ferably, covered with metal or other noncombustible material where sparks or hot metal may fall In some cases, it is advisable to wet down the floor, though the wet floor increases the shock hazard to electric (arc and resistance) welders and necessitates special protection for them

If gas welding or oxygen cutting is done inside a booth provided for arc welding, the gas cylinders should be placed in an upright and secured position outside the booth to prevent contact with the arc or flame

Hot metal or slag should not be allowed to fall through cracks in the floor or other openings, nor into machine tool pits Cracks or holes in walls, open doorways, and open or broken windows should be covered with sheet metal guards or asbestos curtains Because hot slag may roll along the floor, it is important that no openings exist between the asbestos curtain and the floor Similar protection should be installed for wall openings through which hot metal or slag may enter when welding or cutting operations are conducted on the outside of the building

If it is necessary to weld or cut close to wood construction or near combustible material which cannot be removed or protected, a small fire hose, water pump tank extinguisher, or fire pails should be conveniently located Portable extinguishers for specific protection against Class B and C fires should also be provided (see Chapter 36, "Fire Extinguishment and Control") Pails of limestone dust or sand may be useful It is good practice to provide a fire extinguisher, either dry chemical, multi-purpose chemical, or carbon dioxide, for each welder, as part of his kit

A fire watcher equipped with a suitable fire extinguisher should be stationed at or near welding or cutting operations conducted in hazardous locations to see that sparks do not lodge in floor cracks or pass through floor or wall openings The fire watch should be continued for at least 30 minutes after the job is completed, to make sure that smoldering fires have not been started

Hazardous locations

Welding and cutting operations should not be permitted in or near rooms containing flammable or combustible vapors, liquids, or dusts, or on or inside closed tanks or other containers which have held such materials, until all fire and explosion hazards have been eliminated All of the surrounding premises should be thoroughly ventilated, and frequent gas testing provided Sufficient draft should be maintained to prevent accumulation of explosive concentrations Local exhaust equipment should be provided for removal of hazardous gases, vapors, and fumes (present in the surroundings or generated by the welding or cutting operations) that ventilation fails to dispel

Drums, tanks, and closed containers

Closed containers that have held flammable liquids or other combustibles should be thoroughly cleaned before welding or cutting Sometimes containers which cannot be removed and handled properly for standard cleaning procedures are purged with an inert gas (Fig 31-10) or filled with water to within an inch or two of the place where the work is to be done, with a vent left open Either of these two measures may also be employed as an added precaution after cleaning according to recommended methods (See American Welding Society *Safe Practices for Welding*

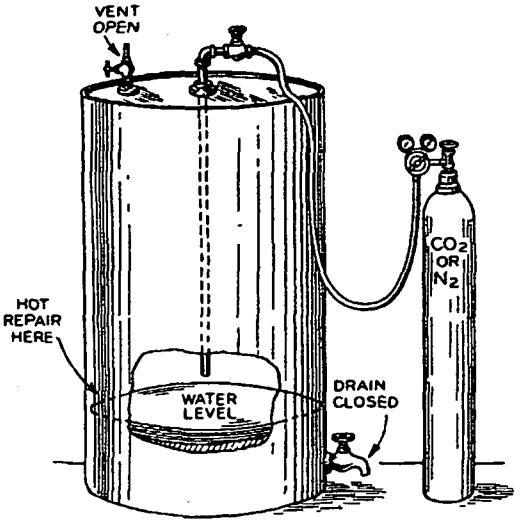

FIG 31-10 – As an added precaution after cleaning, a container to be welded or cut may be filled with either carbon dioxide or nitrogen to dilute any combustible gas or vapor remaining—dilute it enough to render it nonhazardous

Courtesy American Welding Society