

## CHAPTER II GENERAL PROVISIONS

3. Filling, possession, import and transport of cylinders: - (1) No person shall fill any cylinder with any compressed gas or import, possess or transport any cylinder so filled or intended to be filled with such gas unless:-

(a) such cylinder and its valve have been constructed to a type and standard specified in Schedule I as amended from time to time by an order issued by the Chief Controller;  
(b) the test and inspection certificates issued by the inspecting authority in respect of cylinder and its valve are made available to the Chief Controller and prior approval of the said authority is obtained.

(2) For obtaining approval under Clause (b) of sub rule (1), the following particulars shall be submitted to the Chief Controller: -

(i) total number and serial numbers of the cylinders;  
(ii) name and address of the manufacturers of the cylinders;  
(iii) specification of the cylinders and the valves;  
(iv) previous approval, if any;  
(v) the test and inspection certificates in respect of the cylinders  
(vi) the test and inspection certificates pertaining to the valves fitted/to be fitted to the cylinders;  
(vii) scrutiny fee as specified in Schedule V.

(3) The test and inspection certificates required to be obtained from the inspecting authority in respect of cylinders and valves inspected and certified by it in accordance with the approved design and specification or code shall give the information included in Schedule II.

(4) (a) Any person desiring to manufacture cylinders, valves, LPG regulators attached to self-closing valves, multi-function valves and other fittings shall obtain approval from the Chief Controller and in order to seek such approval, submit the particulars set forth in Schedule III and scrutiny fee as specified in Schedule V together with design drawings and calculations duly endorsed by Inspecting Authority.

(b) For any subsequent changes in the design drawing, a fresh approval shall be obtained.

(5) Notwithstanding anything contained in sub rule (1) cylinders of specifications not conforming to the specifications specified in Schedule I and imported into India for filling and shipment to the country of origin or supply to a foreign going vessel touching Indian port, could be filled with such gas, provided:

(a) the cylinder has passed the hydrostatic test or hydrostatic stretch test, as the case may be, within the period specified in these rules and the pressure applied during the test shall be the test pressure marked on the cylinder;

(b) the cylinder is not filled with-

(i) any liquefiable gas in excess of the filling ratio specified in IS:3710 for low pressure liquefiable gases and IS:8866 for high pressure liquefiable gases;

(ii) any permanent gas at a pressure in excess of the pressure for which the cylinder is designed;

(c) a separate record of the cylinder tested and filled is maintained at the filling station;

(d) the filled cylinders are removed from the filling station and shipped off as expeditiously as possible.

4. Valves.- (1) Valves fitted to gas cylinders shall comply in all respects with the following specifications namely:-

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(a) in respect of industrial gas cylinders, IS:3224;

(b) in respect of medical gas cylinders, IS:3745;

(c) in respect of cylinders used with breathing apparatus, IS:7302 as amended from time to time;

(d) in respect of cylinders used for filling liquefied petroleum gas, IS:8776 for cylinders of water capacity not exceeding 5 litres and, IS: 8737 for cylinders of water capacity exceeding 5 litres;

(e) in respect of auto LPG containers IS:15100;

(f) in respect of small Refrigerant cylinders IS:12300

Provided that the Chief Controller may, if he is of opinion that it is necessary so to do in the public interest, permit the use of valves not conforming to any of the above specifications.

(2) Valves fitted to Carbon Dioxide cylinders shall be provided in the body with a safety release consisting of softened copper disc so arranged as to burst at a pressure between 200 kg/cm<sup>2</sup> and 220 kg/cm<sup>2</sup>

(3) Valves for cylinders containing flammable gases not listed in IS:3224 shall have outlets provided with left handed screw threads for the pipes or other connections.

(4) All other valves shall have outlets with right-handed screw threads.

(5) The valves shall be attached to the cylinder neck by screwing and not by making any permanent attachment or inserting adapter in between.

(6) The design of spindle-operated valves shall be such that when fitted to the cylinders it shall not be possible to withdraw the spindle under normal operating conditions.

5. Safety relief devices - (1) Cylinders manufactured in India, if fitted with safety relief devices in their bodies, shall have such safety devices manufactured and maintained in accordance with IS:5903

(2) Cylinders containing obnoxious or poisonous gases shall not be provided with any safety device.

