

Legislation & Regulations

STATUTORY LEGISLATIONS – An Overview



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1. THE FACTORIES ACT, 1948 AND RULES

(F.A. Amended w.e.f. 12/11/2013)

1.1 The Factories Act, 1948

This Factories Act, 1948 came into force w.e.f. 1st day of April, 1949. It is framed by the Central Government and is applicable to all the registered factories throughout the country. The main objective of this Act is to control working conditions in factories so that health, safety and welfare of workers are taken care of as per Article 39(c) & 42 of the Constitution of India. The provisions of this Act are enforced by the State Government in the registered factories of the respective states. Directorate General of Factory Advice Service & Labour Institutes (DGFASLI), Mumbai which is the technical wing of the Ministry of Labour and Employment, Government of India, co-ordinates with various State Governments for uniform administration of this Act. DGFASLI organization also coordinates with various Trade Unions, Manufacturers Associations, Industries etc. to prepare draft amendments to this Act. This Act has been amended several times – first in 1954, then in 1976 and latest in 1987. The Factories Act, 1948 has , in all, 120 Sections covered under 11 Chapters and 3 Schedules as follows :-

Chapter	Chapter Title	Section Nos.	No. of Sections
I	- Preliminary	1 to 7-B	8
II	- Inspecting Staff	8 to 10	3
III	- Health	11 to 20	10
IV	- Safety	21to41,36A, 40-A,40-B, 41	24
IV-A	- Provisions Relating to Hazardous Processes	41-A to 41-H	8
V	- Welfare	42 to 50	9

VI	- Working Hours of Adults	51 to 66	16
VII	- Employment of Young Persons	67 to 77	11
VIII	- Annual Leave with Wages	78 to 84	7
IX	- Special Provisions	85 to 91, 87-A, 88-A & 91-A	10
X	- Penalties & Procedures	92 to 106, 96-A, 104-A, 106-A	18
XI	- Supplemental	107 to 120, 111-A & 118-A	16

The First Schedule : It has a list of 29 types of industries involving hazardous process.

The Second Schedule : It has a table showing permissible level of certain chemical substances in Work Environment expressed in Time-Weighted Average (TWA) Concentration for 8 hrs. as well as in Short Term Exposure Limit (STEL) (for 15 mts.). The permissible levels are expressed both in parts per million (ppm) and milligramme per cub. metre (mg/m³).

The Third Schedule: It has a list of 29 types of Notifiable Diseases

Salient Features of the Factories Act,1948

A Few Important Definitions or Meaning of Terms

Meaning of the term **Factory** [Section 2 (m)]

A premises including precincts wherein ten or more workers are working or were working in last 12 months with the aid of power or twenty or more workers are working or were working in last 12 months without the aid of power to carry out a manufacturing process.

Worker - Anybody who is engaged in a manufacturing process irrespective of his designation, or remuneration etc. is a worker. As far as Health & Safety is concerned the Act does not discriminate between regular employees, ad hoc employees or even contract workers.

Manufacturing Process - Any process for making, altering, repairing, ornamenting, finishing, packing, oiling, washing, cleaning, breaking up, demolishing or otherwise treating, adapting an article/substance for its use/sale/transport/delivery/disposal, or pumping oil/water/sewage or any other substances, or generating/transforming or transmitting powers, or constructing, repairing/breaking of ships/vessels, or preserving/storing any article in cold storage.

Definition of the term [Section 2 (cb)]

Hazardous Process - It means any process or activity in relation to an industry specified in the First Schedule, where unless special care is taken, raw materials used therein or the intermediate/finished products/by-products/wastes/effluents thereof would cause material impairment to the health of the workers or result in the pollution of the general environment.

