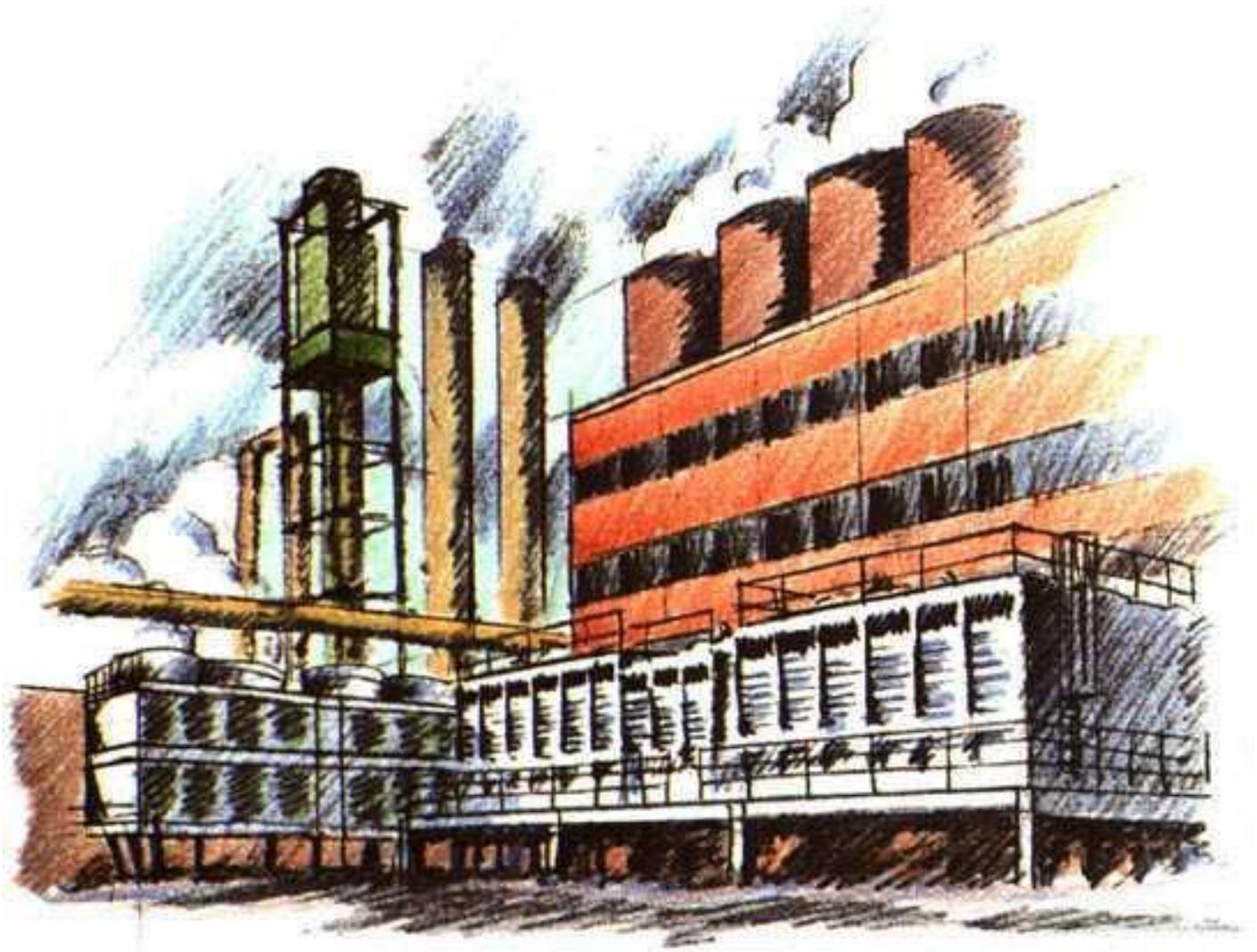


THE KERALA FACTORIES RULES, 1957



**DEPARTMENT OF FACTORIES & BOILERS
KERALA**

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GOVERNMENT OF KERALA
Labour and Local Administration Department
NOTIFICATION

No. D Dis. 4373/57/L and L.A.D dated Trivandrum 12th December 1957

In exercise of the powers conferred by section 112 of Factories Act, 1948 (Central Act LXIII of 1948), the Government of Kerala hereby make the following rules, the same having been previously published as required by section 115 of the said act.

THE KERALA FACTORIES RULES, 1957

CHAPTER I
PRELIMINARY

1.Short title, extent and commencement:

- (1) These rules may be cited as the Kerala Factories Rules, 1957.
- (2) These rules shall extend to the whole of the State of Kerala.
- (3) These rules except rules 29 to 33, 81, 88, 91 to 102 and 122 shall come into force at once and rules 29 to 33, 81, 88, 91 to 102 and 122 shall come into force on such days as are specified therein

2.Definitions:

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

- (a) “Act” means the Factories Act, 1948.
- (b) “Appendix” means an appendix append to these rules.
- (c) “Artificial humidification” means the introduction of moisture into the air of a room by any artificial means whatsoever ; except the unavoidable escape of a steam or water vapour into the atmosphere directly due to a manufacturing process:
Provided that the introduction of air directly from outside through moistened mats or screens placed in opening at times when the temperature of the room is [26.5 °C] or more, shall not be deemed to be artificial humidification.
- (d) “Belt” includes any driving strap or rope.
- (e) “Degrees” (of temperature) means degrees on the [Celsius] scale.
- (f) “District Magistrate” includes such other official as may be appointed by the State Government in that behalf.
- (g) “Fume” includes gas or vapor.
- (h) “Health officer” means the municipal health officer in a municipality or corporation, the District Health Officer concerned in any area within the jurisdiction of a district board or Panchayath or such other officer as may be appointed by the State Government for any area in that behalf irrespective of whether such area is within the limits of a municipality or the jurisdiction of a district board or Panchayath.
- (i) “Hygrometer” means an accurate wet and dry bulb hygrometer conforming to the prescribed conditions as regards constructions and maintenance.
- (j) [omitted] (by GO(Rt) 1786/79 L&H dt.17-12-1979).
- (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)“Family” means the wife, son, daughter, father, mother, brother or sister of the owner of any place wherein a manufacturing process is carried on and who lives with or is dependent, on such owner.
- (n)“Local authority” means the commissioner in the case of an area within the limits of a Municipality or Corporation, the executive officer in the case of an area within the Jurisdiction of a Panchayath and the president of a District Board in the case of any other area.
- (o)“Public Health authority” means the Local Health Officer having jurisdiction over the area.
- (p)“Competent authority” means the Chief Inspector or an authority notified by the State Government from time to time for the purpose of Registration and grant of licence, renewal, amendment, transfer and issue of duplicate licence to factories.

Rule under Section 2 (ca)

2A. Competent Person

(1) The Chief Inspector may recognize any person as a ‘competent person’ within such area and for such period as may be specified for the purpose of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, pressure plant, confined space, ventilation system and such other process or plant and equipment as stipulated in the Act and the Rules made thereunder, located in a factory, if such a person possesses the qualifications, experience and other requirements as set out in the schedule annexed to this Rule:

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

Provided further that the ‘Competent person’ recognized under this provision shall not be above the age of 62 and shall be physically fit for the purpose of carrying out the tests, examination and inspection.

(2) The Chief Inspector may recognize an Institution of repute having persons possessing qualifications and experience as set out in the schedule annexed to sub rule(1) for the purpose of carrying out tests, examinations, inspections and certification of buildings, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, pressure plant, confined space, ventilation system and such other process or plant and equipment as stipulated in the Act and the Rules made there under, as a competent persons within such area and for such period as may be specified.

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

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

Every application for recognition or renewal of recognition of competent person shall be accompanied by a treasury chalan receipt towards the remittance of the prescribed fee shown in Appendix II.

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

(1) if he has reasons to believe that a competent person-

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

(b) has carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of this Act or the Rules made thereunder ; or has omitted to act as required under the Act and the Rules made there under ; or

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

Explanation.- For the purpose of this Rule, an institution includes an organization.

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

**Form of Application for Grant of Certificate of Competency
to a Person under Sub-Rule (1) Of Rule 2A**

- 1 Name :
- 2 Date of Birth :
- 3 Name of the Organization (if not self-employed) :
- 4 Designation :
- 5 Educational qualification :

(copies of testimonials to be attached)

Details of professional experience (in Chronological order)

Name of the organization	Period of Service	Designation	Area of Responsibility
--------------------------	-------------------	-------------	------------------------

- 7 Membership if any, of professional bodies :
- 8 (i) Details of facilities(examination, testing etc.) at his disposal :
- (ii) Arrangements for calibrating and maintaining the accuracy of these facilities :
- 9 Purpose of which competency certificate is sought (section or sections of the Act should be stated) :

- 10 Whether the applicant has been declared as competent:
person under any statute (if so, the details)
- 11 Any other relevant information :

12 **Declaration by the applicant**

I hereby declare that the information furnished above is true.
I undertake

- (a) that in the event of any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organization, I will promptly inform the Chief Inspector ;
- (b) to maintain the facilities in good working order, calibrated periodically as per manufacturer’s instructions or as per National Standards ; and
- (c) to fulfill and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief Inspector from time to time.

Place :

Date :

Signature of the applicant.

Declaration by the Institution (If Employed)

I,..... certify that Shri..... whose details are furnished above, is in our employment and nominate him on behalf of the organization for the purpose of being declared as a Competent Person under the Act. I also undertake that I will-

- (a) notify the Chief Inspector in case the Competent Person leaves out employment;
- (b) provide and maintain in good order all facilities at his disposal as mentioned above;
- (c) notify the Chief Inspector any change in the facilities(either addition or deletion).

Place :

Date. :

Office Seal

Signature

Name and designation,

Tel No.

**Form of Application for Grant of Certificate of Competency to
an Institution under Sub-Rule (2) of Rule 2A**

- 1.Name and full address of Organization :
- 2. Organization’s status :
[specify whether Government, Autonomous,
Co- operative (Corporate or Private)]
- 3.Purpose for which Competency Certificate is :
Sought [Specify section (s) of the Act

4. Whether the organization has been declared :
as a competent person under this or any other
statute. If so, give details

5 Particulars of persons employed and possessing qualification and experience as set out in
schedule annexed to sub-rule (1) of Rule 2A

Sl. No	Name & Designation	Qualifications (Testimonial to be attached)	Experience	Section(s) and the rules under which is competency sought for	Signature
1	2	3	4	5	6

1.
2.

6 Details of facilities (relevant to item 3 above) and
arrangements made for their maintenance and
periodical calibration

7 Any other relevant information

Declaration

I hereby, on behalf of certify that the details
furnished above are correct to the best of my knowledge. I undertake to:-

- (1) Maintain the facilities good in working order, calibrated periodically as per manufactures instructions or as per National Standards; and
- (2) To fulfill and abide by all the conditions stipulated in the Certificate of competency and instructions issued by the Chief Inspectors from time to time.

Place :

Date :

Signature of Head of the Institution
or of the persons authorized to sign on his behalf.
Designation

Form of Certificate of competency issues to a person or an Institution in pursuance to Rule 2A Made under section 2(ca) Read with section

I,..... in exercise of the powers conferred on me under Section 2(ca) of the Factories Act and the rules made thereunder, hereby recognise Shri..... employed in (Name of the person), (Name of the organization) to be a competent person the purpose of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, lifts and hoists, lifting machines and lifting tackles, pressure plants, confined space, ventilation system and process or plant and equipment (as the case may be) used in the factory located in Kerala State under section and the rule made thereunder.*

(*Strike out the words not applicable)

This certificate is valid from.....to.....

This certificate is issued subject to the conditions stipulated hereunder:-

- (i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act and the Rules made thereunder;
- (ii) Tests, examination and inspections shall be carried out under direct supervision of the competent person;
- (iii) The certificate of competency issued in favour of a person shall stand cancelled if the person leaves the organization mentioned in his application;
- (iv) The institution recognized as competent person shall carry out the tests, examination and inspections by

	Name	Sections Applicable
1.		
2.		
3.		
(v)	-----	
(vi)	-----	

Station :
Date :

Office Seal

Signature of the Chief Inspector

SCHEDULE

Sl.No.	Section or Rules under which competency is recognized	Qualification required	Experience for the purpose	Facilities at his command
1	2	3	4	5
1	Rules made under section 6 and section 112- Certificate of stability for buildings.	Degree in Civil or Structural engineering; or equivalent	<ul style="list-style-type: none"> i. A minimum of 10 years experience in the design of construction or testing or repairs of structures ; ii. Knowledge of non -destructive testing, various codes of practices that are current and the effect of the vibrations and natural forces on the stability of the building; and iii. Ability to arrive at a reliable conclusion with regard to the safety of the structure or the building 	Gauges for measurement; instruments for measurement of speed and any other equipment or device to determine the safety in the use of the dangerous Machines.
2	Rules made under section 23 (2)- “Dangerous Machines”	Degree in Electrical or Mechanical or Textile Engineering; or Equivalent.	<ul style="list-style-type: none"> (i) A minimum of 7 years experience in- <ul style="list-style-type: none"> a). design or operation or maintenance ; or b). testing, examination and inspection of relevant machinery, their guards, safety devices and appliances. ii. He shall- <ul style="list-style-type: none"> a). be conversant with safety devices and their proper functioning ; b). be able to identify defects and any other cause leading to failure ; and c). have ability to arrive at reliable conclusion with regard to the proper functioning of safety device and appliance and machine guard. 	

1	2	3	4	5
3	Section 28 Lifts and Hoists	A degree in Electrical and/or Mechanical Engineering or its equivalent.	i. A Minimum experience of 7 years in- a). design or erection or maintenance or: b). inspection and test procedures ; of lifts and hoists ; ii. He shall be- a). Conversant with relevant codes of practices and test procedures that are current ; b). Conversant with other statutory requirements covering the safety of the Hoists and Lifts; c). able to identify defects and arrive at a reliable conclusion with regard to the safety of Hoists and Lifts.	Facilities for load testing tensile testing, gauges, equipment/ gadgets, for measurement and any other equipment required for determining the safe working conditions of Hoists and Lifts.
4	Section-29 Lifting Machinery And Lifting Tackle.	Degree in Mechanical or Electrical or Metallurgical Engineering or its equivalent	i. A minimum experience of 7 years in - a. design or erection or maintenance ; or b. Testing examination and inspection of lifting machinery, chains, ropes and lifting tackles. ii. He shall be - a. Conversant with the relevant codes of practices and test procedures that are current. b. conversant with fracture mechanics and metallurgy of the material of construction ; c. conversant with heat treatment/stress relieving techniques as applicable to stress bearing components and parts of lifting machinery and lifting tackles ; d. capable of identifying defects and arrive at a reliable conclusion with regard to the safety of lifting machinery, chain, ropes and lifting tackles.	Facilities for load testing tensile testing heat treatment, equipment/ gadget for measurement, gauges and such other equipment, to determine the safe working conditions of the lifting machinery/tackle.

1	2	3	4	5
5	Section 31- Pressure plant	Degree in Chemical or Electrical or Metallurgical or Mechanical Engineering or its equivalent.	<ul style="list-style-type: none"> i. A minimum experience of 10 years in- <ul style="list-style-type: none"> a. design or erection or maintenance, or b. testing, examination and inspection of pressure plants. ii. He shall be- <ul style="list-style-type: none"> a. conversant with the relevant codes of practices and test procedures relating to pressure vessels ; b. conversant with statutory requirements concerning the safety of unfired pressure vessels and equipment operating under pressure ; c. conversant with non-destructive testing techniques as are applicable to pressure vessels ; d. able to identify defects and arrive at a reliable conclusion with regard to the safety of pressure plants. 	Facilities for carrying out hydraulic test, non-destructive test, gauges/equipment/ gadgets for measurement and any other equipment or gauges to determine the safety in the use of pressure vessels
6	<ul style="list-style-type: none"> i. Section 36- precautions against dangerous fumes. ii. Rules made under sections 41 and 112 concerning ship building and ship repairs 	Masters degree in Chemistry, or a degree in Chemical Engineering	<ul style="list-style-type: none"> i. A minimum of 7 years experience in collection and analysis of environmental samples and calibration of monitoring equipment; ii. He shall- <ul style="list-style-type: none"> a. be conversant with the hazardous properties of chemicals and their permissible limit values; b. be conversant with the current techniques of sampling and analysis of the environmental contaminants and c. be able to arrive at a reliable conclusion as regards the safety in respects of entering and carrying out hot work 	Meters, instruments and devices duly calibrated and certified for carrying out the tests and certification of safety for working in confined spaces.

1	2	3	4	5
7	<p>Ventilation systems as required under various schedules framed under section 87, such as schedules on-</p> <ul style="list-style-type: none"> i. Grinding of glazing of metals and processes incidental thereto ii. Cleaning or smoothening etc. of articles, by a jet of sand, metal shot or grit, or other abrasive propelled by a blast of compressed air or steam. iii. Handling and processing of asbestos. iv. Manufacture of Rayon by viscose process. v. Foundry operations 	Degree in Mechanical or Electrical Engineering or Equivalent.	<ul style="list-style-type: none"> i. A minimum of 7 years in the design fabrication, installation, testing of ventilation system and systems used for extraction and collection of dusts, fumes and vapours and other ancillary equipment ii. He shall be conversant with relevant codes of practice and tests procedures that are current in respect of ventilation and a traction system for fumes and shall be able to arrive at a reliable conclusion with regard to effectiveness of the system 	Facilities for testing the ventilation system instruments and gauges for testing the effectiveness of the extraction systems for dusts, vapours and fumes and any other equipment needed for determining the efficiency and adequacy of these systems. He shall have the assistance of a suitable qualified technical person who can come to a reasonable conclusion as to the adequacy of the system.

Rules under Subsection (1) (aa) of Section 6**3*.Approval of site, construction or extension of a factory:**

(* Rule 3 to 12A substituted by SRO No. 1149/2001 dt. 28-12-2001)

(1) No site shall be used for the location of a factory nor shall any building be constructed, reconstructed or extended for use as a factory, nor shall any manufacturing process be carried on in any building, constructed, reconstructed or extended unless the previous permission in writing is obtained from the State Government or the Chief Inspector or the Deputy Chief Inspector. The previous permission of the Chief Inspector or the Deputy Chief Inspector shall also be obtained for the installation of additional machinery or for the installation of prime movers exceeding the power already installed in the factory.

(2) Application for such permission shall be made in the prescribed Form No. 1 or in the composite application form to be submitted to the Green Channel Counter of the Kerala State Industries Development Corporation or District Industries Centres or other notified agencies as the case may be, who will forward a copy of the same to the Department concerned and shall contain the details such as the Name and address of the applicant, full particulars of the factory such as name, postal address, survey No. Village, Taluk, District, nearest Police Station, Railway Station and also the total power of plant and machinery in kW. The application shall be accompanied by the following documents:

(a) A flow chart of the manufacturing process supplemented with a brief description of the process in its various stages.

(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, etc.

(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.

(iii.) The plans of layout machinery clearly indicating the position of the plant and machinery, aisles and passageways. These shall be a minimum clearance of 50cm. between machines and fixed structures.

The plans and layout of factory buildings sent to the Department for approval under these rules shall be prepared by a person not below the rank of a draughtsman recognized by the Chief Inspector or the Deputy Chief Inspector/ State Government in this regard.

(c) In the case of hazardous and polluting industries, a certificate of approval of location of the factory obtained from the Chief Town planner to Government and a no objection certificate from the Kerala State Pollution Control Board.

(d) A Chalan receipt evidencing payment or scrutiny Fee as prescribed in Appendix II.

(e) Such other particulars as the Chief Inspector or the Deputy Chief Inspector may require.

(3) Site suitability.-

The siting of the factory shall satisfy the following requirement of minimum distance from, -

(i) Educational Institution	25 metres
(ii) Hospitals	30 metres
(iii) Religious-cum-worship building	25 metres
(iv) Tank and Canals	10 metres

and set back of three meters of open space of front , sides and rear. For sites abutting National Highways and State Highways the minimum set back of the building shall be 7 meters on front.

Provided that the Chief Inspector or the Deputy Chief Inspector may subject to such conditions as may be prescribed, relax these requirement in respect of factories which do not create noise, pollution or do not generate solid, liquid or gaseous effluents.

- (4) If the Chief Inspector or the Deputy Chief Inspector is satisfied that the plans are in consonance with the requirements of the Act and Rules he shall, subject to such conditions as he may specify, grant the permission sought for under permit and approve the plans by signing and returning to the applicant one copy of each plan, or he may call for such other particulars as he may require to enable such approval. The permission so granted will be valid for one year only unless it is revalidated, for completion of construction. Request for revalidation of permission shall be made to the Chief Inspector or the Deputy Chief Inspector as the case may be along with the fee prescribed in Appendix II.
- (5) The plans approved by the Chief Inspector or the Deputy Chief Inspector under this rule shall be readily available in the factory for inspection by the Inspectors and Additional Inspectors.
- (6) The Chief Inspector or the Deputy Chief Inspector may refuse to grant permission if the requirements of the Act and Rules are not satisfied and in such cases the reasons for refusing the permission shall be recorded and communicated to the Applicant.
- (7) (a) No manufacturing process shall be carried on in any building of a factory constructed, reconstructed or extended or taken into use as a factory or part of a factory until a Certificate of Stability in Form No. 3 in respect of that building has been obtained from a Competent Person.

Provided that the Certificate of Stability as required in this Rule shall be valid only for a maximum period of five years from the date of its issue and a fresh stability certificate shall be obtained thereafter.

(b) The certificate of stability referred to in clause (a) shall be readily available in the factory for inspection by the Inspectors and Additional Inspectors.

(8) (a) A factory or part of a factory constructed, reconstructed, extended or taken into use, shall be in accordance with the plans approved and shall satisfy the conditions subject to which the plans have been approved.

(b) No machinery or prime mover or a permanent fixture not shown in the plans approved shall be installed, fixed or used in any factory except in replacement provided its capacity is not different and it is not occupying more floor area than that already shown in the approved plans.

4. Application for registration and grant of licence.

The occupier of every factory shall submit to Chief Inspector or the Deputy Chief Inspector an application for registration and grant of licence and notice of occupation, specified in sections 6 and 7 in Form No. 2 in triplicate.

5. Grant of licence. –

- (1) A licence for a factory may be granted by the Chief Inspector or the Deputy Chief Inspector in Form No.4, on an application made in the prescribed Form No. 2 and on payment of the fees specified in Appendix I

Provided that subject to the provision of sub-section (3) of section 6 of the Act the Chief Inspector or the Deputy Chief Inspector may refuse to register a factory and grant of licence for the following reasons and communicate such decisions in writing to the occupier.

- (a)The plans of the factory are not approved under rules made in this behalf.
- (b)The requirements under sub-rule (7) of rule 3 or are not satisfied.

(c) There is imminent danger to human life due to the presence of explosive or inflammable dust, gas, fumes or mixture beyond permissible level and effective measures are not taken to remove such danger

(d) There is imminent danger to human life due to the building or the entrances thereto or exists there from is in a dangerous or structurally unsound condition and effective measures are not taken to remove the danger, and.

(e) Such other reasons, as may be recorded in this behalf.

- (2) Every licence granted under this Chapter shall remain in force up to the 31st of December of the year for which the licence is granted.
- (3) No manufacturing process shall be carried on in any factory without a licence having been granted by the Chief Inspector or the Deputy Chief Inspector and is in force for the time being.
- (4) The licence granted to a factory under this rule, shall be readily available in the factory for inspection by the Inspectors and Additional Inspectors appointed under section 8 of the Act

6. Amendment of licence.

(1) The licence granted under rule 5 may be amended by the competent authority.

(2) The limits specified in the licence granted to a factory in regard to power or the number of persons employed shall not be altered or the name of the factory shall not be changed unless the licence has been amended for that purpose.

(3) An application for amendment of a licence shall be submitted to the Competent Authority specifying the nature of amendment sought for and the reasons therefore at least 15 days prior to the date on which the applicant desires the amendment to take effect. The application shall be accompanied by the original licence and a treasury chalan receipt evidencing payment of the prescribed fee.

(4) The fee for the amendment shall be as prescribed in Appendix II plus the difference between the fee that has been paid for the licence and the fee that is payable for the licence, had it been originally issued in the amended form:

Provided that if the limit specified in the licence is exceeded without making the application as aforesaid, the licence shall be amended only on payment of a fee of 100% in excess of the fee ordinarily payable under sub-rule (4) for getting the licence in the amended form.

(5) On the receipt of such application together with the original licence and the chalan receipt for the prescribed fee, the Competent Authority may amend the licence suitably, if the statutory requirements are complied with or he may call for such other particulars or details or make such enquiries which he considers necessary before amending the licence. The Competent Authority shall incorporate the amendment in the appropriate columns of the original licence under his dated signature if he agrees to the amendment or may refuse the amendment and return the licence to the applicant. The amendment shall take effect from the date on which it is amended;

Provided that if an application for amendment is refused, the reason for the same shall be recorded and communicated to the applicant.

7. Renewal of licence.

(1) A licence may be renewed by the Competent Authority.