Explanation.-For the purpose of this sub-rule, "obnoxious or poisonous gases" include Carbon monoxide, Hydro-cynic acid, Hydrogen chloride, Hydrogen bromide, Hydrogen fluoride, Sulphur dioxide, Chlorine, Methyl bromide, Nitrogen tetroxide, Nitrosyl chloride, Town gas, Hydrogen sulphide, Carbonyl chloride (Phosgene), Cyanogen, Cyanogen chloride, Fluorine and Carbon oxychloride.

(3) Cylinders manufactured in foreign countries, approved for use in this country, if fitted with safety relief devices shall have these devices fully maintained in accordance with the requirements of the specification to which they were originally made.

6. Marking on cylinders - (1) Marking generally:

(a) Every gas cylinder shall be clearly and permanently marked in accordance with following conditions by stamping, engraving or similar processes:

(i) on the shoulder of the cylinder which shall be reinforced by forging or other means, or

(ii) on such a part which is inseparably bound with the cylinder and which is not or only negligibly affected by the stresses due to the gas pressure within it.

(b) The name plate shall not be affixed to the cylinder by soldering if there is a risk of corrosion or embrittlement.

(c) In conjunction with the original marking, space shall be provided for stamping the test date obtained at the periodic inspection.

(d) Markings shall be so carried out and the letters and numerals used shall be of such shape and size that the marking is clear and easily readable and does not give place for misreading.

(2) Marking on permanent and liquefiable gas cylinders:

(a) Every cylinder shall be marked with the following markings, namely:--

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(i) Manufacturer's, owner's and inspector's marking and rotation number (these markings shall be registered with the Chief Controller);

(ii) specification to which the cylinder has been made:

(iii) a symbol to indicate the nature of heat treatment given to the cylinder during manufacture or after repairs;

(iv) the date of the last hydrostatic test or hydrostatic stretch test, as the case may be, with the code mark of recognised testing station where the test was carried out and the code mark shall be registered with the Chief Controller. In the case of liquefied petroleum gas cylinders, the quarter and the year of test shall be given as an additional marking in a neck or on a shoulder plate;

(v) working pressure and test pressure;

(vi) tare weight-

Explanation - In the case of liquefiable gas cylinders, tare weight shall include the weight of valve fitted to the cylinder.

(vii) water capacity.

(b) All the markings, except the manufacture's markings, which may be on the base, shall be stamped on the neck end of the cylinder. However, seamless cylinders having no foot ring or skirt shall be stamped with the manufacturer's marking on the neck end of the cylinder.

7. Markings on valve - Valves fitted to the cylinder shall be clearly and durably marked in accordance with the following provisions by stamping, engraving or similar processes:

- (i) the specification of the valves;
- (ii) year and month or quarter of manufacture
- (iii) manufacturer's symbol;
  
- (iv) working pressure
- (v) the name or chemical symbol of the gas for which the valve is to be used;
- (vi) the type of screw threads on the outlet, in case of left handed as (L.H.);
- (vii) Inspector's stamp;
- (viii) where dip tubes are provided, special indications shall be given by a clear and durable marking on the valve or on a badge fixed between the valve and the cylinder and the total length in millimeter of the tube shall also be indicated.

8. Identification colours: - (1) Every person filling any cylinder with any compressed gas shall, before it is stored or despatched, see that the cylinder is painted with appropriate identification colours specified in IS:4379 for industrial cylinders and IS:3933 for medical cylinders.  
(2) Cylinders used for new gases and gas mixtures for which identification colours are not provided in sub-rule (1) shall be painted with the colours indicated in the following table, namely: -

7  
Name of the gas contained in the Colour of the Colour of band at neck cylinder cylinder shell end of cylinder

1 2 3

Non-flammable and non-toxic White

Non-flammable but toxic White Yellow (IS:5 shade No.356).

Flammable but non-toxic other White Red (IS 5 Shade than the LPG No.537).