A Few Important Provisions of The Act

Responsibility for implementing the provisions of the Act

The Act puts the responsibility of compliance for its various provisions and the rules framed thereunder on the “Occupier” and the “Factory Manager”. As per Section 2(n) of the Act, the Occupier is the person who has ultimate control over the affairs of the factory. In case of a company, any one of the directors shall be deemed to be the occupier; in case of a firm/other association of individuals, any one of the individual partners/members shall be deemed to be the Occupier and in case of a factory belonging to Central Govt. or State Govt. or Local Authority, the person appointed to manage the factory shall be deemed to be the Occupier.

General Duties of the Occupier [FA- Section 7-A]

As law making cannot keep pace with the fast change in technology, in 1987 amendment, a clause regarding general duties of the Occupier was added to this Act. It requires the occupiers to ensure so far as is reasonably practicable, the health, safety and welfare of all workers while they are at work in the factory. It also requires the occupier to declare the written statement of general policy regarding Safety and Health.

General duties of manufacturers, etc. as regards articles and substances for use in factories [FA Section 7-B]

The designers, manufacturers, importers and suppliers of any article (plant and machinery) for use in a factory, are required to ensure, so far as is reasonably practicable, that the article is safe and without risk to the health of the workers. This provision is added to the Act in 1987 amendment.

Ventilation and temperature [FA Section 13]

Suitable provisions shall be provided in every factory to maintain in every work room such a temperature as will secure the workers therein, reasonable conditions of comfort and prevent injury to their health. Adequate ventilation by circulation of fresh air shall be maintained.

Preventing accumulation of dust & fumes [FA Section 14]

Accumulation of dust and fumes which are offensive and injurious to health in substantial quantities shall be prevented by effective measures in every work room. Such measures may include application of exhaust appliance near to the point of origin of such dust & fumes.

Over Crowding [FA Section 16]

In every factory at least 14.2 cubic meters of space shall be available for every worker working in any work room. While calculating this space, no account shall be taken for any space above 4.2 metres above the floor level of the room.

Lighting [FA Section 17]

In every part of a factory where workers are working or passing, sufficient and suitable lighting (natural, artificial or both) shall be provided and properly maintained. Glared windows and skylights shall be cleaned on their inner and outer surfaces. The amounts of illumination required for various tasks are given in the State Factories Rules. By suitability of light it is meant that the lighting should not cause glare and formation of shadow causing eyes strain.

Drinking Water [FA Section 18]

Effective arrangements shall be maintained for sufficient supply of drinking water to the workers. No tap point of drinking water shall be within 6 meters of any urinal, latrine, open drain carrying sludge, effluent spittoon, effluent or any other source of contamination.

In every factory where more than 250 workers are working, cool drinking water shall be provided during hot weather.

Fencing of Machinery [FA Section 21]

This section requires that dangerous parts of a machinery should be properly guarded. Such parts include moving parts, power transmission parts and any other part which can transmit energy to the workers in substantial quantity so as to harm him.

Restriction on employment of young person on dangerous machines [FA Section 23]

A young person [a person who is either a child (age less than 15 yrs.) or an adolescent (age between 15 yrs. and below 18 yrs.)] shall not be employed on dangerous machines (specified in the State Factories Rules) until and unless he has been fully instructed, sufficiently trained and is under adequate supervision.

Hoist and Lifts [FA Section 28]

Hoist and lifts are used for lifting and lowering materials and persons in a factory. This section demands that such equipment should be of good mechanical construction, sound material and adequate strength. These

equipment must be thoroughly examined by a competent person at least once in a period of 6 months. Safe working load of every hoist and lift should be marked on it.

Lifting machines, chains, ropes and lifting tackles [FA Section 29]

Such equipment should be of good construction, sound material and free from defects. They should be thoroughly examined by a competent person at least once in a period of 12 months. Such equipment shall not be loaded beyond their safe working loads which have to be displayed in prominent positions on the premises.

Pressure Plants [FA Section 31]

Any plant or machinery which is operated at a pressure above atmospheric pressure is considered as a pressure plant. Effective measures shall be taken to ensure that safe working pressure of such plants or machinery is not exceeded.

