a source approved in writing by the Health Officer: 1. Engineering Workshop.
2. Iron and Steel Works.
3. Oil Mills.
4. Chemical Factory.
5. Automobile Workshops.



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 4.54 litres per day for every person employed in the factory.

**90. Facilities for storing and drying clothing**

In all classes of factories specified in the Table below facilities for keeping clothing not worn during working hours and for the drying of wet clothing shall be provided. Such facilities shall include the provisions of separate rooms, pegs, lockers or any other suitable arrangement approved by Chief Inspector in each case.

**Table**

6. Tanneries.

A. For factories in which the number of persons employed does not exceed ten, or (in the case of factories in which mechanical power is not used) does not exceed fifty persons each first aid box or cupboard shall contain the following equipment:
(i) Six small size sterilized dressings.
(ii) Three medium size sterilized dressings.
(iii) Three large size sterilized dressings.
(iv) Three large size sterilized burn dressings.
(v) One (60 ml.) bottle of cetrimide solution (1%) or a suitable antiseptic solution.

(vi) One (60 ml.) bottle of mercurochrome solution (2%) in water.
(vii) One (30 ml.) bottle containing sal-volatile having the dose and mode of administration indicated on the label.
(viii) One pair scissor,
(ix) One roll of adhesive plaster (2 cms. x 1 Meter).
(x) Six pieces of sterilized eye pads in separate sealed packets.
(xi) A bottle containing 100 tablets (each of 5 grains) of aspirin or any other analgesic.
(xii) Polythene wash bottle (Half litre i.e., 500 c.c.) for washing eyes.
(xiii) A snake bite lancet.
(xiv) One (30 ml.) bottle containing potassium permanganate crystals.
(xv) One copy of first aid leaflet issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India, Bombay.
B. For factories in which mechanical power is used and in which the number of persons employed exceeds ten but does not exceed fifty, each first aid box or cupboard shall contain the following equipment:
(i) twelve small size sterilized dressings.
(ii) six medium size sterilized dressings,
(iii) six large size sterilized dressings,
(iv) six large size sterilized burn dressings.
(v) six (15 gm.) packets of sterilized cotton wool.
(vi) one (120 ml.) bottle of cetrimide solution (1 per cent) or a suitable antiseptic solution.



**91. 104[First aid appliance**
The first aid boxes or cupboards shall be distinctively marked with a red cross on white back ground and shall contain the following equipment:

(vii) one (120 ml.) bottle of Mercurochrome solution (2%) in water.
(viii) one (60 ml.) bottle containing sal volatile having the dose and mode of administration indicated on the label.
(ix) One pair scissors,
(x) Two rolls of adhesive plaster (2cms. x 1 meter).
(xi) Eight pieces of sterilized eye pads in separate sealed packets.
(xii) One tourniquet,
(xiii) One dozen safety pins.
(xiv) A bottle containing 100 tablets (each of 5 grains) of aspirin or any other analgesic.
(xv) One polythene wash bottle (Vi litre i.e., 500 c.c.) for washing eyes.
(xvi) A snake bite lancet.
(xvii) One (30 ml.) bottle containing potassium permanganate crystals.
(xviii) One copy of the first aid leaflet issued by the Directorate General of Factory Advice, service and Labour Institutes, Government of India, Bombay.
C. For factories employing more than fifty persons. Each first aid box or cupboard shall contain the following equipment:
(i) 24 small sterilized dressings.

(ii) 12 medium size sterilized dressings,
(iii) 12 large size sterilized dressings,
(iv) 12 large size sterilized burn dressings.
(v) Twelve (15 ml.) packets of sterilized cotton wool.
(vi) One (200 ml.) bottle of cetrimide solution (1%) or a suitable antiseptic solution.
(vii) One (200 mL) bottle of mercurochrome (2%) solution in water.
(viii) One (120 ml.) bottle of sal-volatile having the dose and mode of administration on the label.
(ix) One pair of scissors.
(x) One roll of adhesive plaster (6 cms. x 1 meter),
(xi) Two rolls of adhesive plaster (2 cms. x 1 meter).
(xii) Twelve pieces of sterilized eye pads in separate sealed packets.
(xiii) A bottle containing 100 tablets (each of 5 grains) of aspirin or any other analgesic.
(xiv) One polythene wash bottle (500 c.c.) for washing eyes.
(xv) Twelve roller bandages 10 cms. wide.

(xvi) Twelve roller bandages 5 cms. wide,
(xvii) Six triangular bandages,
(xviii) One tourniquet.
(xix) A supply of suitable splints.
(xx) Two packets of safety pins.
(xxi) Kidney tray,
(xxii) A snake bite lancet.
(xxiii) One (30 ml.) bottle containing potassium permanganate crystals.
(xxiv) First aid leaflet issued by the Directorate General of Factory, Advice Service and Labour Institutes, Bombay:
D. In lieu of the dressings required under items (i) and (ii), there may be substituted adhesive wound dressings approved by the Chief Inspector of Factories and other equipment or medicines that may be considered essential and recommended by the Chief Inspector of Factories from time to time.
(1) Every ambulance room shall be under the charge of at least one whole-time qualified medical practitioner (hereinafter referred to as Medical Officer) assisted by at least one qualified nurse or dresser-cum-compounder and one nursing attendant in each shift:
(a) There shall be no relaxation in respect of nursing staff; and

Provided that items (xiv) to (xxi) inclusive need not be included in the standard first aid box or cupboard (a) where there is properly equipped ambulance room, or (b) if at least one box containing such items and placed and maintained in accordance with the requirements of section 45 is separately provided.
**91-A. 105[Notice regarding first aid**
A notice containing the names of the persons working within the precincts of the factory who are trained in first aid treatment and who are in charge of the first aid boxes or cupboards shall

be posted in every factory at a conspicuous place and near each such box or cupboard. The notice shall also indicate work room where the said person shall be available. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said Notice.

**92. 106[Ambulance Room**

Provided that where a factory works in more than one shift, the Chief Inspector, if he is satisfied that on account of the size of the factory, nature of hazards or frequency of accidents, it is not necessary to employ a whole-time Medical Officer for each shift separately, may with the previous approval of the State Government, grant exemption from the provisions of this sub-rule and permit employment of only one whole-time medical officer for more than one or all shifts, subject to the conditions that:

(b) The Medical Officer is readily available on call during the working hours of the factory.
(2) There shall be displayed in the ambulance room a notice giving the name, address and telephone number of the Medical Practitioner in-charge. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.
(3) No Medical Officer shall be required or permitted to do any work which is inconsistent with or detrimental to his responsibilities under this rule.
(4) The ambulance room shall be separate from the rest of the factory and shall be used only for the purpose of first-aid treatment and rest. It shall have a floor area of at least twenty-four square metres and smooth, hard and impervious walls and floors, and shall be adequately ventilated and lighted by both natural and artificial means. There shall be attached to it at least one latrine and urinal of sanitary type. An adequate supply of wholesome drinking water shall be laid on and the room shall contain at least:
(i) A glazed sink with hot and cold water always available
(ii) A table with a smooth top at least 180 cm. x 105 cm.
(iii) Means for sterilising instruments
(iv) A couch
(v) Two stretchers
(vi) Two buckets or containers with close fitting lids
(vii) Two rubber hot water bags
(viii) A kettle and spirit stove or other suitable means of boiling water
(ix) Twelve plain wooden splints 900 mm. x 100 mm. x 6 mm.
(x) Twelve plain wooden splints 350 mm. x 75 mm. x 6 mm.
(xi) Six plain wooden splints 250 mm. x 50 mm. x 12 mm.
(xii) Six woollen blankets
(xiii) Three pairs of artery forceps
(xiv) One bottle of spiritus ammoniac aromaticus 120 ml.
(xv) Smelling salts (60 gm.)
(xvi) Two medium size sponges
(xvii) Six hand towels
(xviii) Four "kidney" trays
(xix) Four cakes of toilet, preferably antiseptic soap
(xx) Two glass tumblers and two wine glasses

(xxi) Two clinical thermometers
(xxii) Two teaspoons
(xxiii) Two graduated (120 ml.) measuring glasses
(xxiv) Two minimum measuring glasses
(xxv) One wash bottle (1000 cc) for washing eyes
(xxvi) One bottle (one litre) carbolic lotion 1 in 20
(xxvii) Three chairs
(xxviii) One screen
(xxix) One electric hand torch
(xxx) Four first-aid boxes or cupboards stocked to the standard prescribed under Rule 91-C
(xxxi) An adequate supply of antitetanus toxoid
(xxxii) Injections-morphia, pethidine, atropine, adrenaline, coramine, novocan (6 each)
(xxxiii) Coramine liquid (60 ml.)
(xxxiv) Tablets —antihistaminic, antispasmodic (25 each)
(xxxv) Syringes with needles—2 cc, 5 cc, 10 cc and 50 cc
(xxxvi) Three surgical scissors
(xxxvii) Two needle holders, big and small
(xxxviii) Suturing needles and materials
(xxxix) Three dissecting forceps
(xl) Three scalpels
(xli) One Stethoscope
(xlii) Rubber bandage—pressure bandage
(xliii) Oxygen cylinder with necessary attachments
(5) The occupier of every factory to which these rules apply shall for the purpose of removing serious cases of accident or sickness, provide in the premises and maintain in good condition an Ambulance Van.
(6) The Chief Inspector may, by an order in writing, exempt any factory from the requirements, or this rule, subject to such conditions as he may specify in that order, if a hospital, ambulance room or dispensary is maintained at or within 200 metres of the precincts of the factory and such arrangements are made as to ensure the immediate treatment of all injuries sustained by workers within the factory and for providing rest to the workers so injured.
(7) [107][To ensure the minimum help need of workers

i. There shall be one more doctor for every additional two thousand workers employed;
ii. Factory medical officer required to be appointed shall have qualification included in schedule to the Medical Degrees Act 1916 or in the schedules to the Medical Council Act 1956;
iii. Nurse means nurses registered in Karnataka Nursing Council;
iv. ambulance room shall be separate from the rest of the factory premises, and within the compound wall of the factory premises and medical officers shall maintain records of an the patients or employees examined by him;] (1) The occupier of every factory [108][xxx] 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) The manager of a factory shall submit for the approval of the Chief Inspector plans and site plan, in duplicate of the building to be constructed or adopted for use as a canteen.
(3) The canteen building shall be situated not less than 15 meters from any latrine, urinal, boiler house, coal stocks, ash dumps and any other source of dust, smoke or obnoxious fumes:
(4) 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, Store Room, Pantry and Washing places separately for workers and for utensils.
(5) 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 material; the remaining portion of the inside walls shall be made smooth by cement plaster or in any other manner approved by the Chief Inspector.
(6) The Doors and Windows of a canteen building shall be of fly-proof construction and shall allow adequate ventilation.
(7) The canteen shall be sufficiently lighted at all times when persons have access to it.
(8)

**Explanation -** For the purpose of this rule, "qualified medical practitioner" means a person holding a qualification granted by an authority specified in the schedule to the Indian Medical Degrees Act, 1916, or in schedules to the Indian Medical Council Act, 1956.]]

**93. Canteens**

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.

(a) In every canteen:
(i) all inside walls of rooms and all ceilings 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 De;
(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:
(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. 6.
(9) 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.

Provided that inside walls of the kitchen shall be lime-washed once in every four months.

**94. Dining Hall**

(1) The Dining Hall in the Canteen shall accommodate at a time at least 30 per cent of the workers working at a time:

Provided that in any particular factory or in any particular class of factories, the [109][the Inspector 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 0.93 sq.m. 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 to be accommodated as prescribed in sub-rule (1). (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 as provided, shall have a top of smooth and

**95. Canteen Equipment**

impervious material. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.
(3) Where the canteen is managed by a Co-operative Society registered under the Karnataka Co-operative Societies Act, the occupier shall provide the initial equipment for such canteen and shall undertake that any equipment required thereafter for the maintenance of such canteen shall be provided by such Co-operative Society.
(1) Food, Drink and other items served in the canteen shall be sold on a non-profit basis and the prices charged shall be subject to the approval of the Canteen Managing Committee:
(2) Items served in the canteen and their prices shall be conspicuously displayed in the canteen.
(3) [110][In computing the prices referred to in sub-rule (1) the following items of expenditure shall not be taken into consideration but will be borne by the Occupier:
(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.
(2) The accounts pertaining to the Canteen shall be audited, once 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:

**96. Prices to be charged in canteen**

Provided that if the management bears the cost of wages of canteen staff, buildings, water, lighting, fuel and insurance, it shall not be incumbent on them to run the canteen on any further loss to themselves.
(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 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 uniform, if any, provided to them].

**97. Canteen accounts**
Provided that the accounts pertaining to a canteen in a Government Factory having its own Accounts Department, may be audited by such Department:

(1) The Manager shall appoint a Canteen Managing Committee which shall be consulted from time to time as to:
(a) running of the canteen;
(b) the quality and quantity of foodstuffs to be served in the canteen;
(c) the arrangement of menus;
(d) times of meals in the canteen; and
(e) 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 proportion of 1 for every 1,000 workers employed in the factory, provided that in no case shall there be more than 5 or less than 2 workers on the committee.
(3) The Manager shall determine and supervise the procedure for elections to the Canteen Managing Committee.
(4) The Canteen Managing Committee shall be dissolved by the Manager two years after the last election, no account being taken of a bye-election:

Provided further that where the canteen is managed by a Co-operative Society registered under the Karnataka Co-operative Societies Act, the accounts pertaining to such canteen may be audited in accordance with the provisions of the Karnataka Co-operative Societies Act.
**98. Canteen Managing Committee**
Provided that where the canteen is managed by a Co-operative Society registered under the Karnataka Co-operative Societies Act, 1959, it shall not be necessary to appoint a Canteen Managing Committee.

Provided that where the canteen is managed by a Co-operative Society registered under the Karnataka Co-operative Societies Act, 1959, it shall not be necessary to appoint a Canteen Managing Committee.

**99. Food-stuffs to be served and prices to be charged**

(1) [111][While issuing Rules or directions regarding the food-stuffs to be served and the charges to be made therefore, the Chief Inspector shall take into consideration the menu in vogue in the region concerned and exclude rent for the land and building, interest on the amounts spent on the provision and maintenance of furniture and equipment provided for the canteen, depreciation charges, electric charges, water charges and the element of profit. He may also consult the Canteen Managing Committee:

Provided that where the canteen is managed by a Co-operative Society registered under the Karnataka Co-operative Societies Act, 1959, such society may be allowed to include in the charges to be made for the food-stuffs served, a profit upto 5 per cent on its working capital employed in running the canteen.

(2) [112][Explanation to clause (d) of sub-rule (1) of Rule 65

In this Rule and in Rule 64, a competent person means a person holding any of the qualifications exempting him from passing Part 'A' and 'B in Mechanical Engineering of the Associate Membership Examination of the Institutions of Engineers (India) and any other person, whom the Chief Inspector considers competent for any specified purpose by virtue of his experience in any particular line.

**99-A.**

Annual medical examination for fitness of each member of the canteen staff who handles food stuffs shall be carried out by the Factory Medical Officer or the Certifying Surgeon which should include the following:

(i) Routine blood examination.

(ii) Routine and bacteriological testing of faeces and urine for germs of dysentery and typhoid fever.

(iii) Any other examination including chest X-Ray 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 or the Certifying Surgeon is unsuitable for employment on account of possible risk to the health of others, shall not be employed as Canteen Staff.]

**100. [113][Shelters, rest rooms and lunch rooms**

(1) The shelters, or rest rooms and lunch rooms shall conform to the following standards: (a) The building shall be of sound construction 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 one metre shall be so laid or finished as to provide a smooth, hard and impervious surf ace;

(b) The height of every room in the building shall not be less than 3.7 metres from floor level to the lowest part of the roof and there shall be at least 1.12 square metres 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 De accommodated; and
(ii) In the case of factories in existence on the date of commencement of the Factories (Amendment) Act, 1987, where it is impracticable, owing to lack of space to provide, 1.12 sq. mts. 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 and
(e) Sweepers shall be employed whose primary duty is to keep the rooms, building and precincts thereof in a dean and tidy condition
(f) Suitable provision shall be made in every room for supply of drinking water and facilities for washing.
(a) comply with the requirements laid down in clauses (a) to (f) of sub-rule (1), and
(b) be provided with adequate number of tables with impervious tops for the use of the workers for taking food.]



(2) The lunch room shall:

**101. Creches**
(1) The Creche 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 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.
(2) The building in which the creche is situated shall be sound construction 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 creche shall be so laid or finished as to provide a smooth impervious surface.
(3) 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 there shall not be less than 1.86 sq. m. of floor area for each child to be accommodated.
(4) Effective and suitable provision shall be made in every part of the creche for securing and maintaining adequate ventilation by the circulation of fresh air.
(5) The creche 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.

(6) 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 available, sufficient space for the provision of such a playground.
(7) The Chief Inspector may, in respect of factories that do not work for more than 180 days in a year, relax the provisions of sub-section (3) of Section 48.

(1) There shall be in or adjoining the creche a suitable washroom for the bathing of the children and washing their clothing. The washroom shall conform to the following standards:
(a) the floor and internal walls of the room to a height of one meter 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 creche at any one time together with a supply of water provided, if practicable, through taps from a source approved by a Health Officer. Such source shall be capable of yielding for each child a supply of at least 23 litres 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 creche.
(2) Adjoining the washing room referred to above, a flush out type latrine shall be provided for the sole use of the Children in the creche. The design of this latrine and the scale of accommodation to be provided shall be as determined by the Health Officer. The creche latrine shall always be kept clean and in a sanitary condition by a sweeper especially employed for the purpose.

**102. Washroom**

**103. Supply of Milk and Refreshment**

At least 400 centilitres of clean pure milk shall be available for each child on every day, it is accommodated in the creche and the mother of such a child shall be allowed in the course of her daily work two intervals of at least fifteen minutes to feed the child. For children above two years of age there shall be provided in addition an adequate supply of whole-some refreshment.

**104. Creche Staff**

(1) For each creche there shall be appointed a woman-in-charge and one female attendant for every 20 children attending or a fraction thereof and at least one sweeper.
(2) Except as in sub-section (2) of Section 48, no woman shall be appointed under sub-rule (1) as a woman-in-charge unless she possesses a Nurse's qualifications or produces a certificate that she has undergone training for a period of not less than 18 months in child care in a hospital, maternity home, or nursing home approved in this behalf by the Chief Inspector.
(3) The provisions of sub-rule (2) shall not apply in the case of a woman who is in-charge of a creche in a factory on the date when the rules come into force, unless the Chief Inspector directs otherwise with reasons.

(4) The creche staff shall be provided with suitable clean clothes for use while on duty in the creche. (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 the children kept in the creche were less than 5 in the preceding year, the Chief Inspector of Factories and Boilers may exempt such factories from the provisions of Section 48 and the Rule 101 to 104 made there under, if he is satisfied that alternate arrangements as stipulated under sub-rule (2) are provided by the Factory.
(2)
(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.]

**104-A 114[Exemption from the provision of creche**
(a) The alternative arrangements required in sub-rule (1) shall include a crèche building which has a minimum accommodation at the rate of 2 sq. metre per child and constructed in accordance with the plans approved by the Chief Inspector.
(b) the creche building shall have:
(i) a suitable wash room for washing of the children and their clothing;
(ii) adequate supply of soap and 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 creche.

**104-B. 115[Exemption from the provision of creche in certain cases**
(1) In factories where it is reasonably not practicable to provide and maintain a creche in accordance with law, the Chief Inspector of Factories may exempt such factories from the provision of Rules 101 to 104, if he is satisfied that alternate arrangements made under sub-rule (2) of this rule are ensured by the occupier of the factory: (a) obtain the consent of the employee;
(b) furnish full details of the places, owners or persons or Non-Government Organisation who are providing such creche and the infrastructure facilities available therein;
(c) bear the cost incurred by the parent on the child;
(d) furnish the information of the child as and when it is admitted and withdrawn.

Provided that the occupier of the factory shall:
(2) The alternate arrangements required in sub-rule (1) shall include a "creche" provided and maintained by private agencies or person or an individual or Non-Government Organisation.

(3) The exemption granted under sub-rule (1) of this, may at any time be withdrawn by the Chief Inspector, by assigning reasons thereof if he finds after the such enquiry as he may deem fit, that the occupier has committed a breach of this rule.] (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 under subsection (1) of Section 53 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 or 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. Compensatory holidays not granted within, the succeeding calendar month shall be paid in lieu of if workers desires.
(3) Any compensatory holidays to which a worker is entitled shall be given to him before he is discharged or dismissed or paid in lieu of and shall not be reckoned as part of any period of notice required to be given before discharge or dismissal.
(4)
(a) The Manager shall maintain a Register in Form 8, Showing compensatory holidays granted:
(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.
(1) The following classes of adult workers are exempted from the provisions of Section 58, namely:

**Chapter VI**
**Working Hours for Adults**
**105. Compensatory Holidays**
Provided that, if the Chief Inspector of Factories 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 Section 53, he may, by order in writing, direct that such muster roll or register or return shall to the corresponding extent, be maintained in place or and be treated as the register or return required under this Rule for that Factory.
**106. Exemption from Section 58**
(1) Watch and Ward and Fire protection staff in all factories
(2) All workers in Newspaper Presses
(3) All workers in Iron and Steel, Aluminium Copper and Brass Rolling Mills

(4) All workers in Hotels and Restaurants
(5) Workers in public utility transport workshops (Where this exemption is considered necessary by the Chief Inspector)
(6) Any other classes of workers in the auxiliary sections of large factories where steam or electricity is generated or transformed for use in the factory, who may be declared to be so exempted in writing by the Chief Inspector on application by the Manager, in consideration of the essential or continuous nature or the duties involved.
(7) All workers in Tea Factories
(8) Any special class of workers in any other factory where overlapping shifts are considered necessary by the Chief Inspector. (2) Workers exempted under sub-rule (1) shall wear badges

showing the ticket number, in distinctive colour supplied by the Manager while at work. A reference of the badges and their colour should be noted in the Register of adult workers and notice of periods of work.

