

34—Welding and Cutting

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 34-11) 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 and Cutting Containers That Have Held Combustibles*, A6.1. See also National Fire Protection Association, *Cleaning or Safeguarding Small Tanks and Containers*, Standard No. 327. Also see Chapter 42, "Flammable and Combustible Liquids," in this Manual.)

The accepted method for preparing tanks and drums for welding is

- 1 Remove all sources of ignition (open flames, unguarded electric lights, etc.) from the vicinity of the drums to be cleaned.
- 2 Remove the bung with a special long-handled wrench.
- 3 Examine the inside for rags, waste, or other debris which might interfere with free draining. Use a portable electric hand lamp that is listed for hazardous locations, or an electric extension lamp protected by a guard of spark-resistant material.
- 4 Place the drums on a steam rack with the bung holes at the lowest possible point, and let the drums drain for 5 minutes.
- 5 Steam the drums for at least 10 minutes.

Drums that have contained shellac, turpentine, or similar materials require longer steaming.

- 6 Remove the drums from the steaming rack, and fill them part way with caustic soda or soda ash solution. Rotate the drums for at least 5 minutes. Light hammering with a wood mallet will help to loosen scale.
- 7 Thoroughly flush the drums for at least 5 minutes with boiling water. A water spray nozzle placed 6 or 8 in. inside the drum can be used. Drums should be so placed that water can drain out the bung openings during this operation.
- 8 Wash down the outside of the drum with a hose stream of hot water.
- 9 Dry the drum thoroughly by circulating warm air throughout the inside.
- 10 Thoroughly inspect the interior of the drum, using a light that is listed for hazardous locations, and a small mirror. If it is not clean, repeat the cleaning process.

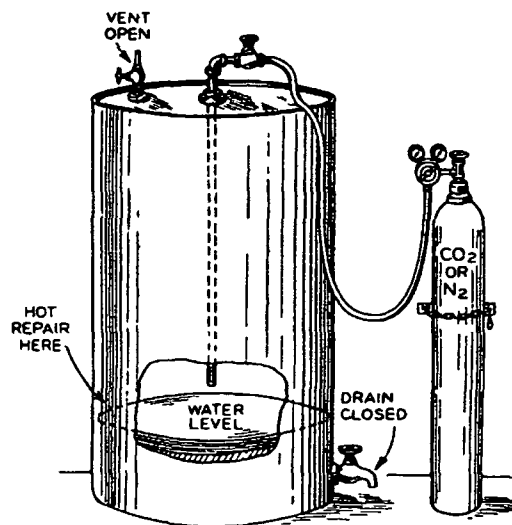


FIG 34-11 —As an added precaution after cleaning, a container to be welded or cut may be filled with either carbon dioxide or nitrogen to dilute any combustible gas or vapor remaining—dilute it enough to render it nonhazardous.

Courtesy American Welding Society