(2) Every application for the renewal of licence shall be in the prescribed Form No.2 in triplicate, and shall be made to the Competent Authority not less than two months before the date on which the licence expires and if the application is so made the premises shall be held to be duly licenced until such date as the Competent Authority under sub-rule (1) renews the licence or till the Competent

Authority intimates the applicant in writing his refusal to renew the licence as the case may be.

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

- (i) 25% of the fee ordinarily payable if the application is received before the expiry of the licence;
- (ii) 50% of the fee ordinarily payable if the application is received after the expiry of the licence;

Provided further that the State Government or subject to the Control of the State Government, the Chief Inspector may waive the payment of additional fee by a written order for valid reasons.

(4) An application for renewal of licence may be refused by the Competent Authority:

- (a) On any of the reasons stated in rule 5;
- (b) If the applicant is guilty of repeated contravention of the provisions of the Act or Rules or both;
- (c) If the applicant has obtained the licence by fraud or by misrepresentation;
- (d) If the licensee has violated the conditions of the licence:

Provided that, in any case falling under clauses (a), (b) or (c) before refusing the renewal of any licence, the applicant shall be given an opportunity to show cause why the renewal of licence shall not be refused.

(5) Every licence renewed under this Rule shall remain in force up to 31st December of the year(s) for which the licence is renewed:

Provided that the Chief Inspector or the Competent Authority may renew the licence for more than one year not exceeding five years at a stretch if an application is so made along with chalan receipt towards the payment of the required fee in lumpsum.

8. Transfer of licence.

- (1) The licence granted under rule 5 may be transferred by the Competent Authority.
- (2) The holder of a licence may, at any time apply for permission to transfer the licence to another person.
- (3) Application for transfer shall be made to the Competent Authority along with the original licence and a treasury chalan receipt evidencing payment of fees for the transfer at the rates prescribed in Appendix II.
- (4) The transfer of licence shall take effect only after the Competent Authority approves the transfer and make entries of the details of transfer in the appropriate columns in Form No. 4 under his dated signature. The transferee shall not take over the factory before getting the written approval of the Competent Authority. The licence shall then be given to the person named (transferee) in the application:

Provided that the Competent Authority may call for such other particulars as he may require before effecting the transfer:

Provided further that if the Competent Authority disapproves the transfer he shall record the reasons in writing and communicate the same to the applicant.

9. Procedure on death or disability of licensee.

If a licensee dies or becomes insolvent, the person carrying on the business of such licensee shall not be liable to any penalty under the Act for exercising the powers granted to the licensee by the licence during

such time as may reasonably be required to allow him to make an application for transfer to get the licence transferred in his favour.

10. Issue of duplicate licence.

Where a licence granted or renewed under these rules is lost or accidentally destroyed, a duplicate may be issued by the Competent Authority on payment of fee as prescribed in Appendix II.

11. Payment of fees.

(1) Fees payable under these rules shall be remitted in a local treasury on a chalan in the correct head of account notified by the Government from time to time.

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

Provided that if the Chief Inspector is satisfied that a factory has worked even on a single day during the period for which the application for the grant, renewal, transfer or amendment of licence is made, the fee remitted therefore shall not be refunded.

(3) When the amount paid is in excess of the prescribed fee for the grant or renewal of licence, the excess amount so paid may be refunded or adjusted towards the fee payable for the licence for the subsequent years on request from the occupier.

12 Notice of occupation.

The notice of occupation shall be in Form No.2

12A. Notice of change of Manager.

The notice of change of Manager shall be in Form No. 23.

12B. Guidelines, instructions and records.-(inserted by SRO No.765/95 dt. 07-12-1995)

(1) Without prejudice to the general responsibility of the Occupier to comply with the provisions of Section 7A, the Chief Inspector may, from time to time, issue guidelines and instructions regarding the general duties of the Occupier relating to the health, safety and welfare of all workers while they are at work in the factory.

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

12C. Register of Factories (inserted by SRO No.1149/2001 dt. 28-12-2001)

The authorities granting, renewing, amending or transferring the licence shall maintain a register called the "Register of Factories" and full details shall be entered in it. The register shall be well maintained so as to have full details in respect of each factory at all times.

12D. Suspension of licence. (inserted by SRO No.1149/2001 dt. 28-12-2001)

Without prejudice to the provision contained in these rules if a Factory is lying idle for a period of exceeding one calendar year, the Chief Inspector, may, after satisfying himself of the bonafides suspend the licence for one more licensing period(s) in that case licence fee is not payable for the suspended period. However, the full amount of licence fee is payable if the factory has worked even for a single day during a calendar year (licensing period).

Provided that the licence suspended under this rule, shall be renewed after revoking the suspension by the Chief Inspector on an application made by the licensee. Such application shall be submitted at least 15 days before reopening and shall be accompanied by the full amount of licence fee as applicable for grant of licence and 10% excess of the fee ordinarily payable.

CHAPTER II**INSPECTING STAFF****Rule under Sub-Section (1) of Section (8)****13. Appointment of Inspectors.- (substituted by SRO No.1149/2001 dt. 28-12-2001)**

No persons shall be appointed as Inspectors for the purpose of the Act, unless he/she possesses the qualifications prescribed for such Inspectors in the Kerala Factories and Boilers Service Rules for the time being in force.

Rules under section 9

13A. Powers of Inspectors.- An Inspector shall, for the purpose of the execution of the Act, have power of do all or any of the following things, that is to say-

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

Rules under sub-section (4) of section 10**14. Duties of certifying Surgeon.**

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

(2) The Certifying Surgeon shall issue his certificates in Form No.5. The foil and counterfoil shall be filled in and the left thumb mark of the person in whose name the certificate is granted shall be taken on them. On being satisfied as to the correctness of the entries made therein and of the fitness of the person examined he shall sign the foil and initial the counterfoil and shall deliver the foil to the person in whose name the certificate is granted. The foil so delivered shall be the certificate of fitness granted under section 69. All counterfoils shall be kept by the Certifying Surgeon for a period of at least 2 years after the issue of the certificate.

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

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

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

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

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

(5) (substituted by SRO No.1149/2001 dt. 28-12-2001)

At such visits, the certifying surgeon after examining a worker, shall issue a certificate of fitness in Form No. 27. The record of examination and re-examination carried out shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-rule (1) and (2) including the nature and the result of the tests shall also be entered by the Certifying Surgeon in a Health Register in Form 17.

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

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

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

CHAPTER III**HEALTH****Exemptions under sub-section (2) of section 11**

15. 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 schedule hereto:

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

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

(i) as respects factories or parts of factories specified in Part A of the said schedule to work-room in which the amount of cubic space allowed for every person employed in the room is less than [14 cubic metre]; (Substituted for “500 cubic feet” by SRO No. 1149/2001, dated 28/12/2001)

(ii) as respects factories or parts of factories specified in Part B of the said schedule to work-room in which the amount of cubic space allowed for every person employed in the room is less than [70 cubic metre]; (Substituted for “2500 cubic feet” by SRO No. 1149/2001, dated 28/12/2001)

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

(iv) to such parts of walls, sides and tops of passages and staircases as are less than [6 metre]; (Substituted for “20 feet” by SRO No. 1149/2001, dated 28/12/2001) 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 white wash or colour wash, wash paint or varnish the same, and in the event of the occupier failing to comply with such requisition, within two months from the date of the notice, sub-rule (1) shall cease to apply to such part of a factory, unless the Chief Inspector otherwise determines.

Schedule**PART A**

Blast furnaces.

Brick and tile woks in which unglazed bricks or tiles are made.

Cement works.

Chemical works.

Copper Mills.

Gas Works

Iron and Steel Mills.

Stone, slate and marble works.

Petroleum Refineries.

The following parts of factories:-

Rooms used only for the storage of articles.

Rooms in which the walls or ceilings consist of galvanized 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 is used to a substantial extent, except in brush works.

The parts of a glass factory known as the glass house.

Rooms in which graphite is manufactured or is used to a substantial extent in any process.

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

Parts of walls, partitions, ceilings or tops of rooms which are at least 20 feet 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 5 feet from the ground floor level.

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

Parts in which cashew nuts are roasted or cashew oil is extracted.

Walls in tea factories.

PART B

Coach and motor body works.

Electric generating or transforming stations.

Engineering works.

Factories in which sugar is refined or manufactured

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

Gun factories.

Ship building works.

Those parts of factories where unpainted or unvarnished wood is manufactured.

Register under sub-section (1) of section 11

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

Rules under sub-section (2) of section 12

17. Disposal of trade wastes and effluents.- (1) In the case of a factory where the drainage system is proposed to be connected to the public sewerage system, prior approval of the arrangements made shall be obtained from local authority.

(2) In the case of a factory situated in a place where no public sewerage system exists, prior approval of the arrangements made for proposal of trade wastes and effluents shall be obtained from the Public Health Authorities or (Inserted by G.O. (Rt) No. 1790/87/LBR &REH dt. 01/12/1987). [The Kerala State Pollution Control Board appointed under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981.]

(3) Rubbish, filth or debris shall not be allowed to accumulate or to remain in any part of the premises in a factory for more than 24 hours and shall be disposed in a manner approved by the Public Health Authorities shall filth and other decomposing matter shall be kept in covered receptacles.

(4) Wastes and effluents resulting from factory or industrial processes and which may be of the nature of injurious or obnoxious substances, shall not be disposed of without being suitably treated to render them unobjectionable to the satisfaction of the Public Health Authorities and of the Inspector

of Factories. If any objection is raised by the Occupier or the Manager of a factory or if any difference of opinion arises between the Public Health Authorities and the Inspector with regard to treatment of wastes and other effluents under this rule, the matter shall be referred to the Chief Inspector of Factories whose decision shall be final.

(5) All open drains carrying waste or sullage water or sewerage shall be constructed of masonry or other impermeable material and shall be regularly flushed at least twice daily and, where possible, connected with some recognized drainage line.

[RULE UNDER SECTION 13] (Rule 17A inserted by SRO No. 1149/2001 dt. 2-12-2001)

17A. Limits of temperature and air movement.- (1) In any factory the maximum wet-bulb temperature of a air in a work room at a height of 1.5 metre above the floor level shall not exceed 30⁰C and adequate air movement of at least 30 metre per minute shall be provided; and in relation to dry-bulb temperature, the wet-bulb temperature in the workroom at the said height shall not exceed that shown in the schedule annexed here to.

SCHEDULE

Dry – bulb temperature	Wet – bulb temperature
30 ⁰ C to 34 ⁰ C	29 ⁰ C
35 ⁰ C to 39 ⁰ C	28.5 ⁰ C
40 ⁰ C to 44 ⁰ C	28 ⁰ C
45 ⁰ C to 47 ⁰ C	27.5 ⁰ C

Provided that if the temperature measured with a thermometer inserted in a hollow globe of 15 Centimetres diameter coated mat black outside and kept in the environment for not less than 20 minutes exceeds the dry-bulb temperature of air, the temperature so recorded by the globe thermometer shall be taken in place of the dry-bulb temperature:

Provided further that when the reading of the wet-bulb temperature outside in the shade exceeds 27 degree centigrade, the value of the wet-bulb temperature allowed in the schedule for given dry-bulb temperature may be correspondingly exceeded to the same extent.

Provided further that this requirement shall not apply in respect or factories covered by section 15 and in respect of factories where nature of work carried on involves production of excessively high temperature referred to in clause (ii) of sub-section (1) to which workers are exposed for short periods of time not exceeding one hour followed by an interval of sufficient duration in thermal environments not exceeding those otherwise laid down in this rule.

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

(2) **Provisions of thermometers.-** (a) If it appears to the Inspector that in any factory, the temperature of air in work room is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1) he may serve on the manager of the factory an order requiring him to provide

sufficient number of whirling hygrometers or any other type of hygrometers and direct that the dry-bulb and wet-bulb readings of each in such workroom shall be recorded at such position as approved by the Inspector twice during each working shift by a person especially nominated for the purpose by the manager and approved by the Inspector .

(b) If the inspector has reason to believe that a substantial amount of heat is added inside the environment of a workroom by radiation from walls, roof or other solid surroundings, he may serve on the manager on the factory an order requiring him to provide one or more globe thermometers referred to in the first proviso in sub rule (1) and further requiring him to place the globe thermometers at a place specified by him and keep a record of the temperature in a suitable register.

- (3) **Ventilation.-** (a) In every factory the amount of ventilating openings in a workroom below the eaves shall except where mechanical means of ventilation as required by clause (b) below are provided, be of an aggregate area of not less than 15% of the floor area and so located as to afford a continued supply of fresh air:

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

Provided further that this requirements shall not apply in respect of workrooms of factories:-

- (i) covered by section 15; or
- (ii) in which temperature and humidity are controlled by refrigeration.

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

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

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

Rules 18 to 28 under sub-section (1) of section 15

18. When artificial humidification not allowed.- There shall be no artificial humidification in any room of a cotton spinning or weaving factory :

(a) by the use of steam during any period when the dry bulb temperature of that room exceeds 29.5 degrees ;[Substituted for “85” by SRO No. 1149/2001, dt. 28-12-2001

(b)at any time when the wet bulb reading of the hygrometer is higher than that specified in the following Schedule 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 relation to the lower of these two dry bulb readings

Schedule

Dry bulb °C	Wet bulb °C	Dry bulb °C	Wet bulb °C	Dry bulb °C	Wet bulb °C
15.5	14.5	25.0	24.0	34.5	30.0
16.0	15.0	25.5	24.5	35.0	30.5
16.5	15.5	26.0	25.0	35.5	31.0
17.0	16.0	26.5	25.5	36.0	31.0
18.0	17.0	27.0	26.0	37.0	31.5
18.5	17.5	28.0	27.0	37.5	32.0
19.0	18.0	28.5	27.0	38.0	32.0
19.5	18.5	29.0	27.5	38.5	32.5
20.0	19.0	29.5	28.0	39.0	32.5
20.5	19.5	30.0	28.0	39.5	32.5
21.0	20.0	30.5	28.5	40.0	32.5
21.5	20.5	31.0	28.5	40.5	33.0
22.0	21.0	31.5	29.0	41.0	33.0
23.0	22.0	32.0	29.0	41.5	33.0
23.5	22.5	33.0	29.5	42.0	33.0
24.0	23.0	33.5	30.0	43.0	33.5
24.5	23.5	34.0	30.0	43.5	33.5

Provided however, that clause (b) shall not apply when the difference between the wet bulb temperature as indicated by the hygrometer in the department concerned and the wet bulb temperature taken with a hygrometer outside in the shade is less than 2 degrees.[Substituted for “3.5” by SRO No. 1149/2001 dt. 28-12-2001]

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

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

(b) Other departments : One hygrometer for each room of less than [8,500 cubic metres] (Substituted for “3,00,000 cubic feet” by SRO No. 1149/2001 dt. 28-12-2001) capacity and one extra hygrometer for each [5,670 cubic metres] (Substituted for “2,00,000 cubic feet” by SRO No. 1149/2001 dt. 28-12-2001) or part of, 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 reading.

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

21. Copy of Schedule to Rule 18 to be affixed near every hygrometer.- A legible copy of the Schedule to Rule 18 shall be affixed near each hygrometer.

22. Temperature to be recorded at each hygrometer.

At each hygrometer maintained in accordance with Rule 19, correct wet and dry bulb temperatures shall be recorded thrice daily during each working day by competent persons nominated by the Manager and approved by the Inspector. The temperature shall be taken between 7.A.M. and 9.A.M., between 11 A.M. and 2.P.M. (but not in the rest interval) and between 4 P.M. and 5.30 P.M. In exceptional circumstances such additional readings and between such hours, as the Inspector may specify, shall be taken. The temperatures shall be entered in a Humidity Register in the prescribed Form No.6, maintained, in the factory. At the end of each month the persons who have taken the reading shall sign the Register and certify the correctness of the entries. The Register shall always be available for inspection by the Inspector.

23. Specifications of hygrometer.-

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

(2) The wet bulb shall closely 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 the wick shall be suitable for the purpose, clean and free size or grease.

(3) [Substituted by SRO No. 1149/2001 dt. 28-12-2001]

No part of the wet-bulb shall be within 76mm from the dry-bulb or less than 25mm 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 of the room.

(5) [Sub Rules (5) to (8) Substituted by SRO No. 1149/2001 dt. 28-12-2001]

The bores of the stems shall be such that the position of the top of the mercury column shall be easily distinguishable at a distance of 60cms.

(6) Each thermometer shall be graduated in such a way that accurate readings can be taken between 10 and 50 degrees.

(7) Every degree from 10 degrees upto 50 degrees shall be clearly marked by horizontal lines on the stem, each fifth degree shall be marked by longer marks than the intermediate degree and the temperature marked opposite each fifth degree, that is 15, 20, 25, 30, 35, 40, 45, 50.

(8) The markings as above shall be accurate, that is to say, at no temperature between 10 and 50 degrees the indicator readings shall be in error by more than one ninth of a degree.”

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

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

24. Thermometers to be maintained in efficient order.

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

- (a) the wick and the muslin covering of the wet bulb shall be renewed once a week ;
- (b) the reservoir shall be filled with water which shall be completely renewed once a day. The Chief Inspector may direct the use of distilled water or pure rain water in any particular mill or mills in certain localities;
- (c) no water shall be applied directly to the wick or covering during the period of employment.

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

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

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

[Substituted by SRO No. 1149/2001 dt. 28-12-2001]

- (1) No hygrometer shall be fixed to a wall, pillar or other surface unless protected there from by wood or other non-conducting material at least 12mm in thickness and distant at least 25 mm from the bulb of each thermometer.
- (2) No hygrometer shall be fixed at a height of more than 170cm from the floor to the top of thermometer stem or in the direct draughts from a fan, window or ventilating opening.

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

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

28. How to introduce steam for humidification.

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

- (a) The diameter of such pipes shall not exceed 50 mm and in the case of pipes installed after the 1st day of January 1957 the diameter shall not exceed 25mm. [Substituted by SRO No. 1149/2001 dt. 28-12-2001]
- (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 insulation not less than half an 12 mm in thickness. [Substituted by SRO No. 1149/2001 dt. 28-12-2001]
- (d) No uncovered jet from such pipe shall project more than 115mm beyond the outer surface of any cover.
- (e) The steam pressure shall be as low as practicable and shall not exceed 5Kg/cm²
- (f) The pipe employed for the introduction of steam into the air in a department shall be effectively covered with such non-conducting material, as may be approved by the Inspector in order to minimize the amount of heat radiated by them into the department.

29 - Deleted[Omitted by SRO No. 1149/2001 dt. 28-12-2001]

Rules 30 to 33 under sub-section (4) 17

(30) Lighting of interior parts.

(1) The general illumination over those interior parts of a factory where persons are regularly employed shall be not less than 65 lux candles measured in the horizontal plane at a level of 90 centimeters above the floor.

Provided that in any such parts in which the mounting height of the light source for general illumination necessarily exceeds 760 centimeters measured from the floor or where the structure of the room or the position or construction of the fixed machinery or plant prevents the uniform attainment of this standard, the general illumination at the said level shall not be less than 22 lux candle and where work is actually being done the illumination shall be not less than 65 lux candles.

(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 no less than 5 lux candles at floor level.

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

31. Prevention of glare:

(1) Where any source of artificial light in the factory is less than 490 centimeters above floor level, no part of the light source or of the lighting fitting having a brightness greater than 1.5 candle/sq.cm. shall be visible to persons whilst normally employed within 30 metres of the source, except where angle of elevation from the eye to the source or part of the fitting as the case may be exceeds 20° .

(2) Any local light, that is to say, an artificial light designed to illuminate particularly the area or part of the area of work of a single operative or small group of operatives working near each other, shall be provided with a suitable shade of opaque material to prevent glare or with other effective means by which the 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 person is exposed to glare therefrom.

32. Power of Chief Inspector to exempt.

Where the Chief Inspector is satisfied in respect of any particular factory or part thereof or in respect of any description of work room or process than any requirement of Rules 30 and 31 is inappropriate or is not reasonably practicable he may by order in writing exempt the factory or part thereof of description or workroom or process from such requirements to such extent and subject to such conditions as he may specify.

33 - Deleted[Omitted by SRO No. 1149/2001 dt. 28-12-2001]

Rules 34 to 39 under sub-section 4 of Section 18

34. Quantity of drinking water.

The quantity of drinking water to be provided for the workers in every factory shall be at least 5 litres a day per workers employed in the factory and such drinking water shall be readily available at all times during working hours :

Provided that if the Chief Inspector is of the opinion that the arrangements made in any factory would ensure adequate supply of water, he may make a relaxation in this rule in respect of that factory with such conditions as he may deem necessary.

35. Source of supply.

The water provided for drinking shall be supplied.-

- (a) from a public water supply system, or
- (b) from any other source approved in writing by the Health Officer.

36. Means of supply.

If drinking water is not supplied directly from taps either connected with public water supply system or any other water supply system of the factory approved by the health officer, it shall be kept in suitable vessels, receptacles or tanks fitted with taps and having dust proof covers placed on raised stands or platforms in shade and having suitable arrangement 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.

37. Cleanliness of well or reservoir.

- (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 sterilized once a week or more frequently if the Inspector by written order so requires, and the date on which sterilizing is carried out shall be recorded.

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

38. Report from Health Officer.

The inspector may be order in writing direct the Manager to obtain at such time or at such intervals as he may direct, a report from the Health Officer as to be 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.

39. Cooling of water.

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

- (a) the drinking water supplied to the workers shall from the 1st of March to the 15th June every year, be cooled by ice or other effective method;

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

- (b) the cooled drinking water shall be supplied in every canteen, lunch-room and the 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 centers to be provided shall be one "centre" for every 150 persons employed at any one time in the factory;

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

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

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

(f) [Substituted by SRO No. 1149/2001 dt. 28-12-2001]

The means of supply of drinking water shall be either directly through taps connected to water coolers or any other systems of cooling water, or by means of vessels, receptacles or tanks fitted with taps and having dust proof covers and placed on raised stands or platform in shade, and having suitable arrangements of drainage to carry away the spilt water. Such vessels, receptacles or tank shall be kept clean and the water renewed at least once in every day.

Rules 40 to 49 under sub-section (3) of section 19

40. Latrine Accommodation.

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

(a) where females are employed, there shall be at least one latrine for every 25 females;

(b) where males are employed there shall be at least 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.

In calculating the number of latrines required under this rule, any odd number of workers less than 25 or 50, as the case may be, shall be reckoned as 25 or 50.

41. 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 Public Health Authorities.

42. Privacy of latrines.

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

43. 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 "For Men Only" or "For Women Only" as the case may be. The notice shall also bear the figure of a man or of a woman as the case may be.

44. Urinal accommodation.

Urinal accommodation shall be provided for the use of male workers and shall not be less than 2 feet in length for every 50 males; provided that where the number of males employed exceeds 500, it shall be sufficient if there is one urinal for every 50 males up to the first 500 employed, and one for every 100 thereafter.

In calculating the urinal accommodation required under this rule any odd number of workers less than 50 or 100, as the case may be, shall be reckoned as 50 or 100.

45. Urinals to conform to Public Health requirements.

Urinals other than those connected with an efficient water borne sewage system and urinal in a factory where in more than two hundred and fifty workers are ordinarily employed shall comply with the requirements of the Public Health Authorities.

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

When any general system of underground sewerage with an assured water supply for any particular locality is provided in a municipality, all latrines and urinals of a factory situated in such locality shall, if the factory is situated within 100 feet of an existing sewer, be connected with that sewerage system.

47. White-washing, Colour-washing or latrines and urinals.

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

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

48. Construction and maintenance of drains.

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

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

49. Water in latrines.

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

Rules 50 to 52 under sub-section (2) of Section 20**50. Number and location of spittoons.**

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

51. Type of spittoons.

The spittoons shall be of either of the following types:-

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

52. Cleaning of spittoons.

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

CHAPTER IV SAFETY

Rules 53 to 69 under sub-section (2) of Section 21

53. Any guard specified to be deemed to be fencing.

Any guard specified in the rules in this Chapter for the protection of workers from danger shall be deemed to be fencing, required by Section 21 of the Act.

54. Certain parts of machinery to be fenced.

The following parts of machinery shall if in motion and within reach, be securely fenced or protected. All shafts whether vertical or horizontal, wheels including balancing and momentum wheels besides the parts mentioned in sub-section (1) of Section 21 of the Act, drums or pulleys (including fast and loose pulleys), couplings, collard, clutches, toothed wheels, straps whether horizontal, inclined or vertical bands, belts, chains, ropes and wires or other devices by which any machine or appliance receives its motion, also all projecting set screws, keys, nuts, or bolts, or revolving parts of machinery and the underside of all heavy overhead main driving belts or ropes if there is any possibility of any person having to pass under them.

Explanation.- The fences and other devices for protection shall be constructed and designed as to render it impossible for any person to pass between them and moving part and also in such a manner as to give protection to a person oiling, cleaning or otherwise attending to machinery and to all persons who may be in the neighbourhood of a moving part while it is in motion.

Exception.- Where in any case any of the parts mentioned in this rule are not in the opinion of the Inspector, a source of danger to any person employed in the factory he shall at the request of the occupier or manager of the factory give such occupier or manager certificate in writing clearly specifying the parts which are not a source of danger. This rule shall not apply in respect of any parts specified in such certificate. The Chief Inspector may revise or cancel such certificate at any time.