**107. Muster Roll for exempted factories**

The Manager of every factory in which workers are exempted under Section 64 or 65 from the provisions of Section 51 or 54 shall keep a [116][register of overtime and payment] in Form No. 9, showing the normal piece-work rate of pay, or the rate of pay per hour, of all exempted employees. In this muster roll the overtime hours of work and payments therefore of all exempted workers shall be correctly entered. The muster roll shall always be available to the Inspector.

**107-A. 117[Application for Exemption**

The Manager of Factory, shall submit the application for exemption under Section 65(1) of the Factories Act 1948.]

**108. 118[xxx]**

**109. Overtime work**

The period of overtime, worked shall be entered in overtime slips in duplicate a copy of which duly signed by the Manager, or by a person duly authorised by him, shall be given to the worker immediately after completion of the overtime work.

**110. 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.

**111. Notice of periods of work**

(1) [119][The notice of periods of work for adult workers shall be in Form 10 on the commencement of the rules or of any change in notice.]

(2) [120][The notice of displayed under sub-rule (1) shall be both in English and Kannada.]

**112. Register of Adult Workers**

The register of Adult Workers shall be in Form 11 and shall be maintained in accordance with the following provisions:

(1) Where a worker is transferred from one group to another, or from one relay to another, the particulars or his transfer shall be entered against his name beforehand:

Provided that in case sufficient details of transfer of worker from one group or relay to another are shown in the muster roll, such entries need not be shown in this register.

(2) Where a worker is discharged from or leaves his employment the date of his leaving or discharge as the case may be, shall be entered against his name in the "Remarks" column.

(3) All entries in the register shall be in ink and shall be legible. (1) Adult workers engaged in the factories specified in column (3) of the Schedule below, on the specified column (4) shall be exempted as specified in columns (5) and (6) thereof. 1. No worker shall be

**113.**

**121[ x x x x x]**

**114.**

**122[ x x x x x]**

**115.**

**123[x x x x x x]**

**116. 124[Exemption of certain adult worker**

**Schedule**

**The Karnataka Factories Rules, 1969**

**[See Rule 116]**

| Sl. No. | Section of the Act empowering grant of | Class of Factory | Nature of exempted work | Extent of Exemption | Conditions subject to which exemption is granted |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1. | 64(2)(a) and 64(3) | All factories | Urgent repairs | Sections 51, 52, 54, 55, 56 & 61 | employed on such repairs for more than15 hours on any one day, 39 hours during any |

2. 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

3. their completion

| | | | | | |
|---|---|---|---|---|---|
| three consecutive days or 66 hours during each period of seven consecutive days commencing from his first employment on such repairs<br>Exemption from the provisions of Section 54 shall apply only in the case of adult male workers | | | | | |
| 2. | 64(2)(b) and 64(3) | All factories | Work in the machine shop, the smithy or the foundry or in connection with the mill gearing, electric driving or lighting apparatus, mechanical or electrical lifts or the steam or water pipes or pumps of a factory | Sections 51, 54, 55, 56 and 61 | The limits of work inclusive of overtime shall not exceed those mentioned in subsection (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 3. | 64(2)(b) and 64(3) | All factories | Work of examining or repairing any machinery or other part of the plant, which is necessary for carrying on | Sections 51, 54, 55, 56 and 61 | The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| work in the factory | | | | | |
| 4. | 64(2)(b) and 64(3) | All factories | 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 | The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |
| 5. | 64(2)(c) and 64(3) | All factories | Work performed by persons/ workers on lighting, ventilating and humidifying apparatus | Sections 51, 54, 55 and 61 | The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |
| 6. | 64(2)(c) and 64(3) | All factories | Work performed by fire pump men | Sections 51, 54, 55 and 61 | The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 7. | 64(2)(d) and 64(3) | Oil tank Installations | Work performed by workers connected with pumping operations | Sections 51, 52,54, 55, 56 and 61 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift<br>provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the inspector describing the circumstances under which the worker is |



required to work in the subsequent shift
(iii) the exemption shall be restricted to only male adult workers; and
(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64

| | | | | | |
|---|---|---|---|---|---|
| 8. | 64(2)(d) and 64(3) | Public Hydroelectric supply factories | Operation and maintenance of prime movers and auxiliaries, transformers and switches | Sections 52, 54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift<br>provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of |



| |
|---|
| overtime shall not exceed |

| | | | | | |
|---|---|---|---|---|---|
| 9. | 64(2)(d) and 64(3) | Public electric supply companies generating electricity from oil in internal combustion engines | Work of engine drivers and assistants, generator attendants, oilers and greasers, switchboard operators and pump men | Sections 52, 54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift<br>provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 10. | 64(2)(d) and 64(3) | Electrical Transforming factories | Work of operation and maintenance of the transforming plant, switches and synchronous condensers | Sections 52,54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that—<br>(i) the next shift of the shift worker |

shall not commence before a period of 16 hours has elapsed
(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift
(iii) the exemption shall be restricted to only male adult workers; and
(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64

| | | | | | |
|---|---|---|---|---|---|
| 11. | 64(2)(d) and 64(3) | Distilleries | Work on the extraction of sugar from various bases, fermentation of sugar juice and distillation of fermented wash | Sections 52,54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 12 | 64(2)(d) and 64(3) | Sugar factories | Extraction of the juice from the cane, clarification, evaporation and boiling of the juice, curing of the massecuite, and bagging | Sections 52, 54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only |



| |
|---|
| male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 13. | 64(2)(d) and 64(3) | Chemical factories | Work on the sulphur burners, chambers, concentrators and pumps, roasting furnace, manufacture of hydrochloric acid, nitric acid, sulphides, nitrates, super phosphate and chlorides; and work on the steam service | Sections 52,54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |
| 14. | 64(2)(d) and 64(3) | Vegetable hydrogenation factories | Work of refining, bleaching, | Sections 52, 54 and 55 | In the absence of a worker who has failed to report for duty, a |

| | |
|---|---|
| filtering,<br>generation of<br>hydrogen;<br>hydrogenating,<br>deodorising<br>processes,<br>compression of<br>oxygen and<br>cylinder filling<br>and work on<br>the electrical power plant | shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence<br><br>before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 15. | 64(2)(d) and 64(3) | Ice factories | Work of the engine and compressor operators and assistants and oilers | Sections 52,54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the |

subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift
(iii) the exemption shall be restricted to only male adult workers; and
(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64

| | | | | | |
|---|---|---|---|---|---|
| 16. | 64(2)(d) and 64(3) | CHI Mills | All work | Sections 54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted |



to only male adult workers; and
(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64

| | | | | | |
|---|---|---|---|---|---|
| 17. | I64(2)(d) and 64(3) | Flour Mills | All work | Sections 52 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |
| 18. | 64(2)(d) and 64(3) | Glass factories | (i) Work in attending to furnace<br>(ii) All work and processes from mixing of batch | Sections 52 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a |

| | | | | | |
|---|---|---|---|---|---|
| to removal of the | | | subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 | | |
| 19. | 64(2)(d) and 64(3) | Paper factories | (i) All work on paper making machinery and on the generation and supply of power connected there with | Sections 54 and 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.— |

| | |
|---|---|
| (ii) Work on choppers, digesters, kneaders, strainers and washers, beaters, paper making machines, pumping, | (i) The next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the |

| | | | | | |
|---|---|---|---|---|---|
| plant reelers, cutters and power plant | | | Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 | | |
| 20. | 64(2)(d) and 64(3) | Rubber tyre factories | All work on curing process | Section 55 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.— |

| | | | | | |
|---|---|---|---|---|---|
| 21. | 64(2)(d) and 64(3) | Iron and Steel | All work on steel furnaces | Sections 51,52, 54, 55 and 56 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift |



(iii) the exemption shall be restricted to only male adult workers; and
(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64

| | | | | | |
|---|---|---|---|---|---|
| 22. | 64(2)(d) and 64(3) | All Factories | Work on heat treatment operations with atmosphere, sealed quenching furnace systems, having safely interlocking arrangements | | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |
| 23. | 64(2)(d) and 64(3) | All factories | Work on automatic equipment engaged in galvanising, | Sections 51, 52, 54, 55 and 56 | (i) the limits of work inclusive of overtime shall not exceed those mentioned in sub- |

| | | | | | |
|---|---|---|---|---|---|
| anodising and enamelling | | | section (4) of Section 64<br>(ii) the exemption shall be restricted to only male adult workers | | |
| 24. | 64(2)(i) | Newspaper printing factories | Tele-printer service | Sections 51, 54 and 56 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |

| | | | | | |
|---|---|---|---|---|---|
| 25. | 64(2)(j) | An factories | Loading and unloading of railway wagons, lorries or trucks | Sections 51,52,54, 55 and 56 | (i) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64<br>(ii) the exemption shall be restricted |

| | | | | | |
|---|---|---|---|---|---|
| to only male adult workers | | | | | |
| 26. | 64(2)(k) | All factories | Work on national importance as may be notified by the State Government in the Official Gazette | Sections 51, 52, 54, 55 and 56 | (i) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64<br>(ii) the exemption shall be restricted to only male adult workers |
| 27. | 64(2)(d) and 64(3) | All factories | Preparation of payrolls as may be notified by the State Government in the Official Gazette | Sections 51, 52,54, 55 and 56 | (i) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64<br>(ii) the exemption shall be restricted to only male adult workers |

| | | | | | |
|---|---|---|---|---|---|
| 28. | 64(2)(d) | All factories | Persons working in Ambulance room or Dispensary | Sections 51,52 and 56 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift |



(iii) the exemption shall be restricted to only male adult workers; and
(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64

| | | | | | |
|---|---|---|---|---|---|
| 29. | 64(2)(d) | All factories | Persons working in Industrial canteens | Sections 51, 52 and 54 | In the absence of a worker who has failed to report for duty, a shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 |
| 30. | 64(2)(d) | Cement factories | All work on continuous process | Sections 51,52,54, 55 | In the absence of a worker who has failed to report for duty, a |

| | |
|---|---|
| and 56 | shift worker shall be allowed to work the whole or part of a subsequent shift provided that.—<br>(i) the next shift of the shift worker shall not commence before a period of 16 hours has elapsed<br>(ii) within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift<br>(iii) the exemption shall be restricted to only male adult workers; and<br>(iv) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 (2) Except in the case of urgent repairs covered by item (1) of the Schedule, and except in case of continuous operations specified in the Schedule, the exemptions shall be subject to the following conditions, namely-— |



(i) the total number of hours of work in any day shall not exceed ten;
(ii) the spread-over, inclusive of rest intervals for rest, shall not exceed twelve hours in any one day;
(iii) the total number of hours of work in a week, including overtime, shall not exceed sixty;
(iv) the total number of hours of overtime shall not exceed fifty in any one quarter.

**Explanation -** For the purpose of this rule "Quarter" means a period of three consecutive months beginning from the 1st of January, 1st of April, 1st of July or 1st of October".

**116-A. 125[Repeal of certain rules**

The Coorg Factories Rules,1950, as in force in the Coorg District are hereby repealed:

Provided that such repeal shall not affect—

(a) the previous operation of the said rules or anything duly done or suffered there under; or

(b) any right, privilege, obligation or liability acquired, accrued or incurred under the said rules; or

(c) any penalty, forfeiture or punishment incurred in respect of any offence committed against the said rules; or

(d) any investigation, legal proceeding or remedy in respect of any such right, privilege, obligation, liability, forfeiture or punishment as aforesaid, (1) Where a child is transferred from one group to another, or from one relay to another, the following particulars of his transfer shall be entered against his name:

(a) under the group or- relay from which he has been transferred — the date and actual time of finishing work in the group or relay; and

(b) under the group or relay to which he has been transferred — the date and actual time of commencing work in the group or relay.

(2) Where a child is discharged from or leaves his employment, the date of his leaving or discharge, as the case may be, shall be entered against his name in the 'Remarks" column.

(3) All entries in the Register shall be made in ink and shall be legible.

and any such investigation, legal proceeding or remedy may be instituted, continued or enforced, and any such penalty, forfeiture or punishment may be imposed as if the said rule had not been repealed.]

**Chapter VII**

**Employment of Young Persons**

**117. Notice of periods of work for children**

The Notice of periods of work for child workers shall be in Form 12, and it shall be displayed in the manner prescribed in sub-section (2) of Section 108 of the Act.

**118. Register of child workers**

The register of child workers shall be in Form 13 and shall be maintained in accordance with the following provisions:

**Chapter VIII**

**Leave with wages**

**119. Leave with Wages Register**

(1) The Manager shall keep a register in Form 14, hereinafter called the Leave with Wages Register:

(2) The cash equivalent of the advantage accruing through the concessional sale of foodgrains and other articles, payable to workers proceeding on leave shall be the difference between the value of the average rates in the nearest market prevailing during the month immediately preceding his leave and the value at the concessional rates allowed of foodgrains and other articles he is entitled to.

Provided that if the Chief Inspector is of the opinion that any muster roll or register maintained as a 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 treated as the register or return required under this Rule in respect of that Factory:
Provided further that in case of a worker who is discharged from service at the end of his work every year, the Inspector by written order, may accept any other abridged form of leave with wages register, so that wages in lieu of leave with wages accrued may be readily foreseen.
For the purpose of each cash equivalent, monthly average market rate of foodgrains and other articles shall be computed at the end of the month.

**120. Preservation of Register**

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.

**121. Leave Book**

(1) The Manager shall provide each worker who has become entitled to leave during a calendar year, with a book in Form 15 (hereinafter called the leave book) not later than the 31st 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 of the dates of holidays or interruptions in service, and shall not keep it for more than a week at a time:

Provided that in the case of a worker who is discharged or dismissed from service during the course of the year who is covered by. Sub-section (3) of Section 79, the Manager shall issue an abstract from the" "Register of Leave with Wages" (Form 15) within a week from the date of discharge or dismissal as the case may be.
(2) If a worker loses his leave book, the Manager shall provide him with another copy on payment of fifteen paise, and shall complete it from his record.

**122. 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 whole or part of the period of his illness, under the provisions of clause (7) of Section 79, he shall, if required by the Manager, produce a

Medical Certificate signed by a registered Medical Practitioner or by a registered or recognised Vaia or Hakim stating the cause of absence and the period for which the worker is in the opinion of such Medical Practitioner, Vaid or Hakim, unable to attend to his work, or other reliable evidence to prove that he was actually sick during the period for which leave is to be availed of.

**123. Notice to Inspector of involuntary unemployment**

The Manager shall give, as soon as possible, a notice to the Inspector of every case of involuntary unemployment of workers, giving numbers of unemployed and me reason for their unemployment. Entries to this effect shall be made in the Leave with Wages Register and the Leave Book in respect of each worker concerned.

**124. Notices by worker and Manager**

(1) Before or at the end of every calendar year, a worker, who may be required to avail 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.

(2) The Manager shall cause a notice to be displayed giving the names of all workers whose leave, which has been carried forward, has reached the maximum limit allowed under the first proviso to sub-section (5) of Section 79, as soon as possible in the first quarter of each calendar year. The notice shall state that no further leave can be carried forward and that application for leave shall be made within one month from the date of the notice. A copy of the notice shall be given to each worker concerned. A copy shall also be delivered at the Office of the Inspector of Factories. (1) As far as circumstances permit, members of the same family, comprising husband, wife and children, shall be allowed leave on the same date.

(2) A worker may exchange the period of his leave with another worker, subject to the approval of the Manager.

(1) Where an exemption is granted under Section 84, the Manager shall maintain a register showing the leave due, the leave taken and wages granted in respect of each worker.

**125. Suitability of Leave period**

**126. Payment of Wages if a 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 intimation of the death of the worker. For this purpose, each worker shall submit a nomination in Form 25 duly signed by himself and attested by two witnesses. The nomination shall remain in force until it is cancelled or revised by a fresh nomination.

**127. Register to be maintained in case of exemption under Section 84**

(2) He shall display, at the main entrance of the factory, a notice giving the full details or the system established in the factory for leave with wages and shall send a copy of it to the Inspector.

(3) No alteration shall be made in the scheme approved by the State Government at the time of the granting of exemption under Section 84 without its previous sanction.

**128. Exemption from the provisions of Rules 119 to 127**

The Chief Inspector may grant exemption from all or any of the provisions of Rules 119 to 127 in respect of all or any of the workers in any factory subject to such conditions as he may impose.

**Chapter IX**

**Special Provisions**

**129. 126[Dangerous manufacturing processes or operations**

(1) The following manufacturing processes or operations when carried on in any factory are declared to be dangerous manufacturing processes or operations under Section 87, namely:
(i) Manufacture of aerated water and processes incidental thereto.
(ii) Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, Zinc, Copper, Silver, Gold, etc.
(iii) Manufacture and repair of electric accumulators,
(iv) Glass Manufacture,
(v) Grinding or glazing of metals.
(vi) Manufacture and treatment of lead and certain compounds of lead.
(vii) Generating petrol gas from petrol.
(viii) Cleaning or smoothing, roughening, etc., of articles by a jet of sand, metal shot or grit or other abrasive propelled by blast of compressed air or steam.
(ix) Liming or tanning of raw hides and skins and processes incidental thereto.
(x) Certain lead processes carried on in printing presses and type foundries.
(xi) Manufacture of pottery,
(xii) Chemical works
(xiii) Manipulation of stone or any other materials containing free silica.
(xiv) 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.
(xv) Handling or manipulation of corrosive substances.
(xvi) Compression of oxygen and hydrogen produced by the electrolysis of water.

(xvii) Process of extracting oils and fats from vegetable and animal sources in solvent extraction plants.
(xviii) Manufacture of manipulation of manganese and its compounds.
(xix) Manufacture or manipulation of dangerous pesticides.
(xx) Manufacture, handling and usage of benzene and substances containing benzene.
(xxi) Manufacturing process or operations in Carbon-di- sulphide plants.
(xxii) Manufacture or manipulation of carcinogenic dye intermediates.
(xxiii) Operations involving high noise levels,
(xxiv) Manufacture of rayon by viscose process,
(xxv) Highly flammable liquids and flammable compressed gases.
(xxvi) Operations in Foundries.

**Explanation:-** For the purpose of this rule:
**"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.
(2) The provisions contained in the schedule annexed to this rule (hereinafter referred to as 'the schedules') shall apply to every class or description of factory wherein dangerous manufacturing processes or operations specified in each of the schedule are carried on.
(3) (a) The occupier of every factory shall, for the purpose of medical examinations of workers to be carried out by the Certifying Surgeon as required by the provisions in the schedules shall pay fees at the rate of rupees five per examination of each worker every time he is examined.

(b) The fees payable under 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 examinations. Such charges shall also be payable by the occupier;
(c) The fees payable for medical examinations shall be paid into local treasury under the head of account "087 Labour And Employment, (4) Fees Realised under the Factories Act, 1948".

(4) Notwithstanding anything contained in the schedules 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 removing conditions dangerous to the health of the workers or to suspend any

process where such process constitutes in the opinion of the Inspector, an imminent danger of poisoning or toxicity.
(5) Any register or record of medical examinations and tests connected therewith required to be carried out under any of the schedules 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.

**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, as 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 syphons, (a) suitable face guards to protect the face, neck and throat; and
(b) suitable gauntlets for both arms to protect the whole hand and arms:

(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 or labelling bottles or sypnons;
(a) suitable face-guards to protect the face, neck and throat; and
(b) suitable gauntlets for both arms to protect the arm and at least half of the palm and the space between the thumb and forefinger.
**1. Definitions**

Provided that the provisions of this sub-paragraph (a) (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:

Provided further that 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.

**3. Wearing of face guards and gauntlets**

All Persons engaged in any of the processes specified in paragraph 2 of this schedule shall, while at work in such processes, wear the face guards and gauntlets provided under the provisions of the said paragraph.

**Schedule II**

Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold, etc.

(a) **"electrolytic process"** means the electrolytic plating or oxidation of metal articles by the use or 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**

**3. Prohibition relating to women and young persons**

**4. Floor of work rooms**

**5. Protective devices**

(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. **6. Water facilities**

(a) A wash place under cover, with either:

For the purpose of this schedule—

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.

No women, adolescent or child shall be employed or permitted to work at a bath.

The floor of every work room containing a bath shall be impervious to water. The floor shall be maintained in good and level condition shall be washed down at least once a day.

(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—

(2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and drying of protective devices.