Flammable and toxic White Red and Yellow (IS:5 shade Nos.537 and 356)

Gas mixtures Major gas colour Minor gas colour with

(not covered in IS:4379 or IS:3933) band width approximately 1/5th of the cylinder length

Explanation. - Cylinders intended for gas mixtures shall be marked with the words "Gas Mixture" or "Mixed Gas" and in addition, the cylinders shall be marked with the names (symbols, if necessary) of the components of the mixture by stamping, if the cylinders are intended for the permanent use of the particular gas mixture, or by painting, if the cylinders are intended for the casual use of the particular gas mixture.

(3) No person shall in any way interfere with or change the colour painted on a gas cylinder: Provided that nothing in this sub-rule shall be deemed to prohibit the re-painting of a cylinder with the identification colour painted on it when it is required for the maintenance of the cylinder or when a cylinder is converted from one gas service to another gas service in accordance with these rules.

9. Labelling of cylinders: - (1) Every cylinder shall be labeled with the name of the gas and the name and address of the person by whom the cylinder was filled with gas.

(2) A warning in the following terms shall be attached to every cylinder containing permanent or liquefiable gas, namely: -

"WARNING"

Gas Cylinders, Rules, 2004

(i) Do not change the colour of this cylinder.

(ii) This cylinder should not be filled with any gas other than the one it now contains.

(iii) No flammable material should be stored in the close vicinity of this cylinder or in the same room in which it is kept.

(iv) No oil or similar lubricant should be used on the valves or other fittings of this cylinder.

(v) Please look for the next date of test, which is marked on a metal ring inserted between the valve and the neck of the cylinder, and if this date is over, do not accept the cylinder for filling.

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10. Restriction on delivery or despatch of cylinders:- (1) No person shall deliver or despatch any cylinder filled with any compressed gas to any other person in India who is not the holder of a licence to possess such compressed gas cylinders or his authorised agent unless he is exempted under these rules to possess such compressed gas cylinders without a licence.

(2) The gas cylinders delivered or despatched by a person under sub-rule (1) shall be of the type for which he is licensed and shall not exceed the quantity which the person to whom it is delivered or despatched is authorised to possess under these rules.

(3) Nothing in sub-rule (1) and (2) shall apply to the delivery or despatch of gas cylinders to the defence forces of the Union, port authorities or Railway administration.

11. Repairing of seamless gas cylinders during use - No person shall repair or cause to repair any leakage in the body of a seamless gas cylinder.

12. Repairing of welded or brazed cylinders: — (1) Welded or brazed cylinder showing leaks at any place other than the welded or brazed seams shall not be repaired and shall be rendered unserviceable.

(2) In the case of cylinders having welded or brazed seam, repairing of minor defects, such as small weld cracks, pin holes, blow holes, undercuts in welding, leaks at the weld (shown in periodical hydrostatic test) may be allowed provided-

a) the defects have been removed by grinding, chipping, gouging or other approved methods;

b) the repairing is carried out by a certified welder at the premises of a manufacturer of cylinders recognised by the Chief Controller under the supervision of a competent person by-

(i) welding if the original seams were welded;

(ii) brazing, if the original seams were brazed;

c) the cylinder is properly heat-treated after the repairs;

d) the welded or brazed seams of the cylinder are radiographed if the cylinder was originally required to be radiographed after its manufacture;

e) after repairs and heat-treatment, the cylinder is subjected to the same pneumatic and hydrostatic test or hydrostatic stretch test as was done at the time of manufacture.

(3) Welded or brazed cylinder, before repairing, shall be thoroughly cleaned and gas-freed or otherwise prepared for safely carrying out hot work and certified in writing, by a competent person, to have been so prepared. The certificate shall be preserved for a period of three months and produced to the Chief Controller on demand.

(4) No person shall refill any cylinder which has been repaired under sub-rule (2) with any gas unless a full report on the repairs and test carried out on the cylinder, accompanied by the repairer's certificate of testing are furnished to the Chief Controller and his permission is obtained for its refilling.

(5) Notwithstanding anything contained in sub-rule (2), no repairs shall be carried out to any dissolved acetylene gas cylinder showing leaks in its weld seam.

13. Prohibition of employment of children and intoxicated persons.- No child under the age of eighteen years and no person who is in a state of intoxication shall be employed in-charge of loading or unloading or transport of any compressed gas cylinder or in any premises licensed under these rules.