55. Certain parts of machine tools to be fenced.

The following parts of machines shall be secured fenced.

The back gears and change wheels of lathes; the back gear and bevel gearing of drilling machines; and the gear and wheels of planning, shaping, slotting and milling machine which are within reach.

56. Emery and abrasive wheels to be provided with an iron cover guard.

All emery wheels shall be provided with strong guards and the tools rests shall be kept close to the wheels. The guard shall be made of wrought iron not less than $\frac{1}{4}$ inch thick or of steel plate not less than $\frac{1}{16}$ inch thick.

57. The floor round every machine to be in good repair and non-slippery.

The floor surrounding every machine shall be level and shall be maintained in good repair and free from chips, grease, oil or other material that they may make it slippery.

58. Important pulleys to be provided with belt hangers.

As far as practicable all important pulleys shall be provided with belt hangers.

59. Driving straps of fast and loose pulleys to have suitable string gear.

Suitable string gear shall be provided and used to move driving straps on all fast and loose pulleys.

60. Lubrication of bearing, etc., of running belts to be done only by experience or trained persons.

Lubrication of bearing or gear wheels or replacing or adjusting of belts shall be done only by an experienced and specially trained person.

61. Service Platforms to be provided for overhead shafting.

Service platform or gangways shall be provided for overhead shafting where the shafting is over

machinery or where it is impracticable to fit a ladder with hooks on to the shaft and if so required by the Inspector, shall be securely fenced with guard rails and toe boards.

62. Machinery in motion not to be cleaned with cotton wastes, etc., held in hand.

No machinery in motion shall be cleaned with cotton waste, rags or similar materials held in the hand.

63. Shafting ladders.

Every shafting ladder shall be fitted either with hooks or with some effective non-skid device.

64. Certain workers to be supplied with certain clothing free of charge.

Male adult workers whose names are entered in the Register prescribed under section 22(1) shall be supplied by the occupier, with a tight head dress, a tight fitting shirt or banyan and a tight fitted pair of shorts free of cost. At least two such sets shall be supplied every year so that workers concerned may always be dressed in tight clothing kept as clean as possible consistent with their duties in the factory.

65. Belts, etc., of machinery requiring attention when in motion to have safe and convenient access.

Safe and convenient access shall be provided to all belts, bearings, of shaft and other parts of machinery in a factory which may require attention while machinery is in motion.

66. Additional weights not to be placed on safety valve of any boiler except with written sanction.

No additional weight shall be placed on the safety valve of any boiler except under the written authority of the Chief Boiler Inspector appointed under the Boilers Act.

67. Gear wheels of cashew roasting drums to be covered.

The gear wheels of all cashew roasting drums shall be adequately covered by guards.

68. Display of pictorial safety posters.

Pictorial safety posters for the prevention of accidents approved by the Chief Inspector shall be displayed at conspicuous places in every room of the factory in which machinery is in use.

69. The Chief Inspector's decision in regard to measures to be taken for the protection of machinery final.

If any question arises as whether any measure taken or required to be taken in accordance with the rules in this chapter is efficient, effective or practicable, the question shall be referred to the Chief Inspector whose decision shall be final.

Rule under sub-section (1) of Section 22

69A. The register of specially trained workers shall be in Form No.34.

Rule under sub-section (2) of Section 23

70. Employment of young persons on dangerous machines.

The machines specified in Sections 28, 29, 30 and the machines mentioned below 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 the metal trades;
- Guillotine machines;
- Circular saws;
- Platen printing machines

Rule under sub-section (3) of section 26**71. Part of machines deemed to be guarded by the makers.**

The following parts of machine will be deemed to be machinery to be guarded by the makers for the purpose of Section 26(1) of the Act.

1. Back gears, change wheels and cog drives of lathes.
2. Back gears and bevel gearing of drilling machines.
3. Gear wheels and bevel drives of planning, shaping, slotting and milling machines.
4. All cog and bevel drives of oil expellers.

Rule under Section 28**72. (1) Hoists and Lifts.**

A register shall be maintained to record particulars of examination of Hoists or Lifts and shall give particulars as shown in Form No. 41.

Exemption under sub-section (4) of Section 28**(2) Exemption of certain hoists and lifts.**

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

<u>Schedule</u>	<u>Schedule</u>
<i>Class or description of hoist or lift</i>	<i>Requirements which shall not apply</i>
Hoists or lifts mainly used for raising materials for charging blast furnaces or lime kilns	Sub-section (1) (b) in so far as requires a gate at the bottom landing; Sub-section(1) (d) Sub-section(1) (e)
Hoists not connected with mechanical power and which are not used for carrying persons	Sub-section(1) (d) in so far as it requires the hoist-way or lift way enclosure to be so constructed as to prevent any person or thing from being trapped between any part of the hoist or lift and any fixed structure or moving part ; Sub-section (1) (e).

Rules under sub-section (2) of Section 29**73. Inspection of lifting machines, chains ropes and lifting tackles.**

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

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

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

(3) Particulars of register to be maintained under clause (a) (iii) of sub-section (1) of. Section 29 of the Act shall be:

(i) Name of occupier of factory.

(ii) Address of the factory

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

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

(v) Date and number of the certificate relating to any test and examination made under sub-rules (1) and (7) together with the name and address of the person who issued the certificate.

(vi) Date of each periodical thorough examination made under clause (a) (iii) of sub-section (1) of section 29 of the Act and sub-rule (6) and by whom it was carried out.

(vii) Date of annealing or other heat treatment of the chain and other lifting tackle made under sub-rule (5) and by whom it was carried out.

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

The register shall be kept readily available for inspection.

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

(4)A (i) To provide access to rail tracks of overhead traveling cranes suitable passage ways of at least 50cm. Width with toe-boards and double hand rails 90cm. High shall be provided along side, and clear of the rail tracks of overhead traveling cranes, such that no moving part of the crane can strike persons on the ways, and the passage way shall be at a lower level than the crane track itself. Safe access ladders shall be provided at suitable intervals to afford access to these passage-ways, and from passage-ways to the rails tracks.

(ii) The Chief Inspector of Factories may, for reasons to be specified in writing exempt any factory in respect of any overhead traveling crane from the operation of any provision of clause (1) subject to such conditions as he may see fit.

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

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

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

Provided that chains and lifting tackle not in frequent use shall, subject to the Chief Inspector's approval be annealed only when necessary. Particulars of such annealing shall be entered in a register prescribed under sub-rule (3).

(6) Nothing in the forgoing sub-rule (5) shall apply to the following classes of chains, and lifting tackles:-

(i.) Chains made of malleable cast iron.

(ii.) Plate link chains

(iii.) Chains, rings, hooks, shackles and swivels made for steel or of any nonferrous metal

(iv.) Pitched chains working on sprocket or packeted 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 of ball bearing or other case hardened parts.

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

(viii.) Bordeaux connections.

Such chains and lifting tackle shall be thoroughly examined by a competent person once atleast in every twelve months, and particulars entered in the register kept in accordance with sub-rule (3).

(7) All lifting machines, chains, ropes and lifting tackle, except a fiber rope or fibre rope sling, which have been lengthened, altered or repaired by welding or otherwise, shall, before being again taken into use be adequately, re-tested and re-examined by a competent person and certificate of such test and examination be obtained, and particulars entered in the register kept in accordance with sub-rule (3).

(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) Where the Chief Inspector is satisfied that in the factory due to shut down or for any other reasons it is not practicable to maintain a minimum distance of twenty feet between the persons employed or working on or near the wheel track of a traveling 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.

[Rule under sub-section (2) and (3) of Section 31] (Heading substituted by SRO No. 1149/2001 dt. 28-12-2001)

74. Pressure Vessels or Plant.- (1) Interpretation. - In this rule.

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

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

(c) Omitted[Clause (c) omitted by SRO No. 1149/2001 dt. 28-12-2001]

(d) 'Pressure Vessel' means vessels that may be used for containing, storing, distributing, transferring, distilling, processing or otherwise handling any gas, vapor or liquid under pressure greater than the atmospheric pressure and includes any pipe line fitting or other equipment attached thereto for used on connection therewith ; [Amended by G.O. (Rt) No.1786/79 L&H dt. 17-12-1979] and

(e) Omitted[Clause (e) omitted by SRO No. 766/95, dt. 07-06-1995]

(2) Exceptions. – Nothing in this rule shall apply to-

(a) Vessels made of ferrous materials having an internal operating pressure not exceeding 1 Kg/cm² (15 lbs/Sq.inch) ;

(b) Steam boilers, steam and feed pipes and their fittings coming under the purview of Indian Boilers Act, 1923 (V of 1923) ;

(c) metal bottles or cylinders used for storage or transport of compressed gases or liquified or dissolved gases under pressure covered by the Gas Cylinder Rules, 1940 framed under the Indian Explosive Act, 1884 (IV of 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 liters 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 tones or less or refrigeration in 24 hours; and

(h) Working cylinders of steam engines or prime movers, feed pumps and steam traps; turbine casings; compressors cylinders; steam separations or dyers; steam strainers; steam de-super heaters; oil separators; air receivers for fire sprinkler installations; air receivers or monotype machines provided the maximum working pressure of the air receiver does not exceed 1.33 kg.f/cm² (20lb/sq.inc.) and the capacity 84.95 liters (3cu.ft.); air receivers of electrical circuit breakers; air receivers of electrical relays; air vessels on pumps, pipe coils accessories of instruments and appliances, such as cylinders and piston assemblies used for operating relays and inter-locking type of guards; vessels with liquids subjected to static head only; and hydraulically operating cylinders other than any cylinder communicating with an air and accumulator.

(3) Design and construction:- Every pressure vessel or plant used in factory.

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

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

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

Provided that the pressure vessel or plant in respect of the design and construction of which there is an Indian standard or 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 maybe, and a certificate there of shall be obtained from the manufacturer or from the competent person which shall be kept and produced on demand by an Inspector.

(4) Safety Devices.-Every pressure vessel shall be fitted with -

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

(b) a suitable pressure gauge with a dial range not less than 1 times the maximum permissible working pressure, easily visible and designed to show at all times the correct internal pressure and marked with a prominent red mark at the maximum permissible working pressure of the pressure vessel;

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

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

(e) a suitable drain cock or valve at the lowest part of the pressure vessel for the discharge of the liquid or other substance that may collect in the pressure vessel;

Provided that it shall be sufficient for the purposes of this sub-rule if the safety valve or pressure relieving device, the pressure gauge and the stop valve are mounted on a pipe line immediately adjacent to the pressure vessel and where there is a range of two or more similar pressure vessels served by the same pressure lead, only one set of such mountings need be fitted on the pressure lead immediately adjacent to the range of pressure vessels, provided they cannot be isolated.

(5) Pressure Reducing Devices.- (a) Every pressure vessel which is designed for a working pressure less than the pressure at the source of supply, or less than the pressure which can be obtained in the pipe connecting the pressure vessels 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 vessels in the event of failure of the reducing value or device, at least one safety valve having a capacity sufficient to release all the steam, vapour or gas without under pressure rise as determined by the pressure at the source supply and the size of the pipe connecting the source of supply, shall be fitted on the low pressure side of the reducing valve.

(6) Pressure vessel or plant being taking into use.- (a) no new pressure vessel or plant shall be taken into use in 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 pressure which shall be 1.5 times the maximum permissible working pressure.

Provided, however, that the pressure vessel or plant which 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 pressure not less than the design pressure or the maximum permissible working pressure as the case may be:

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

Design pressure shall be not less than the maximum permissible working pressure and shall take into account the possible fluctuations of 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, and every pressure vessel or plant so used in a factory shall be marked so as to enable it to be identified as to be the pressure vessel or plant to which the certificate relates and the certificate shall be kept available for perusal by the inspector;

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

(7) In service test and examinations.- Every pressure vessel or plant in service shall be thoroughly examined by competent person-

(a) externally, once in every period of six months

(b) internally, once in every period of twelve months;

If by a reason of the construction of a pressure vessel or plant, a through 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.

Provided that for a pressure vessel of plant in continues process which cannot be frequently opened the period of internal examinations may be extended to four years; and

(c) Hydrostatic test once in every period of 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 clause (a) of this sub-rule, or if owing to its construction and use a pressure vessel or plant cannot be hydrostatically tested as required in clauses (b) and (c) of this sub-rule, a through external examination of the pressure vessel or plant shall be carried out at least once in every period of two years, and at least once in every period of four years, a through 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.

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

(8) Thin walled pressure vessel or plant.- (a) In respect of any pressure vessel or plant of thin walls such as sizing cylinder made of copper or any other non-ferrous metal the maximum permissible working pressure shall be reduced at the rate of 5 percent 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 20 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 affects its strength or safety have been carried out, shall be tested before use at least 1.5 times its maximum permissible working pressure.

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

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

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

(d) The competent person making report of any examination under this rule, shall within seven days of the completion of the examination, sent 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) Application of other laws.-(a) The requirements of this rule shall be in addition to and without any prejudice to and not in derogation of the requirements of any other law in force;

(b) Certificates or reports of any examination, or test of any pressure vessel or plant to which sub-rules 7 to 9 do not apply, conducted or required to be conducted under any other law in force and other relevant record relating to such pressure vessel or plant, shall be properly maintained as required under the said law and shall be produced on demand by the Inspector.

74A. Water-sealed Gasholder.-(1) The expression “gasholder” means a water sealed gasholder which has a storage capacity of not less than 141.5 cubic mtres. (5000 cft.)

(2) Every gasholder shall be adequate material and strength, sound construction and 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 a 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 within every 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 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 No. 37 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 thrown 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 person carrying out repairs, and

(f) remarks.

(iii) The result of examination by a competent person carried out under sub-rules (4) and (5) shall in Form No. 38

(iv) A copy of the report in Form No. 38 shall be kept in the register and both the register and the report shall be readily available for inspection.

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

RULES UNDER SUB – SECTION (2) OF SECTION 34
[Substituted by SRO No. 722/2002 dt. 07-09-2002]

75. Excessive weight.- (1) Definition.- for the purpose of this rule:- [Substituted by SRO No. 722/2002 dt. 07-09-2002]

(a) The term “manual transport of loads” means any transport in which the weight of the load is wholly borne by one worker and it covers the lifting and putting down of loads;

(b) The term “regular manual transport of loads” means any activity which is continuously or principally devoted to the manual transport of loads, or which normally includes, even though intermittently, the manual transport of loads.

(2) No person, unaided by another person, or mechanical aid, be required or allowed to lift, put down, carry or move any load of material, article, tools or appliance exceeding the maximum limit in weight as set out in the following schedule:-

SCHEDULE

Persons	Maximum weight of material article, tool or appliance Kg.
(a) Adult male	55
(b) Adult female	30
(c) Young person (male 15-18yrs)	30
(d) Young person (female 15-18yrs)	20
(e) Young person (male 14-15yrs)	16
(f) Young person (female 14-15yrs)	14

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

(4) Taking in to account all conditions in which the work is to be performed no worker shall be required or permitted to engage in the manual transport of load which, by reason of its weight, is likely to jeopardize his health or safety.

(5) Wherever reasonably practicable, suitable technical devices shall be used for the manual transport of loads.

(6) Notwithstanding the fact that workers are engaged in the regular manual transport of loads within the permissible limits as set out in sub rule(2), they should be subjected to medical examination prior to regular assignment and to periodical examination at an interval of 12 months if the assignment of such jobs, exceeds more than 12 months.]

Rules under section 35

76. Protection of eyes.- Effective screens or suitable goggles shall be provide for the protection of persons employed in or the immediate vicinity of the following processes:-

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

The process specified in schedule II annexed hereto, being processes which involve risk of injury to the eyes by reason of exposure to excessive light or infra-red or ultra-violet radiations.

Schedule I

1. The breaking, cutting, dressing or curving of bricks, stone, concrete, slag or similar materials by means of hammer, chisel, pick or similar hand tool, or by means of portable tool driven by mechanical power, and the dry grinding of surfaces of any such materials by means of a wheel or disk driven by mechanical power, where in any 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, disk or hand driven by mechanical power, and of surfaces of metal by means of a portable tool driven by mechanical power.

3. The dividing into separate parts of metal, bricks, stone, concrete or similar materials by means of high speed of saw driven by mechanical power or by means of an abrasive cutting-off wheel or disk driven by mechanical power.

The turning of metal, or articles of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.

5. Drilling by means of portable tool, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
6. The welding and cutting of metals by means of an electric, oxy-acetylene or similar process.
7. The hot fettling of steel castings by means of a flex injected burner or air torch, and the de-scaming 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 metal and the chipping, knocking out, cutting out or cutting off of cold rivets, bolts, nuts, lugs, pins, collars or similar articles from any structure or plant, or from part of any structure or plant, by means of hammer, chisel, punch or similar hand tool, or by means of a portable tool driven by mechanical power.
10. Chipping or scuffing or paints, 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. Breaking of scrap metal by means of a hammer or by means of a tool driven by mechanical power.
12. Routing of metal, where particles of 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 circumstance and in such a position that particles of fragments are liable to be thrown off towards to his face during work with drop hammer or power hammers.
14. Work at a furnace where there is risk to the eyes from molten metals.
15. Bouring or skimming of molten metal.
16. Work involving risk to the eyes from hots and being thrown off.
17. Turning of dressing of an abrasive wheel.
18. Handling in open vessels or manipulation of strong as its or dangerous corrosive liquids or materials, and operation, maintenance of dismantling of plant or any part of plant, being plant or part of plant which contains or has contained such acids, liquids or materials, unless the plant or part of plant has been so prepared (by isolation, reduction of pressure, or otherwise), treated or designed and constructed as to prevent risk of injury.
19. Any other process wherein there is a risk of injury to eyes from particles or fragments thrown off during the course of the process.

Schedule II

1. Welding or cutting of metals by means of an electrical, oxy-acetylene or similar process.
2. All work on furnaces where there is risk of exposure to excessive light or infra-red radiations.
3. Process such as rolling, casting or forging of metals, where there is risk of exposure to excessive light or infra-red radiations.
4. Any other process wherein, there is a risk of injury to eyes from exposure to excessive light or ultra-violet or infra-red radiation.

Rules under sub-section (6) of section 36

77. Minimum dimension of manholes.- Every chamber, tank, vat, pipe, fuel or other confined space which persons may have to enter and which may contain dangerous fumes to such an extent as to involve risk of the persons being overcome thereby, shall unless there is other effective means of regress, be provided with a manhole which may be rectangular, oval or circular in shapes, and which shall-

- (a) In the case of rectangular or oval shape, be not less than 16 inches long and 12 inches wide;
- (b) In the case of a circular shape, be not less than 16 inches diameter.

Exemption under sub-section (5) of section 37

78. Exemptions.- The requirements of sub-section (4) of section 37, shall not apply to the following process carried on in any factory:-

(a) The operation of repairing a water-sealed gasholder by the electric welding process, subject to the following conditions:-

- (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 the constant supervision of a competent person.

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

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

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

- (iii) The operation shall be carried out by an experience person or persons and at least 2 persons (including those carrying out the operations) experienced in work on gas main and over 18 years of age shall be present during the operation.

- (iv) The site of the operation shall be free from any inflammable or explosive gas or vapour.

- (v) Where acetylene gas is used as a source of heat in connection with an operation it shall be compressed and contained in a porous substance in a cylinder; and

- (vi) Prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.

(c) The operation of repairing an oil tank on any ship by the electric welding process shall be subject to the following conditions:-

- (i) The only oil contained in the tank shall have a flash point of not less than 150⁰F (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 any inspector, or by any person employed or working on the ship.
- (iii) The welding operation shall be carried out only on the exterior surface of the tank at 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.

RULES UNDER SUB-SECTION (1) OF SECTION 38**79.Fire.- (1) Processes, equipment, plant, etc., involving serious explosion and serious fire hazards-**

- [(a) All process, 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 time.] (Clause (a) substituted by SRO No. 1149/2001 dt. 28-12-2001)
- (b) All industrial processes involving serious fire hazard shall be located in buildings or work places separated from one another by walls of fire-resistant construction.
- (c) Equipment and plant involving serious fire or flash fire hazard shall, wherever possible, be so constructed and installed that in case of fire, they can be easily isolated.
- [(d) Ventilation ducts, pneumatic conveyors and similar equipment involving various fire risk should be provided with flame-arresting or automatic fire extinguishing appliances or fire resisting dampers electrically interlocated with heat sensitive smoke detectors and air conditioning plant system.] (Clause (d) substituted by SRO No. 1149/2001 dt. 28-12-2001)
- [(e) In all work places having serious fire or flash fire hazards, passages between machines installations or piles of material should be at least 90cm.wide. For storage piles, the clearance between the ceiling and the top of the pile should not be less than 2 metres] (Clause (e) substituted by SRO No. 1149/2001 dt. 28-12-2001)
- (2) **Access for fire fighting.-** [(a)] buildings and plants shall be so laid out and roads, passage ways etc., so maintained as to permit unobstructed access for fire fighting. (Sub-rule (2) renumbered as clause (a) of that rule and inserted clause (b) by SRO. No. 1149/2001 dt. 28-12-2001)
- [(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]. (Sub-rule (2) renumbered as clause (a) of that rule and inserted clause (b) by SRO. No. 1149/2001 dt. 28-12-2001)
- (3) **Protection against lighting.-** Protection from lightning shall be provided for-
- (i) buildings in which explosive or highly flammable substances are manufactured, used, handled or stored;
 - (ii) storage tanks containing oils, paints or other flammable liquids;
 - (iii) grain elevators; and
 - (iv) buildings, tall chimneys or stacks where flammable gases, fumes, dust or lint are likely to be present.
- [(v) sub-station buildings and out-door transformers and switch yard.] (Item (v) added by SRO No. 1149/2001 dt. 28-12-2001)
- (4) **Explosives.-** All Explosives shall be handled, transported, stored and used in accordance with the provisions in the Indian Explosives Act, 1884, (Central Act 4 of 1884).
- (5) **Precautions against ignition.-** Wherever there is danger of fire or explosion from accumulation of flammable or explosive substances in air-
- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
 - (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
 - (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;

- (d) smoking, lighting or carrying 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.

[The material susceptible to spontaneous ignition shall 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 1 meter away from process or storage buildings].(added by SRO. No. 1149/2001 dt. 28-12-2001)

(6) Spontaneous ignition.- Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation.

(7) Cylinders containing compressed gas.- Cylinders containing compressed gas may only be stored in open if they are protected against excessive variation of temperature, direct rays of sun, or continuous dampness. Such cylinders shall never be stored near highly flammable substances, furnaces or hot process. The room where such cylinders are stored shall have adequate ventilation.

(8) Storage of flammable liquids

(a) The quantity of flammable liquids in any work room shall be the minimum required for the process or processes carried on in such room. Flammable liquids shall be stored in suitable containers with close fitting covers:

Provided that not more than 20 litres of flammable liquids having a flash point of 21°C or less shall be kept or stored in any work room.

(b) Flammable liquids shall be stored in closed containers and in limited quantities in well ventilated rooms of fire resisting construction which are isolated from the remainder of the building by fire walls and self closing fire doors.

(c) Large quantities of such liquids shall be stored in isolated and adequately ventilated building of fire resisting construction or in storage tanks, preferably underground and at 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.

(9) Accumulation of flammable dust, gas, fumes or vapor in air or flammable waste material on the floors

(a) Effective steps shall be taken for removal or prevention of the accumulation in the air of flammable dust, gas, fume or vapor to an extent which is likely to be dangerous.

(b) No waste materials 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.

10. Fire exits.-

(a) In this 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. An exit may also include a horizontal exit leading to an adjoining building at the same level.

[(c)The number and types of first-aid firefighting equipment to be provided for light hazard occupancy shall be as given in Schedule I. For the ordinary hazard or extra hazard occupancies, equipment as given in sub-rule 12 shall be provided in addition to that given in Schedule I.](clause (c) substituted by SRO. No. 1149/2001 dt. 28-12-2001)

(d) In every room of a factory exits sufficient to permit safe escape of the occupants in case of fire or other emergency shall be provided which shall be free of any obstruction.

(e) The exits shall be clearly visible and suitably illuminated with suitable arrangement, whatever artificial lighting is to be adopted for this purpose, to maintain the required illumination in case of failure of the normal source of electric supply.

(f) The exits shall be marked in a language understood by the majority of the workers.

(g) 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.

(h) All exits shall provide continuous means of egress to the exterior of a building or to an exterior open space leading to a street.

(i) Exits shall be so located that the travel distance on the floor shall not exceed 30 metres.

(j) 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.

(k) 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.

(l) The unit of exit width used to measure capacity of any exit shall be 50cm. A clear width of 25cm. shall be counted as an additional half unit. Clear width of less than 25cm. shall not be counted for exit width.

(m) Occupants per unit width shall be 50 for stairs and 75 for doors.

(n) For determining the exits required, the occupant load shall be reckoned on the basis of actual number of occupants within any floor area or 10 square metres per person, whichever is more.

(o) 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.

(p) For 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 to provide a suitably means of escape for any person employed therein, and in any such room wherein more than 10 persons may be normally present, at least two separate means of exit shall be available, as remote from each other as practicable.