(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:
(i) a trough with a smooth impervious surface filled 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 at intervals or 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) Sufficient supply of dean towels renewed daily, and soap or other suitably 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 1500 litres 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**
(i) Chemicals handled in this plant are corrossive and poisonous.
(ii) Smoking, chewing tobacco, eating food or drinking, in this area is prohibited. No food stuff or drink shall be brought in this area.
(iii) Some of these chemicals may be absorbed through the skin and may cause poisoning.
(iv) A good wash shall be taken before meals,
(v) Protective devices supplied shall be used while working in this area.
(vi) Spillage of the chemicals on any part of the body or on the floor shall be immediately washed away with water.
(vii) 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 first 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 micro-globulin in urine.
(2) No worker shall be employed in any electrolytic processes 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 rorm-4. 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 16.
(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 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. **1. Savings**
**2. Definitions**

(a) **"first employment"** means first employment in a lead process in a factory or workshop and also re-employment there in a lead processes following any cessation of employment in such process for a period exceeding three calendar months;
(b) **"lead process"** means melting of lead or any material 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;
(c) **"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. **3. Prohibition relating to women and young persons**
**4. Separation of certain processes**

(a) manipulation of raw oxide of lead;

**Schedule III**
**Manufacture and repair of electric accumulators**
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.
For the purpose of this schedule:
No women or young person shall be employed or permitted to work in any lead process or in any room in which the manipulation of raw oxide of lead or pasting is carried on.
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 processes, namely:

(b) pasting;
(c) drying of pasted plates;
(d) formation with lead burning (tacking) necessarily carried on in connection therewith; and
(e) melting down of pasted plates. **5. Air space**
**6. Ventilation**
**7. Distance between workers in pasting room**
**8. Floor or workrooms**

(1) The floor of every room in which 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) kept free from materials, plant or other obstruction not required for, or produced in the process carried on in the room.
(2) In all such rooms other than grid casting shops the floor shall be cleaned 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 shops the floor shall be cleaned 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; and
(c) thoroughly washed daily by means of a hose pipe. **9. Work-benches**

(a) have a smooth surface and be maintained in sound condition; and

In every room in which a lead process is carried on, there shall be at least 14.2 cubic metres of air space for each person employed therein, and in computing this air space no height over 3.65 metres shall be taken into account.
Every work room shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.
In every pasting room the distance between the centre of the working position of one paster and that of the other paster working nearest to him shall not be less than 1.5 metres.
The work-benches at which any lead process is carried on shall:

(b) to be kept free from all materials or plant not required for or produced in, the process carried on thereat;
(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;
(d) be cleansed daily,
(e) be covered throughout with sheet lead or other impervious material;
(f) be provided with raised edges; and
(g) be kept constantly moist while pasting is being carried on. **10. Exhaust draught**

(1) The following processes shall not be carried on without the use of an efficient exhaust draught, namely-
(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; and
(e) lead burning, other than:
(i) tacking in the formation room; and
(ii) chemical burning for the making of lead lining for cell cases necessarily carried on in such a manner that the application of efficient exhaust is impracticable.
(2) Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as may be at its point of origin, so as to prevent it entering the air of any room in which persons work. **11. Fumes and gases from melting pots**
**12. Container for dross**
**13. Container for lead waste**

and all such work-benches other than those in grid casting shops, shall:
and all such work-benches in grid casting shops, shall:
and every work-bench used for pasting shall:
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.
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.

**14. Racks and shelves in drying room**

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.
(1) The racks or shelves provided in any drying room shall not be more than 2.4 metres from the floor nor more than 60 centimetres in width:

Provided that as regards racks or shelves set or drawn from both sides the total width shall not exceed 120 centimetres.
(2) Such racks or shelves shall be cleaned only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose. **15. Protective clothing**

(1) Protective clothing shall be provided and maintained in good repair for all persons employed in: (a) manipulation of raw oxide of lead;
(b) pasting; and
(c) the formation room;

and such clothing shall be worn by the persons concerned.
(2) The protective clothing shall consist of a waterproof apron and waterproof footwear and in addition, as regards persons employed in the manipulation of raw oxide of lead or in pasting, head coverings. The head coverings shall be washed daily. **16. Messroom 17. Cloakroom**

(a) a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing 2 wet, which accommodation shall be separate from any messroom; and
(b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 15. **18. Washing facilities**

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 messroom which shall be

furnished with sufficient tables and benches and adequate means for warming food. The messroom shall be placed under the charge of responsible person and shall be kept clean.
There shall be provided and maintained for the use of all persons employed in a lead process:
(1) 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 of sufficient length to allow at least 60 centimetres for every five such persons employed at any one time and having a constant supply or water from taps or jets above the trough at intervals of not more than 60 centimetres; 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 constant supply of water laid on;
(b) a sufficient supply of dean 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
(c) a sufficient supply of soap or other suitable cleansing material arid of nail brushes. **19. Time to be allowed for washing**
**20. Facilities for bathing**
**21. Food, drinks etc., prohibited in work rooms**
**22. Medical facilities and records of the examinations and tests**

(a) employ a qualified medical practitioner for medical surveillance or the workers employed therein whose employment shall be subject to the approval of the Chief Inspector; and
(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) 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.

Before each meal and before the end of the days 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 60 centimetres of trough for each such person this paragraph shall not apply.
Sufficient bath accommodation to the satisfaction of the Chief Inspector shall be provided for all persons engaged in the manipulation of raw oxide or lead or in pasting and a sufficient supply of soap and clean towels.
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.
(1) The occupier of every factory in which manufacture and repair of electric accumulators is carried on shall—

(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 which shall be kept readily available for inspection by the Inspector.

**22-A. Medical examination by Certifying Surgeon**

(1) Every worker employed in 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, haemoglobin 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 set process 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 shall after examining a worker, issue a certificate of fitness in Form 4. The record of the examination and re-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 record of each examination and re-examination carried out under sub-paragraphs (1) and (2) respectively, including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.

(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 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 to the set 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 under above sub-paragraph shall be reemployed 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 IV**

**Glass Manufacture**

**1. Definitions**

(a) **"efficient exhaust draught"** means localised 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 or 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 compound exceeding, when calculated as lead mono-oxide, five percent of the dry weight of the portion taken for analysis.

For the purposes of this schedule:
The method of treatment shall be as follows:
A weighted quantity of the material which has been dried at 100 degrees centigrade 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 hydro-chloric 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 filterate shall then be precipitated as lead sulphide and weighed as lead sulphate.
**2. Exhaust draught** (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 vapours are given off;
(d) all processes in the making of furnace moulds or pots including the grinding or crushing or used "pots"; and
(e) all processes involving the use of a dry lead compound.



The following processes shall not be carried on except under efficient exhaust draught or such other conditions as may be approved by the Chief Inspector, namely:
**3. Prohibition relating to women and young person**

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 operations are carried on.
**4. Floor and work-benches** (a) the floor shall be,

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 namely—

(i) of cement or similar material so as to be smooth and impervious to water;
(ii) maintained in sound condition; and
(iii) cleansed daily after being thoroughly spread with water at a time when no other work is being carried on in the room; and (b) the work-benches shall,
(i) have a smooth surface and be maintained in sound condition, and
(ii) 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.

**5. Use of hydroflouric acid**

The following provisions shall apply to rooms in which glass is treated with hydroflouric acid, namely—
(a) there shall be no 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 guttaparcha and be tight and shall slope gently down to a covered drain;
(c) the workplaces 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.

**6. Storage and transport of hydroflouric acid**

Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles of lead or rubber.

**7. Blow pipes**

Every glass blower shall be provided with a separate blow pipe bearing the distinguishing mark of the person to whom it is issued and suitable facilities shall be readily available to every glass blower for sterilising his blow pipe.

**8. 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 workplace where in any process specified in paragraph 2 is carried on.

**9. Protective clothing**

The occupier shall provide and maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 2 suitable protective clothing, footwear and goggles according to the nature of the work and such clothing, footwear and goggles shall be worn by the persons concerned.

**10. Washing facilities** (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 60 centimetres 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 60 centimetres; or
(ii) at least one wash basin for every five 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;
(b) a sufficient supply of clean towels made of suitable material renewed daily with a sufficient supply of soap or other suitable cleansing material and of nail brushes; and
(c) a sufficient number of stand pipes with taps the number and location of which shall be to the satisfaction of the Chief Inspector.
(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; 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 which shall be kept readily available for inspection by the Inspector.

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 2:

**11. Medical facilities and record of examination and tests**

**12. Medical Examination by Certifying Surgeon**

(1) Every worker employed in processes specified in paragraph 2 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 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 shall after examining a worker, issue a Certificate of Fitness in Form 4. 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 and re-examination carried out under sub-paragraphs (1) and (2) respectively including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 form the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion or the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
(6) No person who has been found unfit to work under sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

**13. Exemption**

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 authorise such suspension or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

**Schedule V**

**Grinding or glazing of metals and processes incidental thereto**

**1. Exception**

(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 or metals carried on intermittently and at which no person is employed for more than 12 hours in any week.

**2. Definitions** (a) **"abrasive wheel"** means a wheel manufactured of bonded emery or similar abrasive;

(b) **"glazing"** means the abrading, polishing or finishing by aid of mechanical power, of metal, by means or any wheel, buff, mop or similar appliance to which any abrading or polishing substance is attached or applied;

(c) **"grinding"** means the abrasion by aid of mechanical power, of metal, by means of a grindstone or abrasive wheel;

(d) **"grindstone"** means grindstone composed of natural or manufactured sandstone but does not include a metal wheel or cylinder into which blocks of nature of manufactured sandstone are fitted;

(e) **"hacking"** means the chipping of the surface of a grindstone by a hack or similar tool; and

(f) **"racing"** means the turning up, cutting or dressing of a revolving grindstone before it is brought into use for the first time; and

(g) **"rodding"** means the dressing of the surface of a revolving grindstone by the application of a rod, bar or strip of metal to such surface.

(a) a hood or other appliance 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 duct 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:

For the purposes of this schedule:

**3. Equipment for removal of dust**

No racing, dry grinding or glazing shall be performed without—
Provided that the Chief Inspector may accept any other appliance that is in his opinion, is 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 an adequate supply of water is laid on at the upper surface of the grindstone or adequate appliances for the interception of dust are provided in accordance with the requirements of paragraph 3.

**7. Examination of dust equipment** (1) All equipment for the extraction or suppression of dust shall at least once in every 6 months be examined and tested by a competent person, and any defect disclosed by such examinations and tests shall be rectified as soon as practicable.
(2) A register containing particulars of such examinations and tests shall be kept in Form No. 25.

**8. Medical facilities and Record of examinations and tests** (1) The occupier of every factory in which grinding or glazing of metals are carried out, shall:

(a) employ a qualified medical practitioner for medical surveillance of the worker employed therein whose appointment shall be subject to the approval of the Chief Inspector; 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, which shall be kept readily available for inspection by the Inspector.

**9. Medical Examination by Certifying Surgeon**
(1) Every worker employed in grinding or glazing or 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 shall after examining a worker, issue a Certificate of Fitness in Form 4. 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 and re-examination carried out under sub-paragraphs (1) and (2) respectively including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 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 under sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

**10. Exemption 1. Application**

The Chief Inspector may by certificate in writing, subject to such conditions 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.

**Schedule VI**

**Manufacture and treatment of lead and certain compounds of lead**

This schedule shall apply to all factories or parts of factories in which any of the following operations are carried on namely:

(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 delivering of lead or the melting of scrap lead or zinc;
(c) manufacture of solder or alloys containing more than ten per cent of lead;
(d) the manufacture of any oxide, carbonate, sulphate, chromate, acetate, nitrate or silicate of lead;
(e) the handling or mixing of lead tetraethyl;
(f) any other operation involving the use of lead compound and

(g) the cleaning of workrooms where any of the operations aforesaid are carried on.

**2. Definitions**

(a) **"efficient exhaust draught"** means localised ventilation, affected by heat or 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, fumes 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 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.

**3. Prohibition relating to women and young persons**

**4. Requirements to be observed**

For the purpose of this schedule

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 filterate shall then be precipitated as lead sulphide and weighed as lead sulphate.

No woman or young person shall be employed or permitted to work in any of the operations specified in paragraph 1.

**5. Exhaust draught**

**6. Food, drinks, etc., prohibited in workroom**

**7. Protective clothing**

**8. Cleanliness of workrooms, tools etc.**

**9. 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 60 centimetres for every ten persons employed at any one time, and having a constant supply of clean water from taps of jets above the trough at intervals of not more than 60 centimetres; or

(b) at least 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 dean water together with, in either case, a sufficient supply of nail or brushes, soap or other suitable cleaning material and clean towels.

(2) The facilities so provided shall be placed under the charge of a responsible person and shall be kept clean.

**10. Messroom or canteen**

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 herein, 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 5 to 13 are complied with.
Where dust, fume, gas or vapour is produced in the process, provisions shall be made for removing them by means of an efficient exhaust draught so contrived as to operate on the dust, fume, gas or vapour as closely as possible to the point of origin.
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.
Suitable protective overalls and head coverings shall be provided, maintained and kept clean by the occupier and such overalls and head coverings shall be worn by the persons employed.
The rooms in which the persons are employed and all tools and apparatus used by them shall be kept in a clean state.
The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking their meals. The arrangements 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,

**11. Cloakroom**

**12. Medical facilities and records of examinations and tests**

(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; and
(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

**13. Medical examination by Certifying Surgeon**

adequate means of warming the food. The room shall be adequately ventilated by the circulation of fresh air and shall be placed under the charge of a responsible person and shall be kept clean.
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.
(1) The occupier of every factory to which the schedule applies shall:
(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 which shall be kept readily available for inspection by the Inspector.
(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, haemoglobin 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 shall after examining a worker, issue a Certificate of Fitness in Form 4. 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 and re-examination carried out under sub-paragraphs (1) and (2) respectively including the nature and the results of the tests shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 under 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. **14. Exemption**

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.
**Schedule VII**
**Generating Petrol gas from petrol**
**1. Prohibition relating to women and young persons**

No women 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 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 shall be erected after the coming into force of the provisions or this schedule, 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 plants erected before the coming into force of the provisions of this schedule there shall be no direct communication/specified 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 any easily accessible position near the plant for generation of gas from dangerous petroleum.

**5. Plant to be approved by Chief Inspector**

Petrol gas shall not be manufactured except in a plant for generating petrol gas, the design and construction of which has been approved by the Chief Inspector.

**6. Escape of petrol**

Effective steps shall be taken to prevent petrol from escaping into any drain or sewer.

**7. 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 the generation room or building or in the vicinity thereof and a warning notice in the language understood by the majority of the workers shall be posted 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 petrol or container**

No unauthorised person shall have access to any petrol or to a vessel containing or having actually contained petrol.

**9. Electric fittings**

All electric fittings shall be of flameproof construction and. all electric conductors shall either be enclosed in metal conduits or be lead-sheathed.

**10. Construction of doors**

All doors in the generating room or building shall be constructed to open outwards or to slide and no door shall be looked or obstructed or fastened in such a manner that it cannot be easily and immediately pened from the inside while gas is being generated and any person is working in the generating room or building.

**11. Repair of containers**

No vessel that has contained petrol shall be repaired in a generating room or 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 petrol or flammable vapour.

**Schedule VIII**

Cleaning or smoothing, roughening, etc., of articles, by a jet of sand metal shot, or grit, or other available abrasive propelled by a blast or compressed air or steam

**1. Definitions** (a) **"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;

For the purpose of this schedule:

(b) **"blasting enclosure"** means a chamber, barrel, cabinet or any other enclosure designed for the performance of blasting therein;

(c) **"blasting chamber"** means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise; and

(d) **"cleaning of castings"** where done as an incidental 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 cores and the general smoothening 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 paragraph shall come into force two years after the coming into force of this schedule:

Provided further that no woman or young person shall be employed or permitted to work at any operation of sand blasting.

**3. Precautions in connection with blasting operations** (1) Blasting shall not be done except in a blasting enclosure and no work other than a blasting and any work immediately incidental thereto and cleaning and repairing of the enclosure including the plant 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) Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosure, and from apparatus connected therewith, into the air of any room.

(3) 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 of 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:
(4) 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 manner that it shall not escape into the air of every room; and every other filtering or setting device

Provided that this paragraph 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 opinion that it is not reasonably practicable to provide such separating apparatus.

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) The ventilating plant provided for the purpose of sub-paragraph (4) shall be kept in continuous operation whenever 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.
(1) Every blasting enclosure shall be specially inspected by a competent person at least 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 at least once in every month.
(2) Particulars of the result of every such inspection, examination or 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 in 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.
(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 and certified by the Chief Inspector; and every such person shall wear the helmet 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 it 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 been 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 170 litres per minute.

(4) Suitable gauntlets and overalls shall be provided for 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.
(1) Where any person is engaged in cleaning of any blasting apparatus or blasting enclosure or of any apparatus or ventilating plant connected therewith or the

**4. Inspection and examinations**
**5. Provision of protective helmets, gauntlets and overalls**
**6. Precautions in connection with cleaning and other work**

surroundings thereof or in 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) All practicable measures shall be taken in connection with any cleaning operation referred to in paragraph 5 and the removal of dust from filtering or settling devices, to dispose of the dust in such a 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 under the paragraph 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 purposes 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.
**10. Medical facilities and records of examinations and tests** (1) The occupier of every factory 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; 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, which shall be kept readily available for inspection by the Inspector.

**11. 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 shall after examining a worker, issue a Certificate of Fitness in Form 4. The record of examination and re-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 record of each examination and re-examination carried under sub-paragraphs (1) and (2) respectively, including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.
(5) If 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 or 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 said processes under sub-paragraph (5) shall be re-employed or permitted to work unless the Certifying Surgeon, after further examination, again certifies him to be fit for employment in those processes.

**12. Restrictions in employment of young persons**

(1) No person under 18 years of age shall be employed in blasting or for assisting 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 therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant.

(2) No person under 18 years of age shall be employed to work regularly within a distance of twenty feet of any blasting enclosure unless the enclosure is in a room and he is outside that room where he is effectively separated from any dust coming from the enclosure.

**13. Power to exempt or relax**

(1) If the Chief Inspector is satisfied that in any factory or any class of factory, 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 of 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 may be specified in the said order.

(2) Where an exemption has been granted under sub-paragraph (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 easily and conveniently read by the persons employed. A copy of such notice shall also be given to each person employed when he is engaged and subsequently, if still employed, on the first day of each calendar year.

(2) 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 person employed.

(3) 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.

(4) 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 notice specified in sub-paragraphs (1), (2) and (3) and if chrome solutions are used in the factory the contents of the notice specified in sub-paragraph (2).

**2. Protective clothing**

The occupier shall provide and maintain in good condition the following articles or protective clothing, namely:

(a) Waterproof footwear, leg coverings, aprons and gloves for persons employed in processes involving contact with chrome solutions, including the preparation of such solutions;

(b) gloves and boots for persons employed in lime yard; and
(c) protective footwear, aprons and gloves for persons employed processes involving the handling of hides or skins, other than; processes specified in clauses (a) and (b):

Provided above that the gloves, aprons, leg coverings or boots may be of rubber or leather, but the gloves and boots to be provided under clauses (a) and (b) shall be of rubber:
Provided further that 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, messroom and cloakroom** (a) a trough with a smooth impervious surface fitted with a waste pipe without plug of sufficient length to allow of at least 60 centimetres 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 60 centimetres, or at least 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 water together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing materials and clean towels;
(b) a suitable messroom, adequate for the number remaining on the premises during the meal intervals, which shall be furnished with sufficient tables and benches and adequate means for warming food and for boiling water. The messroom shall be,
(i) separate from any room or shed in which hides or skins are stored, treated or manipulated,
(ii) separate from the cloakroom, and
(iii) placed under the charge of a responsible person; and
(c) suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and also adequate arrangements for drying up the clothing in both the cases, if wet. The accommodation so provided shall be kept dean at all times and placed in the charge of a responsible person.

There shall be provided and maintained in a clean state and in good repair for the use of all persons employed.

**4. Food, drinks, etc., prohibited in workrooms**

No food, drinks, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom or shed in which the hides or skins are stored, treated or manipulated.

**5. Medical facilities and records of examination and tests** (1) The occupier of every factory to which this 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 Inspectors;
(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a);

(c) arrange for inspection twice a week of the hands of all the persons and keeping in contact with chromium substances; and
(d) provide maintain and supply suitable ointment and plaster in a box readily accessible to the workers and solely used for the purpose or 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 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 the schedule applies shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include skin test for dermatomes 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 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 shall after examining a worker, issue a Certificate in Fitness in Form 4. The record of examination and re-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 record of each examination and re-examination carried out under sub-paragraphs (1) and (2) respectively, including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 under 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 X**
**Printing presses and type foundries and certain lead processes carried therein**
**1. Definitions** (a) **"efficient exhaust draught"** means localised 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.
(b) **"lead material"** means material containing not less than five per cent of lead;
(c) **"lead process"** means,
(i) the melting of lead or any lead material for casting and mechanical composing,
(ii) the recharging of machines with used lead material,
(iii) any other work including removal of dross from melting pots and cleaning of plungers, and
(iv) manipulation, movement or other treatment of lead material.

For the purpose of this schedule:
**2. Exhaust draught** (1) None of the following processes shall be carried on except with an efficient exhaust draught 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 on, or unless carried on in electrically heated and thermostatically controlled melting pots namely:
(a) melting lead material or slugs; and
(b) heating lead material so that vapour containing lead is given off.

(2) 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.



**3. Prohibition relating to women and young persons**

No woman or young person shall be employed or permitted to work in any lead processes.
**4. Separation of certain processes** (a) melting of lead or any lead material;
(b) casting of lead ingots; and
(c) mechanical composing.

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 processes namely:
**5. 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 near the machine except when the dross is being deposited therein.
**6. Floor of workroom** (a) of cement or similar material so as to be smooth and impervious to water;
(b) maintained in sound condition; and
(c) cleaned throughout daily after being thoroughly damped with water at a time when no other work is being carried on at the place.

The floor of every workroom where lead process is carried on shall be—

**7. Messroom**

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 messroom which shall be furnished with sufficient tables and benches.

**8. Washing facilities** (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 60 centimetres 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 60 centimetres, or

There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in a lead process,

(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 cleansing material.



**9. Food, drinks, etc., prohibited in workrooms**

No food, drink pan and supari or tobacco shall be consumed or brought by any worker in any workroom in which any lead process is carried on.

**10. 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; 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 which shall be kept readily available for inspection by the Inspector.

**11. 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, haemoglobin, 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 process 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 shall after examining a worker, issue a certificate of Fitness in Form 4. The record of examination and re-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 record of each examination or re-examination carried out under sub-paragraphs (1) and (2) respectively, including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 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 include the period for which he considers that the said persons 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 under sub-paragraphs (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.
**12. Exemption**

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.
**Schedule XI**
**Manufacture of Pottery**
**1. Savings** (a) unglazed or salt glazed bricks and tiles; and
(b) architectural terra-cotta made from plastic clay and either unglazed or glazed with a leadless glaze only.
(a) **"efficient exhaust draught"** means localised ventilation effected by mechanical or other means for removal of dust or fume so as to prevent it from escaping into 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;
(b) **"fettling"** includes scalloping, towing sand papering, sand sticking, brushing or any other process of cleaning of pottery ware in which dust is given off;
(c) **"ground or powdered flint or quartz"** does not include natural sands;

These provisions shall not apply to a factory in which any of the following articles, but no other pottery, are made, namely:

**2. Definitions**

For the purposes of this schedule:

(d) **"leadless glaze"** means a glaze which does not contain more than one per cent of its dry weight, of a lead compound calculated as lead monoxide;

(e) **"low solubility glare"** means a glaze which does not yield to dilute hydrochloric acid more than five per cent of its dry weight, of a soluble lead compound calculated as lead monoxide when determined in the manner specified below:

(f) **"pottery"** includes earthenware, stoneware, porcelain, china tile and any other articles made from such clay or from a mixture containing clay and other materials such as quartz, flint, feldspar and gypsum;

(g) **"potter's shop"** includes all places where pottery is formed 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 fire is carried on.