14. Prohibition of smoking, fires, lights and dangerous substances: - (1) No person shall smoke and no fires, other than blow pipe flames for repairs, or no articles or such other substances of flammable nature or liable to spontaneous ignition or to cause or communicate fire or explosion shall be allowed at any time in proximity to a place where any cylinder for flammable gases is being filled, stored or handled.

(2) No person in or near any place where cylinders containing flammable gases are filled, stored

handled shall have in his possession any matches, fuses, mobile phones or any other appliances for producing ignition or explosion.

15. General precautions. - (1) Cylinders together with their valves and other fittings and the identification colours under these rules shall always be maintained in good condition.

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

(3) Save as provided in Rules 12 and Clause B 2(1)(b) of Schedule IV, no cylinder shall be subjected to any heat treatment or exposed to a high temperature or to the Sun or stored with any other flammable or explosive material.

(4) Every cylinder containing compressed gas shall have its valve securely closed so as to prevent leakage. Valves fitted to the cylinders containing Liquefied Petroleum Gas and highly toxic gases like Boron trifluoride, Carbon monoxide, Fluorine, Hydrogen chloride, Cyanogen chloride, Chlorine trifluoride, Hydrogen cyanide, Hydrogen fluoride, Hydrogen sulphide, Methyl bromide, Nitrogen tetroxide, Chlorine, Ammonia or Sulphur dioxide shall be provided with security nut on the outlet to act as a secondary means of safeguard against leakage of gas.

(5) If a leak in the valve cannot be rectified by tightening the gland nut or the spindle, the cylinder shall be removed to an open space where it is least dangerous to life and property and the filler shall be informed. In the case of LPG cylinder, the safety cap shall be fixed to arrest the leak and the cylinder shall be moved to an open space.

16. Special precautions against accidents: - (1) No person shall commit or attempt to commit any act, which may tend to cause a fire or explosion in or about any place where gas under pressure in a cylinder is stored, handled or transported.

(2) Every person storing compressed gas cylinders and every person in charge of or engaged in the storage, handling and transport of such gas cylinders, shall at all times-

(a) comply with the provisions of these rules and the conditions of any licence relating thereto;

(b) observe all precautions for the prevention of accident by fire or explosion;

(c) prevent any person from committing any act referred to in sub-rule (1).

17. Competent person to be incharge of operations - Every person holding or acting under a licence granted under these rules, shall, whenever cylinders are filled, loaded, unloaded, examined or tested, depute a competent and experienced person to be present and to conduct any of the said operations in accordance with provisions of these rules and the name, qualification and experience of such personnel deputed in each shift shall be furnished to the Chief Controller or Controller for considering filling permission round the clock.

18. Handling and use: - (1) Cylinders shall be adequately supported during handling.

(2) Conveyors, trolleys and cradles of adequate strength shall, as far as possible, be used when moving the cylinders.

(3) The cylinders shall be handled carefully and not be allowed to fall upon one another or otherwise subjected to any undue shock.

(4) Sliding, dropping or playing with cylinders is prohibited.

(5) Liquefied petroleum gas cylinders and cylinders containing liquefiable gases shall always be kept in an upright position and shall be so placed that they cannot be knocked over.

(6) Cylinders used in horizontal position shall be so secured that they cannot roll.

(7) Open flames, lights, mobile phones, lighting of fires, welding and smoking shall be prohibited in close proximity to any cylinder containing flammable gases except those while in use for welding, cutting or heating.

(8) Working places shall not be classified as storage places for the purpose of licensing.

19. Restrictions on filling: - (1) Welded cylinders shall not be used for filling any permanent or high pressure liquefiable gas or highly toxic gases like Boron trifluoride, Carbonyl chloride (Phosgene), Chlorine trifluoride, Cyanogen, Cyanogen chloride, Hydrogen cyanide, Hydrogen sulphide.

(2) No cylinder, which has once been used for storage and transportation of coal gas, carbon monoxide or methane shall be used for filling with any other gas except mixture of these gases with inert gases.

(3) No cylinder shall be filled with any gas that is capable of combining chemically so as to endanger its serviceability.