Pits, Sumps, Opening in Floor, etc. [FA Section 33]

Every fixed vessel, sump, tank, pit or opening in the ground floor which, by reason of its depth, situation, instruction on content may be a source of danger, shall be securely covered or fenced.

Excessive weight [FA Section 34]

No person shall be employed in any factory to lift, carry or move any load so heavy as likely to cause him injury. State governments prescribe limits for such weights. The Governments of Maharashtra and Delhi have prescribed the following limits.

Male Adult -	55 kg.
Female Adult -	30 kg.

Protection of eyes [FA Section 35]

Effective screens or suitable goggles shall be provided for protection of persons employed on such manufacturing processes which may involve risk of injury to eyes from flying particles or by exposure to excessive light.

Precaution against dangerous fumes, gas-es etc. [FA Section 36]

No person shall be allowed to enter into any tank, vat, pit, pipe, flue or other confined space in which gas, fume, vapour or dust can overcome that person. Manhole of adequate size shall be provided to the confined space and all practicable measures shall be taken to remove such fumes, gases etc. to a level within the permissible limits. A written certificate to this effect should be given by a competent person to declare that the space is reasonably free from dangerous gas, fumes or dust etc. before a person enters inside such a space.

Person entering the space shall wear suitable breathing apparatus and a securely attached belt, free end of which is to be held by a person outside the confined space.

Precaution regarding the use of portable electric light [FA Section 36-A]

This section prohibits use of electric light or other electric appliance of voltage exceeding 24 volt in a confined space. Lamp or light other than that of flame proof construction is also restricted to be used in any chamber, tank, pit or other confined space where any inflammable gas, fumes or dust is likely to be present.

Explosive or inflammable dust, gas etc. [FA Section 37]

This section requires that practicable measures shall be taken to prevent explosion of dust, gases, fumes or vapours (produced in any manufacturing process) by effective enclosures to the plant or machinery for removal and prevention of accumulation of such gases or dust etc. or by effectively preventing all possible sources of ignition.

Precautions in case of fire [FA Section 38]

All practicable measures shall be taken to prevent out break of fire and its spread. Safe means of escape for all the persons as well as necessary

equipment and facilities to extinguish fire, shall be provided and maintained. All the workers shall be made familiar with the above means of escape.

Safety Officers [FA Section 40-B]

In every factory wherein, one thousand or more workers are ordinarily employed, prescribed numbers of suitably qualified safety officers shall be employed. Even if the number of workers is less than 1000 and the State Government feels necessary, it can frame rules requiring the factory to employ the requisite number of safety officers. This section has been added to Factories Act in 1976 amendment.

The duties, qualifications and condition of service of the safety officers shall be prescribed by the state governments.

Welfare Officer [FA Section 49]

In every factory wherein five hundred or more workers are ordinarily employed, the Occupier shall employ in the factory such number of welfare officer as may be prescribed.

Provisions Relating To Industries Involving Hazardous Processes [Chapter IV-A]

A list comprising 29 types of industries (mentioned in Schedule 1) is categorized as those industries which involve hazardous processes. The Act mentions certain special provisions to be complied by such industries. The special provisions are relating to:

- a) Constitution of Site Appraisal Committee (Section 41-A)
- b) Compulsory disclosure of information by the Occupier (Section 41-B)
- c) Specific responsibility of the Occupier (Section 41-C)
- d) Power of Central Govt. to appoint inquiry committee (Section 41-D)
- e) Emergency Standards (Section 41-E)
- f) Permissible limits of exposure of chemicals and toxic substances (Section 41-F)
- g) Workers participation in safety management (Section 41-G)

h) Right of workers to warn about imminent danger (Section 41-H)

The above 8 Sections (41-A to 41-H) are briefly described below:

(a) Constitution of Site Appraisal Committee [Section 41-A]

The State Govt. appoints a Committee to recommend for permission to initiate or expand a factory involving hazardous process[Sec.2(cb)].

The Committee consists of CIF as chairman other Govt. departments (representatives from Central & State Pollution Control Board , Town Planning Dept.)