(q) Every storage area shall have access to at least one means of exit which can be readily opened.

(r) Every exit doorway shall open into an enclosed stairway, a horizontal exit on a corridor or passageway providing continuous and protected means of egress.

(s) No exit doorway shall be less than 100cm. in width. Doorways shall be not less than 200cm. in height.

- (t) Exit doorways shall open outwards, that is, away from the room, but shall not obstruct the travel along any exit. No doors when opened shall reduce the required width of stairway or landing to less than 90cm. Over head or sliding doors shall not be installed for this purpose.
- (u) An exit door shall not open immediately upon a flight of stairs. A landing equal to at least the width of the doorway 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.
- (v) The Exit doorways shall be openable from the side which they serve without the use of a key.
- (w) Exit for corridors and passageways shall be of width not less than the aggregate required width of exit doorways leading from there in the direction of travel to the exterior.
- (x) Where stairways discharge through corridors and passageways, the height of the corridors and passageways shall not be less than 2.4 metres.
- (y) Internal stairs shall be constructed of non-combustible materials throughout.
- (z) Internal stairs shall be constructed as a self-contained unit with at least one side adjacent to an external wall and shall be completely enclosed.
- (aa) A staircase shall not be arranged round a lift shaft unless the latter is totally enclosed by a material having a fire-resistance rating not lower than that of the type of construction of the former.
- (bb) Hollow combustible construction shall not be permitted.
- (cc) The minimum width of an internal staircase shall be 100cm.
- (dd) The minimum width of treads without nosing shall be 25cm. For an internal staircase. The threads shall be constructed and maintained in a manner to prevent slipping.
- (ee) The maximum height of a riser shall be 19cm. and the number of risers shall be limited to 12 per flight.
- (ff) Hand rails shall be provided with a minimum height of 100cm. and shall be firmly supported.
- (gg) The use of spiral staircase shall be limited to low occupant load and to a building of height of 9 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 300 cm. in diameter and have adequate head room.
- (hh) The width of a horizontal exit shall be same as for the exit doorways.
- (ii) The horizontal exit shall be equipped with at least one fire door or self closing type.
- (jj) The floor area on the opposite or refuge side of a horizontal exit shall be sufficient to accommodate occupants of the floor areas served, allowing not less than 0.3square 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.
- (kk) Where there is difference in level between connected areas for horizontal exit, ramps not more than 1 in 8 slope shall be provided. For this purpose steps shall not be used.
- (ll) Doors in horizontal exits shall be openable at all times.
- (mm) Ramps with a slope of not more than 1 in 10 may be substituted for the requirements of staircase. For all slopes exceeding 1 in 10 and wherever the use is such as to involve danger of slipping, the ramp shall be surfaced with non-slipping materials.
- (nn) In any building not provided with automatic fire alarm a manual fire alarm system shall be provided if the total capacity of the building is over 500 persons, or if more than 25 persons are employed above or below the ground floor, except that no manual fire alarm shall be required in one-storey buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

11. First aid fire fighting arrangements

- (a) In every factory there shall be provided and maintained adequate suitable fire fighting equipments for fighting fire 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 risks which are classified as follows, namely:-

- (1) "Class A fire" - Fire due to combustible materials such as wood, textiles, paper, rubbish and the like.
 - (i.) "Light hazard" – Occupancies like offices, assembly halls, canteens, rest-rooms, ambulance rooms and the like;
 - (ii.) "Ordinary hazard" – Occupancies like saw mills, carpentry shops, small timber yards, book binding shops, engineering workshop and the like.
 - (iii.) "Extra hazards" – Occupancies like large timber yards, godowns storing fibrous materials flour mills, cotton mills, jute mills, large wood working factories and the like;
- (2) "Class B Fire" – Fire in flammable liquids like oil, petroleum products, solvents, grease, paint, etc.,
- (3) "Class C Fire" – Fire arising out of gaseous substances.
- (4) "Class D Fire" – Fire from reactive chemicals, active metals and the like.
- (5) "Class E Fire" – Fire involving electrical equipment and delicate machinery and the like.

(c) The number and types of first-aid fire fighting equipments to be provided shall be as per the following scale:

(1) Class A fire-

(i) Light hazard- One 9 litre water bucket for every 100 square metres of floor area or part thereof and one 9 litre watery type (soda-acid or gas pressure or bucket pump) extinguisher shall be provided for each 6 buckets or part thereof with a minimum of one extinguisher and two buckets per compartment of the building. These equipment shall be so distributed over the entire floor areas that a person shall have to travel not more than 25 meters for any point to reach the nearest equipment.

(ii) Ordinary hazard- One 9 litre 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 buckets pumps) extinguisher shall be provided for each six buckets or part thereof with a minimum of two extinguishers and four buckets per compartment of the building. These equipment shall be so distributed over the entire floor areas that a person shall have to travel not more than 15 meters from any point to reach the nearest equipments.

(iii) Extra hazard- 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:

Provided that in special cases, the Inspector, after taking into consideration the circumstances, authorize that the buckets prescribed in this clause may be dispensed with, if the number of the extinguishers provided is double that of what is prescribed.

(2) Class B Fire- There shall be at least one fire extinguisher either, foam type or carbon dioxide or dry powder type per 50 square meters of floor area and shall be so distributed that no person is required to travel more than 15 metres from any point to reach the nearest equipment. In addition to the requirements extinguishers specified here, requirements as laid down in clause (1) shall also be provided.

(3) Class C Fire- Carbon dioxide or dry chemical powder extinguishers shall be provided near each plant or groups of plants.

(4) **Class D Fire-** Special dry powder (chloride based) type of extinguishers or sand buckets shall be provided on a scale as laid down for class B fire. The Inspector may require a higher scale of portable equipment to be provided depending upon the risk involved.

(5) **Class E Fire-** Carbon dioxide or dry powder type extinguishers shall be provided near each plants or group of plants depending upon the risk involved.

(d) The first-aid fire fighting equipments shall conform to the relevant Indian Standards.

(e) As far as possible the first-aid firefighting equipment shall all be similar in shape and appearance and shall have the same methods of operation.

(f) All first-aid firefighting equipment shall be placed in a conspicuous position and shall be readily and easily accessible for immediate use. Generally, these equipments shall be placed as near as possible to the exits or stair landing or normal routs 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 equipment shall be allotted a serial number by which it shall be referred to in the records. The following details shall be painted with the white paint on the body of each equipment namely :

- (1) serial number;
- (2) date of last refilling; 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 750mm. above the floor level. Fire bucket shall be placed on hooks attached to a suitable stand or wall in such a way that their bottom 750mm. 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 fire fighting equipments shall be subject to routine maintenance, inspection and testing to be carried out by properly trained persons. Periodicity of the routine maintenance, inspection and the test shall conform to the relevant Indian Standards.

12. Other fire fighting arrangements.-

(a) In every factory, adequate provision of water supply for firefighting shall be made and where the amount of water required in liters per minute, as calculated from the formula

$$\frac{A + B + C + D}{20} \geq 550$$

Power driven trailer pumps of adequate capacity to meet the requirements of water as calculated above shall be provided and maintained:

Provided that in areas where the fire risk 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 fire fighting 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 3 kilometers 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 percent ; but not account shall be taken for this reduction in calculating water supply required under clause (a).

Note- In the above formula in this clause-

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.

- (b) Each trailer pump shall be provided with equipment as per Schedule appended to this rule. Such equipment, shall conform to the relevant Indian Standard.
- (c) Trailer pumps shall be housed in a separate shed or sheds which shall be sited closed to a principal source of water supplies in the vicinity of the main risk of the factory.
- (d) In factories where the area is such as cannot be reached by man hauling of trailer pumps within reasonable time vehicle with towing attachment shall be provided at the scale of one for every four trailer pumps with a minimum 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 100 minutes. At least 50 per cent of water supply of 450,000 litres whichever is less, shall in the form of static tanks of adequate capacities (not less than 450,000 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 15cm. diameter and it shall be capable of supplying a minimum of 4500 litres per minute at a pressure of not less than 7 kg. per square centimeter.
- (f) All trailer pumps including the equipment provided with them and the vehicles for towing them shall be maintained in good conditions and subjected to periodical inspections and testing as required.

13. Personnel in charge of equipment and for fire fighting, for drills etc.,

(a) The first-aid and other firefighting equipment to be provided as required in sub-rules (11) and (12) shall be in charge of a trained responsible person.

(b) Sufficient number of person shall be trained in a 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 adequate number of persons is available for firefighting both by means of first-aid firefighting equipment and others. Wherever vehicles with towing attachment are to be provided as required in clause (d) of sub-rule (12) sufficient number of persons shall be trained in driving those vehicles to ensure that trained persons are available for driving them whenever the need arises.

(c) Fire fighting drills shall be held at least once in every three months.

14. Automatic sprinklers and fire hydrants shall be in addition and not in substitution of the requirements in sub-rules (11) and (12)

15. If the Chief Inspector is satisfied in respect 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 the workers, he may by order in

writing (which he may at his discretion revoke) exempt such factory or part of the factory from all or any of the provisions of the rules subject to conditions as he may by such order prescribed.

[SCHEDULE I]

(Schedule-I added by SRO.1149/2001 dt. 28-12-2001)

FIRST AID FIRE FIGHTING EQUIPMENTS

(1) The different type of fires and First-Aid Fighting Equipments suitable for use on them are as under:

<i>Class of Fire</i>	<i>Suitable type of Appliances</i>
A. Fires in ordinary combustibles (wood, vegetable fibres, paper & the like)	Chemical Extinguishers of soda, acid Gas/expelled water and antifreeze types and water buckets.
B. Fires inflammable 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 and dry powder type and sand buckets	Chemical extinguishers of carbon dioxide

(2) One 9 litre water buckets shall be provided for every 100 Sp.m of the floor area or part thereof and one 9 litre water type extinguishers shall be provided to six buckets or part thereof with a minimum of one extinguisher two buckets per compartment of the building. Buckets may be dispensed with provided supply of extinguishers is double this indicated above.

(3) Acceptable replacements for water buckets and water type extinguishers in occupancies were Class B fires are anticipated, are as under:

Acceptable Replacement	<u>Buckets of water</u>		<u>Water type Extinguishers</u> For each 9 Ltrs (or 2 gallons extinguishers)
	For one bucket	For three buckets	
Dry sand	1 bucket	3 buckets	
Carbon dioxide Extinguishers	3Kg	9Kg (In not less than 2 extinguishers)	9Kg
Dry powder	2Kg	5Kg (In one or more Extinguishers)	5Kg
Foam extinguishers	9 litres	9 litres	9 litres

(4) The following provisions shall be complied with where Class E fires are anticipated.

(a) For rooms containing electrical transformers, switch gears motors and/ or other electrical apparatus only, not less than two Kg. Dry powder or Carbon Dioxide type extinguishers shall be provided within 15m. of the apparatus.

- (b) Where motors and/or other electrical equipment are installed in rooms other than those containing such equipment only one 5 Kg. Dry powder or Carbon dioxide Extinguisher shall be installed within 15m. of such equipment in addition to the requirement mentioned at (3) and (4) above. For this purpose the same extinguisher may be deemed to afford protection to all apparatus within 15m. 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 of a long platform with a number of metres one extinguisher shall be acceptable as adequate for every 3 metres on the common platform. The above requirements will be in addition to the requirements mentioned at item (3) and (4) above.
- (5) The first aid fire fighting equipments shall be so distributed over the entire floor area that a person has to travel not more than 15m. to reach the nearest equipments.
- (6) Selection of sites for the installation of first aid fire fighting equipments: –
- (a) While selecting sites for first aid fire fighting equipments, due consideration shall be given to the nature of the risk to be covered. The equipments shall be placed in conspicuous position 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 fire fighting 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.
- (b) 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 is 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 eligible due to passage of time fresh transfers of the same shall be obtained from the manufacturers of the equipments and affixed to the extinguishers.]

[SCHEDULE II]

(Schedule renumbered as Schedule II by SRO No. 1149/2001 dt. 28-12-2001)

EQUIPMENTS 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 70mm. delivery hose of 25 metres length complete with quick-release coupling.
- 1 Dividing breaching-piece
- 2 Branch –piece with 15 mm. nozzles.
- 1 Diffuser nozzle.
- 1 Stand pipe with blank cap.
- 1 Hydrant key.
- 4 Collapsible canvas buckets
- 1 Fire hook (preventor) with cutting edge.
- 1 25mm. manila rope of 30 metres length.
- 1 Extension ladder of 9 metres length (where necessary)

- 1 Heavy axe.
- 1 Spade.
- 1 Pick axe.
- 1 Crowbar.
- 1 saw.
- 1 Hurricane lamp.
- 1 Electric torch.
- 1 Pair rubber gloves

For large trailer pump of a capacity 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 adopter.
- 14 Unlined or rubber lined 70mm. delivery hose of 25 metres length complete with quick-release couplings.
- 1 Dividing breaching-piece
- 1 Collecting breaching-piece
- 4 Branch pipes with one 25mm. two 20mm and one diffuser nozzles.
- 2 Standpipe with blank caps.
- 2 Hydrant keys.
- 6 Collapsible canvas buckets.
- 1 Ceiling hook (preventor) with cutting edge.
- 1 50mm manila rope of 30 metres length.
- 1 Extension ladder of 9 metres length (where necessary)
- 1 Heavy axe.
- 1 Spade.
- 1 Pick axe
- 1 Crowbar
- 1 Saw.
- 1 Hurricane lamp.
- 1 Electric torch.
- 1 Pair rubber gloves.

Note:- If it appears to the Chief Inspector of Factories 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.

SPECIAL RULES FOR MATCH FACTORIES

- 80. In match factories.**-(i) the residue of the head composition shall not in any way be mixed with the residue of the friction composition;
- (ii) the rooms comprising the two mixing departments, namely (a) head composition, and (b) friction composition shall be entirely separated from each other and the drains from these two departments shall be kept entirely separate;

- (iii) rubbish containing the residues of the head composition and friction composition shall be kept and burnt separately;
- (iv) departments in which completed matches (matches with heads on) are stored shall be separated from all other departments by means of fireproof walls and doors providing adequate means of escape in case of fire, provided that the chief inspector may, subject to such conditions, as he may deem necessary, exempt any factory in existence on 1st January 1951 from the provisions of this clause;
- (v) Splints, veneers, and other materials required in excess of the quantity required for the days manufacture shall be kept in separate rooms of the factory where no manufacturing process is carried on. No manufactured materials shall be stored anywhere in the factory compound for more than five days after the manufacture except in the storage godowns;
- Provided that nothing contained in this clause shall apply to splints and veneers in cases stored in peeling and box making departments; and
- (vi) Store rooms for matches shall be entirely separated by fire proof walls from the buildings used for manufacture.

Rules under section 41

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

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

[Schedule 1]

(Amended by G.O. (Ms) No. 6/87/LBR, dt. 22-01-1987)

TEXTILE MACHINERY EXCEPT MACHINERY USED IN JUTE MILLS

1. Application.- The requirements of this Schedule shall apply to machinery in factories engaged in the manufacture or processing of textiles other than jute textiles. The schedules shall not apply to machinery in the factories, engaged exclusively in the manufacture of synthetic fibres.

2. Definitions.- for the purpose of this Schedule-

- (a) "Calender" means a set of heavy rollers mounted on vertical side frames and arranged to pass cloth between them. Calenders may have two to ten rollers, or bowls, some of which can be heated.
- (b) "Embossing calender" means a calender with two or more rolls, one of which is engraved for producing figure effects of various kinds on a fabric.
- (c) "Card" means a machine consisting of cylinders of various sizes and in certain cases 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 cards, the roller and clearer card, etc.
- (d) "Card clothing" means the material with which the surface of the cylinder, differ, flats etc., of a card are covered and consists of a thick foundation material made of, either textile fabrics through which are pressed may fine closely spaced, specially bent wires or mounted saw toothed wire.
- (e) "Comber" means a machine for combing fibres of cotton, wool etc. The essential parts are device 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 fibers, short fibers, and nips are removed and the long fibers are laid parallel.

- (f) “Combing machinery” means a general classification of machinery including combers, silver lap machines, ribbon lap machines and gill boxes, but excluding cards.
- (g) “Rotary stapple cutter” means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibers into staple lengths.
- (h) “Garnet machine” means any of the number of types of machines for opening hard twisted waste to wool, cotton, silk, etc. Essentially, such machines consist of a licker in, one or more cylinders each having a compliment worker and stripper rolls; and a fancy roll and doffer. The action of such machines is somewhat like that of wool card, but it is much more severe in that various rolls are covered with garnet wire instead of card clothing.
- (i) “gill box” means a machine used in the worsted system of manufacturing yarns. Its function is to arrange fibers in parallel order. Essentially, it consist of a pair of feed roll 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 self 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 or locked while the machine or the dangerous part if in motion.
- (l) “Kier” means a large metal vat, usually a pressure type, in which fabrics may be boiled out, bleached, etc.
- (m) “Ribbon lapper” means a machine or a part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibers have been straightened as much as possible.
- (n) “Silver lapper” means a machine or a part of machine in which a number of parallel card silvers are drasted slightly, laid side by side in a compact sheet and would into a cylindrical package.
- (o) “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, the fabric is wound on a cloth beam.
- (p) “Starch mangle” means a mangle that is used specifically for starching cotton goods. It commonly consists of two large rolls and a shallow open vat with several immersion rolls. The vat contains the starch solution.
- (q) “Water mangle” means a calendar having two or more rolls used for squeezing water from fabrics before drying. Water mangles also may be used in other ways during the finishing of various fabrics.
- (r) “Mule” means a type of spinning frame having a head stock and carriage as its two main sections. The head stock is stationery. The carriage is movable and it carries the spindles which draft and spin the roving into yearn. The carriage extends over the whole width of the machine and moves slowly toward and away from the head stock during the spinning operation.
- (s) “Nip” is the danger zone between two rolls or drums which by virtue of their positioning and movement create a nipping hazard.
- (t) “Openers and pickers” means a general classification of machinery which includes breaker pickers, intermediate pickers, finisher pickers, single process pickers, multiple process pickers, willow machines, card and picker waste cleaners, thread extractors, shredding machines,

roving waste openers, shoddy pickers, bale balakers, feeders vertical openers, lattice cleaners, horizontal cleaners, and any similar machinery equipped with either cylinders, screen section, calender section, rolls, or beaters used for the preparation of stock for further processing.

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

(v) “plaiting machine” means a machine used to lay cloth into folds of regular length for convenience of subsequent process or use.

(w) “Roller printing machine” means a machine consisting of a large central cylinder, or pressure bowl, around the lower part of the perimeter of which is placed a series of engraved colour rollers (each having a colour through) a furnished roller, doctor blades, etc. The machine is used for printing fabrics.

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

(y) “Mercerizing range” means a 3 bowl mange, a tender frame, and a number of boxes for washing and securing. The whole set up is in a straight line and all parts operate continuously. The combination is used to saturate the cloth with sodium hydroxide, stretch it while saturated, and washing out most of the caustic before releasing tension.

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

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

(bb) “Singeing machine” means a machine which comprises of a heated roller, 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.

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

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

(ee) “Warper” means a machine for preparing and arranging the yarns intended for the warp of a fabric, specifically, a beam warper.

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 of 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 opening, 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 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 that it cannot be raised until the machine is stopped, and the machine cannot be started until the cover or guard is closed:

Provided that the forgoing provision shall not apply to the machine equipped with automatic lap forming devices:

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

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

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

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

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

Distance of opening from nip point	Maximum width of opening
0 to 38mm	6mm
39 to 63mm	10mm
64 to 88mm	13mm
89 to 140mm	15mm
141 to 165mm	19mm
166 to 190mm	22mm
191 to 215mm	32mm

8. Silver 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 head stock shall be guarded and the guard shall have interlocking arrangement.

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

11. Warpings.- Swiveled double-bar gates shall be installed on all warpings operating in excess of 410 metres/mm. 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 tangement 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 the 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 170cm. Above the floor to control the operation from any point.

(c) Slashers operated by push button control shall have stop 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 calender 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 on paragraph (b).

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

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

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

13. Looms.- Each loom shall be equipped with suitable guards designed to minimize the danger from flying shuttles.

14. Valves of kiers, tanks, and other containers.- (1) Each valve controlling the flow of steam, injurious gases or liquids into 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 close 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 10mm.

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 of 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 paragraph 7 (2).

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 requirements in paragraph 7 (2) shall be provided to all dangerous in-running rolls.

20. Centrifugal extractors.- (1) Each extractor shall be provided with a guard for the basket, and the guard shall have 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 paragraph 7 (2).

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 paragraph 7(2).

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

(3) A safety trip rod, cable or wire centre cord shall be provided across the front and back of all palmer cylinders extending the length of the face of the cylinder. It shall operate readily whether pushed or pulled. The safety trip shall not be more than 170cm. 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 so designed as to prevent the water or liquid from splashing the operator, the floor or working surface.

(2) A safety trip rode, 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 170cm. 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 out cylinders or shells while it is being loaded or unloaded.

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

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

26. Calenders.- 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 guards and the rolls, 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 tap between the knife and card bar shall be prevented by a guard.

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

30. Flat-work ironer.- Each flat-work or collar ironer shall be equipped with a safety bar or other guard across the entire front of the feed or first pressure rolls, so arranged that the striking 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.

Schedule II

COTTON GINNING

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

Schedule III

WOOD-WORKING MACHINERY

1. Definitions. – For the purpose of this schedule-

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

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

(c) "Band saw" means a band saw, the cutting portion of which runs in a vertical direction but does not including a long saw or band re-sawing machine.

(d) "Planing machine" means a machine for overhand planing or for thickening or for both operations.

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

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-working machine be fully and carefully instructed as to the dangers of the machines and 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 moving knife, which shall have a smooth surface, shall be strong rigid and easily adjustable and shall also conform to the following conditions:-

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

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

(iii) For a saw of a diameter of less than 24 inches, the knife shall extend upwards from the bench table to within one inch of the top of the saw, and for a saw of a diameter of 24 inches or over shall extend upwards from the bench table to a height of at least nine inches.

(b) The top of the saw shall be covered by a strong and easily adjustable guard, with 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 root of the teeth of the saw. The guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw.

(c) The part of the saw below the bench table shall be protected by two plates of metal or other suitable material one on each side of the saw such plates shall not be more than six inches apart and shall extend from the axis of the saw outwards to a distance of not less than two inches beyond the teeth of the saw. Metal plates, if not beaded, shall be of a thickness of at least 1/10 inch, or if beaded be of a thickness of at least 1/20 inch.

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.
- (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.- (i) 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.

(ii) 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.

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

10. Vertical spindle moulding machines.- (i) 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.

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

11. Chain mortising machines.- The chain of every chain mortising machine shall be provided with a guard which shall enclosed 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. Exemption.- 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.

Schedule IV RUBBER MILLS

1. Installation of machines.- Mills for breaking down, cracking, grating, mixing, refining and warming rubber or rubber compounds shall be so installed that the top of the front roll is not less than forty-six inches above the floor or working level. Provided that in existing installations where the top of the front roll is below this height a strong rigid distance bar guard shall be fitted across the front of the machines in such position that the operator cannot reach the nip of the rolls.

2. Safety device.- (1) Rubber Mills should be equipped with-

- (a) hoppers so constructed or guarded that it is impossible for the operators to come into contact in any manner with the nip of the rolls;
- (b) horizontal safety trip rods or tight wire cables across both front and rear, which will, when pushed or pulled, operate instantly to disconnect the power and apply the brakes, or to reverse the rolls.

(2) Safety-trip rod or tight wire cables on rubber mills shall extend across the entire length of the face of the rolls and shall be located more than sixty-nine inches 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 and defect is disclosed by such examination and test the mill shall not be sued until such defect has been remedied.

81A. Building and structures.- No building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging, or other structure, whether of a permanent or temporary character, shall be constructed, situated or maintained in any factory in such a manner as to cause risk of bodily injury.

81B. Machinery and plant.- No machinery, plant or equipment shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily injury.

81C. Methods of work.- No process or work shall be carried in any factory in such a manner as to cause risk of bodily injury.

81D. Stacking and storing of materials, etc.- No materials or equipment shall be stacked or stored in such a manner as to cause risk or bodily injury

81E. Reaction Vessels and Kettles.- (1) This rule applies to reaction vessels and kettles, hereinafter referred to as reaction vessels which normally work 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 vessel, it shall be supplied through a suitable 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 or through suitable pipes without causing any hazard. Where flammable gases or vapours are likely to be vented out from the vessel, the discharge and shall be provided with a flame arrester.

(5) Every reaction vessel shall be provided with a pressure gauge having 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 can 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 within the safe limits of temperature and pressure.

(8) An automatic auditory and visual warning device shall be provided for clear warning whenever process conditions exceed the present limit. This advice wherever possible, shall be integrated with automatic process correction systems.

(9) A notice pointing out the possible circumstances in which pressure above atmospheric pressure may be built up in the reaction vessel the dangers involved and the precautions to be taken by the operators shall be display at a conspicuous place near the vessel.

