

34—Welding and Cutting

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 within 20 ft of cylinders containing flammable gases or to highly combustible materials. If closer, cylinders should be separated by a fire-resistive partition ($\frac{1}{2}$ -hr minimum rating).

Acetylene and liquefied fuel gas cylinders should be stored with the valve end up. The total capacity of acetylene cylinders stored and used 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 sockets or lamps and should be equipped with guards to prevent breakage. Electric switches should be located outside the room.

Using cylinders

Safe procedures for the use of compressed gas cylinders include

- 1 Use cylinders, particularly those containing liquefied gases and acetylene, in an upright position and secure them against accidentally being knocked over.
- 2 Unless the cylinder valve is protected by a recess in the head, keep the metal cap in place to protect the valve when the cylinder is not connected for use. A blow on an unprotected valve might cause gas under high pressure to escape.
- 3 Make sure the threads on a regulator or union correspond to those on the cylinder valve outlet. Do not force connections that do not fit.
- 4 Open cylinder valves slowly. A cylinder not provided with a handwheel valve should be opened with a spindle key or a special wrench or other tool provided or approved by the gas supplier.
- 5 Do not use a cylinder of compressed gas without a pressure-reducing regulator attached to the cylinder valve, except where cylinders are attached to a manifold, in which case the regulator will be attached to the manifold header.
- 6 Before making connection to a cylinder valve outlet, "crack" the valve for an instant to clear the opening of particles of dust or dirt. Always point the valve and opening away from the body and not toward anyone else. Never crack a fuel gas cylinder valve near other welding work or near sparks, open flames, or other possible sources of ignition.
- 7 Use regulators and pressure gages only.