(a) Compulsory Disclosure of Information by the Occupier [Section 41-B]

The occupier is to disclose to the workers , local authority, CIF in respect of information on dangers including health hazards and measures to overcome it and the quantity, specification & other characteristics of wastes and manner of their disposal.

The occupier is to lay down a detailed policy on health and safety and with the approval of CIF, draw up an On-Site Emergency Plan and Detailed Disaster Control Measures for his factory and make it known to the workers and general public.

(b) Specific Responsibility of the Occupier in Relation to Hazardous Process [Section 41-C]

The Occupier is to maintain accurate and up-to-date health records/medical records of the workers exposed to chemical, toxic and other harmful substances manufactured, stored, handled or transported.

The Occupier is to appoint persons possessing requisite qualification & experience and competent enough to supervise in handling hazardous substances.

The Occupier is to provide for premedical, periodic medical (every 12 months) and post-medical examinations of workers engaged in hazardous operations or processes.

(c) Power of Central Govt. to Appoint Inquiry Committee [Section 41-D]

The Central Govt. appoints an Inquiry Committee to enquire standards of health and safety for finding out causes of failure/neglect in adopting measures of standard on health & safety.

The Committee consists of a chairman and 2 other members with tenure determined by the Central Govt.

Recommendation of the Committee is advisory in nature.

(d) Emergency Standards [Section 41-E]

The Central Govt. may direct DGFASLI or specialized Institute in the matter of standards of safety in hazardous process, to lay down emergency standard, where the same is missing or found inadequate.

(e) Permissible Limits of Exposure of Chemical and Toxic Substances [Section 41-F]

The maximum permissible threshold limits of exposure (i.e TWA & STEL in both ppm & mg/m³) of chemicals and toxic substances in manufacturing process (hazardous or non-hazardous) should not exceed the value indicated in the 2nd Schedule.

The Central Govt. may change the limits.

(f) Workers' Participation in Safety Management [Section 41-G]

The occupier should set up a Safety Committee with equal number of representatives of workers & management to promote co-operation between workers & management in maintaining proper safety and health at work.

(g) Right of Workers to Warn About Imminent Danger (Sec.41-H)

When the workers apprehend likelihood of imminent danger to their life and health due to an accident, they may bring the same to the notice of

occupier, agent, manager, factory in-charge and Factory Inspector directly or through representative of the safety committee.

The occupier, agent, manager and factory in-charge, if accepts the danger, is to take immediate remedial action and send action report to nearest Inspector, and if does not accept the danger, inform the matter to the nearest Inspector.

Notice of certain accidents [FA Section-88]

Where in any factory an accident occurs which causes death or such injury to the person that the injured person is prevented from working for at least 48 hours, the manager of the factory shall send notice of such an accident to the factory inspector within such time as stipulated by the State Governments in the State Factories Rules.

Right of the Workers [FA Section 111-A]

Every worker in a factory shall have the right to:

Obtain from the Occupier the information relating to workers' health and safety at work.

Get trained (within the factory or in a recognized training centre / institute) on matters relating to Health and Safety at work

Represent to the factory inspector in the matter of inadequate provisions for protection of his health and safety in the factory.

General Penalty for Offences (Chapter X)

As per Section 92, if there is any contravention of any of the provisions of this Act and the Rules framed thereunder, the occupier and manager of the factory shall each be guilty of an offence punishable with imprisonment for maximum 2 yrs. or with fine up to Rupees one lakh or with both. In case the contravention is related to certain provisions applicable to hazardous processes (Section 41-B, 41-C and 41-H), as per Section 96-A, the punishment may be extended upto 7 years of imprisonment and with fine up to Rupees two lakh.

1.2 The State Factories Rules

The Factories Act, 1948 is a Central enactment. It is enforced by the State Governments in the respective States with the help of the State Factories Rules. In exercise of the powers conferred by Section 112 of the Factories Act, 1948 (Central Act LXIII of 1948), the Governments of the States/Union Territories have made the State Factories Rules for their State/UT. The Factories Act (Section 113) also empowers the Central Government to issue directions to a State Government in regard to the execution of the provision of the Act.