[81F. The Qualifications, conditions of service and duties of Safety Officers shall be as follows:-

(Inserted by G.O. (Rt) No.1567/79/L&H, dt. 03-11-1979)

(1) **Qualifications.-** (a) A person shall not be eligible for appointment as a Safety Officer unless he-

(i) possesses a recognized 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 recognized 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 recognized 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 of not less than 5 years;

- (ii) possesses a degree or diploma in industrial safety recognized 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.

[Provided that the provisions of this sub-clause shall not be applicable in the case of persons whose appointments are made on All India basis.] (Inserted by SRO No. 1677/93 dt. 18-10-1993)

(b) Notwithstanding the provisions contained in clause (a), any person who possesses-

a recognized degree or diploma in engineering or technology and has had experience of not less than five years in a department of the Central or State Government which deals with the administration of the Factories Act, 1948 or the Indian Dock Laborers Act, 1934, or

a recognized degree or diploma in engineering or technology and has had experience of not less than five 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 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 a suitable person possessing the necessary qualifications 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 of commencement of this rule, the Chief Inspector may, subject to such conditions as he may specify, relax all or any of the above said qualifications.

(2) **Conditions of service.**- (a) Where the number of Safety Officers to be appointed in a factory as required by a 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), the other safety officers 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) as the case may be, shall be given the 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 condition of their service shall be the same as those of the other officers of corresponding status in the factory.

(d) (i) If the service of a Safety Officer is terminated otherwise than under the terms of contract, he shall have within 30 days of such termination, a right of appeal to the Chief Inspector of Factories.

Provided that the Chief Inspector of Factories, may on sufficient cause being shown for the delay, extend the aforesaid time-limit to a period not exceeding six weeks.

(ii) On being satisfied that a Safety Officer intends to prefer an appeal under clause (i) of sub-rule (d), the Chief Inspector of Factories may stay the enforcement of the order of termination to be appealed against for such period and on such terms, if any, as he may think just and proper.

(iii) The Chief Inspector of Factories, shall, after giving both the parties a reasonable, opportunity of being heard, by an order for reasons to be recorded in writing, dispose of the appeal as early as possible. While disposing the appeal, the Chief Inspector of Factories, may confirm, modify or set aside the order appealed against.

(iv) The occupier or any Safety Officer, being aggrieved by the decision of the Chief Inspector of Factories may, within thirty days of the communication of such order to him, prefer a second appeal to the State Government; and the decision of the State Government thereon shall be final and binding on both the parties.

(v) On being satisfied that the Occupier or a Safety Officer intends to prefer an appeal under clause (iv) of sub-rule (d), the State Government may stay the enforcement of the decision of the Chief Inspector of Factories, for such period and on such terms and conditions, if any, as the State Government may think just and proper.

(3) Duties of Safety Officer.- The duties of a Safety Officer shall be to advise and assist the factory management in the fulfillment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintenance of a safe working environment. These duties shall include the following, namely:-

- (i) to advise the concerned departments in planning and organizing 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 purchasing and stores departments in insuring high quality and availability of personal protective equipment;
- (v) to advise on matter related to carrying out plant safety inspections;
- (vi) to carry out plant safety inspections in order to observe the physical conditions of 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 actions 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 contracted and dangerous occurrences reportable under Rule 123;
- (x) to advise on the maintenance of such records as are necessary relating to accidents, dangerous occurrence and industrial diseases;
- (xi) to promote setting up of safety committees and act as adviser and catalyst to such committees;
- (xii) to organize in association with the concerned departments, campaigns, competitions, contests and other activities which will development and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedures; and
- (xiii) to design and conduct 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).]

81 G. Examination of eye sight of certain workers. (Inserted by G.O.(Ms) No, 4/87/LBR., dt. 17-1-1987)

- (1) No person shall be employed to operate a crane, locomotive or forklift Truck, or to give signals to a crane or locomotive operator unless his eye sight and colour vision have been examined and declared fit by a qualified ophthalmologist to work whether with or without the use of corrective glasses.
- (2) The eye sight and colour vision of the person employed as referred to in sub-rule (1) shall be examined at least once in every 12 months up to the age of 45 years and once in every 6 months beyond that age.
- (3) Any free payable for the examination of a person under sub-rule (2) shall be paid by the occupier shall not be recovered 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. 43

81 H. Railways in factories. (Inserted by G.O.(Ms) No, 4/87/LBR., dt. 17-1-1987)

- (1) This rule shall apply to railways in the precincts of a factory which are not subject to Indian Railways Act, 1890 (Central Act IX of 1890).
- (2) **Gateways.**- A gateway through which a railway track passes shall not be used for the general passage of workers into or out of a factory.
 - (3) **Barriers and Turngates.**- (a) Where buildings or wall contains doors or gates which open to a railway track a barrier 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 feet beyond it at either end, so that any person passing out may become aware of an approaching train when his pace is checked at the barrier. If the traffic 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.
 - (b) If the distance between wall and track cannot be made to accommodate such barrier, the barrier of a turngate shall be placed at the inside of the opening.
 - (c) Where a footway passes close to a building or other obstruction as it approaches a railway track; a barrier or a turngate shall be fixed in such a manner that a person approaching the track is compelled to move away from the building or obstruction and thus obtain timely sight of an approaching locomotive or wagon.
- (4) **Crowds.**- (a) Worker's 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 ceases for not less than five minutes.
- (5) **Locomotives.**- (a) locomotive shall be used in shunting operations unless it is in good working order.
- (b) Every locomotive and tander shall be provided with efficient brakes, all of which shall be maintained in good working order. Brake shoes shall be examined at suitable fixed intervals and those that are worn out replaced at once.
- (c) Water-gauge glasses of every locomotive, whatever its boiler pressure, shall be protected with substantial glass or metal screens.
- (d) Suitable steps and hand-holds shall be provided at the corners of the locomotive for the use of shunters.
- (e) Every locomotive crane shall be provided with lifting and jacking pads at the four corners of the locomotive for assisting in re-railing operations.

(f) It shall be clearly indicated on every locomotive crane in English and in language understood by the majority of the workers in the factory, for what weight of load and at what radius the crane is safe.

(6) **Wagons.**- (a) Every wagon (and passenger coach, if any), shall be provided either with self-acting brakes capable of being applied continuously or with efficient hand brakes which shall be maintained in good working order. The hand brakes shall be capable being applied by a persons on the ground and fitted with a device for retaining them in the applied position.

(b) No wagon shall be kept standing within 3 meters of any authorized crossing.

(c) No wagon shall be moved with the help of crow bars or pinch bars.

(7) **Ridding on locomotive, wagon or other rolling stock.**- No person shall be permitted to be upon (Whether inside or outside) any locomotive, wagon or after rolling stock except where secure foothold and handhold are provided.

(8) **Attention to brakes and doors.**- (a) No locomotive, wagon or other rolling stock shall be kept standing unless its brakes are firmly applied and, where it is on a gradient, without sufficient number of properly constructed scotches placed firmly in position.

(b) No train shall be set in motion until the shunting jamadar has satisfied himself that all wagon doors are securely fastened.

(9) **Projecting loads and cranes.**- (a) If the load on a wagon projects beyond its length, a guard or dummy-track shall be used beneath the projection.

(b) No loco-crane shall travel without load unless the job is completely lowered and positioned in line with the track.

(c) When it is necessary for a loco-crane to travel with a load, the jib shall not be swung until the loco-crane has come to rest.

(10) **Loose-shunting.**- Loose-shunting shall be permitted only when it cannot be avoided. It shall never be performed on a wagon not accompanied by a man capable of applying and pinning down the brakes. A wagon not provided with the 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.**- Fly-shunting shall not be permitted on any factory railway.

(12) **The shunting Jamadar.**- (a) Every locomotive or wagon in motion in a factory shall be in charge of a properly trained Jamadar.

(b) Before authorizing a locomotive or 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) **Hand Signals.**- The hand signals used by the shunting jamadar by day and night shall be those prescribed by the shunting rules of Railways, working under the Indian Railway Act, 1890 (Central Act IX of 1890.)

(14) **Night work and fog.**-(a) In factories where person work at night, no movement of locomotive, wagon or other rolling stock otherwise than by hand shall be permitted between sunset and sunrise unless the tracks and their vicinity are lighted on a scale of not less than 10 lux as measured at the horizontal plane at the ground level.

(b) In no circumstances shall any locomotive or train be moved between sunset and sunrise or at any time when there is fog, unless it carries a white head-light and a red rear-light.

(15) **Speed control.**- (a) A locomotive or train shall be not be permitted to move at a speed greater than seven kilometers per hour.

(b) A train, locomotive, wagon or other rolling stock shall not be moved by mechanical or electrical power unless it is preceded at a distance of not less than 10 metres during the whole of its journey by a shunting jamadar. He shall be provided with signalling flags or lamp and whistle necessary for calling the attention of the driver.

- (16) **Tracks.**- (a) The distance (i) between tracks and (ii) between tracks and buildings, blind walls or other structures and (iii) tracks and materials deposited on the ground shall be respectively not less than;-
- (1) from centre to centre of parallel tracks, the overall width of the widest wagon of that gauge plus twice the width of the door of such a wagon when opened directly outward plus 1 metre.
 - (2) from a building or structure other than a loading platform to the centre of the nearest track, half the overall width of the widest wagon of that gauge plus the width of its door when opened outward, plus 1.5 metres.
 - (3) from material stacked or deposited alongside the track, on the ground or on a loading platform, to the centre of the nearest track, half of the overall width of the widest wagon of that gauge plus half the widest of its door when opened directly outward, plus 1 metre.
- (b) Sleepers of a track shall be in level with the ground and at all crossings of the track with a road or walkway, the surface of the road or walk way 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 door way or gateway in a building or in a wall which conceals an approaching train from view, between the building and the track as prescribed in clause (a) of sub-rule (3).
- (e) Where tracks are carried on a gantry or other elevation, a safe footway or footways with hand rails and toe boards shall be provided at all positions where persons work or pass on foot; and where there is an opening in the stage of an elevated track for the dropping of materials to a lower level the position shall be 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 60cm. above the level of the ground on which the track is laid and more than 15 metres in length shall be provided with stops at intervals not greater than 15 metres apart to enable the platform to be easily mounted from the track.
- (h) Turn tables on plant railways shall be provided with lacking devices which will prevent the tables from turning while locomotives or wagons are being run on or off the tables.
- (i) Workers shall be prohibited from passing under, between or above railway wagons.
- (17) **Crossings.**- (a) At all crossing of track with a road or walkway, danger or crossing signs and wherever reasonably practicable, blinking lights or alarm light shall be provided. At all important crossings, gates or barriers manned by watchman shall be provided. Swinging gates and barriers shall be secured against inadvertent opening or closing.
- (b) All crossings, warning signs, gates and barriers shall be illuminated during hours of darkness.
- (18) **Duties of drives and shunters.**- It shall be the duty of every driver of a locomotive or a shunter including a shunting jamadar, to report without delay to their superior any defect in permanent way, locomotive or rolling stock.
- (19) **Young persons not to be employed as drives of locomotive or as shunters.**- No person who is under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as a driver of locomotive or as a shunter.
- (20) The Chief Inspector may by an order in writing exempt a factory or part of it from all or any of the provisions of this rule to such extent and on such conditions as he deems necessary.

[81 I. Safety Committee. (Rule 81 I Substituted by SRO No. 765/95 dt. 07-06-1995)

- (1) In every factory.-
 - (a) Where 250 or more workers are ordinarily employed; or

- (b) which carries on any process or operation declared to be dangerous and Section 87 of the Act; or
 (c) which carries on “Hazardous, Process” as defined under Section 2 (cb) of the Act; there shall be a “Safety Committee”
- (2) The representatives of the management on Safety Committee shall include –
- A senior official, who by his position in the organization can contribute effectively to the functioning of the committee, shall be the Chairman;
 - A Safety Officer and a Factory Medical Officer wherever available and the Safety Officer in such a case shall be the Secretary of the Committee.
 - A representative each from the production, maintenance and purchase departments.
- (3) The workers’ representatives on this Committee shall be elected by the workers.
- (4) The tenure of the Committee shall be two years.
- (5) Safety Committee shall meet as often as necessary but at least once in every quarter. The minutes of the meeting shall be recorded and produced to the Inspector on demand.
- (6) Safety Committee shall have the right to be adequately and suitably informed of,-
- Potential safety and health hazards to which the workers may be exposed at workplace.
 - 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.
- (7) Function and duties of the Safety Committee shall include-
- assisting and co-operating with the management in achieving the aims and objectives outlined in the ‘Health and Safety Policy’ of the occupier;
 - dealing with all matters concerning health, safety and environment and to arrive at practicable solutions to problems encountered;
 - creating safety awareness amongst all workers;
 - undertaking educational, training and promotional activities;
 - 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;
 - carrying out health and safety surveys and identifying causes of accidents;
 - 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
 - reviewing the implementation of the recommendations made by it.
- (8) Where owing to the size of the factory, or any other reasons, the functions referred to in sub-rule (7) cannot be effectively carried out by the Safety Committee, it may establish sub-committees as may be required to assist it.

[81J. Quality of Personal Protective Equipments (Rule 81 J, 81 K & 81 L added by SRO No1149/2001 dt. 28-12-2001)

– All personal Protective Equipments provided to the worker as required under any of the provision of the Act or the Rules shall have certification by ISI.

81K. Protective Equipments – 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.

81L. Ovens and Driers.- (1) **Application** – This rule shall apply to ovens and driers, except those used in laboratories or kitchens of any establishment and those which have a capacity below 325 litres.

(2) **Definition** – For the purpose of this Rule, Oven or drier means 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 article or substance which is baked, dried or otherwise processed within in its.

(3) **Separate electrical connection.** – Electrical power supplied to every oven or drier shall be by means of a separate circuit provided with isolation switch.

(4) **Design, Construction, examination and testing** –

(a) Every oven or drier shall be properly designed on sound engineering practice and be of good construction, sound materials and adequate strength, free from any patent defects and safe if properly used.

(b) No oven or drier shall be taken into use in a factory for the first time unless a Competent Person has thoroughly examined all its parts and carried out the tests as are required to establish that the necessary safe system 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 as have been mentioned in clause (b) has been carried out by a Competent Person and a certificate of such examination and tests signed by that Competent Person has been obtained and is kept available for Inspection.

(5) **Safety ventilation.**- (a) Every oven or drier shall be provided with a positive and effective safety ventilation system using one or more motor driven centrifugal fans so as to dilute any mixture of air and any flammable substance that may be formed within the oven or drier and maintain the concentration of the flammable substances in the air at a safe level of dilution.

(b) The safe level of dilution referred to in clause (a) shall be so as to achieve a concentration of the concerned flammable substance in air of not more than 25 per cent of its lower explosive limit: Provided that a level of concentration in air up to 50 per cent of the lower explosive limit of the concerned flammable substance may be permitted to exist subject to installation and maintenance of an automatic device which –

(i) Shows continuously the concentration of the flammable 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 30 percent of its lower explosive limit: and

(iii) Shuts down the heating system of the oven or drier automatically when the concentration in air of the flammable substance in any part of the oven or drier reaches a level of 60 percent 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 work-rooms and not near windows or doors and other opening from where the mixture could re-enter the work-rooms.

(f) The fresh air admitted into the oven or drier by means of safety ventilation system shall be circulated adequately by means of circulating fan or fans through all parts of the oven or drier so as to ensure that there are no locations where the flammable substance can accumulate in the air or become packeted to any dangerous degree.

(g) Throttling dampers in any safety ventilation system should be so designed by cutting away a portion of the damper or otherwise, that the system will handle at least the minimum ventilation rate required for safety when they are set in their maximum throttling position.

(6) Explosion Panels.- (a) Every oven or drier having an internal total space of not less than half cubic 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 2200 Square centimeter for every one cubic metre of volume of the oven or drier. The design of the explosion panels and doors as above said shall be such as to secure their complete release under an internal pressure of 0.25 kg. per square centimeter.

(b) The explosion releasing panels, shall, as far as practicable be situated at the roof of the oven or drier or at those portion of the wall where persons do not remain in connection with operation of the oven or drier.

(7) Inter-locking arrangements.-(a) In each oven or drier efficient inter-locking arrangements shall be provided and maintained to ensure that:-

(i) all ventilating fans and circulating fans whose failure would adversely affected the ventilation rate of flow pattern, are in operation before any mechanical conveyor that may be provided for feeding the articles or substances to be processed in the oven or drier is put into operation;

(ii) failure of any of the ventilating or circulating fans will automatically stop any conveyor as referred to in clause (i) as may be provided, as well as stop the fuel supply by closing the shut off valve and shut off the ignition in the case of gas or oil fired ovens, and in the case of electrically heated ovens switch off the electrical supply to the heaters.

(iii) the above said mechanical conveyor is set in operation before the above said shut off valve can be energized; 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 de-activate the ignition system, or cut off the electrical heaters in the case of electrically heated, ovens or furnaces.

(8) Automatic pre-ventilation.- Every oven or drier heated by oil, gas, steam or electricity shall be provided with an efficient arrangement for automatic pre-ventilation consisting of at least 3 volume changes with fresh air by operation of 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) Temperature control.- 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)Multistage Processes.- Wherever materials are to be processed in ovens or driers in successive operations, suitable arrangement should be provided to ensure that the operating temperatures necessary for safe operation at each stage are maintained within the design limits.

(11)Combustible substances not to drip on electrical heater or burners flame.- Effective arrangements shall be provided in every oven or drier to prevent dripping of combustible substances on electric heaters or burner flame used for heating.

(12)Periodic examination testing and maintenance.- (a)All parts of every oven and drier shall be properly maintained and thoroughly examined and the various controls as mentioned in these rules and the working of the oven or drier tested at frequent intervals to ensure its safe operation by a responsible person designed by the occupier or manager who by his experience and knowledge of necessary precaution 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 entry made shall be signed by the person making tests.

(13)Training of Operators.- No person shall be assigned any tasks connected with operation of any oven or drier unless he has completed 18 years of age and he is properly trained.

(14)Polymerizing machines.- (a) Printed fabric shall be thoroughly dried by passing them over drying cans or through hot flue or other equally effective means, before the same is allowed to pass through the polymerizing machines.

(b)Infra-red ray heaters of polymerizing machines shall be out off while running the prints.]

[81M. Thermic fluid heaters. (Rule 81 M added by SRO No1149/2001 dt. 28-12-2001)

(1) All heater shall be of such construction that coils are removable for periodic cleaning, visual inspection and by hydraulic test.

(2)Suitable arrangement shall be made for cooling the furnace effectively in case of power failure.

(3) Before restarting the failure it shall be effectively purged.

(4)Velocity of flow of the thermic fluid shall not be allowed to fall below the minimum recommended by the manufactures while the heater is in operations.

(5)The thermic fluid shall be circulated in a closed circuit formation with an expansion-cum-deaerator tank. This tank shall be located outside the shed where the heater is installed.

(6)Every heater shall be provided with photo-register actuated audio-visual alarm to indicate flame failure and automatic burner cut-off.

(7)The stack temperature monitor-cum-controller with audio-visual alarm shall be provided so as to warn the operator in case the outlet temperature exceeds the specified minimum.

(8)Where, inspection doors are provided on the furnace they should be inter-locked with the burner itself so that they cannot be opened until burner is shut off and furnace is cooled sufficiently.

(9)All heaters shall also be provided with the following safety devices;

(a)Level control in the expansion tank;

(b) Temperature control of thermic fluid;

- (c) Differential pressure switch on the outlet line of the heater tubes and ;
 - (d) Temperature control device for the fuel oil supply to the burner.
- (10) All devices mentioned in paragraph 9 shall have enter-locking arrangement with burner so that in case of any predetermined limits being crossed the supply to fuel and air to burner shall automatically be cut-off.
- (11) All safety inter-locks when operated shall be indicated on the control panel of the heater by a suitable audio-visual alarm.
- (12) Every heater unit shall be provided, as standard accessory with an arrangement for sniffing with low pressure steam for nitrogen for putting out the fire.
- (13) Electric panel for the heater shall be located near the heater, but not so closed as to be exposed to spilling or leaking oil.
- (14) The heater shall be located in a place segregated from other manufacturing activities.
- (15) Explosion vent shall be so installed that release takes place at safe location.
- (16) The heater coil shall be subjected to pressure test by Competent Person once at least in every 12 months the test pressure shall not be less than twice the operation pressure.
- (17) If repairs are carried out to the coil, it shall be tested before taking it into.
- (18) The thermic fluid shall conform to the specifications prescribed by the manufactures and shall be tested by Competent Person for suitability at least once in every three months period. Such test shall include test for acidity, suspended matter, ash contents, viscosity and flash point.
- (19) Cleaning of the internal surface of the heater for soot and check up of refractory surface on the inside shall be carried out every month or as often as required depending upon working conditions. The coils shall be removed and surface of the coils cleaned thoroughly once at least in a period of six months. The burner, nozzles, oil filters and pumps shall be cleaned once a week during the period of use.
- (20) A separate register containing the following information shall be maintained:
- (a) Weekly checks carried out confirming the effectiveness of the inter-lock.
 - (b) Weekly checks confirming that all accessories are in good state of repairs; and
 - (c) Information regarding fuel oil temperature, pressure thermic fluid inlet/outlet pressure and temperature, fuel gas temperature, recorded at 4 hourly intervals.
- (21) The heater when in operation shall always be kept in charge of trained operator.]

[RULES UNDER SUB-SECTION (1) OF SECTION 41 A (Rule 81AA to 81AO added by SRO. No. 765/95 dt. 07-06-1995)

81AA. Site Appraisal Committee. (1) Constitution. – The following provision shall govern the functioning of the Site Appraisal Committee; hereinafter be referred to as the “Committee” in these rules:-

- (a) The State Government may constitute a “Site Appraisal Committee” and reconstitute the Committee as and when necessary;

(b) The State Government may appoint a senior official of the Factories Inspectorate to be the Secretary of the Committee;

(c) The State Government may appoint the following members in the committee;

(i) a representative of the Fire Service Organization of the State Government ;

(ii) a representative of the State Department of Industries;

(iii) a representative of the Director General of Factory Advice Service and Labour Institutes, Bombay.

(2) No member, unless required to do so by a court of Law, shall disclose otherwise than in connection with the purpose of the Act, at any time any information relating to manufacturing or commercial business or any working process which may come to his knowledge during his tenure as a Member of this Committee.

(3) Applications for appraisal of sites- (a) Application for appraisal of sites in respect of the factories covered under section 2 (cb) of the act shall be submitted to the Chairman of the Site Appraisal Committee.

(b) The application for site appraisal along with 15 copies thereof shall be submitted in the Form annexed to this Rule. The Committee may dispense with furnishing information on any particular item in the Application Form if it considers the same to be not relevant to the application under consideration.

(4) Function of the Committee-

- a. The Secretary shall arrange to register the applications received for appraisal of site in a separate register and acknowledge the same within a period of 7 days.
- b. The secretary shall fix up meeting in such a manner that all the applications received and registered are referred to the Committee within a period of one month from the date of their receipt.
- c. The Committee may adopt a procedure for its working keeping in view the need for expeditious disposal of applications.
- d. The Committee shall examine the application for appraisal of a site with reference to the prohibitions and restrictions on the location of industry and the carrying on of processes and operations in different areas as per the provisions of Rule 5 of the Environment (Protection) Rules, 1986 framed under the Environment Protection Act, 1986.
- e. The Committee may call for documents, examine experts, inspect the site if necessary and take other steps for formulating its views in regard to the suitability of the site.
- f. Wherever the proposed site requires clearance by the Ministry of Industry or the Ministry of Environment and Forests, the application for site Appraisal will be considered by the Site Appraisal Committee only after such clearance has been received.

FORMAT OF APPLICATION TO THE SITE APPRAISAL COMMITTEE

1. Name and address of the applicant.

2. Site Ownership Data

2.1 Revenue details of site such as Survey No. Plot No. etc.

2.2 Whether the site is classified as forest and if so, whether approval of the Central Government under section 5 of the Indian Forests Act 1927 has been taken.

2.3 Whether the proposed site attracts the provisions of Sections 3 (2) (v) of the E.P. Act, 1986, if so, the nature of the restrictions.

- 2.3 Whether the proposed site attracts the provisions of Section 3(2)(v) of the E.P. Act, 1986, if so, the nature of the restrictions
- 2.4 Local authority under whose jurisdiction the site is located.

3.Site Plan

- 3.1 Site Plan with clear identification of boundaries and total area proposed to be occupied and Showing the following details nearby the proposed site.
- Historical monument, if any, in the vicinity.
 - Names of neighbouring manufacturing units and human habitants, educational and training institutions, petrol installations, storages of L.P.G and other hazardous substances in the vicinity and their distances from the proposed unit.
 - Water sources (river, streams, canals, dams, water filtration plants. Etc.) in the vicinity.
 - Nearest hospitals, fire-stations, civil defense stations and police stations and their distances.
 - High tension electrical transmission lines, pipe lines for water, oil gas or sewerage; railway lines, roads, stations; jetties and other similar installations.
- 3.2 Details of soil conditions and depth at which had strata obtained.
- 3.3 Contour map of the area showing nearby hillocks and difference in levels.
- 3.4 Plot plan of the factory showing the entry and exit points, roads within water drains, etc.