(a) all process involving the manipulation or use of a dry and unfretted lead compound;

(b) 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;

(c) shifting of clay dust or any other material for making tiles or other articles by pressure, except where—

(i) this is done in a machine so enclosed as to effectually prevent the escape of dust; or

(ii) the material to be shifted is so damp that no dust can be given off;

(d) pressing of tiles from clay dust, an exhaust opening being connected with each press and pressing from day dust of articles other than tiles, unless the material is so damp that no dust is given off;

(e) fettling of tiles made from day dust by pressure, except where the fettling is done wholly on, or with, damp material and fettling of other articles made from day dust, unless the material is so damp that no dust is given off;

(f) process of loading and unloading of seggars where handling and manipulation of ground and powdered flint, quartz, alumina or other materials are involved;

A weighed quantity of the material which has been dried at 100 degrees centigrade and thoroughly mixed shall be continuously shaken for one hour at the common temperature with 1000 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 dear filterate shall then be precipitated as lead sulphide and weighed as lead sulphate;

**3. Efficient exhaust draught**

The following processes shall not be carried on without the use of an efficient exhaust draught, namely:

(g) brushing or 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 as adequate having regard to all the circumstances of the case;
(h) fettling of biscuit ware which has been fired in powdered flint or quartz except where this is done in machines so enclosed as to effectually prevent the escape of dust;
(i) cleaning after the application of glaze by dipping or other process;
(j) crushing and dry grinding of materials for pottery bodies and seggars, 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;
(k) sieving or manipulation of powdered flint, quartz, clay grog or mixture of these materials unless it is so damp that no dust can be given off;
(l) grinding of tiles on a power driven wheel unless an efficient water spray is used on the wheel;
(m) 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 to any place in which persons are employed;
(n) preparation or weighing out of flow material, lawning of dry colours, colour dusting and colour blowing;
(o) mould making unless the binds or similar receptacles used for holding plaster of paris are provided with suitable covers; and
(p) manipulation of calcined material unless the material has been made and remains so wet that no dust is given off.
(a) crushing and dry grinding or sieving of materials, fettling pressing of tiles, drying or day and green ware loading an3 unloading of seggars; and
(b) all processes involving the use of a dry lead compound.

**4. Separation of 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 other wet processes, namely
**5. Prohibition on 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.
**6. Prohibition relating to women and young person**

No woman or young person shall be employed or permitted to work in any of the operations specified in paragraph 4, or at any place where such operations are carried on.

**7. Provisions of screen to potter's wheel**

The potter's wheel (Jolly and Jigger) shall be provided with screens or so constructed as to prevent clay scrapings being thrown off beyond the wheel.

**8. Control of dust during cleaning**

(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 material 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.

**9. Floor of certain workrooms**

The floors of potter's shops, slip houses, dipping houses and ware cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by an adult male using a moist method.

**10. Protective equipment** (1) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in process included under paragraph 3.

(2) The occupier shall provide and maintain suitable aprons of a waterproof 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 paragraphs 10(2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All over shall and head coverings shall be washed, cleaned and mended at least once a week and this washing, cleaning or mending shall be provided for by the occupier.

(4) No person shall be allowed to work in emptying sacks of dusty materials, weighing out and mixing of dusty materials and changing of ball mills and plungers without wearing a suitable and efficient dust respirator.

**11. Washing facilities** (1) The occupier shall provide and maintain, in a clean state and in good repair for the use of all persons employed in any of the processes specified in paragraph 3

(a) a wash place under cover with either:

(i) a trough with smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60 centimetres 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 centimetres.

(ii) at least one tap of stand pipe for every five such persons employed at any one time and having a constant supply of dean water, the tap of stand pipe being spaced not less than 120 centimetres apart; and

(b) a sufficient supply of dean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

**12. 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 mentioned in paragraph 3.

**13. Messroom**

(1) There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable messroom providing accommodation of 0.93 square metre per head and furnished with:

(a) a sufficient number of tables and chairs on benches with back rest;

(b) arrangements for washing utensils;

(c) adequate means for warming food; and

(d) 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.

**14. 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 any of the processes mentioned in paragraph 3 are carried on and no person shall remain in any such room during intervals for meals or rest.

**15. Cloakroom etc.** (a) a cloakroom for clothing put off during working hours and such accommodation shall be separate from any messroom; and

(b) separate and suitable arrangements for the storage of protective equipment provided under paragraph 10.

(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; and

There shall be provided and maintained for the use of all persons employed in any of the processes mentioned in paragraph 3:

**16. Medical facilities and records of examination and test**

(1) The occupier of every factory in which manufacture of pottery is carried on, shall:

(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 test carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector, which shall be kept readily available for inspection by the Inspector.

**17. Medical examination by Certifying Surgeon**

(1) Every worker employed in any process mentioned under paragraph 3 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, haemoglobin content, stippling of cells and pulmonary function tests and chest X-ray for workers engaged in processes mentioned in clauses (a) and

(b) of paragraph 3 and pulmonary function tests and chest X-ray 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 clauses (a) and (n) paragraph 3 shall be examined by a Certifying Surgeon once in every 3 calendar months. Those employed in any other processes mentioned in the remaining clauses of paragraph 3 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 subparagraph (1) except chest X-ray which shall be done once in 3 years.
(3) The Certifying Surgeon shall after examining a worker, issue Certificate of Fitness in Form 4. The record of examination and re-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 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 16.
(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 or the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) The person who has been found unfit to work under sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examination again certifies him fit for employment in those processes.

**18. Exemption**

If in respect of any factory, the Chief Inspector is satisfied that all or any of the provisions or this schedule are not necessary for the protection of the persons employed in such factory, he may by a certificate in writing exempt such 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 without assigning any reasons.

**Schedule XII**

**Chemical Works**

**Part I**

**1. Application**

This schedule applies to all manufacture and processes incidental thereto carried on in chemical works.

**2. Definitions** (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 localised 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 bichromate 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 para 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

For the purpose of this schedule:

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 131-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 neighbourhood in a serious manner, demanding immediate action;

(k) **"dangerous chemical reactions"** means high speed reactions, run-away reactions, delayed reactions, etc., and are characterised by evolution of large quantities of heat, intense release of toxic or flammable gases or vapours, 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. Housekeeping**
(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 or 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 unauthorised 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 1 month of their employment and for 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 colours used on the labels stuck or painted on the various types of containers and pipe lines.

**5. Evaluation and provision 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 worker which may occur during manufacturing.
(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-para (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-paras (1) to (3) shall not act 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 explosivity 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 labelling 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 131-A.
(3) Without prejudice to the generality of the requirements in sub-para (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 clause (a) and (b) above, the Chief Inspector of Factories may direct any factory carrying out processes covered in Appendix 'A' to further limit to storage of hazardous substances to quantities less than two months on considerations of safety.
(5) Stand-by arrangements equal to the biggest container shall always be available to transfer the toxic substances quickly into the stand-by storage facility if any defect develops in any of the container resulting in the release of toxic substances.
(6) Any storage facility constructed using non-metallic material such as Fiberglass 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, access 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 in 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.
(1) Suitable 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 system to be installed in case of plants or processes where toxic materials are being used and spillage or leakage of which may cause wide spread poisoning in or around the plant.
(1) Effective arrangements such as, enclosure, or by pass, of 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 equipment, 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 substance that would have escaped into the work atmosphere taking immediate steps as required in sub-para (2), shall be rendered innocuous by diluting with air or water or any other suitable agent or by suitably treating the substances.

**12. Alarm Systems**
**13. Control of escape of substances into the work atmosphere**
**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 of blanketing or other effective arrangements shall come into operation.
**15. Testing, examination and repair of plant and equipment** (1) All parts of plants, 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 matters. 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 pyropheric nature or contains spontaneously combustible chemicals;
(b) as soon as the test is completed, the vessels 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'.
(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 process 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.

**16. Staging**

(3) All the staging constructed for the purpose of this para shall have appropriate access which are safe and shall be fitted with proper hand rails to a height of one metre and to a 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 spaces** (1) The occupier of every factory to which the provisions 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 of work inside the confined spaces through a 'permit to work system' which should include the safeguards developed as required under sub-clause (a) above;
(c) before testing the confined space for entry into for work, the place shall be rendered safe by washing or cleaning with neutralizing agents; or purging with steam or inert 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, location of the work and such other details that would have a bearing on the safety and health of 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 nave 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** (a) all work subject to the permit to work system shall be carried out under the supervision of acknowledgeable 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, purgings, 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 procedures 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 used 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.

The permit to work system shall inter and include the observance of the following precautions while carrying out any specified work to be subjected to the permit to work system:

**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 of 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 firefighting 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 neighbouring 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 arrangements and their meaning. The arrangements must be checked for its effectiveness every month.
(5) Alternate power supply arrangements shall be made and interlocked with 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 on Part II, Part III, Part IV, and Part VI of this schedule.

(6) The occupier shall arrange to suspend the further process work in place where emergency is established and shall forthwith evaluate all persons in that 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 per cent of the workers trained in the use of First Aid, Firefighting 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 substance to the treating physician when the information is needed to administer proper emergency or first-aid treatment to exposed persons.

**1. Sources 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 a 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 conveyors 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 area 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 area.

**2. Static Electricity**

**24. Danger due to effluents**

(1) Adequate precautions shall be taken to prevent the mixing or 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) 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, and precautions shall be taken to ensure that earthing is effective before such filling or discharge takes place.

**3. Lightening protection**

**4. Process heating**

**5. Leakage of flammable liquids**

**6. Safety valves**

**7. Installation of pipeline etc.**

**8. Firefighting systems**

(1) Every factory employing 500 or more persons and carrying out processes listed in Appendix 'A' shall provide:

Lightening protection arrangements shall be fitted where necessary, and shall be maintained.
The method of providing heat for a process likely to result in fire 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.
(1) Provisions shall be made to confine by means of bund 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 installed in the vicinity of such vessels.

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 gauge, and a proper safety valve or other equally efficient means to relieve the pressure. These appliances shall be maintained in good condition.
All pipelines 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 and deterioration or defects, or accumulation of flammable or explosive substances, and record kept of any defects found and repairs made.

(a) Trained and responsible firefighting squad so as to effectively handle the firefighting and lifesaving 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 8 such trained persons to De available at any time. The squad shall consist of watch and ward

personnel, fire pump man and departmental supervisors and operator trained in the operations of fire and emergency services.
(b) Squad leaders shall preferably be trained in 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 or 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 be 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 area.

**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 localise any escape of toxic substances.
(2) Catch pits, bund 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 specificity provided for this purpose wherein deleterious material shall be neutralised, treated or otherwise rendered safe before it is discharged into public drains or sewers.

**3. Cohering of vessels** (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 at least 90 centimetres above the adjoining ground or platform, be securely fenced to a height of at least 90 centimetres above such adjoining ground or platform.
(3) Where such vessel adjoins and the space between them, clear of any surrounding brick or other work is either less than 45 centimetres in width or is 45 or more centimetres in width, but is not securely fenced on both sides to a height of at least 90 centimetres, secure barriers shall be so placed as to prevent passage between them:

(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.

Provided that sub-paragraph (2) of this paragraph shall not apply to—

**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 processes involving the manipulation of toxic substances, shall be graded 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 receptacle shall be destroyed by burning or using other suitable methods under the supervision of a responsible person.
(2) During the course of manufacture, whenever any batch or intermediate products having toxcity is rejected on considerations of quality, sufficient precautions shall be taken to render them innocuous or otherwise treat them or inactive 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 crystallised 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 nitro 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 or 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 containing 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 chrome 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, crystallisation, centrifugation or packing are carried out, to enable quick washing of affected parts of body with running water.
(3) Weekly inspection of hand and feet of all persons employed in chrome process 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 omission of vapour from the 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 risks of fire or explosion or health hazards.
(1) Crystallisation, 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 crystallisation of chlorate or to contain crystallised ground chlorate.

**4. Special precautions for processes involving chlorate manufacture**

**Medical requirements**

**1. Decontamination facilities** (a) fully equipped first aid box;

(b) readily accessible means of drenching with water persons, parts of body of persons and clothing or persons who have been contaminated with such toxic and corrosive substances and such means shall be as shown in the Table below:

(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.

In all places where toxic substances are used in processes listed in Appendix 'A' the following provisions shall be made to meet an emergency—

| **No. of persons employed at any** | **No. of drenching showers** |
|---|---|
| Up to 50 persons | 2 |
| Between 51 to 100 | 3 |
| 101 to 200 | 3 +1 for every 50 persons thereafter |
| 201 to 400 | 5 +1 for every 100 persons thereafter |
| 401 and above | 7+1 for every 200 persons thereafter |



**2. Occupational health centre** (1) For factories employing up to 50 workers:

(2) For factories employing 51 to 200 workers—

(a) The occupational health centre shall have a room having a minimum floor area of 15 Sq.mt. 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 over all 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 500 workers and one more Medical Officer for every 1000 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 sq. mt. with floors and walls made of smooth, hard and impervious surface and shall be adequately illuminated, ventilated and equipped.

(c) There shall be one qualified and 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.

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:
(a) the services of a qualified medical practitioner herein after known as Factory Medical Officer, available on a retainership 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 at least one shall always be available during the working period.
(c) A fully equipped first aid box.

**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 full time 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-para (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 worker; and
(c) The details of pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the prescribed form.
(2) 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 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:
(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 regard.

Provided that the Certifying Surgeon on his own may examine any other workers 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.

(4) The worker suspended from the process owing to the circumstances covered in sub-para (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. Mess room 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 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. Cloakroom 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 cloakroom 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 cloakroom facilities so provided in pursuance of sub-para (1) shall be located as far as possible near to the facilities provided for washing in pursuance of para 1(1). If it is not possible to locate the washing facilities the cloakroom facilities shall have adequate and suitable arrangements for cleaning and washing.

**4. Special bathing facilities** (1) The occupier of any factory carrying out the processes 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 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 or also effectively prevent such of those workers taking bath in any place other than the bathing facilities.
(3) Notwithstanding anything contained in sub-para (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 'B' shall not make any safety device or appliance or any guarding or fencing arrangement, inoperative or defective and shall report the defective condition of the aforesaid arrangements 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 mal-function 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 used and 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 unauthorised place or carry out unauthorised work or improvise any arrangements or adopt short cut method or misuse any of the facilities provided in pursuance of this 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 examinations 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-para (1) above shall be provided with alternate work which is not detrimental to their health or safety. **1. Power of exemption**
(a) the manufacture, manipulation or recovery of any of following is carried on—

(i) sodium, potassium, iron, aluminium, cobalt, nickel, copper, arsenic, antimony, chromium, zinc, selenium, magnesium, cadmium, mercury, beryllium and their organic and inorganic salts, alloys, oxides and hydroxides;
(ii) ammonia, ammonium hydroxide and salts of ammonium;
(iii) the organic or inorganic compounds of sulphurous, sulphuric, nitric, nitrous, hydrochloric, hydrofluoric, hydriodic, hydrosulphuric, hydrobromic, boric;
(iv) cyanogen compounds, cyanide compounds, cyanate compounds;
(v) phosphorous and its compounds other than organo 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 chloride gas is produced in chlor-alkali plants;
(d)
(i) gas tar or coal or bitumen or shale oil asphalt or any residue or such tar is distilled or is used in any process of chemicals manufacture;
(ii) tar based synthetic colouring matters or their intermediates are produced;

**Part X**
**Exemptions**
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 requirement is not necessary to ensure the safety and health of persons employed suitable and effective alternate arrangements are available to any of the requirements covered in this schedule.
**Appendix "A'**
Any works or that part of works in which—

(e) nitric acid 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 substitutes, such as chloroform, ethylene glycol, formaldehyde, benzyle, chloride, phenol, methyl ethyl keytone peroxide, cobalt carbonyl tungsten carbide etc., are manufactured or recovered.

**Appendix ‘B'**
**Concerning Special Bathing Accommodation in pursuance of para 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 chloralkali 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 or substituted derivatives.

**Appendix 'C**
**Ambulance**
Ambulance shall have the following equipments:
**General:**
– A wheeled stretcher with folding and adjusting devices; Head of the stretcher must be capable or being tilted upward;
– Fixed suction unit with equipments;
– Fixed oxygen supply with equipments;
– Pillow with case;
– Sheets;
– Blankets;
– Towels;
– Emesis bag;
– Bed pan
– Urinal;

– Glass; – Flares with life of 30 minutes;
– Flood lights;
– Flashlights;
– Fire extinguisher dry powder type;
– Insulated gauntlets; – 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;
– Cuggi;
– Stethoscope; – Long and short padded boards;
– Wire ladder splints;
– Triangular bandage;
– Long and short spine boards;
– Gauze pads-4"x 4";
– Universal dressing 10'x 36';
– Roll of aluminium foils;
– Soft roller bandage 6'x 5'yards;

– Adhesive tape in 3' roll;

**Safety Equipment**
**Emergency care equipments:**
**Resuscitation:**
**Immobilization:**
**Dressings:**

– Safety pins;
– Bandage sheets;
– Burn sheet.
– Syrup of Ipecac
– Activated charcoal | Pre pacin doses
– Snake bite kit
– Drinking water
– As per requirement (under the advice of Medical Officer only).

**1. Application**
**2. Definitions**

(a) "manipulation" means crushing, breaking, chipping, dressing, grinding, 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 5% by weight of free silica; **3. Precautions in manipulation**

(a) dumping the stone or other material being processed,
(b) providing water spray,
(c) enclosing the process,
(d) isolating the process, and
(e) providing localised exhaust ventilation,

**Poisoning:**
**Emergency Medicines:**
**Schedule XIII**
**Manipulation of stone or any other material containing free silica**
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.
For the purpose of this schedule:

No manipulation shall be carried out in a factory or part of a factory unless one or more of the following measures, namely:
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 to the schedule appended to Rule 133-A:

**4. Maintenance of floors**

(1) All floors or places where fire dust is likely to settle on and whereon any person has to work or pass shall be of impervious material and maintained in such conditions 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 y work is carried on or where any person has to pass during the course his work, shall be cleaned of dust at least once 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 for employing young persons**
**6. Medical facilities and records of examinations and tests**

(1) The occupier of every factory to which this 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, and
(b) provide to the said medical officer all the necessary facilities for the purpose referred to in clause (1).
(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 which shall be kept readily available for inspection by the Inspector. **7. Medical examination by Certifying Surgeon**

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.
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 out.
(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 medical examination shall include pulmonary function tests 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 processes 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 3 years.

(3) The Certifying Surgeon shall after examining a worker, issue a Certificate of Fitness in Form 28. 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 and re-examination carried out

under sub-paragraphs (1) and (2) respectively, including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in health register in Form 16.
(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 considered 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 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. **8. Exemption**

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or in frequency of the processes or for any other reason, all or any of the provisions of this schedule are not necessary for protection of the 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 XIV**

**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, namely—
(a) breaking, crushing, disintegrating, opening, grinding, mixing or sieving of asbestos and any other processes involving handling and manipulation 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 insulation mattresses, composed wholly or partly of asbestos and processes incidental thereto;
(e) manufacture of asbestos cardboard and paper;
(f) manufacture of asbestos or cement goods;
(g) application of asbestos by spray method;
(h) sawing, grinding, turning, abrading and polishing in the dry state or articles composed wholly or partly of asbestos; and
(i) cleaning of any room, vessel, chamber fixture or appliances for the collection of asbestos dust; and
(j) any other processes in which asbestos dust is given off into the work environment.
**2. Definition** (a) **"asbestos"** means any fibrous silicate mineral and any admixture containing actionlite, amosite, anthophyllite, dhrysotile, croddolite, tremolite or any mixture thereof, whether crude, crushed or opened;
(b) **"asbestos textiles"** means yarn or doth composed of asbestos or asbestos mixed with any other material;
(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 breaths air free from dust or any other approve apparatus;
(e) **"efficient exhaust draught"** means localised 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 in and 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 overall and head covering which (in either case) will when worn exclude asbestos dust.

For the purpose of this schedule:
**3. Tools and Equipment**

Any tools or equipment used in processes to which this schedule apply 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 manufacture and conveying machinery, namely: (a) preparing, grinding or dry mixing machines;
(b) carding, card waste and ring spinning machines, and looms;
(c) machines or other plant fed with asbestos; and
(d) machines used for the sawing, grinding, turning, drilling, abrading or polishing; in the dry state, or articles composed wholly or partly of asbestos;
(e) cleaning and grinding of the cylinders or other parts of a carding machine;

(f) chambers, hoppers, or other structures into which loose asbestos is delivered or passes;
(g) work-benches for asbestos waste sorting or for other manipulation of asbestos by hand;
(h) filling or emptying of sacks, skips or other portable containers, weighing or other process incidental thereto which is affected by hand or is carried on in any work place;
(i) sack cleaning machine;
(j) mixing and blending of asbestos by hand; and
(k) 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 work place.
(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 workrooms by the exhaust system shall be collected in suitable receptacles or filter bag which shall be isolated from all work areas.
**5. Testing and examination of ventilating systems** (1) All ventilating systems used for the purpose of extracting or suppressing dust as required by this schedule shaft be examined and inspected once in a 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 examination and tests and the state of the plant and the repairs or alternations, if any found to be necessary shall be kept and shall be available for inspection by an Inspector.