The procedure for making rules (the Factories Rules of the respective State) is contained in Section 115 of the Factories Act, 1948 which provides that rules made under this Act shall be published in the Official Gazette, and shall be subject to the condition of previous publication, the date to be specified under clause (3) of Section 23 of the General Clauses Act, 1987, being not less than 45 days from the date on which the draft of the proposed rules is published. Every rule made by the State Government under this Act shall be laid as soon as it is made, before the State Legislation.

With a view to achieving uniformity in enforcement of the provisions of the Factories Act throughout the country, the Ministry of Labour & Employment, Government has prepared Model Rules to guide the State Governments, who may incorporate in their respective Factories Rules with suitable modifications to suit the local conditions.

Many of the State Governments have taken help of the Model Rules to frame their State Factories Rules.

State Factories Rules of the different State/UT extends to the whole of the State/UT. The Factories Rules of each State/UT has got different rules under various Chapters in line with the 12 Chapters of the Factories Act. Titles of the Rules framed under different Chapters of the Factories Rules are more or less the same.

Many of the Rules are framed showing detailed provisions under specified section of the Factories Act, 1948.

1.2.1 Salient Features of the Factories Rules

Important rules under various Chapters are as under :

Chapter I	:	Preliminary	It mainly deals with short title, extent and enforcement, competent person registration, grant and renewal and supervision of licence, etc.
Chapter II	:	Inspecting Staff	It deals with appointment & powers of Inspector
Chapter III	:	Health	It gives various provisions on health of workers like cleanliness of work place, disposal of wastes and effluents, proper lighting, drinking water, urinals & latrines, etc.
Chapter IV	:	Safety	<p>It deals safety precautions (under various schedules) for different types of machinery used in textiles, wood working, rubber, mill, power presses, paper, etc. as well as hoists and lifts, lifting machines & tackles, pressure vessel/plant, excessive weight, eye protection, fire protection, safety committee, PPE, health & safety policy, medical examination, occupational health centre, ambulance van, qualification etc. of supervisors.</p> <p>In addition, special provisions of hazardous process industry like collecting, development & dissemination of information, disclosure of information to various persons/agencies, etc. in line with Chapter-IV A of the Factories Act are also detailed here.</p>
Chapter V	:	Welfare	It deals with first aid appliances, washing facilities, canteen, crèches, etc.

Chapter VI	:	Working Hours of Adults	It deals with compensatory holidays, overtime work, register of adult worker, etc.
Chapter VII	:	Employment of Young Person	
Chapter VIII	:	Annual Leave with Wages	It deals with mode of leave, medical certificate, etc.
Chapter IX	:	Special Provisions	It deals with various dangerous operations under different schedules.
Chapter X	:	Penalties & Procedures	
Chapter XI	:	Supplemental	It deals with appeals, notice, returns
Forms	-	A number of forms are used as application for getting licences, approval, renewal, certificates, registration, examination report, etc.	

2. Gas Cylinder Rules, 2004

The above rules have been framed under Section 17 of Indian Explosives Act, 1884. Any gas when contained in a metal container in a compressed or liquefied states has been declared to be an explosive within the meaning of the said Act and rules to regulate the manufacture, possession, transport and importation of such gases have been framed under these rules.

General Exemption

Nothing in these rules is applicable to any air receiver which forms part of an internal combustion engine or a compressing plant.

General Rules

No person shall fill any cylinder with any compressed or liquefied gas and no person shall import any cylinder so filled unless such cylinder and its valve or other fittings.