4. Project Report.

- A summary of the salient features of the Project.
- Status of the organization (Government, Semi-Government, Public or Private etc.)
- Maximum number of persons likely to be working in the factory.
- Maximum amount of power and water requirements and source of their supply
- Block diagram of the buildings and installations, proposed.
- Details of housing colony, hospital, school and other infrastructural facilities proposed.

5.Organization structure of the proposed manufacturing Unit factory.

- 5.1 Organization diagrams of-
- Proposed enterprise in general
 - Health Safety and Environmental protection departments and their link age to operation and technical departments
- Proposed Health and Safety Policy.
 - Area allocated for treatment of wastes and effluent.
 - Percentage outlay on safety, health and environment protection measures.

6.Meteorological data relating to the site.

- Average, minimum and maximum of
 - Temperature
 - Humidity
 - Wind velocities during the previous ten years.
- Seasonal variations of wind direction.
- Highest water level reached during the floods in the area recorded so far.
- Lightening and seismic data of the area.

7.Communication Links

- Availability of telephone/telex/wireless and other communication facilities for outside communication
- Internal communication facilities proposed..

8. Manufacturing Process Information

- 8.1 Process flow diagram.
- 8.2 Brief write-up on process and technology
- 8.3 Critical process parameters such as pressure build-up, temperature rise and run-away reactions.
- 8.4 Other external effects critical to the process having safety implications, such as ingress of moisture or water, contact with incompatible substances, sudden power failure.
- 8.5 Highlights of the built-in safety/pollution control devices or measures/incorporated in the manufacturing technology.

9. Information for Hazardous Materials.

- 9.1 Raw materials, intermediates, products and by-products and their quantities. (Enclose Material Safety Data Sheet in respect of each hazardous substance).
- 9.2 Main and intermediate storages proposed for raw material/intermediates/products/by-products (maximum quantities to be stored at any time)
- 9.3 Transportation method to be used for materials inflow and outflow, their quantities and likely routes to be followed.
- 9.4 Safety measures proposed for:
 - handling of materials;
 - Internal and external transportation; and
 - disposal (packing and forwarding of finished products).

10. Information on Dispersal/Disposal of Wastes and Pollutants

- 10.1 Major pollutants (gas, liquid, solid) their characteristics and quantities (average and at peak loads).
- 10.2 Quality and quantity of solid wastes generated, method of their treatment and disposal.
- 10.3 Air, water and soil pollution problems anticipated and the proposed measures to control the same, including treatment and disposal of effluents.

11. Process Hazards Information

- 11.1 Enclose a copy of the report on environmental impact assessment.
- 11.2 Enclose a copy of the report on Risk Assessment study.
- 11.3 Published (open or classified) reports, if any, on accident situations/ occupational health hazards in similar plants elsewhere (within or outside the country)

12. Information of Proposed Safety and Occupational Health Measures.

- 12.1 Details of fire fighting facilities and minimum quantity of water, CO₂ and or other fire fighting measures needed to meet the emergencies.
- 12.2 Details of in-house medical facilities proposed.

13. Information of Emergency Preparedness

- 13.1 On site emergency Plan.
- 13.2 Proposed arrangements, if any, mutual aid scheme with the group of neighboring factories.

14. Any other relevant information.

I certify that the information furnished above is correct to the best of my knowledge and nothing of importance has been concealed while furnishing it.

Name and Signature of the Applicant

RULES UNDER SECTION 7A (3), 41B (2) AND 112

81 AB. Health and Safety Policy.-(1) The occupier of every factory, except as provided for 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 50 workers;
- (b) covered under section 2 (m) (ii) but employing less than 100 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 on processes or operations declared to be dangerous under section 87 of the Act.

(3) Notwithstanding anything contained in sub-rule (2), the Chief Inspector may require the occupiers of any of the factories class or description of factories to comply with the requirements of sub-rule (1), if, in his opinion, it is expedient to do so.

(4) The Health and Safety Policy should contain or deal with:

- (a) declared intention and commitment of the top management to health, safety and environment and compliance with all the relevant statutory requirements;
- (b) organizational set up to carry out the declared policy clearly assigning the responsibility at different levels ; and
- (c) arrangements for making the policy effective.

(5) In particular, the Policy should specify the following:

- (a) arrangements for involving the works;
- (b) intention of taking into account the health and safety performance of individuals at different levels while considering their career advancement;
- (c) fixing the responsibility of the contractors, sub-contractors, transporters and other agencies entering the premises;
- (d) Providing a resume of health and safety performance of the factory in its Annual Report ;
- (e) relevant techniques and methods, such as safety audits and risk assessment for periodical assessment of the status on health, safety and environment and taking all the remedial measures;
- (f) stating its intentions to integrate health and safety, in all decisions including those dealing with purchase of plant, equipment, machinery and material as well as selection and placement of personnel;
- (g) arrangements for informing, educating and training and re-training its own employees at different levels and the public, wherever required.

(6) A copy of the declared Health and Safety Policy signed by the occupier shall be made available to the Inspector having jurisdiction over the factory and to the Chief Inspector.

(7) The policy shall be made widely known by:-

- (a) making copies available to all workers including contract workers, apprentices, transport workers, suppliers, etc.
- (b) displaying copies of the policy at conspicuous places ; and
- (c) any other means of communication; in a language understood by majority of workers.

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

- (a) whenever any expansion or modification having implications on safety and health of persons a 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 substance.

RULES UNDER SECTION 41B MATERIAL SAFETY DATA SHEET

81AC. Collection, 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 recognized 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.

(2)Labeling.- Every container of a hazardous substance shall be clearly labeled or marked to identify:

- (a) the contents of the container ;
- (b) the name and address of the manufacturer or importer of the hazardous substances;

- (c) the physical and health hazards ; and
- (d) the recommended personal protective equipment needed to work safety with the hazardous substance:

SCHEDULE

MATERIAL SAFETY DATA SHEET

SAMPLE MODEL

Section 1- Material Identification and Use

Material Name/Identifier

Manufacturer's Name

Street Address

City State

Postal Code Emergency Telephone No.

Chemical Name

Trade Name and Synonyms

Supplier's Name

Street Address

City State

Postal Code Emergency Telephone No.

Chemical Identity

Product Use

Section II-Hazardous Ingredients of Material

Hazardous Ingredients	Approximate Concentration%	C.A.S. or Un Numbers	L.D. 50 (Specify Species & Route)	LC 50 (Specify Species & Route)
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Section III-Physical Data for Material

Physical State

Gas—Liquid—Solid

Vapour Pressure
(mm)

Vapour
density (Air-1)

Solubility
in water
(20⁰C)

PH

Odour
and Appearance
Evaporation Rate

Density (g/ml.)

Odour Threshold
(p.p.m.)

Boiling Point(⁰C)

Specific Gravity

Freezing (⁰C)

Coefficient of Water/ oil distribution

Section IV-Fire and Explosion Hazard of Material

Flammability

-Yes /No

If yes, under what conditions

Means of Extinction

Special Procedures

Flash Point (⁰C)
and Method

Upper Explosion Limit
(% by volume)

Lower Explosion Limit
(% by volume) and

Auto-ignition
Temperature (⁰C)

TDG
Flammability
classification

Hazardous Combustion Products

Explosion Date- Sensitivity
Chemical Impact

Sensitivity to
Static Discharge

Section V- Reactive Data

Chemical Stability

Yes / No

If no, under what conditions

Incompatibility to other substances

Yes / No

If yes, which ones

Reactivity and under what condition

Hazardous Decomposition products

Material Name/Identifier

Section VI- Toxicological Properties of Material

Route of Entry

-Skin Contact

-Skin Absorption

-Eye contact

-Inhalation

-Inhalation

-Ingestion

Acute

Chronic

Effects of Acute Exposure of Material

Effects of Chronic Exposure to Material

Exposure Limit (s)

Irritancy of Material

Sensitization to Material

Carcinogenicity, Reproductive Effects, Teratogenicity, Mutagenicity

Synergistic Materials

Section VII – Preventive Measures

Personal protective Equipment

Gloves (Specify) Respiratory (Specify) Eye (specify)

Footwear (Specify) Clothing (Specify) Other (Specify)

Engineering Controls (e.g. ventilation, enclosed process etc.) please specify

Leak and Spill Procedures

Waste Disposal

Handling Procedures and Equipment

Storage Requirements

Special Shipping Information

Section VIII- First Aid Measure

First Aid Measure

Source used

Additional Information

Section IX-Preparation date of M.S.D.S

Prepared by (Group, Department, etc.)

Phone No

Date

Notes:

1. CAS or UN Number - Chemical Abstract Service or United Nations (UN) Number.
2. LD 50-Lethal Doze - 50% (LD 50-Specify Species and route)
3. LG-50-Lethal Concentration - 50% (LC 50-Specify Species and route)
4. TDG Flammability - Transport of Dangerous Goods Flammability Classification by United Nations

81AD. Disclosure of information to workers.

- (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 material or substances in the manufacture, transportation, storage and other processes:
- (a) Requirements of Section 41B, 41C and 41H of the Act;
 - (b) A list of 'hazardous process' carried on in the factory;
 - (c) Location and availability of all Material Safety Data Sheets as per Rule 81 AC;
 - (d) Physical and health hazards arising from the exposure to or handling of substances;
 - (e) Measures taken by the occupier to ensure safety and control of physical and health hazards;
 - (f) Measures to be taken by the workers to ensure safe handling, storage and transportation of hazardous substances;
 - (g) Personal Protective Equipment required to be used by workers employed in 'hazardous process' or 'dangerous operations';
 - (h) Meaning of various labels and markings used on the containers of hazardous substances as provided under Rule 81 AC;
 - (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;
 - (l) Any other information considered necessary by the occupier to ensure safety and health of workers.
- (2) The information required by sub-rule(1) shall be complied and made known to workers individually through supply of booklets or leaflets and display of cautionary notices at the work places.
- (3) The booklets, leaflets and the cautionary notices displayed in the factory shall be in the language understood by the majority of the workers, and also explain to them.
- (4) The Chief Inspector may direct the occupier to supply further information to the workers as deemed necessary.

81AE. Disclosure of information to the Chief Inspector.

- (1) The occupier of every factory carrying on 'hazardous process' shall furnish in writing to the local Inspector and the Chief Inspector a copy of all the information furnished to the workers.
- (2) A copy of compilation of Material Safety Data Sheets in respect of hazardous substances used, produced or stored in the factory shall 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 or the Inspector from time to time for the purpose of this Act and rules made thereunder.

81AF. Information on Industrial wastes.

- (1) The information furnished under Rules 81AD and 81AE 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 waste 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 opening, and arrangements such as provision of scrubbers, cyclone separators, electrostatic precipitators or similar arrangements made for controlling pollution of the environment.

(3) The occupier shall also furnish the information prescribed in the sub-rules (1) and (2) to the State Pollution Control Board.

81AG. Review of the information furnished to workers etc.

(1) The occupier shall review in every calendar year and modify if necessary, the information furnished under Rule 81AD and 81AE 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.

81AH. Confidentiality of information.- The occupier of a factory carrying on 'hazardous process' shall disclose all information needed for protecting safety and health of the workers and the general public in the neighborhood to-

- (a) his workers;
- (b) local Inspector of Factories and
- (c) Chief Inspector.

as required under Rules 81AD, and 81AE. If the occupier is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interest, 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.

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.

RULES UNDER SECTIONS 41B, 41C – SPECIFIC RESPONSIBILITY OF THE OCCUPIER IN RELATION TO HAZARDOUS PROCESS

81 AI. Medical Examination.

(1) Workers employed in a 'hazardous process' shall be medically examined by a qualified medical practitioner hereinafter 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 6 months, to ascertain the health status of all the workers in respect of occupational health hazardous 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 worker;
- (c) The details or pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the Health Register in Form 17.

(2) No person shall be employed in hazardous process for the first time without a Certificate of Fitness in Form 29 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 unsuitability of any person employed in the process shall immediately be reported to the Certifying Surgeon who shall in turn, examine the concerned worker and communicate his findings to the occupier within 30 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 as prescribed in Appendix II and it shall be paid by the Occupier by way of Treasury remittance.
- (5) The worker taken away from employment in any process under sub-rule (2) may be employed again in the same process only after obtaining the Fitness Certificate from the Certifying Surgeon and after making entries to that effect in the Health Register.
- (6) The worker required to undergo medical examination under these rules and for any medical survey conducted by or on behalf of the Central or the State Government shall not refuse to undergo such medical examination.

81 AJ. Occupational Health Centres.

- (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 50 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 81AI and render medical assistance during emergency;
- (ii) a minimum of 5 persons trained in first-aid procedures amongst whom atleast 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 15sq.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 over all 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 up to 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 15sq. metre 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;
- (iii) there shall be one nurse, one dresser-cum-compounder and one sweeper-cum-ward boy throughout the working period;
- (iv) the Occupational Health Centre shall be suitably equipped to manage medical emergencies.

- (2) The factory Medical Officer required to be appointed under sub-rule (1) shall have qualifications included in Schedules to the Indian Medical Degree Act of 1916 or in the Schedules to the Indian

Medical Council Act, 1956 and possess a Certificate of Training in Industrial Health of minimum three months duration recognized by the State Government: Provided that-

- (i) a person possessing a Diploma in Industrial Health or equivalent shall not be required to possess the certificate of training as aforesaid;
 - (ii) the Chief Inspector may, subject to such conditions as he may specify, grant exemption from the requirement of this sub-rule, if in his opinion a suitable person possessing the necessary qualification is not available for appointment;
 - (iii) in case of a person who has been working as a Factory Medical Officer for a period of not less than 3 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 organizations conducting the Course shall be approved by the Director General of Factory Advice Service and Labour Institutes or the State Government in accordance with the guidelines issued by the DGFASLI.
- (4) Within one month of the appointment a Factory Medical Officer, the occupier of the Factory shall furnish to the Chief Inspector the following particulars-
- (a) Name and address of the Factory Medical Officer,
 - (b) Qualification;
 - (c) Experience, if any; and
 - (d) the rules under which appointed.

SCHEDULE EQUIPMENT FOR OCCUPATIONAL HEALTH CENTRE IN FACTORIES

1. A glazed sink with hot and cold water always available
2. A table with a smooth top at least 180cm X 105cm.
3. Means for sterilizing instruments
4. A couch
5. Two buckets or containers with close fitting lids
6. A kettle and spirit stove or other suitable means of boiling water.
7. One bottle of spirits ammoniac aromaticus (120ml)
8. Two medium size sponges
9. Two 'kidney' trays
10. Four cakes of toilet, preferably antiseptic soap
11. Two glass tumblers and two wine glasses
12. Two clinical thermometers
13. Two tea spoons
14. Two graduated (120ml) measuring glasses
15. One wash bottle (1000cc) 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 (60ml)

22. Tablets-antihistaminic, antispasmodic (25each)
23. Syringes with needles-2cc, 5cc and 10cc.
24. Two needle holders, big and small
25. Suturing needles and materials
26. One dissecting forceps
27. One dressing forceps
28. One scalpels
29. One stethoscope
30. Rubber bandage-pressure bandage
31. Oxygen cylinder with necessary attachments
32. One Blood Pressure apparatus
33. One Patellar Hammer
34. One peak-flow meter for lung function measurement
35. One stomach 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-
 1. Four plain wooden splints 900mm X 100mm X 6mm.
 2. Four plain wooden splints 350mm X 75mm X 6mm.
 3. Two plain wooden splints 250mm X 50mm X 12mm.
 4. One pair artery forceps
 5. Injections-mophia, pethidine, atropine, adrenaline, coramine, novacan (2 each)
 6. One surgical scissors
 - (2) For factories employing above 200 workers-
 1. Eight plain wooden splints 900mm X 100mm X 6mm.
 2. Eight plain wooden splints 350mm X 75mm X 6mm.
 3. Four plain wooden splints 250mm X 50mm X 12mm.
 4. Two pairs artery forceps
 5. Injections-mophia, pethidine, atropine, adrenaline, coramine, novacan (4 each)
 6. Two surgical scissors

81AK. Ambulance Van.

(1) In any factory carrying on 'hazardous process', there shall be provided and maintained in good condition, a suitably constructed ambulance van equipped with items as per 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 will normally be stationed at or near the Occupational Health Centre: Provided that a factory employing less than 200 workers, may make arrangements for procuring such facility at short notice from a nearby hospital or other places, to meet any emergency.

(2) The Ambulance should have the following equipments:

(a) General

A wheeled stretcher with folding and adjusting devices; with the head of the stretcher capable of being tilted upward; Fixed suction unit with equipment; Fixed oxygen supply with equipment; Pillow with case; Sheets; Blankets; Towels; Emesis bag; Bed pan; Urinal; Glass

(b) Safety Equipment

Flares with life of 30 minutes;- Flood lights; Flash lights;- Fire extinguisher dry powder type;
Insulated gauntlets

(c) Emergency Care Equipments

(i) Resuscitation;

Portable suction unit; Portable oxygen units; Bag-valve-mask, hand operated artificial ventilation unit; Airways; Mouth gags; Tracheotomy adaptors; Short spine board I.V. Fluids with administration unit; B.P. Manometer; Stethoscope

(ii) immobilization

Long and short padded boards; Wire ladder splints;

Triangular bandage;- Long and short spine boards

(iii) Dressings

Gauze pads-100mm X 100mm;- Universal dressing 250mm X 900mm

Roll of aluminium foils; Soft roller bandages 150mm X 900mm

Adhesive tape in 75mm roll; Safety pins;

Bandage sheets; Burn Sheet.

(iv) Poisoning

Syrup of Ipecac; Activated Charcoal Pre-packeted in dozens; Snake bite kite; Drinking water

(v) Emergency medicines

As per requirements (under the advice of Medical Officer only.)

81AL. Decontamination facilities.- In every factory, 'carrying out hazardous process', the following provisions shall be made to meet emergency:-

(a) fully equipped first aid box;

(b) readily accessible means of water for washing by workers as well as for drenching the clothing of workers who have been contaminated with hazardous and corrosive substance; and such means shall be as per the scale shown in the table below :-

TABLE

<i>No. of persons employed at any time</i>	<i>No. of drenching showers</i>
(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 clearly indicated by a distinctive signs which shall be visible at all time.

81AM. Making available Health Records to workers.

(1) The occupier of every factory carrying out a 'hazardous process' shall make accessible the health records including the record of worker's exposure to hazardous process or, as the case may be, the medical records of any worker for his perusal under the following conditions:-

(a) Once in every six months or immediately after the medical examination whichever is earlier;

(b) If the Factory Medical Officer or the Certifying Surgeon as the case may be, is of the opinion that the worker has manifest signs and symptoms of any notifiable disease as specified in the Third Schedule of the Act;

- (c) If the worker leaves the employment;
- (d) If any one of the following authorities so direct-
- the Chief Inspector of Factories;
 - the Health Authority of the Central or State Government;
 - Commissioner of Workmen's Compensation;
 - the Director General, Employee's State Insurance Corporation.
 - the Director, Employees State Insurance Corporation(Medical Benefits);and
 - the Director General; Factory Advice Service and Labour Institutes.
- (2) A copy of the up-to-date health records including the record of worker's exposure to hazardous process or, as the case may, 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.

81AN. Qualifications, etc. of Supervisors.-(1) All persons who are required to supervise the handling of hazardous substances shall possess the following qualifications and experience:

- (a)(i) A degree in Chemistry or Diploma in Chemical Engineering or Technology with 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 organizations conducting the training shall be approved by the DGFASLI or the State Government on accordance with the guidelines issued by the DGFASLI.

81AO. Issue of guidelines.- For the purpose of compliance with the requirements of sub-section (1), (4) and (7) of Section 41-B or 41-C the Chief Inspector may, if deemed necessary, issue guidelines from time to time to the occupiers of factories carrying on 'hazardous process'. Such guidelines may be based on National Standards, Codes of Practice, or recommendations of International Bodies such as ILO and WHO.

Special rules for jute mills

- 82. Site of feed tables and protective devices in jute mills.**-(a) The feed table every softener machine shall as far as practicable be not less than 5 feet in length;
- (b) the feed table of such softener machine shall be provided with an automatic knocking of device which shall stop the machine in case the worker's hand is drawn in and prevent the hand from reaching the Specked rollers; and
- (c) the automatic device mentioned in clause (b) shall be maintained in an efficient state and be kept in position whenever the machinery working.

Special rule for Tea Factories

83. The roll table to be fenced and brushes for sweeping the roll table to be provided.- In tea factories, the roll table shall be fenced to the satisfaction of the inspector and brushes shall be provided to the workers for the purpose of sweeping the roll table.

Special rules for Brick and Tile works

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

Special rules on ship building and ship repairing

84A. 1. Application.- The provisions contained in this rule shall apply as respect of the work carried out in any of the operations of ship building and ship repairing.

2.. Definitions.- For the purpose of this rule-

(1) “Certificate of entry” means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates and includes certificates to the effect that he has in an adequate and suitable manner tested the atmosphere in the oil-tank or oil-tanks specified in the certificate and found that having regard to all the circumstances of the case, including the likelihood or otherwise of the atmosphere being or becoming dangerous, entry to the oil-tank or oil-tanks without wearing breathing apparatus may in his opinion to be permitted.

(2) Competent analyst means- An officer of the controller of Explosive Department, Government of India “duly” empowered under Rule 38(c) of the Petroleum Rules, 1937.

(3) “hot work” means any work which involves-

- (a) Welding, burning, soldering, brazing, sand blasting or chipping by spark producing tools; or
- (b) Use of non-flame proof electrical equipments or equipment with internal combustion engines and includes any other work which is likely to produce sufficient heat Capable of igniting flammable gases or vapours.

(4) ‘naked light certificate’ means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates and includes certificate to the effect that he has in an adequate and suitable manner tested for the presence of inflammable vapour in the oil-tank, compartment, space or other part of vessel specified in the certificate and found it to be free from there from and that having regard to all the circumstances of the case including the likelihood or otherwise of the atmosphere becoming inflammable the use of naked lights, fire, lamps or heated revets or any hot work to be carried out may in his opinion be permitted in the oil-tank, compartment, space or other part of the vessel specified in the certificates;

(5) “oil” means any liquid which has flash point below 132⁰C (270⁰F) and also includes lubricating oil, liquid methane liquid butane and liquid propane and oils of any description.

Explanation.- Flash point wherever it occurs in these rules shall be flash point as determined by Abel Closed Cup or Pensky-Marten Closed Cup procedures as described in I.S. 1448-1960.

(6) “oil-tank” means any tank or compartment in which oil is, or has been carried’

(7) “the operations” means-

- (a) construction, reconstruction, or braking up of any ship or vessel, repairing, refitting, painting and finishing.
 - (b) the sealing, surfing or cleaning of its boilers (including combustion chambers or smoke boxes), and
 - (c) the cleaning of its bilges or oil-fuel tanks or any of its tank last used for carrying oil;
- (8) “ship and vessel” have the same meanings as in the Merchant Shipping Act 1958;
- (9) “shipyard” means any yard or dry dock (including the precincts thereof) in which ships or vessels are constructed, reconstructed, repaired, refitted or finished;

- (10) “stage” means any temporary platform on or from which person employed perform work in connection with the operations, but does not include a boatswain’s chair;
- (11) “staging” includes any stage, and any upright, thwarts’ thwart pin, wedge, distance piece, belt or other appliance or material, not being part of the structure of the vessel, which is used in connection with the support of any stage, and any guard-rails connected with a stage;
- (12) “tanker” means a vessel constructed or adopted for carrying a cargo of oil in bulk.

Access and Staging

3. General access to vessels in a shipyard.- All main gangways giving general access to a vessel in a shipyard, whether from the ground or form a wharf or quay, and all cross gangways leading from such a main gangway on to the vessel, shall-

- (a) be at least 0 cm. wide,
- (b) be securely protected on each side to a height of at least 90cm. by strongly constructed upper and lower hand-rails and by a secure too board projecting at least 15cm. above the floor;
- (c) be of good construction, sound material and adequate strength;
- (d) be stable and, wherever, practicable, of permanent construction;
- (e) be kept in position as long as required; and
- (f) maintained in good repairs.

4. Access to dry dock.-(1) Every flight of steps giving access from ground level either to an alter or to the bottom of a dry dock shall be provided throughout on each side with a substantial hand-rail. In the case of an open side, secure fencing to a height of at least 90cm. shall be provided by means of upper and lower rails, taut ropes or chains, or by other equally safe means. For the purposes of this sub-rule a flight of steps which is divided into two by a chute for materials, with no space between either side of the chute and the steps, shall be deemed to be one flight of steps.

(2) Such hand-rails and fencings as aforesaid shall be kept in position save when and to the extent to which their absence is necessary (whether or not for the purpose of the operations) for the access of persons, or for the movement of materials or vessels or for traffic or working, or for repair, but hand-rails or fencing removed for any of those purposes shall be kept readily available and shall be replaced as soon as practicable.

5. Access to vessels in dry dock.- (1) If a ship is lying in a dry dock for the purpose of undergoing any of the operations, there shall be provided means of access for the use of workers at such times as they have to pass to, or from, the ship or dry dock-

- (a) where reasonably practicable one or more ship’s accommodation ladders, or
- (b) one or more soundly constructed gangways or similar constructions.