**6. Segregation in case of certain process**

Mixing or blending by hand of asbestos, or making or repairing of insulating mattresses composed wholly or partly or 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 and 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 purposes 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 heating but by a machine, complying with paragraph 4.

**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-paragraph (1) shall, so far as 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 work place.
(3) When the cleaning is done by any method other than that mentioned in sub-paragraph (2), the persons doing clearing 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 operations, its surfaces 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 surfaces 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.
(1) An approved breathing apparatus and protective clothing shall be provided and maintained in good conditions 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 handstrickles;
(d) in filling, beating or levelling 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 paragraph 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 under sub-paragraph (2). 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.
(4) The cleaning schedule and procedure should be such as to ensure the efficiency in protective the wearer.

(5) All breathing apparatus shall be cleaned and disinfected at suitable intervals and thoroughly inspected once in a 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 that sub-paragraph unless he has been fully instructed in the proper use of that equipment.
(8) No breathing apparatus provided under 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.

**10. Breathing apparatus and protective clothing**

**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 applies for storing of personal clothing. This should be separated from the accommodation provided under sub-paragraph (2) of paragraph 10 to prevent contamination of personal doming.
**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 standpipes placed at intervals of not less than one metre.
(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.
(5) Sufficient supply of soap and nail brushes shall be provided.

**13. Messrootm** (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 unauthorised 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 or asbestos fibre 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.

**18. Medical facilities and records of medical examinations and tests**

(1) The occupier of every factory or part of the factory to which this schedule applies, shall—

(a) employ a qualified medical practitioner for medical surveillance or the workers covered by this schedule those employments shall be subject to the approval of the Chief Inspector, 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 which shall be kept readily available for inspection by the Inspectors.

**19. 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 examination shall include pulmonary function tests, tests for detecting asbestos fibres 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 process referred to in sub-paragraph (1) 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 subparagraph (1) except chest X-ray which will be carried out once in 3 years.

(3) The Certifying Surgeon shall after examining a worker, issue a certificate of fitness in form A. 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 and re-examination carried out under sub-paragraphs (1) and (2) respectively including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.

(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 or the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
(6) No person who has been found unfit to work under sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, further 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 are 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.

**Schedule XV**

**Handling of Manipulation of corrosive substances**

**1. Definitions** (a) **"corrosive operation"** means an operation of manufacturing, storing, handling, processing, packing, or using any corrosive substance in a factory; and
(b) **"corrosive substance"** includes sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric acid, carbolic acids, phosphoric acid, liquid chlorine, liquid bromine ammonia, sodium hydroxide and potassium hydroxide and a mixture thereof and any other substance which the State Government may by notification specify to be a corrosive substance.

For the purpose of this schedule:

**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 resistant 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**

(1) 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 held 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.
(2) The protective equipment and preparations provided shall be used by the persons employed in any corrosive operations.

**4. Water facilities**

Where any corrosive operations 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 centimeters from a pipe 1.25 centimeters 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 water supply a storage tank having a minimum length, breadth and height of 210 centimeters, 120 centimeters and 60 centimeters 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 majority of the workers employed understand, shall be displayed prominently close to the place where a corrosive operation is carried out and where it can be easily and conveniently read by the workers. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

**Cautionary Notice**

**Danger**

"Corrosive substances cause severe burns and vapours 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**

(1) 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 placed in crates of found construction and of sufficient strength.
(2) A container with a capacity of 11.5 litres or more of a corrosive substance shall be placed in a 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.

(3) Containers for corrosive substances shall be plainly labelled.

**7. Devices for handling corrosives** (1) Suitable tilting or lifting derile or pumping arrangements shall be used for emptying jars, carboys and other containers of corrosives.
(2) Corrosive substance shall not be handled by bare hands but by means of a suitable scoop or other devices.

**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 the purpose.

**9. Cleaning tanks, stills etc.** (1) 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).

(2) 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 Act shall be taken to ensure the workers safety.

(3) Wherever possible, before repairs are 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** (1) 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 gases.

(2) 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.

(3) Every container having a capacity of twenty litres or more and every pipeline, valve and fitting used for storing or carrying corrosive substances shall be thoroughly examined every year for finding out any defects and defects so found out 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 firefighting 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 now 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 other equipment.

**12. Exemption**

If in respect of any factory, the Chief Inspector, on an application made by the manager 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 XVI**

**Compression of oxygen and hydrogen produced by the electrolysis of water**

**1. Location of electrolyser plant**

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. Testing of purity** (1) The purity of oxygen and hydrogen shall be tested by a competent person at least once in every shirt at the following posts; namely:

(a) in the electrolysis room;

(b) at the gasholder inlet; and

(c) at the suction end of the compressor.

(2) The purity figures shall be entered in a register and shall be signed by the persons carrying out such tests:

Provided however, that if the electrolyser plant is fitted with automatic recorder of purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of gases is tested at the suction end of the compressor only.

**3. Restriction as to the compression**

The oxygen and hydrogen gases shall not be compressed if their purity as determined under paragraph 2 above falls below 98% at any time.

**4. Limit switch for gasholder**

The bell of any gasholder shall not be permitted to go within the 30 centimeters of its lowest position when empty and a limit switch shall be fitted to the gasholder in such a manner as to switch off the compressor motor when the limit is reached.

**5. Provisions of negative pressure switch**

In addition to the limit switch in the gasholder, a sensitive negative pressure switch shall be provided in or adjacent to the suction main for hydrogen close to the gasholder and between the gasholder and the hydrogen compressor to switch off the compressor motor in the event of the gasholder being emptied to the extent as to cause vacuum.

**6. Purity of caustic soda**

The water and caustic soda used for making lye shall be chemically pure within pharmaceutical limits.

**7. Precautions against reversal of polarity**

Electrical connections at the electrolyser cells and at the electric generator terminals shall be so construed as to preclude the possibility or 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. Colouring of gas pipes**

Oxygen and hydrogen gas pipes shall be painted with distinguishing colours and in the event of leakage at the joints of the hydrogen gas pipe, the pipe after reconnection shall be purged of all air before drawing in hydrogen gas.

**9. Use of flameproof fittings**

All electrical wiring and apparatus in the electrolyser room shall be of flameproof construction or enclosed in flameproof 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. Prohibition of hot work**

No part of the electrolyser plant and the gasholders and compressor shall be subjected to welding, brazing, soldering or cutting until steps have been taken to remove explosive substance from that part and render the part safe for such operations and after the completion of such operations no explosive substance shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.

**11. Repair, etc., to be done under supervision**

No work of operation, repair or maintenance shall be undertaken except under the direct supervision of a person who is by his training, experience and knowledge of the necessary precautions against risk or explosion is competent to supervise such work. No electric generator after erection or repairs shall be switched on to the electrolyser unless the same is certified by the competent persons under whose direct supervision erection or repairs are carried or to be in a safe condition and the terminals have been checked for the polarity as required by paragraph 7.

**12. Checking of plant**

Every part of the electrolyser plant and the gasholders and compressor shall have a regular schedule of overhaul and checking and every defect noticed shall be rectified forthwith.

**Schedule XVII**

**Process of extracting oils and fats from vegetable and animal source in solvent extraction plants**

**1. Definitions** (a) **"competent persons"** means a person who is a member of the Institution of Engineers (India) or an Associate member of the said institution with 10 years experience in a responsible position as may be approved by the Chief Inspector:

(b) **"flame proof enclosure"** as applied to electrical machinery or apparatus means an enclosure that will withstand, when covers or other access doors and properly secured, an internal explosion of the flammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating internal inflammation or explosion to the external flammable gas or vapour;
(c) **"solvent"** means a flammable liquid such as pentane, hexane and heptane used for the recovery of vegetable oils;
(d) **"solvent extraction plant"** means a plant in which the process of extracting oils and fats from vegetable and animal sources by use of solvents is carried on.

For the purpose of this schedule:
Provided that a graduate in mechanical engineering or chemical technology with specialized knowledge of oils and fats and with minimum experience of 5 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.

**2. Location and layout**

(1) No solvent extraction plant shall be permitted to be constructed or extended to within a distance of 30 metres from the nearest residential locality.
(2) A continuous wire fencing of the height of 1.5 metre shall be provided around the solvent extraction plant upto a minimum distance of 15 metres from the plant.
(3) No person shall be allowed to carry any matches or an open flame of fire inside the area bound by the fencing.
(4) Boiler houses and other buildings where open flame processes are carried on shall be located at least 30 metres away from the solvent extraction plant.

(5) In godowns and preparatory processes are at a distance of less than 30 metres from the solvent extraction plant, these shall be at least 15 metres distance from the plant and a continuous barrier wall of non-combustible material of 1.5 metres height shall be erected at a distance of not less than 15 metres from the solvent extraction plant so that it extends to at least 30 metres of vapour travel around its ends from the plant to the possible sources of ignition.

**3. Electrical installations** (1) All electrical motors and wiring and other electrical equipment installed or housed in solvent extraction plant shall be of flame proof construction.
(2) All metal parts of the plant and building including various tanks and containers where solvents are stored or are present and all parts of electrical equipment not required to be energised shall be properly bonded together and 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 15 metres distance from solvent extraction plant. For this purpose, 'No Smoking' signs shall be permanently displayed in the area.

**5. Precautions against friction** (1) All tools and equipment including ladders, chains and other lifting trackle required to be used in solvent extraction plant shall be of non-sparking type.
(2) 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 accumulations of static electricity to a dangerous level.
(3) No person shall be allowed to enter and work in the solvent extraction plant if wearing clothes made of nylon or such other fibre that can generate static electrical charge, or wearing footwear which is likely to cause sparks by friction.

**6. Firefighting apparatus**
(1) Adequate number of portable fire extinguishers suitable for use against flammable liquid fires shall be provided in the solvent extraction plant.
(2) An automatic water supply spray sprinkler system on a wet pipe or open head deluge system with sufficient supply or storage water shall be provided over 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 with the power failure.
**8. Magnetic separators**

Oil cake shall be fed to the extractor by a conveyer through a hopper and a magnetic separator shall be provided to remove any pieces of iron during its transfer.

**9. Venting** (1) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.
(2) All emergency relief vents shall terminate at least 6 metres above the ground and be so located that vapours will not re-enter the building in which 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 not closer than 8 metres 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. Housekeeping** (1) Solvents shall not be stored in an area covered by solvent extraction plant except in small quantities which shall be stored in approved safety cans.

(2) 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.
(3) Space within the solvent extraction plant and within 15 metres from the plant shall be kept free from any combustible materials and any spills of oil or solvent shall be cleaned up immediately.

**13. Examination and repairs** (1) The solvent extraction plant shall be examined by the competent person to determine any weakness of 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.
(2) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.
(3) Facility shall be provided for purging the plant with inert gas 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 women or young person shall be employed in the solvent extraction plant.
**16. Vapour detection**

A suitable type of flameproof 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**

If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or in frequency 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 in the factory, he 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 conditions, if any, as he may specify therein.
**Schedule XVIII**
**Manufacture or manipulation of manganese and its compounds**
**1. Application**

This schedule shall apply to every factory in which or in any part of which any manganese process is carried on.

**2. Definitions** (a) **"efficient exhaust ventilation"** means localised ventilation effected by mechanical means for the removal of dust or fume or mist at the source of origin so as to prevent it from escaping into the atmosphere of any place where any work is carried on, and 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.
(b) **"first employment"** means first employment in any manganese process following any cessation of employment for a continuous period exceeding 3 calendar months;
(c) **"manganese process"** means processing, manufacture or manipulation of manganese or any compound of manganese or any ore or any mixture containing manganese;
(d) **"manipulation"** means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping or otherwise handling of manganese or a compound of manganese or any ore or any mixture containing manganese.

For the purpose of this schedule—

**3. 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 parts of the factory and persons employed on other processes so that they may not be affected by the same.

**4. 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.

**5. 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 work place 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.

**6. Prohibition relating to women and young persons**

No women or young persons shall be employed or permitted to work in any manganese process.

**7. Food, drinks, etc., prohibited in the work rooms**

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.

**8. Messroom**

There shall be provided and maintained for the use of the persons employed in a manganese process a suitable messroom which shall be furnished with sufficient tables and benches and adequate means for warming of food. The messroom shall be placed under the charge of a responsible person and shall be kept clean.

**9. Washing facilities** (a) a wash place under cover, with either,

There shall be provided and maintained in a clean state and in good condition for the use of persons employed in manganese process—

(b) a trough with a smooth impervious surface fitted with a waste pipe without plug and sufficient length to allow at least 60 centimetres for every ten 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 60 centimetres, or

(c) at least one wash basin for every five such person employed at any one time, fitted with a waste pipe and plug and having a constant supply of water; and

(d) sufficient supply of soap or other suitable cleaning material and nail brushes and clean towels.

**10. Cloakroom**

If the Chief Inspector so requires there shall be provided and maintained for the use or persons employed in manganese process a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing.

**11. Cautionary placard instructions**

Cautionary notices in the form specified in the appendix to this schedule 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 arrangement 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 measure and methods to protect themselves. The notices shall always be maintained in a legible condition.

**12. 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; and

(b) provide to the said medical practitioner all the necessary provide to the said medical practitioner facilities for the purpose ref erred to in clause
(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 which shall be kept readily available for inspection by the Inspector.

**13. Medical examination by Certifying Surgeon**
(1) Every worker employed in any manganese process shall be medically 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 coordination tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified 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 examination shall, wherever the Certifying Surgeon consider appropriate, include all the tests in sub-paragraph (1).
(3) The Certifying Surgeon shall after examining a worker, issue a Certificate of Fitness in Form 4. 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 and re-examination carried out under sub-paragraphs (1) and (2) respectively including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 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 to work in the said process.

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 under sub-paragraph (5) shall be re-employed or permitted to work in said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in these processes.
**14. Exemption 1.** Dust fumes and mists of manganese and its compounds are toxic when inhaled or when ingested.
**2. Do not consume food or drink near the work place.**

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 his 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.

**Appendix**

**Cautionary Notice**

**Manganese and Manganese Compounds**

**3. Take a good wash before taking meals.**

**4. Keep the working area dean.**

**5. Use the protective clothing and equipment provided.**

**6.** When required to work in situations where dusts, fumes or mists are likely to be inhaled, use respiratory protective equipment provided for the purpose.

**7.** If you get severe head-aches, prolonged sleeplessness or abnormal sensations on the body report to the manager who would make arrangements for your examination and treatment.

**Schedule XIX**

**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 pesticides (hereinafter referred to as the said manufacturing process) is carried on.

**2. Definitions** (a) "dangerous pesticides" means any product proposed or used for controlling, destroying or repelling any pest for preventing growth or mitigating effects of such growth including any of its formulations which are considered toxic under the provisions of the Insecticides Act, 1968 and the rules made there under, and any other product as may be notified from time to time by the State Government.

(b) "efficient exhaust draught" means localised mechanical ventilation for removal or smoke, gas, vapour, dust, fume or mist so as to prevent them from escaping into the air of any work room in which work is carried on, and 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 process.

(c) "first employment" shall mean first employment manufacturing process to which this schedule applies and : also include re-employment in the said manufacturing process following any cessation of employment for a continuous period exceeding three calendar months; and

(d) "manipulation" includes mixing, blending, formulating, filling, emptying, packing or otherwise handling.

For the purpose of this schedule

**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 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 instruct the workers periodically regarding the health hazards arising in the said manufacturing process and methods of protection. Such notices shall include brief instructions and methods of periodical clinical tests required to be undertaken for protecting health of the workers.

**5. Prohibition relating to employment of women and young persons**

No women 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, drinks and smoking prohibited**

(1) No food, drink, tobacco, pan or supari shall be brought into or consumed by any worker in any work room in which the said manufacturing process is carried out.

(2) Smoking shall be prohibited if 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) 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:

(3) Protective clothing and equipment shall be worn by the workers who are 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.

(1) Floors in every workroom where dangerous pesticides are manipulated shall be of cement or other impervious material giving a smooth surface.

Provided that where a pesticide contains oil, gloves, boots and aprons shall be made from synthetic rubber.

**8. Floors and work-benches**

(2) Floors shall be maintained in a 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.
(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, immediately 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.

**9. Spillage and waste**
**10. Empty containers used for dangerous pesticides**

Containers used for dangerous pesticides shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded or destroyed.
**11. Manual handling** (1) A dangerous pesticide shall not be required or allowed to be manipulated by hand 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 draught; namely—
(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 draught provided on the above operation, the said operations shall be stopped forthwith.
(1) There shall be provided and maintained in a clean 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 place shall have stand pipes placed at intervals of not less than one metre.
(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:
(5) Sufficient supply of soap and nail brushes shall be provided.
(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.
(a) sufficient tables and benches with back rest, and
(b) adequate means for warming food.

**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 pesticides.
(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**

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

**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—

**16. Messroom**

(1) There shall be provided arid 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 messroom which shall be furnished with—

(2) The messroom 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. Medical facilities and records of examinations and tests**

(1) The occupier of every factory to which the schedule applies, namely— (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; 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, 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 the 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 the organo phosphorous compounds, such examinations 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 Burgeon at least once in every six calendar months. Such examination shall, wherever the Certifying Surgeon considers appropriate, include the tests specified in subparagraph (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 shall after examining a worker, issue a Certificate of Fitness in Form 4. The record or 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 and re-examinations carried out under sub-paragraphs (1) and (2) respectively, including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.

(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 persons 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 reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him for employment in those processes.

**20. Exemption** 1. Chemicals handled in this plant are poisonous substances.

2. Smoking, eating food or drinking, chewing tobacco in this area is prohibited. No rood 3. Some of these chemicals may be 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.

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 or 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 reasons therefore.

**Appendix**

**Cautionary Notice**

**Insecticides and Pesticides**

stuff or drink shall be brought in this area.

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.

**1. Application**

**2. Definitions**

**Schedule XX**

**Manufacture, handling and usage of benzene and substances containing benzene**

This schedule shall apply in respect of factories or parts thereof in which benzene or substances containing benzene are manufactured, handled or used.

For the purpose of this schedule:

(a) **"efficient exhaust draught"** means localised ventilation effected by mechanical means for the removal of gases, vapours, dusts or fumes so as to prevent them from escaping into the air or any workroom. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point such gases, vapours, fumes or dusts originate.

(b) **"enclosed system"** means a system which will not allow escape of benzene vapours to the working atmosphere.

(c) **"substances containing benzene"** means substances wherein benzene content exceeds 1 per cent by volume; and

(d) **"substitute"** means a chemical which is harmless or less harmful than benzene and can be used in place of benzene; **3. Prohibition of use of benzene and certain substances**

(1) Use of benzene and substances containing benzene is prohibited in the following processes, namely: (a) manufacture of varnishes, paints and thinners; and
(b) cleaning and degreasing operations

(2) 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.
(3) Where suitable substitutes are available, they shall be used instead of benzene or substances containing benzene. This provision, however, shall not apply to the following processes, namely— (a) production of benzene;

(b) process where benzene is used for chemical synthesis; and
(c) motor spirits (used as fuel). **4. Protection against inhalation**
**5. Measures against skin contact**
**6. Prohibition relating to employment of women and young persons**



(4) The Chief Inspector may, subject to confirmation by the State Government, permit exemptions from the percentage laid down in clause (c) of paragraph 2 and also from the provisions of sub-paragraph (2), of this paragraph temporarily under conditions and within limits of time to be determined after consultation with the employees and workers concerned.
(1) The process involving the use of benzene or substances containing benzene shall as far as practicable be carried out in an enclosed system.
(2) Where however it is not practicable to carry out the process in an enclosed system the 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 vapours 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 milligrams per cubic metre.
(3) Air analysis for the measurement of concentration of benzene vapours 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 and the result of the analysis shall be entered in a register specially maintained for this purpose, if the concentration of benzene vapours in air as measured by air analysis, exceeds 25 parts per million by volume or 80 milligrams per cubic metre, the manager shall forthwith report the concentration to the Chief Inspector stating the reasons for such increase.
(4) 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 sub-paragraph (2) shall be provided

with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.
(1) Workers who are likely to come in contact with liquid benzene or liquid substances containing benzene shall be provided with suitable gloves, boots and where necessary vapour tight chemical goggles made of material not affected by benzene or its vapours.
(2) The protective wear referred to in sub-paragraph (1) shall be maintained in good condition and inspected regularly.

No women or young person shall be employed or permitted to work in any workroom involving exposure to benzene or substances containing benzene.

**7. Labelling**
**8. Improper use of benzene**

(1) The use of benzene or substances containing benzene by workers for cleaning their hands or their work clothing shall be prohibited.
(2) Workers shall be instructed on the possible dangers arising from such misuse. **9. Prohibition of consuming food etc., in workrooms**
**10. Instructions as regards risks**
**11. Cautionary notices**
**12. Washing facilities, cloakroom and messroom**

(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 cloakroom with lockers for each worker having two compartments; one fore street-clothing and one for work-clothing; and
(c) a messroom 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 messroom shall be dispensed with. **13. Medical facilities and records of examinations and tests**

(1) The occupier of every factory to which the schedule applies, shall—

Every container holding benzene or substances 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 toxicity and warning about the inflammability of the chemical
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.

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.
Cautionary notices in the form specified in appendix to this schedule and printed 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.
In factories in which benzene or substances containing benzene are manufactured, handled or used, the occupier shall provide and maintain in a clean state and in good repair,

(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; 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 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 first employment. Such examination shall include tests for detection of phenol in urine and determination of urinary sulphide ratio and C.N.S. and hematological 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 examination 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 calendar months by the factory medical officer.
(3) The Certifying Surgeon shall after examining a worker, issue a Certificate of Fitness in Form 4. The record of examination and re-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 record of each examination and re-examination carried out under sub-paragraphs (1) and (2) respectively, including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 persons 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 under 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.

**Appendix**
**Cautionary Notice**
**Benzene and substances containing benzene**
**1. Hazards** (a) benzene and substances containing benzene are harmful.
(b) Prolonged or repeated breathing of benzene vapours may result in acute or chronic poisoning.
(c) Benzene can also be absorbed through skin which may cause skin and other diseases.

