
29 C.F.R. § 1926.152

Flammable liquids.

(a) *General requirements.* (1) Only approved containers and portable tanks shall be used for storage and handling of flammable liquids. Approved safety cans or Department of Transportation approved containers shall be used for the handling and use of flammable liquids in quantities of 5 gallons or less, except that this shall not apply to those flammable liquid materials which are highly viscid (extremely hard to pour), which may be used and handled in original shipping containers. For quantities of one gallon or less, the original container may be used, for storage, use and handling of flammable liquids.

(2) Flammable liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

(b) *Indoor storage of flammable liquids.* (1) No more than 25 gallons of flammable liquids shall be stored in a room outside of an approved storage cabinet. For storage of liquefied petroleum gas, see § 1926.153.

(2) Quantities of flammable liquid in excess of 25 gallons shall be stored in an acceptable or approved cabinet meeting the following requirements:

(i) Acceptable wooden storage cabinets shall be constructed in the following manner, or equivalent: The bottom, sides, and top shall be constructed of an exterior grade of plywood at least 1 inch in thickness, which shall not break down or delaminate under standard fire test conditions. All joints shall be rabbeted and shall be fastened in two directions with flathead wood screws. When more than one door is used, there shall be a rabbeted overlap of not less than 1 inch. Steel hinges shall be mounted in such a manner as to not lose their holding capacity due to loosening or burning out of the screws when subjected to fire. Such cabinets shall be painted inside and out with fire retardant paint.

(ii) Approved metal storage cabinets will be acceptable.

(iii) Cabinets shall be labeled in conspicuous lettering, "Flammable-Keep Away from Open Flames."

(3) Not more than 60 gallons of Category 1, 2 and/or 3 flammable liquids or 120 gallons of Category 4 flammable liquids shall be stored in any one storage cabinet. Not more than three such cabinets may be located in a single storage area. Quantities in excess of this shall be stored in an inside storage room.

(4)

(i) Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use. Such construction shall comply with the test specifications set forth in Standard Methods of Fire Test of Building Construction and Material, NFPA 251-1969.

(ii) Where an automatic extinguishing system is provided, the system shall be designed and installed in an approved manner. Openings to other rooms or buildings shall be provided with noncombustible liquid-tight

raised sills or ramps at least 4 inches in height, or the floor in the storage area shall be at least 4 inches below the surrounding floor. Openings shall be provided with approved self-closing fire doors. The room shall be liquid-tight where the walls join the floor. A permissible alternate to the sill or ramp is an open-grated trench, inside of the room, which drains to a safe location. Where other portions of the building or other buildings are exposed, windows shall be protected as set forth in the Standard for Fire Doors and Windows, NFPA No. 80-1970, for Class E or F openings. Wood of at least 1-inch nominal thickness may be used for shelving, racks, dunnage, scuffboards, floor overlay, and similar installations.

(iii) Materials which will react with water and create a fire hazard shall not be stored in the same room with flammable liquids.

(iv) Storage in inside storage rooms shall comply with Table F-2 following:

Table F-2

| Fire protection provided | Fire resistance | Maximum size | Total allowable quantities gals./sq. ft./floor area |
|--------------------------|-----------------|--------------|---|
| Yes | 2 hrs | 500 sq. ft | 10 |
| No | 2 hrs | 500 sq. ft | 4 |
| Yes | 1 hr | 150 sq. ft | 5 |
| No | 1 hr | 150 sq. ft | 2 |

Note: Fire protection system shall be sprinkler, water spray, carbon dioxide or other system approved by a nationally recognized testing laboratory for this purpose.

- (v) Electrical wiring and equipment located in inside storage rooms shall be approved for Class I, Division 1, Hazardous Locations. For definition of Class I, Division 1, Hazardous Locations, see § 1926.449.
- (vi) Every inside storage room shall be provided with either a gravity or a mechanical exhausting system. Such system shall commence not more than 12 inches above the floor and be designed to provide for a complete change of air within the room at least 6 times per hour. If a mechanical exhausting system is used, it shall be controlled by a switch located outside of the door. The ventilating equipment and any lighting fixtures shall be operated by the same switch. An electric pilot light shall be installed adjacent to the switch if Category 1, 2, or 3 flammable liquids are dispensed within the room. Where gravity ventilation is provided, the fresh air intake, as well as the exhausting outlet from the room, shall be on the exterior of the building in which the room is located.
- (vii) In every inside storage room there shall be maintained one clear aisle at least 3 feet wide. Containers over 30 gallons capacity shall not be stacked one upon the other.
- (viii) Flammable liquids in excess of that permitted in inside storage rooms shall be stored outside of buildings in accordance with paragraph (c) of this section.

