

14.4.7 Ventilation shall be provided in accordance with Section 18.6.

14.4.8 Lockers shall include a spill containment system to prevent the flow of liquids from the structure under emergency conditions.

14.4.8.1 The containment system shall have sufficient capacity to contain 10 percent of the volume of containers allowed in the locker or the volume of the largest container, whichever is greater.

14.5 Designated Sites for Hazardous Materials Storage Lockers.

14.5.1 Lockers shall be located on a designated approved site on the property.

14.5.2 The designated site shall be arranged to provide the minimum separation distances specified in Table 14.5.2 between individual lockers, from locker to property line that is or can be built upon, and from locker to nearest side of public ways or to important buildings on the same property.

Table 14.5.2 Designated Sites

Area of Designated Site ^a (ft ²)	Minimum Separation Distance (ft)		
	Between Individual Lockers	From Locker to Property Line That Is or Can Be Built Upon ^b	From Locker to Nearest Side of Public Ways or to Important Buildings on Same Property ^{b,c}
≤100	5	10	5
>100 and ≤500	5	20	10
>500 and ≤1500 ^d	5	30	20

For SI units, 1 ft = 0.3 m; 1 ft² = 0.09 m².

Note: If the locker is provided with a fire resistance rating of not less than 4 hours and deflagration venting is not required in accordance with Section 9.15, all distances required by Table 14.5.2 are permitted to be waived.

^aSite area limits are intended to differentiate the relative size and thus the number of lockers that are permitted in one designated site.

^bDistances apply to properties that have protection for exposures, as defined. If there are exposures and such protection for exposures does not exist, the distances should be doubled.

^cWhen the exposed building has an exterior wall, facing the designated site, that has a fire resistance rating of at least 2 hours and has no openings to above grade areas within 10 ft (3 m) horizontally and no openings to below grade areas within 50 ft (15 m) horizontally of the designated area, the distances can be reduced to half of those shown in the table, except they should never be less than 5 ft (1.5 m).

^dWhen a single locker has a gross single story floor area that will require a site area limit of greater than 1500 ft² (140 m²) or when multiple units exceed the area limit of 1500 ft² (140 m²), the authority having jurisdiction should be consulted for approval of distances.

14.5.3 Once the designated site is approved, it shall not be changed without the approval of the authority having jurisdiction.

14.5.4 More than one locker shall be permitted on a designated site, provided that the separation distance between individual lockers is maintained in accordance with Table 14.5.2.

14.5.5 Where the approved designated storage site is accessible to the general public, it shall be protected from tampering or trespassing.

14.6 Storage Requirements.

14.6.1 Containers of liquid in their original shipping packages shall be permitted to be stored either palletized or solid piled.

14.6.2 Unpackaged containers shall be permitted to be stored on shelves or directly on the floor of the locker.

14.6.3 Containers over 30 gal (114 L) capacity storing Class I or Class II liquids shall not be stored more than two containers high.

14.6.4 In all cases, the storage arrangement shall provide unrestricted access to and egress from the locker.

14.6.5 Miscellaneous combustible materials, including but not limited to idle pallets, excessive vegetation, and packing materials, shall not be permitted within 5 ft (1.5 m) of the designated site approved for lockers.

14.6.6 Warning signs for lockers shall be in accordance with applicable local, state, and federal regulations or with NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*.

Chapter 15 Outdoor Storage

15.1 **Scope.** This chapter shall apply to the storage of liquids outdoors in the following:

- (1) Drums or other containers that do not exceed 119 gal (450 L) individual capacity
- (2) Portable tanks that do not exceed 660 gal (2500 L) individual capacity
- (3) Intermediate bulk containers that do not exceed 793 gal (3000 L) individual capacity

15.2 Definitions Specific to Chapter 15. (Reserved)

15.3 **General Requirements.** Outdoor storage of liquids in containers, intermediate bulk containers, and portable tanks shall comply with Table 15.3 and with all applicable requirements of this chapter.

15.3.1 Where two or more classes of liquids are stored in a single pile, the maximum quantity permitted in that pile shall be that of the most hazardous class of liquid present.

15.3.2 No container, intermediate bulk container, or portable tank in a pile shall be more than 200 ft (60 m) from a minimum 20 ft (6 m) wide access way to permit approach of fire control apparatus under all weather conditions.

15.3.3 The distances specified in Table 15.3 shall apply to properties that have protection for exposures as defined. If there are exposures and protection for exposures does not exist, the distance to the property line that is or can be built upon shall be doubled.