**2. Preventive measures** (a) Avoid breathing of benzene vapours.
(b) Avoid prolonged or repeated contact of benzene with the skin.
(c) Remove benzene soaked or wet clothing promptly.
(d) If any time you are exposed to high concentration of benzene vapours and exhibit signs and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your factory manager.
(e) Keep all the containers of benzene closed.
(f) Handle, use and process benzene and substance containing benzene carefully in order to prevent their spillage on floor.
(g) Maintain good housekeeping.

**3. Protective equipment** (a) use respiratory protective equipment in places where benzene vapours are present in high concentration.
(b) In emergency, use self-generating oxygen mask or oxygen or air cylinder masks.
(c) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and body parts.

**4. First-aid measures in case of acute benzene poisoning**
(1) Remove the clothing immediately if it is wetted with benzene.
(2) If liquid benzene enters eyes, flush thoroughly for at least 15 minutes with clean running water and immediately secure medical attention.

(3) In case of unusual exposure to benzene vapour, call a physician immediately. Until he arrives, do the following— (i) 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
(ii) 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 gums, 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, nail beds), he should be provided with medial oxygen or oxygen carbon-dioxide mixture. If needed, he should be given artificial respiration. Oxygen should be administered by a trained person only.

**Schedule XXI**
**Manufacturing process or operations in 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. This schedule is in addition to and not in derogation of any of the provisions of the Act and rules made there under.
**2. Construction, installation and operation** (1) 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.
(2) Every electric furnace and every plant in which carbon disulphide is condensed, refined and stored with all their fittings and attachments shall be of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected to and shall be so designed that carbon disulphide liquid and gas are in closed system during their normal working.
(3) The electric furnace supports shall be firmly grouted about 60 centimeters in concrete or by other effective means.

(4) Every electric furnace shall be installed and operated according to manufacturer's instructions and these instructions shall be clearly imparted to the personnel in charge of construction and operation.
(5) The instructions regarding observance of correct furnace temperature, sulphur dose, admissible current or power consumption and periodical checking of charcoal level shall be strictly complied with.
(1) Where upper ring electrodes made of steel are 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 built in the electrodes or through a positive pressure water-pump.
(2) The arrangement for cooling water referred to in sub-paragraph (1) 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.

**3. Electrodes**

**4. Maintenance of charcoal level**

When any electric furnace is in operation, it shall be ensured that the electrodes are kept covered with charcoal bed.

**5. Charcoal separator**

A cyclone type of charcoal separator shall be fitted on the off take between the electric furnace and sulphur separator to prevent entry of pieces of charcoal into the condensers and piping.

**6. Rupture discs and safety seal** (1) 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.

(2) A safety water seal shall be provided and tapped from a point between the charcoal separator and the sulphur separator.

**7. Pyrometer and manometers** (1) Each electric furnace shall be fitted with adequate number of pyrometers to give an indication of the temperature as correctly as reasonably practicable at various points in the furnace. The dials for reading the temperatures shall be located in the control room.

(2) Manometers or any other suitable devices shall be provided for indicating pressure—

(a) in the off take pipe before and after the sulphur separator; and

(b) in primary and secondary condensers.

**8. Check valves**

All piping carrying carbon disulphide shall be fitted with check valves 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** (1) Every electric furnace shall be inspected internally by a competent person—

(a) before being placed in service after installation;

(b) before being placed in service after reconstruction or repairs; and

(c) periodically every time the furnace is opened for cleaning or de-ashing or for replacing electrodes.

(2) When an electric furnace is shut down for cleaning or de-ashing—

(a) the brick lining shall be checked for continuity and any part found defective removed;
(b) after removal of any part of the lining referred to in (a) the condition of the shell shall be closely inspected; and
(c) any plates forming shell found corroded to the extent that safety of the furnace is endangered shall be replaced.

**10. Maintenance of records** (a) manometer readings at the points specified in sub-paragraph 7(2) of paragraph 7;
(b) gas temperature indicated by pyrometers and all other vital points near the sulphur separator and primary and secondary condensers;
(c) water temperature and flow of water through the syphon in the electrodes; and
(d) primary and secondary voltages and current and energy consumed.

The following hourly records shall be maintained in a log book namely:

**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 understood by a majority of the workers shall be pasted in the plant prohibiting smoking and carrying matches, fire or naked light or other means or producing naked light 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. They shall always be kept clear of all 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. Fire-fighting equipment** (1) Adequate number of suitable fire extinguishers or other firefighting equipment shall be kept in constant readiness for dealing with risks involved and depending on the amount of nature of materials stored.
(2) Clear instructions as to how the extinguishers or other equipment should be used; printed in the language which the majority or the workers employed understand, shall be affixed to each extinguisher or other equipment.

**16. Bulk sulphur** (1) Open or semi-enclosed spaces for storage of bulk sulphur shall be sited with due regard to the dangers which may arise from sparks given off by nearly locomotives, etc., and precautions shall be taken to see that flames, smoking and matches and other sources of ignition do not come into contact with the clouds of dust arising during handling of bulk sulphur.
(2) All enclosures for bulk sulphur shall be non-combustible construction, adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge.
(3) The bulk sulphur in the enclosures shall be handled in such a mariner as to minimize the formation of dust clouds and no flame, 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 hand.
(4) No repairs involving flames, heat 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, matches, smoking, and other sources of ignition shall be excluded from the vicinity of molten sulphur.
**18. Training and supervision** (1) 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.



(2) Workers in charge of operation and maintenance of electric furnaces and the plants shall be properly qualified and adequately trained.
(1) The occupier shall provide and maintain in a clean state and in good repair for the use of all persons employed wash place under cover with at least 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.
(2) All the workers employed in the sulphur storage, handling and melting operations shall be provided with a nail brush.
(1) Suitable goggles and protective clothing consisting or overalls without pockets, gloves and foot-wear shall be provided for the use of operators—
(a) when operating valves or cooks controlling fluids etc;
(b) drawing off of molten sulphur from sulphur pots; and
(c) handling charcoal or sulphur.
(2) Suitably respiratory protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.
(3) Arrangements shall be made for proper and efficient cleaning of all such protective equipment.

**19. Washing facilities**

**20. Personal protective equipment**
**21. Cloakroom**

There shall be provided and maintained for the use of all persons employed in the processes a suitable cloakroom for clothing put off during work hours and a suitable place separate from lie cloakroom 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 XXII**
**Manufacture or manipulation of carcinogenic dye intermediates**
**1. Application**

This schedule shall apply in respect of all factories or any part thereof where processes in which the substances mentioned in paragraphs 3 and 4 are formed, manufactured, handled or used and the processes incidental thereto in the course of which these substances are formed, are carried on. The processes indicated in this

paragraph shall be herein after referred to as the said processes and such a reference shall mean any or all the processes described in this paragraph.
**2. Definition** (a) "controlled substances" means chemical substances mentioned in paragraph 4 of this schedule;
(b) "efficient exhaust draught" means localised ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air of any place in which work is carried on, and no draught shall be deemed to be efficient which fails to remove, smoke generated at the point where such gas, vapour, fume or dust originates;
(c) "first employment" means first employment in the said processes and also reemployment in such processes following any cessation of employment for a continuous period exceeding three calendar months;
(d) "prohibited substances" means chemical substances mentioned in paragraph 3 of this schedule.
(a) beta-naphthylamine and its salts;
(b) Benzedrine and its salts;
(c) 4-amino biphenyl and its salts;
(d) 4-nitro biphenyl and its salts; and
(e) any substances containing any of these compounds.
(a) alpha-naphthylamine or alpha-naphthylamine containing not more than one per cent of beta-naphthylamine either as a by-product of chemical reaction or otherwise, and its salts;
(b) ortho-tolidine and its salts;
(c) dianisidine and its salts;
(d) dichlorobenzidine and its salts; and
(e) auramine; and

(f) magnate.

For the purpose of this schedule, unless the context otherwise requires—

**3. Prohibited substances**

For the purpose of this schedule, the following chemical substances shall be classified as "prohibited substances" except when these substances are present or are formed as a product of a chemical reaction in a total concentration not exceeding one percent, namely—

**4. Controlled substances**

For the purpose of this schedule, the following chemical substances shall be classified as "controlled substances" namely:

**5. Prohibition of employment**

No person shall be employed in the said processes in any factory in which any prohibited substance is formed, manufactured, processed, handled or used except as exempted by the Chief Inspector under paragraph 23.

**6. Requirements for processing or handling controlled substances** (1) Wherever any of the controlled substances referred to in paragraph 4 are formed, manufactured, processed, handled or used all practical steps shall be taken to prevent inhalation, ingestion or absorption of the said controlled substances by the workers while engaged in processing that substance and its storage or transport within the plant or in cleaning or maintenance of the concerned equipment, plant, machinery and storage areas.

(2) As far as possible all operations shall be carried out in a totally enclosed system. Wherever such enclosure is not possible, efficient exhaust draught shall be applied at the point where the controlled substances are likely to escape into the atmosphere during the process.

(3) The controlled substances shall be received in the factory in tightly closed containers and shall be kept so except when these substances are in process or in use. The controlled substances shall leave the factory only in tightly closed containers of appropriate type. All the containers shall be plainly labeled to indicate the contents.

**7. Personal protective equipment** (1) The following items of personal protective equipment shall be provided and issued to every worker employed in the said processes; namely:

(a) long trousers and shirts or overalls with full sleeves and head coverings, the shirt or overall shall cover the neck completely; and

(b) rubber gumboots.

(2) The following items of personal protective equipment shall be provided in sufficient numbers for use by workers employed in the said processes when there is danger or injury during the performance of normal duties or in the event of emergency, namely:

(a) rubber handgloves

(b) rubber aprons; and

(c) airline respirators or other suitable respiratory protective equipment.

(3) It shall be the responsibility of the manager to maintain all items of personal protective equipment in a clean and hygienic condition and in good repair.

**8. Prohibition relating to employment of women and young persons**

No women or young person shall be employed or permitted to work in any room in which the said processes are carried on.

**9. Floors of workroom** (a) smooth and impervious to water and that asphalt or tar shall not be used in the composition of the floor;
(b) maintained in a state of good repair;
(c) with a suitable slope for easy draining and provided with gutters; and
(d) thoroughly washed daily with the drain water being led into sewer a through a closed channel.

The floor of every workroom in which the said processes are carried on shall be—
**10. Disposal of empty containers**

Empty containers used for holding controlled substances shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded.
**11. Manual handling**

Controlled substances shall be allowed to be mixed, filled, emptied or handled by means of a scoop with a handle. Such scoop shall be thoroughly cleaned daily.
**12. Instructions regarding risk**

Every worker on his first employment in the said processes shall be fully instructed on the properties of the toxic chemicals to which he is likely to be exposed to, of the dangers involved and the precautions to be taken. Workers shall also be instructed in the measures to be taken to deal with an emergency.
**13. Cautionary Placards**

Cautionary placards in the form specified in the appendix to this schedule and printed in the language of the majority of the workers employed in the said process frequented by them in the factory, where the placards can be easily and conveniently read. Arrangements shall be made by the manager to instruct periodically all such workers regarding the precautions contained in the cautionary placards.
**14. Obligations of the workers**

It shall be the duty of the persons employed in the said processes to submit themselves for the medical examination including exfoliative cytology of urine by the Certifying Surgeon or the qualified medical practitioner as provided for under these paragraphs.
**15. Washing and bathing facilities**

(1) The following washing and bathing facilities shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the said processes, namely: (a) a wash place under cover having constant supply of water and provided with clean towels, soap and nail brushes and with at least one stand pipe for every five such workers;

(b) 50 per cent of the stand pipes provided under clause (a) shall be located in bathrooms 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 in dose proximity of the area housing the said processes;
(d) clean towels shall be provided individually to each worker; and
(e) in addition to the taps mentioned under clause (a), one stand pipe in which warm water is made available shall be provided on each floor.

(2) Arrangement shall be made to wash factory uniforms and other work clothes every day.

**16. 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 processes are carried on and no worker shall remain in any such room during intervals for meals or rest.

**17. Cloakroom**

(1) There shall be provided and maintained in a clean state and in good repair for the use of the workers employed in the said process: (a) a cloakroom with lockers having two compartments - one for street clothes and the other for work clothes; and
(b) a place separate from the locker room and the messroom, for the storage of protective equipment provided under paragraph 7.

(2) The accommodation so provided shall be under the care of a responsible person and shall be kept clean.

**18. Messroom**

There shall be provided and maintained for the use of workers employed in the said processes who remain on the premises during the meal intervals, a messroom which shall be furnished with tables and benches and provided with suitable means of warming food.

**19. Time allowed for washing**

Before the end of each shift 30 minutes shall be allowed for bathing for each worker who is employed in the said processes. Further, at least 10 minutes shall be allowed for washing before each meal in addition to the regular time for meals.

**20. Restriction on age of person employed**

No worker under the age of 40 years shall be engaged in the factory in the said processes for the first time after the date on which this schedule comes into force.

**21. Medical facilities and records of examinations and tests**

(1) The occupier of every factory to which this 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; 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 by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector which shall be kept readily available for inspection by the Inspector.

**22. 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 mathemoglobin in blood (hematological tests), paragitrophenol in urine, pulmonary function tests and C.N.S. tests. No worker shall be allowed to work after 15 days of his first 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-examination shall, wherever the Certifying Surgeon, considers appropriate, include all the tests specified in sub-paragraph The Certifying Surgeon shall after examining a worker issue a Certificate of Fitness in Form 4. 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.
(3) The record of each examination and re-examination carried out under sub-paragraphs (1) and (2) respectively including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.
(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 or 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 reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment.

**23. Exemptions relating to prohibited substances**

(1) The Chief Inspector may, by a certificate in writing which he may at his discretion revoke at any time, subject to such conditions, if any, as may be specified therein, exempt any process in the course of which any of the prohibited substances is formed, processed, manufactured, handled or used from the provisions of paragraph 5 if he is satisfied that the process is carried out in a totally enclosed and hermetically sealed system in such a manner that the prohibited substance is not removed from the system except in quantities not greater than that required for the purpose of control of the process or such purposes as is necessary to ensure that the product is free from any of the prohibited substances.

(2) The Chief Inspector may allow the manufacture, handling or use of benzidine hydrochloride provided that all the processes in connection with it are carried out in a totally enclosed system in such a manner that no prohibited substance other than benzidine hydrochloride is removed from except in quantities not greater than that required for the purpose of control of the processes or such purposes as is necessary to ensure that the product is free from prohibited substances and that adequate steps are taken to ensure that oenzidine hydrochloride is, except while not in a totally enclosed system, kept wet with not less than one part of water to two parts of benzidine hydrochloride at all times.

**24. Exemptions-General** 1. Dye intermediates which are nitro amino derivatives or aromatic hydrocarbons are toxic. You have to handle these chemicals frequently in this factory.

2. Use the various items of protective wear to safeguard your own health.

3. Maintain scrupulous cleanliness at all items, hands and feet before taking meals.

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 the protection of the 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 the such conditions, if any, as he may specify therein.

**Appendix**

**Cautionary Placard Notice**

**Carcinogenic dye intermediates**

It is essential to take a bath before leaving the factory.

4. Wash off any chemical falling on your body with soap and water. If splashed with a solution of the chemical, remove the contaminated clothing immediately. These chemicals are known to produce cyanosis. Contact the medical officer or appointed doctor immediately and get his advice.

5. Handle the dye intermediates only with long handled scoops, never with bare hands.

6. Alcoholic drinks should be avoided as they enhance the risk of poisoning by the chemicals.

7. Keep your food and drinks away from work place. Consuming food, drinks or tobacco in any form at the place of work is prohibited.
8. Serious effects from work with toxic chemicals may follow after many years. Great care must be taken to maintain absolute cleanliness of body, clothes, machinery and equipment.
**1. Application**
**2. Definitions**

(a) **"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 measure by an instrument reflects the actual response of the human ear to the sound measured;
(b) **"dBA"** refers to sound level in decibels as measured on a sound level meter operating on the A-weighing net-work with slow meter response;
(c) **"decibel"** means one-tenth of "Bel" which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of "Bels" denoting such a ratio being the logarithm to the base of 10 of this ratio.
(d) **"frequency"** is the rate of pressure variations expressed in cycles per second or hertz.
(e) **"high noise level"** means any noise level measure on the A-weighted scale is 90 Db or above;

**Schedule XXIII**
**Operation involving high noise levels**
This schedule shall apply to all operations in any manufacturing process having high noise level. For the purpose of this schedule:
**Explanation: -** The noise level (or the sound pressure level) corresponds to a reference pressure of (20 x 10-6 newtons per square metre 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 health listeners. The decibel in abbreviated form is dB.

(f) **"noise"** means any unwanted sound **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 number of short term | Sound pressure level in dBA |
|---|---|
| 1 | 2 |
| 8 | 90 |
| 6 | 92 |

| | |
|---|---|
| 4 | 95 |
| 3 | 97 |
| 2 | 100 |
| 1& ½ | 102 |
| 1 | 105 |
| ¾ | 107 |
| ½ | 110 |
| ¼ | 151 |

**Notes:**
(i) No exposure in excess of 115 dBA is to be permitted.
(ii) 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)**

| Peck sound pressure level in dB | Permitted number of impulses or impacts per day |
|---|---|
| 140 | 100 |
| 135 | 315 |
| 130 | 1,000 |
| 125 | 3,160 |

(i) No exposure in excess of 140 dB peak sound pressure level is permitted.
(ii) 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 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.
(3) When the daily 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 exceeds unity.
(4) Where it is not possible to reduce the noise exposure to the levels specified in subparagraph (1) by reasonably practicable engineering control or administrative measures the noise exposure shall be reduced to the greatest feasible by such control or 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-paragraph (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 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 auditory 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-paragraph. (1) shall be subjected

| | |
|---|---|
| 120 | 10,000 |

**Notes:**
Where the C1, C2 etc., indicate the total time of actual exposure at a specified noise level and T1, T2, etc., denote the time or exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculations.

to an auditory examination by Certifying Surgeon within 14 days of his first employment and thereafter, shall be re-examined at least once in a year. 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, 500,1000,2000,4000 and 8000 cycles per second.

**Schedule XXIV**
**Manufacture of Rayon by Viscose Process**
**1. Definitions** (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 collulose pulp is treated with carbon disulphide;
(d) **"dumping"** means transfer of cellulose xanthate from a duty churn to a dissolver;

(e) **"efficient exhaust draught"** means localised ventilation by. mechanical means for the removal of any gas or vapour so as to prevent it from escaping into the air of any place in which work is carried on and 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, foot wear, gloves and overalls made of suitable materials.
(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-di-sulphide and hydrogen sulphide in the air of every work environment within the permissible limits.

For the purpose of this schedule:
**2. Ventilation**

(2) "Notwithstanding the requirements in sub-paragraph (1) an efficient exhaust draught shall be provided and maintained to control the concentration of carbon-di-sulphide and hydrogen sulphide in the air at the following locations namely:
(a) dumping hoppers of dry churns,
(b) spinning machines,
(c) trio rollers and cutters used in staple fibre spinning,
(d) hydro-extractors for yarn cakes,
(e) after treatment processes, and
(f) spin baths.
(3) Insofar as the spinning machines and trio rollers and cutters used in staple fibre spinning are concerned, they shall for the purpose of ensuring the effectiveness or the exhaust draught to be provided as required in sub-paragraph be 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 vapours of carbon-di-sulphide by operation or a suitable and efficient arrangement for exhausting the vapours 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 (I), (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 said sub-paragraphs are in use, as soon as possible and in any case not later than 15 minutes after such an occurrence.

(6)
(i) All ventilation systems provided for the purposes as required in sub-paragraphs (2), (3) and (4) shall be examined and inspected once in every work 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.
(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 of as quickly as possible after decontamination.

**4. Lining of dry churns**

The inside surface of all dry churns shall be coated with a nonsticky 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-di-sulphide 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 subparagraph (1), instantaneous gas detector tubes shall not be used. Samples shall be collected over duration of not less than 10 minutes and analysed 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-di-sulphide or hydrogen sulphide exceeds the permissible limits for such vapour or gas as laid down in rule 133-A, suitable steps shall be taken for controlling the concentration in air of such contaminants. 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 below for use of person employed in the processes referred to therein.

| Process | | Protective Equipment |
|---|---|---|
| 1. | Dumping | Overalls, face-shields, gloves and foot-wear all made of suitable material. |
| 2. | Spinning | Suitable aprons, gloves and foot-wear. |
| 3. | Process involving or likely to involve contact with viscose situation | 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 a suitable appliance for its administration; and
(c) lifebelts;

(2) 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.
(3) The breathing apparatus and other appliances referred to in clauses (a) and (b) of subparagraph (1) shall be cleaned and disinfected at suitable intervals and thoroughly inspected once in every month by a responsible person.
(4) A record of the maintenance and the condition of the breathing apparatus and other appliances referred to in sub-paragraph (1) shall be entered in a register provided for that purpose which shall be readily available for inspection by an Inspector.
(5) 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 2 such trained persons would be available during all the working hours in each room in which fume process is carried on.
(6) Breathing apparatus shall be kept properly labelled in clean, dry, light-proof cabinets and if liable to be effected by fumes, shall be protected by placing them in suitable containers.
(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 that sub-paragraph unless he has been fully instructed in the proper use of that equipment.

(8) No breathing apparatus provided under 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.

**10. Electric fittings**

All electric fittings in any room in which carbon-di-sulphide 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 pasted at 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 of spark may be carried on in such room only when required for the purposes 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 this 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 metre.

(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 namely— 1. Carbon-di-sulphide (CS2) and Hydrogen sulphide (H2S) which may be present in this room are hazardous to health.

2. Follow safety instructions.

**"Cautionary notice"**

3. Use protective equipment and breathing apparatus as and when required.
4. Smoking is strictly prohibited in this area.