(5) *Quantity.* The quantity of flammable liquids kept in the vicinity of spraying operations shall be the minimum required for operations and should ordinarily not exceed a supply for 1 day or one shift. Bulk storage of portable containers of flammable liquids shall be in a separate, constructed building detached from other important buildings or cut off in a standard manner.

- (c) *Storage outside buildings.* (1) Storage of containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one pile or area. Piles or groups of containers shall be separated by a 5-foot clearance. Piles or groups of containers shall not be nearer than 20 feet to a building.
- (2) Within 200 feet of each pile of containers, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.
- (3) The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or earth dike at least 12 inches high. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rain water, or spills of flammable liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.
- (4) Outdoor portable tank storage: (i) Portable tanks shall not be nearer than 20 feet from any building. Two or more portable tanks, grouped together, having a combined capacity in excess of 2,200 gallons, shall be separated by a 5-foot-clear area. Individual portable tanks exceeding 1,100 gallons shall be separated by a 5-foot-clear area.
- (ii) Within 200 feet of each portable tank, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.
- (5) Storage areas shall be kept free of weeds, debris, and other combustible material not necessary to the storage.
- (6) Portable tanks, not exceeding 660 gallons, shall be provided with emergency venting and other devices, as required by chapters III and IV of NFPA 30-1969, The Flammable and Combustible Liquids Code.
- (7) Portable tanks, in excess of 660 gallons, shall have emergency venting and other devices, as required by chapters II and III of The Flammable and Combustible Liquids Code, NFPA 30-1969.
- (d) *Fire control for flammable liquid storage.* (1) At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable liquids.
- (2) At least one portable fire extinguisher having a rating of not less than 20-B units shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.
- (3) When sprinklers are provided, they shall be installed in accordance with the Standard for the Installation of Sprinkler Systems, NFPA 13-1969.
- (4) At least one portable fire extinguisher having a rating of not less than 20-B:C units shall be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable liquids.
- (e) *Dispensing liquids.* (1) Areas in which flammable liquids are transferred at one time, in quantities greater than 5 gallons from one tank or container to another tank or container, shall be separated from other operations by 25-foot distance or by construction having a fire resistance of at least 1 hour. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided to maintain the concentration of flammable vapor at or below 10 percent of the lower flammable limit.
- (2) Transfer of Category 1, 2, or 3 flammable liquids from one container to another shall be done only when containers are electrically interconnected (bonded).
- (3) Flammable liquids shall be drawn from or transferred into vessels, containers, or tanks within a building or outside only through a closed piping system, from safety cans, by means of a device drawing through the top, or

from a container, or portable tanks, by gravity or pump, through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks is prohibited.

(4) The dispensing units shall be protected against collision damage.

(5) Dispensing devices and nozzles for Category 1, 2, or 3 flammable liquids shall be of an approved type.

(f) *Handling liquids at point of final use.* (1) Category 1, 2, or 3 flammable liquids shall be kept in closed containers when not actually in use.

(2) Leakage or spillage of flammable liquids shall be disposed of promptly and safely.

(3) Category 1, 2, or 3 flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearance.

(g) *Service and refueling areas.* (1) Flammable liquids shall be stored in approved closed containers, in tanks located underground, or in aboveground portable tanks.

(2) The tank trucks shall comply with the requirements covered in the Standard for Tank Vehicles for Flammable and Combustible Liquids, NFPA No. 385-1966.

(3) The dispensing hose shall be an approved type.

(4) The dispensing nozzle shall be an approved automatic-closing type without a latch-open device.

(5) Underground tanks shall not be abandoned.

(6) Clearly identified and easily accessible switch(es) shall be provided at a location remote from dispensing devices to shut off the power to all dispensing devices in the event of an emergency.

(7)

(i) Heating equipment of an approved type may be installed in the lubrication or service area where there is no dispensing or transferring of Category 1, 2, or 3 flammable liquids, provided the bottom of the heating unit is at least 18 inches above the floor and is protected from physical damage.

(ii) Heating equipment installed in lubrication or service areas, where Category 1, 2, or 3 flammable liquids are dispensed, shall be of an approved type for garages, and shall be installed at least 8 feet above the floor.

(8) There shall be no smoking or open flames in the areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of flammable liquids.

(9) Conspicuous and legible signs prohibiting smoking shall be posted.

(10) The motors of all equipment being fueled shall be shut off during the fueling operation.

(11) Each service or fueling area shall be provided with at least one fire extinguisher having a rating of not less than 20-B:C located so that an extinguisher will be within 75 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service area.

This document is only available to subscribers. Please [log in](#) or [purchase access](#).

[Purchase Login](#)