- are constructed in accordance with the specifications laid down in Schedule. I.
- have passed the tests specified in that schedule
- are having proper and detailed marking on the cylinder and valves and
- are provided with valves having left handed screw thread when filled with inflammable gas.
- Every cylinder shall be stamped permanently and legibly with,
- Manufacturer's name, owner's identification mark and rotation number.
- Specification to which the cylinder has been made.
- Name and Chemical Symbol of the gas for which the Cylinder has been made.
- Last date of hydraulic test.
- Internal pressure required for hydraulic test.
- If it is to be used for any liquefiable gas, the tare and gross weights calculated from appropriate filling ratio.
- No cylinder shall be filled with gas unless such cylinder has been subjected to by the filler to the hydraulic test specified in Schedule I within the preceding two years and has passed the test.
- Any cylinder which does not pass the hydraulic test shall be destroyed or rendered useless.

Every cylinder shall be carefully examined at the filling station to ensure that it complies in all respects with the requirements of these rules and shall be completely emptied before it is passed for filling.

The working or internal pressure in any cylinder charged with a permanent gas shall not exceed two-third of the test pressure..

Cylinders charged with liquefiable gases shall not be filled in excess of the filling ratios specified in Schedule II.

Filling Ratio

Means the weight of gas permitted for each kg of water capacity of the cylinder.

Every cylinder when filled shall be painted with the appropriate identification colours specified in Schedule III.

Every cylinder shall be legibly marked or labelled with the name of the gas and name and address of the person by whom the cylinder was filled with gas.

General Precautions

Cylinder together with their valves and other fittings and identification colours shall always be maintained in good condition.

No oil or similar lubricant shall be used on any valves or other fittings of any cylinder.

Every cylinder containing compressed or liquefied gas shall have its valve securely closed so as to prevent leakage.

For storage of L.P.G. cylinders (Chief Controller of Explosives)C.C.E. has issued separate order.

Every care should be taken to handle the cylinder properly with proper protective caps approved by the C.C.E.

Transport

Cylinders shall be so transported as not to project beyond the sides of the vehicles in which they are transported.

Adequate precaution to be taken to prevent cylinders falling off the vehicle and being subjected to rough usage, excessive shocks or local stress.

No lifting magnet shall be used in loading or unloading cylinders.

Notice of Accident

Whenever there occurs in or about or in connection with, any place where compressed or liquefied gas cylinders are handled, stored or transported, any accident in any way connected with such cylinders attended with loss of human life or serious injury to persons or property the occupier of the place, or the person in-charge of the vehicle, as the case may be, shall forthwith give notice thereof to the officer of the nearest Police Station and to the C.C.E.

License

No license is required for filling and possession of cylinders if the filling is in small quantity for experiment/test/breathing purpose.

- 100 kg L.P.G. (7 cylinders) at one time stored
- Other flammable but non-toxic-total 125 kg gas or 15 cylinders
- For toxic gas, the total quantity should not exceed 5 cylinders at any time

Following type of licenses are issued:

D – To import cylinder filled or intended to be filled

E – To fill cylinders

F – To store compressed gas cylinder

The details of fees are given in Schedule V of the rules.

3. Static and Mobile(Unfired) Pressure Vessels Rules, 1981 as amended in 2000

SMPV(U) Rules,1981 was framed by the Central Govt. in exercise of the power conferred by Sections 5 & 7 of the Indian Explosives Act,1884.

The Rules has 8 chapters with 69 rules

Salient Features of SMPV(U) Rules :

3.1 Def. of Pressure Vessel [Rule- 2(t)]

Any closed metal container of whatever shape, intended for the storage and transport of any compressed gas which is subjected to internal pressure and whose water capacity exceeds one thousand litres and includes inter connection to the connected piping and fittings but does not include container wherein steam or other vapour is or intended to be generated, or water or other liquid is or intended to be heated by the application of fire or the products of combustion or by electrical means, heat exchangers, evaporators, air-receivers, steam-type digesters, steam-type sterilizers, autoclaves, reactors, clarifiers, pressure piping equipment such as separators or strainers and vessel containing a liquid under a blanket of compressed inert gas.

3.2 Repairs to Pressure Vessel (Rule-6)

Repair, additions or alteration permissible only when approved by the CCE.