(2) The notice shall be in a language understand 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.
(3) Arrangements shall be made to instruct each worker employed in any room in which 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.
(4) Simple and special instructions shall be framed to ensure that effective measures will be carried out in case of emergency involving escape of carbon-di-sulphide and hydrogen sulphide. These instructions shall be displayed in the concerned areas and workers shall be instructed and trained in the actions to be taken in such emergencies.
(1) The occupier of each factory to which this 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, 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 which shall be kept readily available for inspection by the Inspector.

**15. Medical facilities and records of examinations and tests**
**16. Medical examination by the Certifying Surgeon**
(1) Every worker employed in the fume process shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for estimation of exposure coefficient (iodine azide test or urine), and cholestorol, 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 shall after examining a worker, issue a Certificate of Fitness in Form 4. 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 and re-examination carried out under sub-paragraphs (1) and (2) respectively, including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 16.

(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.

The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion or the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
(6) No person who has been found unfit to work under sub-paragraph (5) 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 are 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.

**Schedule XXV**

**Highly flammable Liquids and Flammable Compressed Gases**

**1. Application**

This schedule shall apply to all factories where highly flammable liquids or flammable compressed gases are manufactured, stored, handled or used.

**2. Definition** (a) **"flammable compressed gas"** means flammable compressed gas as defined in Section 2 of the Static and Mobile Pressure Vessels (Unfired) Rules, 1981.
(b) **"highly flammable liquid"** means any liquid including its solution, emulsion or suspension which when tested in a manner specified by Section 14 or 15 of the

For the purpose of this schedule:

Petroleum Act, 1934 gives off flammable vapour at a temperature less than 32 degrees centigrade.

**3. Storage**

(1) Every flammable liquid or flammable compressed gas used in very factory shall be stored in suitable fixed storage tank or in suitable closed vessel located in a safe position under the ground, in the open or in a store room of adequate fire resistant construction.

(2) Except as necessary for use, operation or maintenance every vessel or tank which contains or had contained a highly flammable liquid or flammable compressed gas shall be always kept closed and all reasonably practicable steps shall be taken to contain or immediately drain off to a suitable container any spill or leak that may occur.
(3) Every container, vessel, tank, cylinder or store room used for storing highly flammable liquid or flammable compressed gas shall be clearly and in bold letters marked "Danger-Highly Flammable Liquid" or "Danger Flammable Compressed Gas"

**4. Enclosed systems for conveying highly flammable liquids**

Wherever it is reasonably practicable, highly flammable liquids shall be conveyed within a factory in totally enclosed systems consisting of pipe lines, pumps and similar appliances from the storage tank or vessel to the point of use. Such enclosed systems shall be so designed, installed, operated and maintained as to avoid leakage or the risk of spilling.

**5. Preventing formation of flammable mixture with air**

Wherever there is a possibility for leakage or spill of highly flammable liquid or flammable compressed gas from an equipment, pipe line, valve, joint or other part of a system all practicable measures shall be taken to contain, drawn off or dilute such spills or leakage as to prevent formation of flammable mixture with air.

**6. Prevention of ignition** (1) In every room, work place or other location where highly flammable liquid or flammable combustible gas is stored, conveyed, handled or used or where there is danger of fire or explosion from accumulation of highly flammable liquid or flammable compressed gas in air, all practicable measures shall be taken to exclude the sources of ignition. Such precautions shall include the following namely:
(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 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 foot wear haying 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 to 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.

**7. Prohibition of smoking**

No person shall smoke in any place where highly flammable liquid or flammable 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 notice indicating prohibition of smoking at every place where this requirement applies.

**8. Fire fighting**

In every factory where highly flammable liquid or flammable compressed gas is manufactured, stored, handled, or used, appropriate and adequate means of fighting a fire shall be provided. The adequacy and suitability of such means which expression includes the fixed and portable fire extinguishing systems, extinguishing material, procedures and the process of firefighting, shall be to the standards and levels prescribed by the Indian Standards applicable, and in any case not inferior to the stipulations under rule 71.

**9. 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 are 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.

**Schedule XXVI**

**Operations in Foundries**

**1. Application** (a) the production of iron castings 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 shall moulding, or by centrifugal casting and any process incidental to such production;

Provisions of this schedule shall apply to all parts of factories where any of the following operations or processes are carried on:

(b) the production of non-ferrous castings by casting metal in moulds made of sand, loam, metal, moulding composition or other material or mixture of materials, or by shall mouldings, die-casting (including pressure diecasting), centrifugal casting or continuous casting and any process incidental to such production; and

(c) the melting and casting of non-ferrous metal for the production of ingots, billets, slabs or other similar products, and the stripping thereof;

(a) any process with respect to the smelting and manufacture of lead and the Electric Accumulators;

(b) any process for the purpose of a printing works; or

(c) any smelting process in which metal is obtained by a reducing operation or any process incidental to such operation; or

(d) the production of steel in the form of ingots; or

(e) any process in the course of the manufacture of solder or any process incidental to such manufacture; or

(f) 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.
(a) **"approved respirator"** means a respirator of a type approved by the Chief Inspector;
(b) **"cupola or furnace"** includes a receiver associated therewith;
(c) **"dressing or fettling operations"** includes stripping and other removal of adherent sand, cores, runners, risers, flash and other surplus metal from a casting and the production of reasonably clean and smooth surface, but does not include,
(d) **"foundry"** means those parts of a factory in which the production of iron or steel or non-ferrous casting (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 shall 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

but shall not apply with respect to:
**2. Definitions**

For the purpose of this schedule:
(a) 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
(b) any operation which is a knockout operation within the meaning or this schedule;

which any of the following processes are carried on as incidental processes in connection with an in due 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) **"knockout 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 l cupola or furnace to where metal is poured into directly from a moulds.
(a) Zircomium silicate (Zircon)
(b) Calcined china day
(c) Calcined aluminous fireclay
(d) Silimanite
(e) Calcined or fused alumina
(f) Olivine
(g) Natural sand
(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.

**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 silicon calculated as silica to the extent more than 5 per cent by weight of the dry materials:

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:

(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 preserved:

**5. Construction of floors**

(1) Floors of 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.

**6. Cleanliness of indoor workplaces** (1) All accessible parts of the walls of every indoor work place 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 metres 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 at least once every working day or all accessible parts of the floor of every indoor workplace in which the processes are carried on, other than parts which are of sand; and the parts which are of sand shall be kept in good order.

**7. 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 where any person walks while engaged in the operation shall be on the same level:

Provided that, wherever necessary to enable the operation to be performed 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.

**8. 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 clearly defined main gangway 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 at least 920 millimeters in width;
(d) if used for carrying molten metal shall be:
(i) where truck ladles are used exclusively at least 600 millimeters wider than the overall width of the ladle.
(ii) where hand shanks are carried by not more than two men, at least 920 millimeters in width;
(iii) where hand shanks are carried by more than two men, at least 1.2 metres in width; and
(iv) where used for simultaneous travel in both directions by men carrying shanks, at least 1.8 metres in width.
(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 at least 460 millimeters wide, but where any moulds along side the aisle are 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 at least 760 millimeters wide;
(e) if molten is carried in crane, trolley or truck ladles, shall be of a width adequate for the safe performance of the work.

(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:
(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 or 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.

**9. Work near cupolas and furnaces** (1) No person shall carry out any work within a distance of 4 metres from a vertical line passing through the delivery end of any spout of a cupola or furnace, being a spout used for delivering molten metal, or within a distance of 2.4 metres from 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 of maintenance of a cupola or furnace that work should be carried out with in 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.

(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 unavoidable.

(3) Mould stoves, core stores 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 equality effective means of suppressing dust, operating as near as possible to the point of origin of the dust.

**11. Maintenance and examination of exhaust plant**

(1) All ventilation plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be properly maintained.

(2) All ventilating 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. It shall be thoroughly examined and tested by a competent person at least once in every period of twelve months; and particulars of the results of every such examination and test shall be entered in an approved register which shall be available for inspection by an Inspector. Any defect found on

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.

**12. 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 clause 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 than its contact with the body would cause a burn; or
(b) are engaged in, or in assisting with, the pouring or 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 than 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 or 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 or 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.
(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 60 centimeters for every 10 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 centimeters; or
(ii) at least one tap or stand pipe for every 10 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 1.2 metres 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 bath rooms.
(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.

**13. Washing and bathing facilities**
**14. Disposal of dross and skimmings**

Dross and skimmings removed from molten metal or taken from a furnace shall be placed forthwith in suitable receptacles.
**15. 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.
**16. 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 or access to all such material and equipment and, so far as reasonably practicable, such access shall be by roadways or pathways 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.
**17. Medical facilities and records of examinations and test**

(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.
**18. Medical examination by Certifying Surgeon**
(1) Every worker employed in a foundry shall be examined by a Certifying Surgeon within 15 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 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 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 3 years.
(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form 4. 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 16.
(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 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 so affected shall be suitably rehabilitated.
(6) No person who has been found unfit to work as said in sub-paragraph (3) above shall be reemployed or permitted to work in the said processes unless the

Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.
**19. Exemption** (1) When any accident which results in the death of any person or which results in such bodily injury to any person as likely to cause his death or when any dangerous occurrence specified in the schedule takes place in a factory, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger [127][or through department online portal "e-surakshate] to the Inspector and the Chief Inspector.
(2) When any accident or any dangerous occurrence specified in the schedule, which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, takes place in a factory, notice as mentioned in sub-rule (1) shall be sent also to:
(a) the District Magistrate or Sub-Divisional Officer;
(b) the Officer in charge of the nearest Police Station; and
(c) the relatives of the injured or deceased person.
(3) Any notice given as required under sub-rules (1) and (2) shall be confirmed by the manager of the factory to the authorities mentioned therein within 12 hours of the accident or the dangerous occurrence by sending them a written report in [128][form 17] in the case of an accident or dangerous occurrence by causing death or bodily injury to any person and in form 17-A in the case of a dangerous occurrence which has not resulted in death or in any bodily injury to any person.
(4) When any accident or dangerous occurrence specified in the schedule takes place in a factory and it causes such bodily injury to any person as to prevent the person injured from working for a period of 48 hours or more immediately following the accident or the dangerous occurrence, as the case may be, the manager of the factory shall send a report thereof to the

Inspector in Form 17 within 24 hours after the expiry of 48 hours from the time of the accident or the dangerous occurrence:

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 specify therein.]

**130. Notification of Accidents and dangerous occurrences**

Provided that if in the case of an accident or dangerous occurrence, death occurs to any person injured by such an accident or dangerous occurrence after the notices and reports referred to in the foregoing sub-rules have been sent, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram to the authorities and persons mentioned in sub-rules (1) and (2) and also have this information confirmed in writing within 12 hours of the death:

(a) bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.
(b) Collapse of failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods or any part thereof, or the over turning of crane.
(c) Explosion, fire bursting out, leakage or escape of any molten metal, or hot iron or gas causing bodily injury to any person or damage to 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 or any gas.
(e) collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall building or any other structure.

Provided further that, if the period of disability from working for 48 hours or more referred to in sub-rule 4 does not occur immediately following the accident, or the dangerous occurrence, but later, or occurs in more than one spell, the report referred to shall be sent to the Inspector in the form 17 within 24 hours immediately following the hour when the actual total period of disability from working resulting from the accident or the dangerous occurrence "becomes 48 hours.

**Schedule**

The following classes of dangerous occurrences, whether or not they are attended by personal injury or disablement:

**131. Notice of poisoning or disease**

A notice in form No. 18 should be sent forthwith [129][or through department online portal "e-surakshate] both to the Chief Inspector and to the Certifying Surgeon and the Administrative

Medical Officer, Employees State Insurance Scheme by the Manager of a factory in which there occurs a case of lead, phosphorous, mercury, manganese, arsenic, carbon-disulphide or benzene poisoning or poisoning by nitrous fumes or by halogens or halogen derivatives of the hydrocarbons of the aliphatic series, or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundice-primary opithelimatous, cancer of the skin, or pathological manifestations due to radium or other radio active substances or X rays.

**131-A. 130[Precaution against certain chemical substances in work location**

Without prejudice to any other provision in the Act, or the rules, the precaution against certain chemical substances in work location specified in the schedule below shall apply to all factories.

**Schedule**

**1. Definitions**

(1) For the purpose of this schedule: (a) "mg/$m_3$" means milligrams of a substance per cubicmetre of air;

(b) "mppcm" means million particles of a substance per cubic metre of air;

(c) "ppm" means part of vapour of gas per million parts of air by volume at 250c. and 760 mm 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 commuted from evaluation of adequate number of air samples taken at the location, spread over the entire shift on any day, after giving weight age to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

**Note:** Time weighted average concentration = Where:

C1- represents the concentration of the 1 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)

(2) **"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:

(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 shall 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.

Provided that in 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:
(2) In the case of any substance given in Table 3, the weighted time average concentration shall be taken to prevent absorption through cutaneous routes particularly skin, mucous membranes and eyes as the limits prescribed in these tables are for conditions where the exposure is only through respiratory tract.

(3) In the case where the word "skin" has been indicated against certain substances 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 track.
(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 above mentioned tables, and the fractions obtained are added together, the total shall exceed unity.
(b) In case the air at any work location contains a mixture of substances, mentioned in Tables 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 sub-paragraphs (1) and (2).
(1) Notwithstanding anything contained 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 anything in paragraph 5, the following conditions regarding the sampling and evaluation procedures relevant to checking compliance with the provisions in this schedule are specified namely—
(a) For determination of the number of particles per cubic metre in item 1 (a)(i)(1) in Table 2, samples are to be collected by standard or midget impinger and the counts made by light-field technique.
(b) The percentage of quartz in the formula given in item 1(a)(i)(3) of Table 2 is to be determined from air borne samples.

i.e. C1 /L1 + C2/L2... Cn/Ln should not exceed unity.
When C1, C2.... Cn are the time weighted concentration of toxic substances 1, 2 .... and 'n' respectively, determined after measurement at work location; and L1, L2 .... Ln are the permissible time weighted average concentration of the toxic substances 1, 2... and ‘n’ respectively.

**3. Sampling and evaluation procedures**

(c) For determination of number of fibres as specified in item 2(a) of Table 2, the membrane filter method at 430 x phase contrast should be used.
(d) Both 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 (Unit density sphere) | Percentage allowed by size - selector |
|---|---|
| 2.0 | 90 |
| 2.5 | 75 |
| 3.5 | 50 |
| 5.0 | 25 |
| 10.0 | 0 |

**4. Power to require assessment of concentration of substance** (1) An Inspector may, by an order in writing, direct the occupier or management 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 shall be sent to the Inspector within 3 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**

The Chief Inspector may, if he is satisfied that in any factory or part of a factory, 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 1, 2 or 3 to such an extent as is likely to be injurious to his health, by an order in writing, exempt such factory or a part or the factory from the requirements in paragraph 2, subject to such conditions, if any, as he may specify therein.

**Table 1**

| **Sl. No** | **Substance** | **Permissible limits of exposure** | | | |
|---|---|---|---|---|---|
| **Time-Weighted average concentration** | | | **Short-term maximum concentration** | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| **ppm** | **mg/mg3** | | **ppm** | **tng/mg3** | |

| | | | | | |
|---|---|---|---|---|---|
| 1. | Acetaldehyde | 100 | 0(sic) | 150 | 270 |

| | | | | | |
|---|---|---|---|---|---|
| 2. | Acetic acid | 10 | (sic) | 15 | 37 |
| 3. | Acetone | 50 | 1(sic) | 1000 | 2375 |
| 4. | Acrolein | 0.1 | 0.2(sic) | 0.3 | 0.8 |
| 5. | Acrylonitrile Skin (S.C.) | 2 | 4.5 | - | - |
| 6. | Aldrin-skin | - | 0.25 | - | - |
| 7. | Allylchloride | 1 | 3 | 6 | |
| 8. | Ammonia | 25 | 28 | 27 | |
| 9. | Aniline-Skin | 2 | 10 | | |
| 10. | Anisidine (os p-isomers)-skin | 0.1 | 0.5 | | |
| 11. | Arsenic & soluble compounds as (AS) | - | 0.2 | - | - |
| 12. | Benzene (S.C.) | 10 | 30 | - | - |
| 13. | Beryllium & Compound (as Be) (S.C.) | - | 0.002 | - | - |
| 14. | Boron trifluoride-C | 1 | 3 | - | - |
| 15. | Bromine | 0.1 | 0.7 | 0.3 | 2 |
| 16. | Butane | 800 | 1900 | - | - |
| 17. | 2-Butanone (Methylethy Ketone-MBK) | 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 Ousts and sales (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 tetra chloride-Skin (S.C.) | - | 5 | 30 | - |

| | | | | | |
|---|---|---|---|---|---|
| 29. | Chlordane-Skin | - | 0.5 | - | 2 |
| 30. | Chlorine | 1 | 3 | 3 | 9 |
| 31. | Chlorobenzene | 75 | 350 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| (Monochlorobenzene) | | | | | |
| 32. | Chloroform (S.C.) | 10 | 50 | - | - |
| 33. | bis (Chloromethyl) ether (H.C.) | 0.001 | 0.005 | - | - |
| 34. | Chromic and chromates (as Cr) (Water soluble) | - | 0.05 | - | - |
| 35. | Chromous salts (as Cr) | - | 0.05 | - | - |
| 36. | Copper fume | - | 0.2 | - | - |
| 37. | Copper dust, raw | - | 0.2 | - | - |
| 38. | Cresol, allisomers-Skin | 5 | 22 | - | - |
| 39. | Cyanides (as CN)-Skin | - | 5 | - | - |
| 40. | Cyanogen | 10 | 20 | - | - |
| 41. | DDT (Dichlorodi phenyl trichloroe thane) | - | 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. | Dinitrobenzene (allisomers)-Skin | 0.15 | 1 | - | - |
| 48. | Dinitrotoluene-Skin | - | 1.5 | - | - |
| 49. | Diphenyl (Biphenyl) | 0.2 | 1.5 | - | - |
| 50. | Endosulfan (Thiodan)- Skin | - | 0.1 | - | - |
| 51. | Endrin-Skin | - | 0.1 | - | - |
| 52. | Ethylacetate | 400 | 1400 | - | - |
| 53. | Ethylalcohol | 1000 | 1900 | - | - |
| 54. | Ethylamine | 10 | 18 | - | - |
| 55. | Fluorides (as F) | 2.5 | - | - | |
| 56. | Flourine | 1 | 2 | 2 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| 57. | Formaldehyde (S.C.) | 1.10 | 1.5 | 2 | 3 |
| 58. | Formic acid | 5 | 9 | - | - |
| 59. | Gasoline | 300 | 900 | 500 | 1500 |
| 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 Fum (Fe2O3)(as Fe) | - | 5 | - | - |
| 68. | Isoamylacetate | 100 | 525 | - | - |
| 69. | Isoamylalcohol | 100 | 360 | 125 | 452 |
| 70. | Isobutylalcohol | 50 | 150 | - | - |
| 71. | Lead, inorg, dusts and fumes (as Pb) | - | 0.1 | - | - |
| 72. | Lindane-Skin | - | 0.5 | - | - |
| 73. | Malathion-Skin | - | 10 | - | - |
| 74. | Manganese dust and compounds (as Mn)-C | 5 | - | - | |
| 75. | Manganese fume (as Mn) | - | 1 | - | 3 |
| 76. | Mercury (as Hg)-Skin | | | | |
| i. Alkylcompounds | 0.01 | - | 0.03 | | |
| ii. All forms except alkyl vapour | | 0.05 | | | |
| iii. Anyland in organic compounds | | 0.1 | | | |
| 77. | Methyl alcohol (Methanol)-Skin | 200 | 260 | 250 | 310 |
| 78. | Methylcellosolve (2-Methoxyethanol) -Skin | 5 | 16 | - | - |
| 79. | Methylisobutyl Ketone | 50 | 205 | 75 | 300 |
| 80. | Methyl isocyanate-Skin | 0.02 | 0.05 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| 81. | Naphohalene | 10 | 50 | 15 | 75 |
| 82. | Nickel carbonyl (as Ni) | 0.05 | 0.35 | - | - |
| 83. | Nitric acid | 2 | 5 | 4 | 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. | Para thion-Skin | - | 0.1 | - | - |
| 90. | Phenol-Skin | 5 | 19 | - | - |
| 91. | Phorate (Thimet)-Skin | - | 0.05 | - | - |
| 92. | Phosgene (Carbonyl Chloride) | 0.1 | 1.4 | - | - |
| 93. | Phoshine | 0.3 | 0.4 | - | 1 |
| 94. | Phosphoric acid | - | 1 | - | 3 |
| 95. | Phosphorus (yellow) | - | 0.1 | - | - |
| 96. | Phosphorus penta chloride | 0.1 | 1 | - | - |
| 97. | Phosphorus tri chloride | - | 0.1 | - | 0.3 |
| 98. | Picric-acid-Skin | - | 0.1 | - | 0.3 |
| 99. | Pyridine | 5 | 15 | - | - |
| 100. | Silane (Silicon tetra hydride) | 5 | 7 | - | - |
| 101. | Sodium Hydroxide-C | - | 2 | - | - |
| 102. | Styrene, monomer (Phenylethylene) | 50 | 215 | 100 | 425 |
| 103. | Sulphur dioxide | 2 | 5 | 5 | 10 |
| 104. | Sulphur hexa-fluoride | 1000 | 6000 | - | - |
| 105. | Sulphuric acid | - | 1 | - | - |
| 106. | Tetraethyl lead (as Pb)-Skin | - | 0.1 | - | - |
| 107. | Tolune (Toluol) | 100 | 375 | 150 | 560 |
| 108. | O.Toluidine-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 choride (H.C.) | 5 | 10 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| 113. | Welding fumes | - | 5 | - | - |
| 114. | Xylene (o-,m-,isomers) | 100 | 435 | 150 | 655 |
| 115. | | | Zine Oxide | | |
| i. Fume | | - | 5.0 | - | 10 |
| ii. Dust (Total dust) | | - | 10.00 | - | - |
| 116. | Zirconium compounds as Zn | - | 5 | - | 10 |