(2) The means so provided shall be not less than 55cm. wide properly secured and fenced throughout on each side to a clear height of 90cm. by means of upper and lower rails, taut ropes or chains or by any other safe means, except that in the case of the ship’s accommodation ladder, such fencing shall be necessary on one side only provided where the other side is properly protected by the ship’s side.

- (3) Where at any dry dock, there is a gangway giving access from an altar of the dock to a vessel which in the dock for the purpose of undergoing any of the operations, and the edge of the alter is unfenced, adequate hand holds shall be available for any length of the alter which workers commonly use when passing between the gangway, and the nearest flight of steps which gives access to ground level.

6. Access to and from bulwarks.-Where there is a gangway leading on to a bulwark of a vessel there shall be provided.

- (a) Wherever practicable, a platform at the in-board end of the gangway with safe means of access there from to the decks; or
 (b) Where such a platform is not practicable, a second gangway or stairway leading from a bulwark on to the deck which are either attached to the first mentioned gangway or place contiguous to it, in which case means of access securely protected by fencing shall be provided from the one to the other.

7. Access to staging, etc.-(1) Where outside staging is erected in a shipyard, there shall be provided sufficient ladders giving direct access to the stages having regard to the extent of the staging and to the work to be done.

(2) Where a vessel is under construction or reconstruction and workers are liable to go forward or aft or athwartship across or along uncovered deck-beams, or across or along floors, sufficient planks shall be provided on these deck-beams or on these floors for the purpose of access to or from places of work, and sufficient and suitable portable-ladders shall be provided so as to give access either from the ground or outer bottom plating to the top of the floor.

(3) Without prejudice to any other provision in these Rules, requiring a greater width, no footway or passageway constructed of planks shall be less than 45cm. wide.

8. Ladders.-(1) Subject to sub-rules (2) and (3) of this rule, every Ladder which affords a means of access, communication or support to a person shall-

- (a) be soundly constructed and properly maintained; and
 (b) be of adequate strength for the purpose for which it is used; and
 (c) be securely fixed either-
 (i) as near its upper resting place as possible, or
 (ii) Where this is impracticable at its base, or where such fixing is impracticable a person shall be stationed at the base of the ladder when in use to prevent it from slipping; and
 (d) Unless there is other adequate hand-hold, extend to a height of at least 75cm. Above the place of landing or the height highest rung to be reached by the foot of any person working on the ladder, as the case may be or, if this is impracticable, to the greatest practicable height.

(2) Requirements (c) and (d) of the Proceeding sub-rule of this Rule shall not apply to fixed ladders of a ship or to rope ladders. Effective measures by means of roping off or other similar means shall be taken to prevent the use of fixed ladders of a ship which do not comply with requirements (a) and (b) of that sub-rule.

(3) Any worker who removes any ladder and sets it up in a new position shall, as regards that ladder, comply with requirements (c) of sub-rule (1) of this Rule.

(4) Rope ladders shall provide foothold of a depth including any space behind the ladder of not less than 12cm. and, so far as it reasonably practicable, suitable provision shall be made for preventing such ladders from twisting.

9.Lashing of ladders.

(1)A fibre rope, or a rope made with strands consisting of wire ropes covered with fibre, shall not be used to secure a ladder used for the purpose of the operations.

(2)A wire rope shall not be used to secure any such ladder unless its ends are furrled, but this provision shall not apply in the case of an end which is so situated or protected that a person using the ladder is not liable to come into contact with it so as to suffer injury.

10.Material for staging.

(1)A sufficient supply of sound and substantial material and appliances shall be available in convenient place or places for the construction of staging.

(2)All planks and other materials and appliances intended to be used or re-used for staging shall be carefully examined before being taken into use or re-use in any staging. Every examination required by this sub-rule shall be carried out by a person competent for the purpose.

11.Staging, dry dock altars and shoring sills.

(1)All staging and every part thereof shall be of good construction, of suitable and sound material and of adequate strength for the purpose for which it is used and shall be properly maintained, and every up-right and the wart shall be kept so fixed, secured or placed in position as to prevent, so far as is reasonably practicable, accidental displacement.

(2)All planks forming stages shall be securely fastened to prevent them from slipping unless they extend 45cm. or more beyond the inside edge of the thwart or support on which they rest.

(3)All staging used in connection with the operations shall be inspected before use, and thereafter at regular and frequent intervals, by a responsible person.

(4)All dry dock altars and shoring sills on or from which persons perform work in connection with the operations shall be of sound construction and properly maintained.

(5)All parts of stages, all parts of footways or passageways constructed of planks and all parts or dry dock altars or shoring sills, being parts on or from which person perform work in connection with the operations, shall so far as is reasonably practicable, be kept clear of all substances likely to make foothold or hand-hold insecure.

12.Upright used for hoisting block.

(1)If any upright forming part of staging is used as a fixing for a pulley block for hoisting materials-

(a)it shall be properly housed in the ground or shall otherwise be adequately secured so as to prevent it from rising; and

(b)it shall be suitably protected against damage by the action of the chain or wire or other means of securing the pulley block to the upright.

(2) No upright forming part of staging shall be used as an anchorage for a load pulley block, unless the upright is not likely to be displaced by such use.

13.Support of stages on planks.- Planks supported on the rungs of ladders shall not be used to support stages.

14.Suspended stages.- (1)Stages suspended by ropes or chains shall be secured as far as possible so as to prevent them from swinging.

(2)A fibre rope, or a rope made of strands consisting of wire cores covered with fibre, shall not be used for suspending a stage except that fibre ropes may be used in the case of a stage of which the suspension ropes are reeved through blocks.

(3) Chains, ropes, blocks and other gear used for the suspension of stages shall be of sound material, adequate strength and suitably quality, and in good condition.

(4) Appropriate steps shall be taken to prevent ropes or chains used for supporting a stage from coming into contact with sharp edges of any part of a vessel.

15. Boatswains' chains.- (1) Boatswains chairs and chains, ropes or other gear used for their suspension shall be of sound material, adequate strength and suitable quality and the chains, ropes or other gear shall be securely attached.

(2) Suitable measures shall be taken to prevent where possible the spinning of a boatswain's chain, to prevent the tipping of a boatswain's chair and to prevent any occupant falling there from.

16. Rising stages.- All planks forming a rising stage at the bow end of a vessel shall be securely fastened to prevent them from slipping.

17. Width of staging.- Without prejudice to the other provisions of these Rules, all stages shall be of sufficient width as is reasonable in all the circumstances of the case to secure the safety of the person working thereon.

18. Stages from which a person is liable to fall more than 2m. or into water.

(1) This Rule applies to stages from which a person is liable to fall a distance or more than 2m. or into water in which there is a risk of drowning.

(2) Every stage to which this Rule applies-

(a) shall so far as is reasonably practicable be closed boarded, planked or plated;

(b) shall be so constructed or placed that a person is not liable to fall as aforesaid through a gap in the staging not being a gap necessary and no larger than necessary having regard to the nature of the work being carried on;

(c) shall be at least 45cm. wide.

(3) Every side of a stage to which this rule applies shall-

(a) if it is not a side immediately adjacent to any part of vessel, be fenced (subject to the provisions of sub-rule(4) to (7) of this rule) with a guard rail or guard rails to a height of at least. 1 m. above the stage, which rail or rails shall be so placed as to prevent so far as practicable the fall or persons from the stage or from any standing raised standing place on the stage; or

(b) if it is a side immediately adjacent to any part of a vessel, be placed as near as practicable to that part having regard to the nature of the work being carried on and to the nature of the structure of the vessel.

(4) In the case of stages which are suspended by ropes or chains, and which are used solely for painting, the fencing required by clause (a) of the preceding sub-rule may be provided by means of taut guard rope or taut guard ropes.

(5) No side of a stage or , as the case may be, no part of the side of a stage need be fenced in pursuance of sub-rule (3) (a) of this rule in cases where, and so long as, the nature of the work being carried on makes the fencing of that side or, as the case may be, that part impracticable.

(6) Guard rails provided in pursuance of sub-rule (3) (a) of this rule may be removed for the time and to the extent necessary for the access of persons or for the movement of materials; but guard rails removed for either of these purposes shall be replaced as soon as practicable.

(7) Where it is not reasonably practicable to comply with the provisions of sub-rule (3) (a) of this rule, workers, shall be provided with suitable safety belts equipped with life lines which are secured with a minimum amount of slacks to a fixed structure.

Further precautions against fall of Persons, Materials and Articles

19. Fencing of dry docks

(1) Fencing shall be provided at or near the edges of a dry dock at ground level, including edges above flights of steps and chutes for materials. The height of such fencing shall at no point be less than 1 m.

(2) Such fencing as aforesaid shall be kept in position save when and to the extent to which its absence is necessary (whether or not, for the purposes of the operations) for the access of persons or for movement of materials or vessels or for traffic, or for repair, but fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

20. Protection of openings.- (1) Every side or edge of an opening in a deck or tank top of a vessel, being a side or edge which may be a source of danger to workers shall, except where and while the opening is securely covered or where the side or edge is protected to a height of not less than 75cm. By a coaming or other part of the vessel, be provided with fencing to a height of not less than 90cm. above the edge or side and such fencing shall be kept in position save when and to the extent to which its absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for the movement of materials, or for traffic or working, or for repair, but fencing removed for any of those purposes shall be kept readily available and shall be replaced as soon as practicable.

(2) Sub-rule (1) of these rules shall not apply-

(a) to that part of an opening in a deck or tank top which is at the head of a stairway or ladder way intended to be used while the operations are being carried on; or

(b) to parts of a deck or tank top which are intended to be plated, except such parts where the plating has necessarily to be delayed so that the opening may be used for the purpose of the operations.

21. Fall of articles from stages.- Where workers are at work outside a vessel on a stage adjacent to part of the structure of the vessel and other workers are at work directly beneath that stage, the planks of the stage shall be in such a position that no article liable to cause injury to the workers can fall between the planks, and the inside plank of the stage shall be placed as near as practicable to the structure of the vessel having regard to the nature of the work being carried on.

22. Boxes for rivets, etc.-(1) Boxes or other suitable receptacles for rivets, nuts, bolts and welding rods shall be provided for the use of workers.

(2) It shall be the duty of the workers to use, so far as practicable, the boxes or other suitable receptacles so provided.

23. Throwing down materials and Articles.-(1) Subject to the provisions of sub-rule(2) of those rules, parts of staging, tools and other articles and materials shall not be thrown down from a height where they are liable to cause injury to workers, but shall be properly lowered.

(2) When the work to be done necessarily involves the throwing down from a height of articles or materials conspicuous notice shall be posted to warn persons from working or passing

underneath the place from which articles or materials may fall, or the work shall be done under the direct supervision of a competent person in authority.

(3) No person shall throw down any articles or materials from a height except in accordance with the requirements of this rule.

24. Loose articles or materials.- So far as practicable, steps shall be taken to minimize the risk arising from loose articles or materials being left lying about in any place from which they may fall on workers or persons passing underneath.

Raising and Lowering

25. Secureness to loads.-(1) Loads shall be securely suspended or supported whilst being raised or lowered, and all reasonable precautions shall be taken to prevent danger from slipping or displacement.

(2) Where by reason of the nature or position of the operations load is liable, whilst being moved by a fitting machine or lifting tackle, to come into contact with any object so that the object may become displaced, special measures shall be adopted to prevent the danger so far as reasonably practicable.

26. Support of lifting machines and lifting tackle.- Every lifting machine and all lifting tackle shall be adequately and suitably supported or suspended having regard to the purpose for which it is used.

27. Wire ropes with broken wires.- No wire rope shall be used if in any length of ten diameters the total number of visible broken wires exceeds five per cent of the total number of wires, or if the rope shown signs of excessive wear or corrosion or other serious defect.

28. Splices in wire ropes.- A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of the rope and two tucks with one half of the wires cut out of each strand. All tucks shall be against the lay of the rope:

Provided that this Rule shall not operate to prevent the use of another form of splice which can be shown to be as efficient as the form of splice specified in this Rule.

29. Knotted chains, etc.-(1) No chain or wire rope shall be used when there is a knot tied in any part thereof.

(2) No chain which is shortened or joined to another chain by means of bolts and nuts shall be used;

Provided that this does not exclude the use of a chain bolted or joined to another chain by an approved and properly constructed attachment.

30. Precautions against damage to chains and ropes.- Appropriate steps shall be taken to prevent, so far as practicable, the use of chains or ropes for raising or lowering in circumstances in which they are in or liable to come into contact with sharp edges of plant, materials or loads, or with sharp edges of any part of the vessel on which work is being carried out.

31. Loads on lifting appliances.- No load shall be left suspended from the lifting appliance other than a self-sustaining, manually operated lifting appliance unless there is a competent person in charge of the appliance while the load is so left.

32. Heavy loads.- Where there is reason to believe that a load being lifted or lowered on a lifting appliance weighs more than 20 tonnes its weight shall be ascertained by means of an accurate weighting machine or by the estimation of a person competent for the purpose, and shall be clearly marked on the load.

Provided that this Rule shall not apply to any load lifted or lowered by a crane which has either a fixed or a derricking jib and which is fitted with adequate overload protection device to the satisfaction of the competent person or an approved type of indicator in good working order which:-

- (a) indicates clearly to the driver or person operating the crane when the load being carried approaches the safe working load of the crane for the radius of the jib at which the load is carried; and
- (b) gives an efficient sound signal when the load moved is in excess of the safe working load of the crane at that radius.

Precautions against asphyxiation, injurious fumes or explosions

33. Certification for entry into confined spaces likely to contain dangerous fumes.- A space shall not be certified under section 36 (3) (a) of the Act unless-

- (a) effective steps have been taken to prevent any ingress of dangerous fumes.
 - (b) any sludge or other deposit liable to give off dangerous fumes has been removed and the space contains no other material liable to give off dangerous fumes; and
 - (c) the space has been adequately ventilated and tested for dangerous fumes and has a supply of air adequate for respiration;
- but no account shall be taken for the purposes of sub-paragraph (b) of this paragraph of this Rule of any deposit or other material liable to give off dangerous fumes in insignificant quantities only.

34. Precautions against shortage of oxygen.- No person shall enter or remain in any confined space in a vessel, being a confined space in which there is reason to apprehend that the proportion of oxygen in the air is so low as to involve risk of persons being overcome, unless either.

- (a) the space has been and remains adequately ventilated and a responsible person has tested it and certified that it is safe for entry without breathing apparatus, or
- (b) he is wearing a suitable breathing apparatus and a safety belt securely attached to a rope, the free end of which is held by a person standing outside the confined space.

35. Rivet fires.-

- (1) Rivet fires shall not be taken into or used in or remain in any confined space on board or in a vessel unless there is adequate ventilation to prevent the accumulation of fumes.
- (2) No person employed shall move a rivet fire into any confined space on board or in a vessel unless he has been authorized by his employer to move the fire into the space.

36. Gas cylinders and acetylene generators.-

- (1) No cylinder which containing or has contained oxygen or any flammable gas or vapour at a pressure above atmospheric pressure and no acetylene generating plant, shall be installed or place within 5m of any substantial source of heat (including any boiler or furnace when alight) other than the burner or blow-pipe operated from the cylinder or plant.
- (2) No such cylinder and no such plant shall be taken below the weather dock in the case of a vessel undergoing repair, or below the topmost completed deck in the case of a vessel under construction unless it is installed or placed in a part of the vessel which is adequately ventilated to prevent any dangerous concentration of gas or fumes.

37. Further provision as to acetylene generators.-

- (1) the following provisions shall be observed as respects any acetylene generating plant-

- (a) no such plant shall be installed or placed in any confined space unless effective and suitable provision is made for securing and maintaining the adequate ventilation of that space so as to prevent so far as practicable, any dangerous accumulation of gas;
 - (b) any person attending or operating any such plant shall have been fully instructed in its working and a copy of the maker's instructions for that type of plant shall be constantly available for his use;
 - (c) the charging and cleaning of such plant shall so far as practicable be done during daylight;
 - (d) partly spent calcium carbide shall not be recharged into an acetylene generator.
- (2) No person shall smoke or strike a light or take a naked light or a lamp in or into any acetylene generator house or shed or in or into dangerous proximity to any acetylene generating plant in the open air or on board a vessel;

Provided that this sub-rule shall not apply as respects a generator in the open air or on board a vessel which, since it was last charged, has been thoroughly cleaned and freed from any calcium carbide and acetylene gas.

- (3) A prominent notice prohibiting smoking, naked lights and lamps shall be exhibited on or near every acetylene generating plant whilst it is charged or is being charged or is being cleaned.

38. Construction of plant for cutting, welding or heating metal.-

- (1) Pipes or hoses for the supply of oxygen or any flammable gas or vapour to any apparatus for cutting, welding or heating metal shall be of good construction and sound material and be properly maintained.
- (2) Such pipes or hoses shall be securely attached to the apparatus and other connections by means of suitable clips or other equally effective appliances.
- (3) Efficient reducing and regulating valves for reducing the pressure of the gases shall be provided and maintained in connection with all cylinders containing oxygen or any flammable gas or vapour at a pressure above atmospheric pressure while the gases or vapours from such cylinders are being used in any process of cutting, welding or heating metal.
- (4) Where acetylene gas is used for cutting, welding or heating metal-
- (a) a properly constructed and efficient backpressure valve and flame arrestor shall be provided and maintained in the acetylene supply pipe between each burner or blow-pipe and the acetylene generator, cylinder or container from which it is supplied and shall be placed as near as practicable to the burner or blow-pipe, except that those requirements shall not apply where an acetylene cylinder serves only one burner or blowpipe; and
 - (b) any hydraulic valve provided in pursuance of the preceding clause shall be inspected on each day by every person who uses the burner or blow-pipe on that day and it shall be the duty of every worker who used the burner or blow-pipe to inspect the hydraulic valve accordingly.
- (5) The operating valves of burners or blow-pipes to which oxygen or any flammable gas or vapour is supplied for the purpose of cutting, welding or heating metal shall be so constructed, or the operated mechanism shall not be protected, that the valves cannot be opened accidentally.

39. Precautions after use of apparatus for cutting, welding or heating metal.-

- (1) In the case of apparatus on board a vessel and used for cutting, welding or heating metal with the aid of oxygen or any flammable gas or vapour supplied at a pressure above

atmospheric pressure the precautions specified in the following sub-rules of this Rules shall be taken when such use cases for the day or for a substantial period and the apparatus is to be left on board, but need not be taken when such use is discontinued merely during short interruptions of work. The requirements in sub-rules (3) and (4) of this Rule shall not apply during a meal interval, provided that a responsible person is placed in charge of the plant and equipment referred to therein.

(2) Supply valves of cylinders, generators and gas mains shall be securely closed and the valve key shall be kept in the custody of a responsible person.

(3) Movable pipes or hoses used for conveying oxygen or flammable gas or vapour and the welding and cutting torches shall, in the case of a vessel undergoing construction, be brought to the topmost, completed dock, or in the case of a vessel undergoing repair, to be weather dock, or in either case to some other place of safety which is adequately ventilated to prevent any dangerous concentration of gas or fumes;

Provided that where, owing to a nature of the work, it is impracticable to comply with the foregoing requirements of this sub-rule the pipes or hoses shall be disconnected from cylinders, generators or gas mains as the case may be.

(4) When cylinders or acetylene generating plant have been taken below dock as permitted by sub-rule (2) of Rule 36 such cylinders or acetylene generating plant shall be brought to a weather dock or in the case of a vessel undergoing construction, to the top most completed dock.

40. Naked lights and hot work on oil-carrying vessels.-(1) Subject to the provisions of sub-rule(2) of this Rule and to the provisions of Rule 48, and without prejudice to the provisions of Rule 46 and 47 no naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this Rule)-

(a) shall be permitted to be applied to, or to be in or any hot work permitted to be carried out in any part of a tanker, unless, since oil was last carried in that tanker, a naked light certificate has been obtained and is in force in respect of these parts of the tanker for which, in the opinion of competent analyst, a naked light certificate is necessary;

Provided that a naked light, fire or lamp of a kind specified in writing by a competent analyst may be applied to, or be in, or any hot work of a type specified by him carried on, any part of the tanker so specified

(b) shall be permitted-

(i) to be in any oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23⁰C. (73⁰F.) or was liquid methane, liquid propane or liquid butane, or any hot work permitted to be carried out in any such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank and of any oil-tank, compartment or space adjacent thereto;

(ii) to be applied to the outer surface of any oil-tanker on board or in a vessel in which oil-tanks the oil last carried was such oil as aforesaid or any work of such a nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours permitted to be carried out on the outer surface of such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank;

(iii) to be applied to the outer surface of, or to be in any compartment or space adjacent to an oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid, or any hot work permitted to be carried out in such compartment or

space as aforesaid, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, permitted to be carried out on the outer surface of such compartment or space, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that compartment or space:

Provided that where in any such case referred to in-clause (i) or (ii) of this sub-rule a competent analyst has certified that daily naked light certificates are unnecessary or are necessary only to a specified extent, such a daily certificate need not be obtained or, as the case may be, need only be obtained to the specified extent;

(c) shall be permitted to be applied to the outer surface of, or to be, in any oil-tank on board or in a vessel or any hot work permitted to be carried out in any such oil-tank or vessel, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, permitted to be carried out on the outer surface of the oil-tank or vessel, unless since oil was last carried in that oil-tank, a naked light certificate has been obtained and is in force in respect of that oil-tank.

(d) shall be permitted to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil tank on board or in a vessel or any hot work permitted to be carried out in any such compartment or space, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours permitted to be carried out on the outer surface of any such compartment or space, unless since oil was last carried as cargo in that oil-tank a naked light certificate has been obtained and is in force in respect of that compartment or space.

(2) Notwithstanding anything in sub-rule (4) of this Rule, heated rivets may be permitted in any place without naked light certificate being in force in respect of that place if expressly so authorized by a competent analyst who certifies that after adequate and suitable testing, he is satisfied having regard to all the circumstances of the atmosphere becoming case, including the likelihood or otherwise of the atmosphere becoming flammable, that the place is sufficiently free from flammable vapour; but such heated rivets shall, where practicable, be passed through tubes.

(3) No person shall introduce, have or apply naked light, fire or lamp other than safety lamp of a type approved for the purpose of this Rule into, in or to any place where they are prohibited by this Rule.

(4) No person shall carry out hot work or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapors, in any place or any surface where they are prohibited by this Rule.

(5) In this Rule the expression 'competent analyst' means an analyst who is competent to give a naked light certificate.

41. Entering oil-tanks.

(1) No persons (other than an analyst entering with a view to issuing a certificate of entry) shall, unless he is wearing a breathing apparatus of a type approved for the purpose of this Rule, enter or remain in an oil-tank on board or in a vessel, unless since the oil-tank last contained oil, a certificate of entry has been obtained and is in force in respect of the tank.

(2) Without prejudice to sub-rule (1) of this Rule, no person (other than an analyst entering as aforesaid) shall be allowed or required to enter or remain in an oil-tank on board or in a vessel

in which oil-tank the oil last carried was oil having a flash point of less than 23⁰C, (73⁰F) unless, since the oil-tank last contained oil, an analyst has certified that the atmosphere is sufficiently free from inflammable mixture.

(3) The provisions of this Rule are without prejudice to the requirements of Rule 34.

42. Duration of Certificates.- Any naked light certificate or certificate of entry may be issued subject to a condition that it shall not remain in force after a time specified in this certificate.

43. Posting of certificates.- Every occupier for whom a naked light certificate or a certificate of entry is obtained shall ensure that the certificate or a duplicate thereof is posted as soon as may be and remains posted in a position where it may be conveniently read by all persons concerned.

44. Maintaining safe atmosphere

(1) When conditions in an oil-tank or such in respect of which a naked light certificate has been issued that there is a possibility of oil vapour being released from residuous or other sources, test shall be carried out by a competent analyst at such intervals as may be required so as to ensure that the conditions in the tank are maintained safe.

(2) Whenever hot work is carried on or a naked light fire or lamp is allowed to be on the weather dock over spaces, in respect of which a naked light certificate has not been issued, all covers of manholes and openings on dock and all valves (except those which are connected to high vent pipes) connecting the weather dock with the said spaces, shall be closed.

(3) A record of all the tests carried out for the purpose of rules 34, 40 and 41 shall be maintained in a register which should furnish the date, time location and results of the tests.

45. Cleaning of oil-tanks

(1) Subject to the provisions of Rule 48 before a test for flammable vapour is carried out with a view to the issue of a naked light certificate for the purposes of Rule 40 in respect of an oil-tank on board or in a vessel, that oil-tank, shall, since oil was last introduced into the tank be cleaned and ventilated in accordance with sub-rule (2) of this Rule.

(2) The said cleaning and ventilation shall be carried out by the following methods;-

(a) the oil-tank shall be treated in such manner and for such period as will ensure the vaporization of all volatile oil;

(b) all residual oil and any sludge or other deposit in the oil-tank shall be removed there from;

(c) after the oil-tank has been so cleaned-

(i) all covers of manholes and other openings therein shall be removed and it shall be thoroughly ventilated by mechanical or other efficient means with a view to the removal of all oil vapour; and then

(ii) the interior surfaces, if any deposit remains thereon, shall be washed or scraped down.