20. Loading, unloading and transport of cylinders: - Cylinders filled with any compressed gas shall be transported duly complying with the provisions laid down in Schedule VI and also observing the relevant provisions of other statutes as applicable.

21. Storage of cylinders: - (1) Cylinders shall be stored in a cool, dry, well ventilated place under cover, away from boilers, open flames, steam pipes or any potential sources of heat and such place of storage shall be easily accessible.

(2) The storage room or shed shall be of fire resistant construction.

(3) Thin wall cylinders such as liquefied petroleum gas cylinders and dissolved gas cylinders shall not be stacked in a horizontal position.

(4) Cylinders containing flammable gases and toxic gases shall be kept separated from each other and from cylinders containing other types of gases by an adequate distance or by a suitable partition wall.

(5) Cylinders shall not be stored under conditions, which will cause them to corrode.

(6) Cylinders shall not be stored along with any combustible material.

(7) Empty cylinders shall be segregated from the filled ones and care shall be taken that all the valves are tightly shut.

22. Electrical installations -In premises for filling and storing flammable gases in cylinders all electric meters, distribution boards, switches, fuses, plugs and sockets, all electric fittings, fixed lamps, portable hand lamps and motors, shall be of flame proof construction conforming to IS:2148 or such other specification as approved by the Chief Controller and shall be effectively earthed.

23. Purity of gas: - (1) Compressed gases shall be free from impurities, which are likely to corrode the metal of the cylinder or form an explosive substance with it or cause the gases to decompose or explode.

(2) The gases shall be as dry as possible and in no instance shall the aqueous phase separate when a liquefied gas is cooled to 00C.

(3) Before filling any cylinder with gases like carbon monoxide, coal gas, hydrogen or methane, the gas shall be free from hydrogen sulphide and other sulphurous impurities as far as practicable. The moisture shall be less than 0.02 g/m<sup>3</sup> of gas at normal temperature and pressure.

24. Cylinder subjected to the action of fire: - (1) (a) A cylinder exposed to fire shall not be used unless it has undergone proper examination and hydrostatic test or hydrostatic stretch test.

(b) If deleterious structural changes in the material due to the action of heat of the fire is apprehended to have taken place, the cylinder shall have to be subjected to proper heat treatment, followed by hydrostatic test or hydrostatic stretch test, as the case may be, before the cylinder is taken into use.

(2) Dissolved acetylene cylinders, which have been damaged by fire shall be condemned and destroyed by an experienced and competent person.

25. Ownership of cylinder: - A cylinder shall not be filled with a compressed gas and transported unless it was charged by or with the written consent of the owner of the cylinder.

26. Re-testing of cylinder: - A cylinder for which prescribed periodical re-test has become due shall not be charged and transported until such re-rest has been properly made.

27. Owner's record:-The owner of a cylinder shall keep for the life of each cylinder, a record containing the following information regarding each cylinder, namely:-

(i) Cylinder manufacturer's name and the rotation number;

- (ii) The specification number to which the cylinder is manufactured;
- (iii) Date of original hydrostatic test or hydrostatic stretch test;
- (iv) Cylinder manufacturer's test and inspection certificates;
- (v) Number and date of letter of approval granted by the Chief Controller.

28. Conversion of cylinders.- (1) Gas cylinders designed and approved for filling with a particular gas shall not be used for filling with any other gas unless specific approval is obtained from the Chief Controller except that :-

(a) inert gases, oxygen and compressed air cylinders made to the same specification and design may be converted from one gas to another after fitting with appropriate valve and painting with appropriate identification colour without prior permission from Chief Controller, with approval of the cylinder owner.

(b) proper records of such conversions shall be maintained by the gas filler for examination of Chief Controller or Controller as and when needed.

(2) Any person desiring for conversion approval shall submit to Chief Controller the following: -

- (i) documentary evidence indicating that the cylinders have been purchased by him;
- (ii) an authenticated copy of letter permitting filling of the cylinders in the past;
- (iii) a statement in duplicate, showing manufacturer's serial numbers of the cylinders in ascending order;
- (iv) a certificate to the effect that the cylinder(s) had not been converted to any other gas service in the past;
- (v) scrutiny fee as specified in Schedule