**Table 2**

| Substance | Permissible time weighted average concentration |
|---|---|
| 1. | Silica |

| | |
|---|---|
| (a) Cruystalline | |
| (i) Quartz | |
| (1) In terms of dust count | ____1060___ mppcm<br>% quartz + 10 |
| (2) In terms of Dust respirable | _____10_____ mg/m3<br>% respirable quartz + 2 |
| (3) In terms of total dust | ____30____ mg/m3<br>% quartz + 3 |
| (ii) Cristoblite | Half the limita given against quartz |
| (iii) Tridymitc | Half the limita given against quartz |
| (iv) Silica fused | Same limit as for quartz |
| (v) Tripoli | Same limit as in formula in item 2 given against quartz |
| (b) Amorphous | 705 mppcm |
| 2. | Silicate having less than 1% free silica by weight |
| (a) Asbestos-fibres longer | |
| (i) Amosite | 0.1 fibre/cubic centimetre |
| (ii) Chrysetile | 2 fibre/cubic centimetre |
| (iii) Crocideline | 0.2 fibre/cubic centimetre |
| (iv) Other form | 2 fibres/cubic centimetre |
| (b) Mica | 705 mppem |
| (c) Mineral wool fibre | 10 mg/m3 |
| (d) Porlite | 1660 mppcm |
| (e) Portland cement | 1060 mppcm |

| | |
|---|---|
| (f) Soap stone Talc(nonabostifoam) | 705 mppcm 705 mppcm |
| (g) Talc (fibrous) | same limit as for asbestos |
| (h) Tromlite | same limit as for asbestos |
| 3. | Coal dust |
| (1) For airborne dust having less than 5% silicon dioxide by | 2 mg/m3 |
| (2) For airborne dust having over 5% silicon dioxide | same limit as prescribed by formula in item (2) against quartz |

**Table-3**

| **Substance** | **Permissible limit of exposure** | |
|---|---|---|
| ppm | mg/m3 | |
| Acatic anhydroide | **5** | **20** |
| O-Dichlorobenzene | **50** | **300** |
| Formaldehyde | **2** | **3** |
| Hydrogen Chloride | **5** | **7** |

(1) An appeal presented under Section 197 shall lie to the Chief Inspector, or in cases where the order appealed against is an order passed by that officer, to the State Government or to such authority as the Government may appoint in this behalf and shall be in the form of a memorandum setting forth concisely the grounds of objections to the order and bearing court fees stamps in accordance with Article 11 of Schedule II to the Karnataka Court Fees and Suits Valuation Act, 1958 and shall be accompanied by a copy of the order appealed against.
(2) 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:
(a) if the appellant is a member of one such bodies, be the body;

| | | |
|---|---|---|
| Manganese and compounds (as | **-** | **5** |
| Nitrogen dioxide | **5** | **9** |

| | | |
|---|---|---|
| Notroglycerin-skin | **0.2** | **2** |
| Potassium hydroxide | **-** | **2** |
| Sodium hydroxide | **-** | **2** |
| 2,4,6-Trinitrotoluene (TNT) | **-** | **0.5]** |

**Chapter X**

**132. Procedure in appeals**

(1) The Karnataka Chamber of Commerce
(2) The Karnataka State Estate Labour Relations Organisation (MPA), Kumergode Estate, Mudigere
(3) The Indian Planters, Association, Chikkamagalur, or
(4) Other organisation of employees in the Industry concerned if any
(5) Karnataka Chamber of Commerce, Hubli
(6) South Kanara Chamber of Commerce, Mangalore
(7) Bellary Chamber of Commerce, Bellary.

The body empowered to appoint the assessor shall;

(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 appellant authority considers as the best fitted to represent the industry concerned.
(4) An assessor appointed in accordance with the provisions of sub-rule 2 and 3 shall receive for the hearing of the appeal, a fee to be fixed by the appellate authority, subject to a maximum or fifty rupees per diem. He shall also receive the actual travelling expenses. The fees and travelling expenses shall be paid to the assessors by Government, but where assessors have been appointed at the request of the appellant or the appeal has been decided wholly or partly against him the appellate authority may direct that the fees and travelling expenses of the assessors shall be paid in whole or in part by the appellant.
(1) The abstract of the Act and of the rules required to be displayed in every factory shall be in form 19.
(2) All the registers and forms prescribed to be maintained under these rules shall be maintained in English or in Kannada.

**133. Display of notices**

**134. Returns**

The Manager of every factory shall furnish [131][ in person or through post or through department online portal "e-surakshate] to the Inspector or other officer appointed by the State Government having jurisdiction over the area in which the factory is situated the following returns:

(1) [132]**[Combined Annual Return: -** On or before 1st February of each year, a combined annual return, in duplicate in Form 20.]
(2) **Annual return of holidays: -** Before the end of each year, a return giving notice of all the days on which it is intended to close the factory, during the next ensuing year. If in any year a factory is newly started or re-started after a closure during the previous year such return shall be submitted before the date of such starting or restarting for the remaining period of year. This return shall be submitted whether the factory is or is not working during the year preceding the year to which the return relates: (a) which regularly observe Sundays as holidays, or
(b) which regularly observe a fixed day in the week as a holiday, or
(c) which observe holidays according to a list approved by the Chief Inspector:

Provided that the Chief Inspector may dispense with this return in the case of any specified factory or of any class of factories or of factories in any particular area:
Provided further that the annual return of holidays shall be dispensed with in case of all factories:

Provided, also where the Manager of any factory makes any departure from such a holiday or list of holidays as aforesaid prior intimation shall be given to the Chief Inspector.
(3) **Half year return: -** The Manager of every factory shall furnish to the Inspector on or before the 15th July, of each year, a half-yearly return in duplicate in Form No. 21.
(4) **Leave with Wages: -** Annual Returns: The Manager of every factory shall furnish to the Inspector not later than the 1st February of the year subsequent to that to which it relates a return in Form No. 20.
(5) **Compensatory holidays: -** Annual Returns: The Manager of every factory shall furnish to the Inspector not later than the 1st February of the year subsequent to that which it relates a return in Form No. 20.
(6) **Canteen: -** Annual Return: The Manager of every factory notified by the State Government wherein more than 250 workers are ordinarily employed shall furnish to the Inspector not later than the 1st February of the year subsequent to that to which it relates a return in Form No. 20.
(7) **Creche: -** Annual Return: The Manager of every factory wherein more than 50 women workers are ordinarily employed and provided creches shall furnish to the Inspector not later than 1st February of the year subsequent to that to which it relates a return in Form No. 20.
(8) **Shelter, Rest-rooms and Lunch rooms: -** Annual return: The Manager of every factory wherein more than 150 workers are ordinarily employed shall furnish to the Inspector not later than the 1st February of the year subsequent to that to which it relates a return in Form No. 20.
(9) **Accident Annual Return: -** The Manager of every factory shall furnish to the Chief Inspector not later than the 1st February of the year subsequent to that to which it relates a return in Form No. 20:

Provided that in the case of 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 of Factories, submit the annual or half-

yearly return as the case may be within 15 days after the dose of that period or after close of the last of those periods in the year as the case may be.

**135. Service of notices**

The despatch by post under registered cover with acknowledgement due to any notice or order shall be deemed sufficient service on the occupier, owner or manager of a factory of such notice or order.

**136. 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. Any demand by

(1) The Manager of every factory shall maintain a muster-roll [133][cum-register of wages/salary] of all the workers employed in the factory in Form No. 22 showing.

(a) the name of each worker

(b) the nature of his work,

(c) groups and relays if any, and

(d) the daily attendance of the worker:

(2) The [135][muster-roll-cum-register of wages/salary] shall be written up afresh each month and shall be preserved for a period of 3 years from the date of last entry in it:

an Inspector for any such information, if made, during the course of an inspection, shall be complied forthwith if the information is available in the factory, or, if made in writing shall be complied within seven days of receipt thereof.

**137. Muster Roll**

Inserted by Notification No. L

Provided that if the daily attendance is noted in the Register of Adult workers in Form 11 or the particulars required under this rule are noted in any other register a separate [134][muster-roll cum register of wages/salary/ subsistence allowance] required under this Rule need not be maintained.

Provided that if the daily attendance is noted in respect of Adult and Child Workers in the Register of workers in Forms 11 and 13 respectively, or the particulars required under sub-rule (1) are noted in any other register, and such registers are preserved for a period of 3 years from the date of last entry in them, a separate [136][muster-roll-cum-register of wages/salary] required under sub-rule (1) shall not be maintained.

**138. Register of accidents and dangerous occurrences**

(1) The Manager of every factory shall maintain a register of all accidents and dangerous occurrences which occur in the factory in Form 23 showing the: (a) Name of injured person (if any).

(b) Date of accident or dangerous occurrence.

(c) Date of report in Form No. 17 to Inspector.

(d) Nature of accident or dangerous occurrence.

(e) Date of return of injured person to work.

(f) Number of days of absence from work of injured person.

(2) The manager shall furnish to the Inspector at the end of every month a return snowing name of injured person, date of accident, number of days of absence from work if he returned to work.

**139. Maintenance of Inspection Book**

(1) The Manager of every factory shall maintain a bound Inspection Book of the Size 34 cm. x 22 cm, containing the following particulars and shall produce it when so required by the Inspector or certifying Surgeon for recording his observations: (a) the exemptions granted or available of by the factory in Form 28.

(b) the particulars of rooms in the factory in Form 29.

(c) the particulars of lime washing, colour-washing, painting, varnishing or tarring as the case may be, in Form 6.

(d) The Inspection Book shall contain at least 180 pages, every third page thereof shall be consecutively numbered and the other two un-numbered pages between each two consecutively numbered pages shall have a vertical perforated straight line on the margin side at a margin of 2.5 cm.

(2) In case the Inspection Book containing remarks passed by the Inspector or Certifying Surgeon is lost the manager of the factory shall forthwith report in writing the loss of the Inspection Book to the Inspector in charge of the area and immediately maintain a new inspection Book.

(3) The Manager shall obtain as early as possible copies of all available remarks from the factory Inspection Officer concerned at his cost on payment of necessary typing charges as prescribed.

(1) The maximum number of workers who may be employed in each work-room 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 2.3 square metres in the case of existing factors and 3.3 square metres 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 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.

**140.**

The particulars of measurements of each room in the factory in which workers are employed shall be entered in Form 29.

**141.**

**142. Intimation of intended closure of factory**

The occupier or manager of every factory shall report to the inspector, any intended closure of the factory or any section or department thereof immediately it is decided to do so, intimating:

(i) the reason for the closure;
(ii) the number of workers on the register on the date of report;
(iii) the number of workers likely to be affected by the closure;
(iv) the probable period of the closure; and
(v) details and arrangements of payments in lieu of leave with wages to workers whose services are terminated.

(iv-a) [137][The particulars and quantity of chemicals stored and action taken or proposed to be taken to ensure safety for those chemicals while in storage during such closure;]
An intimation shall also be sent to the inspector before the factory or the section or the department thereof, as the case may be, starts working again.

1 Published in the Karnataka Gazette, dated 10-4-1969 vide Notification No. FCC 113 LFB 65, dated 11-3-1969.
2 Clause (j) omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10- 1993.
3 Rules 3 inserted by GSR 173, dated 28-8-1982 and substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
4 Inserted by noti.no. 934, Part IVA dated 12-10-2017
5 Substituted for the words" rupees one hundred only" by notification No. KAE 18 KABANI 95 (1), dated 6-10-2010, w.e.f. 1-1-2011.
6 Substituted for the words "rupees two hundred and fidty" by Notification No. LD 14 LET 2010, dated 6-10-2010, w.e.f. 29-12-1999.
7 Substituted for the word "rupees five hundred" by Notification No. LD 14 LET 2010, dated 6-10-2010, w.e.f. 1-1-2011.
8 Substituted for the words "above five hundred" by notification No. LD 14 LET 2010, dated 6-10-2010, w.e.f. 1-1-2011.
9 Inserted by Notification No. LD 14 LET 2010, dated 6-10-2010, w.e.f. 1-1-2011.
10 Substituted for the words "chemical factories" by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999. w.e.f. 29-12-1999.
11 Proviso inserted by Notification No. LD 16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10-2002.
12 Inserted by Notification No. LD 16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10- 2002.
13 Inserted by noti.no. 934, Part IVA dated 12-10-2017
14 Rule 3-A inserted by GSR 173, dated 28-8-1982 and substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
15 Inserted by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999, w.e.f. 29-12-1999.
16 Inserted by noti.no. 934, Part IVA dated 12-10-2017
17 Sub-rules (2) and (3) inserted by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999, w.e.f. 29-12-1999.
18 Inserted by noti.no. 934, Part IVA dated 12-10-2017
19 Subs. by noti.no. 934, Part IVA dated 12-10-2017
20 Existing sub-rule (2) renumbered as sub-rule (4) by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999, w.e.f. 29-12-1999.
21 Inserted by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999, w.e. f. 29-12-1999.
22 Inserted by noti.no. 934, Part IVA dated 12-10-2017
23 Rules 4 and 5 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
24 Subs. by noti.no. 934, Part IVA dated 12-10-2017
25 Rules 4 and 5 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
26 Substituted by Notification No. LD 40 KABANI 2018 (P-3) w.e.f. 09-03-2020.
27 Subs. by noti.no. 934, Part IVA dated 12-10-2017
28 Subs. by noti.no. 934, Part IVA dated 12-10-2017
29 Inserted by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999, w.e.f. 29-12- 1999.
30 Subs. by noti.no. 934, Part IVA dated 12-10-2017
31 Subs. by noti.no. 934, Part IVA dated 12-10-2017
32 Subs. by noti.no. 934, Part IVA dated 12-10-2017
33 Rule 7-A inserted by Notification No. SWL10 LET 87, dated 1-10-1993, w.e.f. 1-10- 1993.
34 Subs. by noti.no. 934, Part IVA dated 12-10-2017
35 Subs. by noti.no. 934, Part IVA dated 12-10-2017
36 Substituted for the words "rupees two hundred and fifty" by Notification No. LD14 LET 2010, dated 6-10-2010 w.e.f. 1-1-2011. 29-12-1999, w.e.f. 29-12-1999.
37 Substituted by Notification No. KAE 18 KABANI 95(1), dated 29-12-1999, w.e.f. 29-12- 1999.
38 Inserted by noti.no. 934, Part IVA dated 12-10-2017
39 Proviso added by GSR 173, dated 28-8-1982.
40 Subs. by noti.no. 934, Part IVA dated 12-10-2017
41 Subs. by noti.no. 934, Part IVA dated 12-10-2017
42 Provisos omitted by Notification No. SWL10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
43 Sub-rule (3) omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
44 Subs. by noti.no. 934, Part IVA dated 12-10-2017
45 Substituted for the words "rupee one "by notification No. LD14 LET 2010, dated 6-10-2010 W.e.f. 1-1-2011.
46 Substituted for the word "fifty paise" by notification No. LD14 LET 2010, dated 6-10-2010 w.e.f. 1-1-2011.
47 Rule 18 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e./. 1-10-1993.

48 Rule 33 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
49 Substituted for the words "of these Rules" by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
50 Rule 37 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
51 The words "the taps connected with a" omitted by Notification No. SWL 50 LEB 75, dated 22-11-1976, w.e.f. 25-11-1976.
52 Inserted by noti.no. 934, Part IVA dated 12-10-2017
53 Rule 40 substituted by Notification No. SWL 50 LFB 75, dated 22-11-1976, w.e.f. 25-11-1976.
54 Inserted by noti.no. 934, Part IVA dated 12-10-2017
55 Inserted by noti.no. 934, Part IVA dated 12-10-2017
56 Proviso inserted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e,f. 1-10-1993.
57 Clauses (e) and (f) substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
58 Schedules I, II, III, IV and V substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
59 Schedules I, II, III, IV and V substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
60 Schedules I, II, III, IV and V substituted by Notification No. SWL 10 LET 87, dated 1-10- 1993, w.e.f. 1-10-1993.
61 Schedules I, II, III, IV and V substituted by Notification No. SWL 10 LET 87, dated 1-10- 1993, w.e.f. 1-10-1993.
62 Schedules I, II, III, IV and V substituted by Notification No. SWL 10 LET 87, dated 1-10- 1993, w.e.f. 1-10-1993.
63 Schedules VI and VII inserted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
64 Schedules VI and VII inserted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
65 Substituted by GSR 173, dated 28-8-1982.
66 . Inserted by GSR 80, dated 4-3-1977, w.e.f. 10-3-1977.
67 Rule 65 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f.1-10- 1993.
68 Rule 65-A inserted by Notification No. SWL 73 LFB 77, dated 1/5-12-1978, w.e.f. 21-12-1978.
69 Rules 65-B to 65-E inserted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
70 Rule 66 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
71 Schedule I substituted by Notification No. SWL 84 LFB 72, dated 18-10-1975, w.e.f. 30-10-1975.
72 Substituted for the sentence "All processes in connection with glass melting furnaces" by Notification No. SWL 84 LFB 72, dated 18-10-1975, w.e.f. 30-10-1975.
73 Rule 71 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
74 Rules 72, 73, 74, 75, 76 and 77 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
75 Rules 72, 73, 74, 75, 76 and 77 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
76 Rules 72, 73, 74, 75, 76 and 77 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
77 Rules 72, 73, 74, 75, 76 and 77 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
78 Rules 72, 73, 74, 75, 76 and 77 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
79 Rules 72, 73, 74, 75, 76 and 77 omitted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
80 Rule 79-A inserted by GSR 13, dated 20-12-1972, w.e.f. 18-1-1973.
81 Rule 86 renumbered as Rule (1) by GSR 159, dated 6-7-1981.
82 Sub-rule (2) inserted by GSR 159, dated 6-7-1981.
83 Rule 88-A inserted by GSR 173, dated 28-8-1982.
84 Subs. by noti.no. 934, Part IVA dated 12-10-2017
85 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
86 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
87 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
88 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
89 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
90 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
91 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
92 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
93 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
94 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
95 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
96 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
97 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
98 Inserted by noti.no. 934, Part IVA dated 12-10-2017
99 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
100 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
101 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
102 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
103 Rules 88-B to 88-Q inserted by Notification No. SWL 10 LET 87, dated 1-10-1933, w.e.f 1-10-1993.
104 Rules 91 and 92 substituted as Rules 91,91-A and 92 by GSR 301, dated 12-8-1970, w.e.f. 27-8-1970.
105 Rules 91 and 92 substituted as Rules 91,91-A and 92 by GSR 301, dated 12-8-1970, w.e.f. 27-8-1970.
106 Rules 91 and 92 substituted as Rules 91,91-A and 92 by GSR 301, dated 12-8-1970, w.e.f. 27-8-1970.
107 Inserted by noti.no. 934, Part IVA dated 12-10-2017
108 Omitted by noti.no. 934, Part IVA dated 12-10-2017
109 Substituted for the words "State Government may by notification" by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
110 Sub-rule (3) inserted by GSR 173, dated 28-8-1982.
111 Rule 99 renumbered as sub-rule (1) by Notification No. SWL 95 LFB 73, dated 1-9-1977, w.e.f. 15-9-1977.
112 Sub-rule (2) inserted by Notification No. SWL 95 LFB 73, dated 1-9-1977, w.e.f. 15-9-1977.
113 Rule 100 substituted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.
114 Inserted by GSR 173, dated 28-8-1982.
115 Rule 104-B inserted by Notification No. LD 16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10-2002.
116 Substituted for the words "muster roll" by Notification No. LD 16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10-2002.

117 Inserted by noti.no. 934, Part IVA dated 12-10-2017
118 Omitted by noti.no. 934, Part IVA dated 12-10-2017
119 Rule 111 renumbered as sub-rule (1) thereof by Notification No. LD16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10-2002.
120 Sub-rule (2) inserted by Notification No. LD 16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10-2002.
121 Rules 113 to 115 omitted by Notification No. SWL 79 LFB 77, dated 6-7-1981, w.e.f. 9-7-1981.
122 Rules 113 to 115 omitted by Notification No. SWL 79 LFB 77, dated 6-7-1981, w.e.f. 9-7-1981.
123 Rules 113 to 115 omitted by Notification No. SWL 79 LFB 77, dated 6-7-1981, w.e.f. 9-7-1981.
124 Substituted by Notification No. LD 74 KABANI 2002, dated 2-8-2003, w.e.f. dated 18-9- 2003.
125 Rule 116-A inserted by Notification No. GSR 421, dated 26-11-1969, w.e.f. 4-12-1969.
126 Rule 129 substituted by Notification No. SWL 46 LET 85 (Karnataka Factories (Amendment) Rules, 1986) KGD 6-9-1990.
127 Inserted by noti.no. 934, Part IVA dated 12-10-2017
128 Substituted by GSR 309, dated 19-12-1985.
129 Inserted by noti.no. 934, Part IVA dated 12-10-2017
130 Rule 131-A inserted by Notification No. SWL 46 LET 85 (Kar. Factories (Amdt.) Rules, 1986) KGD 6-9-1990.
131 Inserted by noti.no. 934, Part IVA dated 12-10-2017
132 Clause (1) substituted by Notification No. LD16 KABANI 2001(1), dated 6-7-2002, w.e.f. 19-10-2002.
133 Substituted words “muster-role cum register of wages /salary” by Notification No. LD 42 KABANI 2004, dated 27-6-2005, w.e.f. 28-7-2005.
134 Substituted for the words “muster roll” by notification No. LD 42 KABANI 2004, dated 27-6-2005, w.e.f. 28-7-2005.
135 Substituted for the words "muster-roll" by Notification No. LD 42 KABANI 2004, dated 27-6-2005 w.e.f. 28-7-2005.
136 Substituted for the words "muster-roll" by Notification No. LD 42 KABANI 2004, dated 27-6-2005, w.e.f. 28-7-2005.
137 Clause (iv)(a) inserted by Notification No. SWL 10 LET 87, dated 1-10-1993, w.e.f. 1-10-1993.