46. Invalidation of certificates

(1) If during the course of work in, or to the outer surface of, any part of a tanker or aircraft carrier, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapor entering or arising in that part of the tanker or aircraft carrier, that work shall be suspended and thereafter any certificate of entry previously issued in respect of any oil-tank

in that part and any naked light certificate previously issued in respect of that part shall be no longer in force.

(2) If (in the case of a vessel other than a tanker or aircraft carrier) during the course of work in any oil-tank or in any compartment or space adjacent thereto, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapour entering or arising in the oil-tank or in any compartment or space adjacent thereto shall be suspended and thereafter any certificate of entry previously issued in respect of the oil-tank and any naked light certificate previously issued in respect of the oil-tank or any compartment or space adjacent thereto shall be no longer in force.

47. Provisions as to work in other compartment or spaces

(1) Without prejudice to the other provisions of these Rules, if the presence of oil in such quantity and in such position as to be likely to give rise to fire or explosion is detected in any part of vessel, being a part to which this Rule applies and in which repairs of the following kind are to be or are being undertaken, that is to say, repairs involving the use of a naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of Rule 40) or involving hot work, such repairs shall not be started or continued until a naked light certificate has been issued or, as the case may be reissued in respect of that part of the vessel.

(2) This rule shall apply to bilges, shaft tunnels, pump rooms, lamp rooms, and to compartment and spaces other than those to which sub-rule (1) (d) of Rules 40 applies.

48. Exemptions.- If the Chief Inspector is satisfied, by reasons of the nature of the work and the circumstances in which it is carried out, that any provisions of the rules 33 to 45 or part thereof can be suspended or relaxed without danger to the health or safety of any person, he may grant suspension or relaxation in writing specifying such conditions as he may consider fit. Any such suspension or relaxation may be revoked at any time.

Precautions in use of Electrical Energy

49. Earthing.- Electric energy other than that generated by an independent generating unit on board shall not be taken for use, or used in, or in connection with any of the operations unless the body of the ship is securely earthed in such a manner as to ensure an immediate and safe discharge of energy to the earth. A ship or vessel shall not be considered as securely earthed for the purpose of this rule only on account of it being partly submerged in water.

50. Arc Welding.

(1) Electric arc welding shall not be carried on in connection with any of the operations unless separate and fully insulated welding return conductor or conductors as the case may be, of adequate electrical capacity are provided for return of the current to the transformer or generator of the welding set.

(2) The return end of the source of the welding current shall not be earthed.

(3) All work on which welding is carried on shall be securely earthed independently to an earth electrode by means of conductor or conductors and the case may be, of adequate capacity, unless all such works are connected to any structure of the ship or vessel in such a manner as to ensure adequate connection to earth as aforesaid.

51. Cutting of energy in certain cases.- Electrical energy shall be cut off from all portable electric tools and manual electrode holders within any tank, compartment or space referred to in rules 34

and 40 or in any other confined space during all times when such tools or holders are not in operation;

Provided that determining whether any such portable electric tool or electrode holder is not in operation, no account shall be taken of brief interruptions of work occurring during normal working;

Provided further that energy may not be cut off from any such equipment if a responsible person is left in charge of it in such tank, compartment or space concerned;

Provided further that cutting of all electrical energy by operation of any switch or control provided on the portable tool or electrodes holder itself should not be taken as fulfilling the requirement of this rule.

Miscellaneous Safety Provisions

52.Lighting.- All parts of a vessel and all other places where the operations are being carried on, and all approaches to such parts and to places to which a worker may be required to proceed in the course of his employment, shall be sufficiently and suitably lighted. In providing such lighting, due regard shall be given to avoidance to glare and formation of shadows, to the safety of the vessel and cargo, of the navigation of other vessels, and to any local statutory requirements as to the lighting of the harbor or duck.

53.Work in boilers, etc.-(1) No work shall be permitted in any boiler, boiler-furnace or boiler-flue until it has been sufficiently cooled to make work safe for the workers.

(2) Before any worker enters any steam boiler which is one of a range of two or more steam boilers-

- (a) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range shall be disconnected from that part, or
- (b) all valves or taps controlling such entry shall be closed and securely locked.

(3) While workers remain in any steam boiler to which sub-rule (2) of this rule applies all such inlets as are referred to in that sub-rule shall remain disconnected or all such valves or taps as are therein referred to shall remain closed and securely locked.

(4) No worker shall be allowed or required to enter or remain in, and no person shall enter or remain, in any steam boiler to which sub-rule (2) of this rule applies unless the provision of that sub-rule are being complied with.

54.Hatch beams.- The hatch beams of any hatch in use for the operations, shall, if not removed, be adequately secured to prevent their displacement.

55.Jumped up bolts.- Bolt which have been jumped-up and re-screwed shall not be used for securing plates on the sides of vessels, and no worker shall use such bolts for this purpose.

56.Work in or on life boats.

(1) Before workers are permitted to work in or any life boat, either stowed or in suspended position, precautions shall be taken to prevent the boat from falling due to accidental tripping of the releasing gear or movement of the davits, and capsizing of the boat if in chocks.

(2) Workers shall not be permitted to remain in life boats while the life boats are being hoisted into final stowed position.

Protective Wear

57. Hand Protection.- Adequate protection for the hands shall be available for all workers when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure greater than atmospheric pressure or when engaged in machine caulking or machine riveting or in transporting or stacking plates or in handling plates at machines.

58. Protection in connection with cutting or welding

(1) Suitable goggles fitted with tinted eye-piece shall be provided and maintained for all persons employed when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure above atmospheric pressure.

(2) There shall be provided and maintained for the use of all persons employed when engaged in the process of electric welding-

(a) Suitable helmets or suitable head-shields or suitable hand shields to protect the eyes and face from hot metal and from rays likely to be injurious, and

(b) Suitable gauntlets to protect the hands and forearms from hot metal and from rays likely to be injurious.

(3) When electric welding is in progress at any place and persons other than those engaged in that process are employed in a position where the rays are likely to be injurious to their eyes, screens shall, where practicable, be provided at that place for the protection of those persons. Where it is not practicable to provide effective protection of those persons by screening, suitable goggles shall be provided for their use.

59. Eye protection for other processes.- Suitable goggles or effective screens shall be provided to protect the eyes of all workers in any of the following processes:-

- (a) The cutting out or cutting off or cold rivets bolts from boilers or other plant or from ships;
- (b) The chipping, scaling or scuffing of boiler or ships' plates;
- (c) drilling by means of portable machine tools;
- (d) Dry grinding of metals

60. Head protection.- When workers are employed in areas where there is danger of falling objects they shall be provided with suitable safety helmets.

61. Safety belts and life lines

(1) Whenever any worker is engaged on work at a place from which he is liable to fall more than 2m, he shall be provided with safety belts equipped with life lines which are secured with a minimum of slack, to a fixed structure unless any other effective means such as provision of guard rails or ropes are taken to prevent his falling.

(2) All safety belts and life lines shall be examined at frequent intervals by a competent person to ensure that no belt or life line which is not in good condition is used.

Health and Welfare

62. Prohibition of employment of young persons in certain processes.- No young person shall be employed in-

- (a) The application of asbestos by means of a spray; or

- (b) The breaking down for removal of asbestos lagging ; or
- (c) The cleaning sacks or other containers which have contained asbestos ; or
- (d) The cutting of material containing asbestos by means of portable power driven saws ; or
- (e) The scaling, scurfing or cleaning of boilers' combustion chambers or smoke boxes, where his work exposes him to dust of such a character and to such an extent as to be likely to be injurious or offensive to persons employed in such work.

63. Lead processes.

- (1) Lead paint shall not be applied in the form of a spray in the interior painting of any part of a ship or vessel.
- (2) Wherever lead sheathing work is carried on for making cold storage chambers in the ships, efficient exhaust draughts with portable extractors should be provided to remove the lead fumes from the confined spaces.

64. Stretchers, ambulance and ambulance rooms, etc

- (1) In every shipyard there shall be provided and kept readily available-
 - (a) Sufficient number of suitably constructed sling stretchers or other similar appliances for raising injured persons; and
 - (b) A sufficient number of carrying or wheel stretchers; and
 - (c) A sufficient supply of suitable reviving apparatus and oxygen and the stretchers, appliances and apparatus so provided shall be properly maintained.
- (2) In every shipyard there shall always be readily available during working hours a responsible person or responsible persons whose duty it is to summon an ambulance or other means of transport if needed in cases of accident or illness. Legible copies of a notice indicating that person or, as the case may be these person shall be affixed in prominent position in every shipyard.
- (3) In every shipyard other than a dry dock available for hire-
 - (a) In which the number of persons employed normally exceeds five hundred ; or
 - (b) In which the number of persons employed normally exceeds one hundred and which is more than ten miles from a hospital; there shall be provided and maintained in good order and in clean condition a properly constructed ambulance room containing at least the equipment prescribed in the Rules framed under section 45 of the Act. The room shall be used only for the purpose of treatment and rest and shall be in the charge of a suitably qualified person who shall always be readily available during working hours, and record shall be kept of all cases of accident or sickness treated at the room.

Training and Supervision

65. Young Persons

(1) No young person shall, until he has been employed in a shipyard or shipyards for at least six months, be employed in connection with the operations in a shipyard on a stage from which, or in any part of a ship where, he is liable to fall a distance of more than 2m to into water in which there is a risk of drowning.

(2) Any young person under the age of sixteen shall, when employed in the operations in shipyard, be placed under the charge of an experienced workman.

66. Safety supervision.- In the case of every shipyard other than a dry dock available for hire being shipyard where the number of workers regularly or from time to time exceeds five hundred, a person experienced in the work of such yards shall be appointed and employed exclusively to exercise general supervision of the observance of these Rules and to promote the safe conduct of the work generally.

Special rule for decorticating factories

85. The beater arms and feed mouth of decorticator to be guarded.- In decorticating factories the beater arms and the feed mouth of the decorticator shall, as far as practicable, be guarded as follows;

A grating of $\frac{3}{4}$ inch diameter wrought iron rods spaced $2\frac{1}{2}$ inches apart and supported by iron stiffeners 2 inches x $\frac{1}{4}$ inch thick shall be fixed at a height of 6 inches above the tip of the beater arms. A strong wooden plank $1\frac{1}{2}$ inches thick and iron plated on the underside shall be clamped with bolts and nuts over this grating leaving a space of 8 inches wide for the feeding of groundnuts. A grating of one inch diameter wrought iron rod spaced $1\frac{1}{2}$ inches apart shall be fixed at a height of 5 inches just above the feed mouth and another wooden plank 9 inches wide shall be fixed over the full length of the decorticator platform.

Printing Presses

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

Special rule relating to Electric Fittings

87. Protective measures against danger from electrical shock.

- (1) All electrical conductors shall either be covered with adequate insulating material and otherwise effectively protected to prevent danger or be so placed and guarded as effectively to prevent danger.
- (2) All electrical apparatus, machines and fittings shall be-
 - (a) so placed or effectively guarded as to prevent danger; and
 - (b) provided with efficient handles or other means of working insulated from the electrical system and so arranged that, the worker cannot accidentally touch live metal.
- (3) The fencing of motors and other electrical apparatus shall as far as practicable, be so arranged that the switches and other controlling appliances can be operated from outside the fencing.
- (4) Only specially trained and experience person shall be allowed to operate, adjust or repair any electrical apparatus.
- (5) Instructions, both in English and Malayalam or Tamil, for the restoration of persons suffering from electric shock shall be affixed in a conspicuous place in every factory using electrical energy for lighting or power purposes.

87 A. The occupier of every factory, where welding process is carried on, shall supply free of cost one pair of suitable shoes, as approved by the Inspector of Factories to every welder engaged for welding, once in every twenty-four months, for providing adequate protection to his feet.

87B. Protective measures relating to Fragile Roofs.- In any factory, no worker shall be required to stand or Passover 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 height of more than three meters, unless:-

- (a) Suitable and sufficient ladders, duck ladders or crawling boards, which shall be securely supported, are provided and used; and
- (b) a permit to work on the fragile roof is issued to him each time he is required to work thereon by a responsible person of the factory concerned.

CHAPTER V WELFARE

Rules under sub-section (2) of section 42

88. Washing facilities.

(1) This rule shall come into force, in respect of any class or description of factories, on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.

(2) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

(3) Without prejudice to the generality of the foregoing provision the washing facilities shall include-

(a) a trough with taps or jets at intervals of not less than two feet or

(b) wash basins with taps attached thereto, or

(c) taps on stand-pipes, or

(d) showers controlled by taps, or

(e) circular troughs of the fountain types, 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.

(4)(a) Every trough and basin shall have a smooth, impervious surface, and shall be fitted with a waste pipe and plug.

(b) The floor or ground under and in the immediate vicinity of every trough, tap, jet, wash basin, stand pipe and shower shall be so laid or finished as to provide a smooth impervious surface and shall be adequately drained.

(5) For persons whose work involves contact with any injurious or noxious substance there shall be at least one tap for every fifteen persons and for persons whose work does not involve such contact the number of taps shall be as follows:-

No. of workers	No. of taps
Up to 20	1
21 to 35	2
36 to 50	3
51 to 150	4
151 to 200	5
Exceeding 200 but not exceeding 500	5 plus one tap for every 50 or fraction of 50
Exceeding 500	11 plus one tap for every 100 or fraction of 100

(6) If female workers are employed, separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers "For Women Only" and shall also be indicated pictorially.

(7) The water supply to the washing facilities shall be capable of yielding at least six gallons a day for each person employed in the factory and shall be from a source approved in writing by the Health Officer. Provided that where the Chief Inspector is satisfied that such a yield is not

practicable he may by certificate in writing permit supply of a smaller quantity not being less than gallon per day for every person employed in the factory.

RULES UNDER SECTION 43

88-A. Facilities for storing and drying clothing.- All classes of factories mentioned in the schedule annexed hereto shall provide facilities for keeping clothing not worn during working hours and for the drying or wet clothing. Such facilities shall include the provision of arrangements approved by the Chief Inspector of Factories.

Schedule

Glass works
Engineering Workshops
Iron and Steel Works
Oil Mills
Chemical Works
Automobile Workshops
Dyeing Works
Coir Industry
Cashew Industry
Textile Industry

Rules under sub-section (1) of section 45

89. First aid appliance.- The first aid boxes or cupboards shall be distinctively marked with a red cross on white background and shall contain the following equipment:-

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 scissors.
- (ix) One roll of adhesive plaster (2cms. 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 ($\frac{1}{2}$ litre, i.e. 500c.c.) for washing eyes.
- (xiii) A snake-bite lancet.
- (xiv) One (30ml) bottle containing Potassium Permanganate crystals.

(xv) One copy of first-aid leaflet mentioned in Appendix II to the Kerala Factories Rules, 1957 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 (120ml.) bottle of cetrimide solution (1%) or a suitable antiseptic solution.
- (vii) One (120 ml.) bottle of mercurochrome solution (2% in water)
- (viii) One (60ml) 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 (2cm. 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 ($\frac{1}{2}$ litre i.e. 500c.c.) for washing eyes.
- (xvi) A snake-bite lancet.
- (xvii) One (30ml) bottle containing Potassium Permanganate crystals
- (xviii) One copy of the first-aid leaflet mentioned in Appendix II to the Kerala Factories Rules, 1957 issue by the Directorate General of Factories 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 equipments:-

- (i) (Twenty four small sterilized dressings.
- (ii) Twelve medium size sterilized dressings.
- (iii) Twelve large size sterilized dressings.
- (iv) Twelve large size sterilized burn dressings.
- (v) Twelve (15gm) packets of sterilized cotton wool.
- (vi) One (200ml) bottle of cetrimide solution (1 percent) or suitable antiseptic solution.
- (vii) One (200ml) bottle mercurochrome (2 percent) solution in water.
- (viii) One (120ml) bottle of sal volatile having the dose and mode of administration indicated on the label.
- (ix) One pair scissors.
- (x) One roll of adhesive plaster (6cms. x 1 meter)
- (xi) Two rolls of adhesive plaster (2cms x 2 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 (500c.c) for washing eyes.
- (xv) Twelve roller bandages 10cms. Wide
- (xvi) Twelve roller bandages 5cms 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 (30ml) bottle containing potassium permanganate crystals.
- (xxiv) One copy of the first aid leaflet mentioned in Appendix II to the Kerala Factories Rules, 1957 issued by the Directorate General of Factory Advice Service and Labour Institutes, Bombay.

Provided that items (xiv) to (xxi) inclusive need not be included in the standard first aid box or cupboard (a) where there is a 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 separately provided.

(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 equipments or medicines that may be considered essential and recommended by the Chief Inspector of Factories from time to time.

Provided that if a hospital, ambulance room or dispensary is maintained at or near the factory and such arrangements are made as to ensure the immediate treatment of all injuries to workers occurring within the factory, the Chief Inspector of Factories may by an order in writing, exempt the factory from the requirements of this rule, subject to such conditions as he may specify in that order.

89A. Notice regarding first aid.- A notice containing the name 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 persons shall be available. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.

90. Ambulance room. (Substituted by GO(Ms) No. 4/87/LBR dt. 17/01/1987)

[(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:

Provided that where a factory works in more than one shift, the Chief Inspector, if he 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 provision 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-

- (a) There shall be no relaxation in respect of nursing staff; and
- (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.

[(2A) No medical officer shall be required or permitted to do any work which is inconsistent with or detrimental to his responsibilities under this rule.](Sub-rule 2A inserted by GO (Ms) No. 4/8/7/LBR dt.17-01-1987]

(3) 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. There shall be at least one latrine and urinal of sanitary type attached to the ambulance room. It shall have a floor area of at least 24sq. meters and smooth hard and impervious walls and floors shall be adequately ventilated and lighted by both natural and artificial means. As 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 180cms. x 105cms.
- (iii) Means for sterilizing 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 900mm. X 100mm. X 6mm.
- (x) Twelve plain wooden splints 350mm. X 75mm. 6mm.
- (xi) Six plain wooden splints 250mm. x 50mm. x 12mm.
- (xii) Six woolen blankets.
- (xiii) Three pairs artery forceps.
- (xiv) One bottle of spiritus Ammonia Aromatics (120ml)
- (xv) Smelling salts (60gms.)
- (xvi) Two medium size spongers.
- (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) Tea-spoons-Two.
- (xxiii) Graduated (120ml.) measuring glass-Two.
- (xxiv) Minimum measuring-glass-Two.
- (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 cup-boards stocked to the standards prescribed under C of rule 63.
- (xxxii) An adequate supply of anti-tetanus toxoid
- (xxxiii) Injections-Morphia, Pethidine, Atropin, Adrenaline, Coramine Novacom-Six each.
- (xxxiv) Coramine liquid (6 ml.)
- (xxxv) Tablets-Antilistaminic, Antispasmodic (25 each.)
- (xxxvi) Syringes with needle-2cc., 5cc., 10c.c., 50 cc.
- (xxxvii) Surgical Scissors-three
- (xxxviii) Needle holder.
- (xxxix) Suturing needles and materials.
- (xl) Dissecting forceps-Three.
- (xli) Dressing forceps-Three.
- (xlii) Scalpels-Three.
- (xliii) Stethoscope-One.
- (xliv) Rubber bandage-Pressure bandages.
- (xlv) Oxygen cylinder with necessary attachments.
- (4) 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 a suitable conveyance unless he has made arrangements for obtaining such a conveyance from a hospital.
- (5) The Chief Inspector of Factories may, by an order in writing exempt any factory from the requirements of this rule, subject to such condition as he may specify in that order, if a hospital, ambulance room or dispensary is maintained at or near the factory and such arrangements are made as to ensure the immediate treatment of all injuries to workers occurring within the factory and for providing rest to the injured workers.

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 the Schedules to the Indian Medical Council Act, 1956.]

- (2) After Appendix I the following Appendix shall be inserted namely:-

APPENDIX II

(See Rule 89)

(Instructions for handling emergencies)

Shock:

1. Lay the patient on his back.
2. Stop bleeding-if any
3. Relieve pain by supporting injured part.
4. Keep the patient comfortable, but not hot. Do not cause Sweating:
5. Fluids may given in small amounts unless the patient is nauseated, unconscious, likely to be operated on, or has an abdominal wound.
6. Reassure and cheer up the patient.

Wounds:

1. Stop the bleeding by any one of the following methods :
 - (a) Direct pressure ;
 - (b) Direct finger pressure into the wound in cases of large bleeding wounds;
 - (c) Tourniquet (seldom needed)-use only as last resort.

(2) Avoid touching the wound with hands or unsterile material.

(3) Clear the wound with running water and surrounding are with soap or spirit with clean gauze washing away from the wound. Apply ready-made adhesive gauze bandage or sterile gauze and roller bandage as needed.

(4) Keep the patient quiet; raising the extremity if it is the bleeding part, Give no stimulants.

(5) Never apply antiseptic ointment, lotion or iodine or germicide to the wound.

Abdominal wounds:

1. No time must be lost in sending the patient to the hospital
2. Keep the patient flat.
3. Give nothing by mouth
4. Maintain warmth
5. If intestines protrude from the wound do not attempt to touch or replace them.
6. Apply sterile dressing and binder as for wounds
7. Provide careful, immediate transportation to the hospital

Eye wounds:

1. Removal may be attempted if foreign body is not embedded.
2. Do not apply oil or ointment.
3. If there is a foreign body embedded in the eye ball, send the workers immediately to the doctor after applying pad and loose bandage.

Chemical burns of the eyes:

1. Immediate washing of the eye at least for fifteen minutes is of great importance.
2. Apply sterile bandage and send the worker immediately to the doctor.
3. Neutralizing agents or ointments should not be used.

Suffocation:

1. Remove the patient from the source of danger.
2. Make a rapid examination to ensure that the air passages are free, and to clean them if necessary.
3. Restore natural breathing by artificial respiration, if breathing has ceased.

Electric shock:

1. Remove the patient from the source of danger.
2. Make a rapid examination to ensure that the air passages are free, and to clean them if necessary.
3. Restore natural breathing by artificial respiration, if breathing has ceased.

Insensibility:

1. Send for a doctor if possible; pending his arrival
2. Where the patient's face is place, lay him flat and face downwards with his head turned to one side. If his face is flushed or blue raise and support the head and shoulders.
3. Control any serious bleeding.
4. Loosen any tight clothing and let him have plenty of air.
5. Do not give anything by mouth.
6. If doctor is not available send the casualty to hospital

Back-bone (Spinal) Fracture:

1. Transport on a rigid frame. This frame may be improvised by using available boards or a door
2. The rigid frame may be placed on a stretcher for transportation.
3. If a firm frame cannot be improvised, transport patient on abdomen on a stretcher made of canvas or blanket.

4. In neck fracture cases it is much better to get a doctor to the scene for danger to life is great.

Bruises:

1. Cold applications at first 24-48 hours.
2. Later heat-after 24-48 hours.

Burns:

1. Act quickly
2. Put the affected part in cold water
3. Pour the water over burns that cannot be immersed (Cold water relieves pain, reduces fluid loss).
4. Cover with a sterilized dressing

Snake-bite:

Calm and reassure the patient. Immobilise the bitten limb by splinting it. Wash and cool the wound with soap and water. Do not cut, rub or suck the bite. Take to a doctor. Press hard over wound for up 15 minutes. Do not remove cloth if it has been placed.

Issued by:

The Directorate General of Factory Advice Service and Labour Institutes, Ministry of Labour, Employment and Rehabilitation, Bombay.

Rules 91 to 97 under section 46

91. Canteen.-(1) Rules 91 to 97 shall come into force in respect of any class or description of factories on such dates as the State Government may by notification in the official gazette appoint in this behalf.

(2) The occupier of every factory notified by the State Government and wherein more than two hundred and fifty workers are ordinarily employed shall provide in or near the factory an adequate canteen according to the standards prescribed in these rules.

(3) The Manager of a factory shall submit for the approval of the Chief Inspector plans and site plan, in triplicate of the building to be constructed or adapted for use as a canteen.

(4) The canteen building shall be situated not less than fifty feet from any latrine, urinal, boiler house, coal stacks, ash dumps and any other source of dust, smoke or obnoxious fumes:

Provided that the Chief Inspector may in any particular factory relax the provisions of this sub-rule to such extent as may be reasonable in the circumstances and may require measures to be adopted to secure the essential purpose of this sub-rule.

(5) The canteen building shall be constructed in accordance with the plans approved by the Chief Inspector and shall accommodate at least a dining hall, kitchen, store room, pantry and washing places separately for workers and for utensils.

(6) In a canteen the floor and inside walls up to a height of 4 feet 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.

(7) The doors and windows of a canteen building shall be of fly-proof construction and shall allow adequate ventilation.

(8) The canteen shall be sufficiently lighted at all times when person have access to it.

(9) (a) In every canteen-

- (i) All inside walls of rooms and ceilings and passage and stair-cases shall be lime-washed or colour washed at least once in each year or painted once in three years dating from the period when last lime-washed, or painted as the case may be;