

mechanical means, use some type of carrying device. Cylinders may be rolled on bottom edge but never dragged.

- 4 Protect cylinders from cuts or abrasions
- 5 Do not lift compressed gas cylinders with an electromagnet. Where cylinders must be handled by a crane or derrick, as on construction jobs, carry them in a cradle or similar device and take extreme care that they are not dropped. Do not use slings.
- 6 Do not drop cylinders or let them strike each other violently.
- 7 Do not use cylinders for rollers, supports, or any purpose other than to contain gas.
- 8 Do not tamper with safety devices in valves on cylinders.
- 9 When in doubt about the proper handling of a compressed gas cylinder or its contents, consult the supplier of the gas.
- 10 When empty cylinders are to be returned to the vendor, mark them **EMPTY** or **MT** with chalk. Close the valves and replace the valve protection caps.
- 11 Load cylinders to be transported to allow as little movement as possible. Secure them to prevent violent contact or upsetting.
- 12 Always consider cylinders as full and handle them with corresponding care. Accidents have resulted when containers under partial pressure were thought to be empty.

The fusible safety plugs on acetylene cylinders melt at about the boiling point of water. If an outlet valve becomes clogged with ice or frozen, it should be thawed with warm (not boiling) water, applied only to the valve. A flame should never be used.

#### **Storing cylinders**

Cylinders should be stored in a safe, dry, well-ventilated place prepared and reserved for the purpose. Flammable substances, such as oil and volatile liquids, should not be stored in the same area. Cylinders should not be stored near elevators, gangways, stair wells, or other places where they can be knocked down or damaged.

Cylinders of oxygen should not be stored indoors close to cylinders containing flammable gases. Unless they are stored apart, oxygen cylinders and flammable gas cylinders should be separated by a fire-resistive partition.

Acetylene and liquefied fuel gas cylinders should be stored with the valve end up. The total capacity of acetylene cylinders stored inside a building should be limited to 2000 cu ft of gas, exclusive of cylinders in use or connected for use. Quantities exceeding this total should be stored in a special room built in accordance with the specifications of NFPA Standard No. 51, in a separate building, or outdoors. Acetylene storage rooms and buildings must be well ventilated, and open flames must be prohibited. Storage rooms should have no other occupancy.

Cylinders should be stored on a level, fire-proof floor. One common type of storage house consists of a shed roof with side walls extending approximately halfway down from the roof and a dividing wall between one kind of gas and another.

To prevent rusting, cylinders stored in the open should be protected from contact with the ground and against extremes of weather—accumulations of ice and snow in winter and continuous direct rays of the sun in summer.

Cylinders are not designed for temperatures in excess of 130 F. Accordingly, they should not be stored near sources of heat, such as radiators or furnaces, or near highly flammable substances like gasoline.

Cylinder storage should be planned so that cylinders will be used in the order in which they are received from the supplier. Empty and full cylinders should be stored separately, with empty cylinders being plainly identified as such to avoid confusion. Group together cylinders which have held the same contents.

A direct flame or electric arc should never be permitted to contact any part of a compressed gas cylinder.

Storage rooms for cylinders containing flammable gases should be well ventilated to prevent the accumulation of explosive concentrations of gas. No source of ignition should be permitted. Smoking should be prohibited. Wiring should be in conduit. Electric lights should be in fixed position and enclosed in glass or other transparent material to prevent gas from contacting lighted