For this purpose, vessel to be completely emptied & purged with inert gas and record maintained.

3.3 Purging of Vessel used for Flammable Gas (Rule-7)

Vessel used for flammable gas, when purged with the flammable gas, adequate precaution to take to prevent ignition of flammable mixture during venting.

3.4 Prohibition of Smoking, Fire & Light etc. (Rule-9)

Smoking not permitted and matches, fires, lights, articles/substance which may cause ignition of flammable gases not allowed in a place near an area where compressed gas stored, handled or transported in vessel.

3.5 Special Precautions against Accident (Rule-10)

No person is permitted to commit any act which may cause fire or explosion in an area where any compressed gas is handled, stored or transported in vessel.

3.6 Marking of Pressure Vessels (Rule-16)

Every vessel to bear a permanently fitted metal plate (visible from ground floor) to show:--

- a. manufacturer's name & identification mark
- b. Standard/code followed for its construction
- c. Official stamp of the inspector
- d. Design pressure in kg/cm²
- e. Date of initial hydrostatic test and subsequent test
- f. Hydrostatic test pressure in kg/cm²
- g. Water capacity in litres
- h. Gas capacity ,if filled with liquefiable gas
- i. Name or chemical symbol of the gas to be used in the vessel

3.7 Painting of Vessels (Rule-17)

Vessel to be adequately painted externally to prevent corrosion and to have reflecting surface.

3.8 Periodic Testing of Pressure Vessel in Service (Rule-19)

All vessels to be hydraulically tested by a Competent Person with pressure marked on the vessel with frequency not exceeding 5 yrs. after the date of its first test. Vessel containing corrosive and toxic gases to be tested at an interval of 2 yrs. Vessel when, due to its design, construction or support , cannot be safely filled with water/liquid or cannot tolerate traces of water, CCE may permit pneumatic testing along with non-destructive test instead of hydro-test. CP to issue Test Certificate in prescribed Form.

3.9 Precautions to be observed while carrying out Hydraulic Test (Rule-20)

Before above test, the vessel is to be cleaned and examined externally and, as far as possible , internally too, for surface defect corrosion and foreign matters.

While cleaning and removing sludge (if any), all due precautions to be taken against fire and explosion, if the sludge is pyrophorous or contains spontaneously combustible chemicals.

Immediately after testing, the vessel is to be thoroughly dried internally and clearly stamped with marks and figures mentioning the person who tested & test date .

3.10 Location of Pressure Vessels (Rule-22)

Each pressure vessel is to be located w.r.t nearest building or line of adjoining property or w.r.t other vessel as per the safety distance specified in the Tables (No's I & 2) for –

- (1) Flammable, corrosive and toxic gases ,
- (2) Non-toxic gases

Table-1

Minimum Safety Distances For corrosive, Toxic or permanent flammable Gases

SI.No	Water Capacity of vessel (in litres)	Minimum distance from building or group of buildings or line of adjoining property	Minimum distance between the vessels
i)	Not above 2000	5 metres	1 metres
ii)	Above 2000 but not above 10,000	10 metres	1 metres
iii)	Above 10,000 but not above 20,000	15 metres	1.5 metres
iv)	Above 20,000 but not above 40,000	20 metres	2 metres
v)	Above 40,000	30 metres	2 metres

Table-2

Minimum Safety Distances For Non-Toxic Gases (Under Rule 22)

Sl.No	Water Capacity of vessel (in litres)	Minimum distance from building or group of buildings or line of adjoining property	Minimum distance between the vessels
i)	Not above 2000	3 metres	1 metres
ii)	Above 2000 but not above 10,000	5 metres	1 metres
iii)	Above 10,000 but not above 20,000	7.5 metres	1.5 metres
iv)	Above 20,000 but not above 40,000	10 metres	2 metres
v)	Above 40,000	15 metres	2 metres

3.11 Fencing (Rule-24)

- Area of the Vessel Pumping Equipment, Loading & Unloading Facilities and Direct Fixed Vaporisers to have perimeter of industrial fencing of minimum 2 m height.
- The fencing should have at least two exits with gates opening outward and not self-locking.

3.12 Earthing (Rule-26)

- Vessels for flammable liquefiable gases to be efficiently electrically earthed
- Pipelines conveying flammable liquids should have electrical continuity and earthed efficiently.

3.13 No Smoking (Rule-27)

A permanent notice with letters of minimum 5 cm height, visible from outside and prohibiting smoking and naked flame, is to be fixed to the surrounding fencing where flammable or oxidizing gases are stored.

3.14 Fire Protection (Rule-28)

Vessels used for storage of flammable compressed gases to be protected from all types of fire hazards by providing adequate water and fire

protection system (fixed and portable) like hydrant with hose & monitor, min. 2 DCP (9 Kg each).

3.15 Electrical Apparatus and Installations (Rule-31)

No electric wire to pass over storage vessel.

Electric wire installed within safety zone or any storage vessel for flammable compressed gas should be of approved insulated cable.

Electrical fittings (metres, DB, plug, socket) in pump room of flammable compressed gases should be flame proof construction complying with IS : 2148-1968 and frame to be effectively earthed.

Electrical fixed lamps to be enclosed in glass flame - proof fitting conforming to IS: 2206(Part I)-2962.

All portable hand lamps to be approved by CCE.

3.16 Certificate of Safety (Rule-33)

Before any vessel is used for storage of any compressed gas or doing any addition, alteration to the installation or foundations, a certificate of safety in a proforma, prescribed by the CCE and signed by a CP, is to be furnished to the licensing authority.

3.17 Fire Protection (Rule-41)

Two serviceable fire extinguishers of suitable size and type, visible from outside the cab, are to be provided on each vehicle, one on each side.

A person attending any vehicle conveying flammable gas should not smoke or use match or lighter. No artificial light, capable of causing fire or explosion, should be taken in a vehicle carrying flammable gas.

3.18 Certificate of Safety (Rule-43)

Before any vessel is used for transportation of any compressed gas, a certificate of safety in a prescribed proforma to the effect that the vehicle meets with the rules in this chapter (Ch.-IV) and signed by a CP, is to be furnished to the licensing authority.

3.19 Inspection and Maintenance of Vehicles (Rule-44)

Licence for a vehicle should ensure that it is, at all times, road-worthy and fit to fill transport and discharge its load safely.

A certificate of six monthly examination report of maintenance is to be issued by a CP.

3.20 Notice of Accident (Rule-66)

Notices of Accident are to be given to –

- i. the CCE by express telegram followed by a letter within 24 hrs. giving particulars of occurrence, and
- ii. to the officer-in-charge of nearest police station.

Some abbreviations :

CCE – Chief Controller of Explosives.

CIF – Chief Inspectorate of Factories

CP –Competent Person.

For more details of statues and legislation you may refer to the following websites :

<http://dgfasli.nic.in/statutes1.htm>

<http://peso.gov.in/>

http://nsc.org.in/index.php?option=com_content&view=article&id=139

List of other statues applicable for factories :

• Indian Boilers Act,1923 with allied Regulations, 1961- Section Pertaining to SHE
• The Electricity Act, 2003
• The Electricity Rules, 2005
• Indian Explosives Act, 1884
• The Explosives Rules, 2008
• The Petroleum Act, 1934
• The Petroleum Rules, 2002
• Water(Prevention and Control of Pollution) Act, 1974
• Water(Prevention and Control of Pollution) Rules, 1975
• Air prevention and control of pollution) Act, 1981
• Air (Prevention and Control of Pollution) Rules, 1982
• The Environment (Protection) Act, 1986
• The Environment (Protection) Rules, 1986
• The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (As Amended upto 2000 –Salient Features)
• Noise Pollution (Regulation and Control) Rules, 2000
• Bio Medical (Wastes (Management and Handling) Rules, 1998
• Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008
• The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996