15.3.4 Where total quantity stored does not exceed 50 percent of the maximum quantity per pile, as specified in Table 15.3, the distances to a property line that is or can be built upon and to streets, alleys, or public ways shall be permitted to be reduced by 50 percent but in no case to less than 3 ft (0.9 m).

15.3.5 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 at least 6 in. (150 mm) high.

Table 15.3 Storage Limitations for Outside Storage

Liquid Class	Containers		Portable Tanks and Metal IBCs		Rigid Plastic and Composite IBCs		Minimum Separation Distance (ft)		
	Maximum Quantity per Pile (gal) ^{a,b,c}	Maximum Storage Height (ft)	Maximum Quantity per Pile (gal)	Maximum Storage Height (ft)	Maximum Quantity per Pile (gal) ^{a,c}	Maximum Storage Height (ft)	Between Piles or Rack Sections	To Property Line That Is or Can Be Built Upon ^{b,d}	To Street, Alley, or Public Way ^b
IA	1,100	10	2,200	7	NP	NP	5	50	10
IB	2,200	12	4,400	14	NP	NP	5	50	10
IC	4,400	12	8,800	14	NP	NP	5	50	10
II	8,800	12	17,600	14	8,800	14	5	25	5
III	22,000	18	44,000	14	22,000	18	5	10	5

For SI units, 1 ft = 0.3 m; 1 gal = 3.8 L.

NP: Not permitted.

^aSee 15.3.1 regarding mixed-class storage.

^bSee 15.3.4 for smaller pile sizes.

^cFor storage in racks, the quantity limits per pile do not apply, but the rack arrangements should be limited to a maximum of 50 ft (15 m) in length and two rows or 9 ft (2.7 m) in depth.

^dSee 15.3.3 regarding protection for exposures.

15.3.5.1 Where curbs are used, provisions shall be made to drain accumulations of groundwater or rainwater or spills of liquids. Drains shall terminate at a safe location and shall flow freely under fire conditions.

15.3.6 When accessible to the public, the storage area shall be protected against tampering and trespassing.

15.3.7 The storage area shall be kept free of weeds, debris, and other combustible materials not necessary to the storage for a distance of at least 10 ft (3 m) around the perimeter of the stored materials.

15.3.8 The storage area shall be permitted to be protected from the weather by a canopy or roof that does not limit the dissipation of heat or dispersion of flammable vapors and does not restrict fire-fighting access and control.

15.4 Outdoor Storage Adjacent to a Building.

15.4.1 A maximum of 1100 gal (4160 L) of liquids in containers, intermediate bulk containers, or portable tanks shall be permitted to be stored adjacent to a building under the same management, provided the following conditions apply:

- (1) The adjacent building wall has an exterior fire resistance rating of 90 minutes.
- (2) The adjacent building wall has no openings at grade or above grade that are within 10 ft (3 m) horizontally of the storage.
- (3) The adjacent building wall has no openings directly above the storage.
- (4) The adjacent building wall has no openings below grade within 50 ft (15 m) horizontally of the storage.

15.4.2 The provisions of 15.4.1(1) through 15.4.1(4) shall be permitted to be waived, subject to the approval of the authority having jurisdiction, if the building in question is one story, is of fire-resistive or noncombustible construction, and is devoted principally to the storage of liquids.

15.4.3 The quantity of liquid stored adjacent to a building that meets the conditions of 15.4.1(1) through 15.4.1(4) shall be permitted to exceed that permitted in 15.4.1, provided the maximum quantity per pile does not exceed 1100 gal (4160 L) and each pile is separated by a 10 ft (3 m) minimum clear space along the common wall.

15.4.4 The quantity of liquid stored shall be permitted to exceed the 1100 gal (4160 L) quantity specified by 15.4.1 where a minimum distance equal to that specified by Table 15.3 for distance to property line shall be maintained between buildings and the nearest container or portable tank.

15.4.5 Where the provisions of 15.4.1 cannot be met, a minimum distance equal to that specified by Table 15.3 for distance to property line shall be maintained between buildings and the nearest container or portable tank.

Chapter 16 Automatic Fire Protection for Inside Liquid Storage Areas

16.1 Scope.

16.1.1* This chapter shall apply to automatic fire protection systems for all inside storage of flammable and combustible liquids in containers, intermediate bulk containers, and portable tanks as specified in Section 9.4.

16.1.2* This chapter shall not apply to Class IA flammable liquids or to unstable flammable or combustible liquids.

16.1.3 Storage of liquids that is protected in accordance with the applicable requirements of this chapter shall be considered protected, as defined in 16.2.2. All other storage shall be considered unprotected unless an alternate means of protection has been approved by the authority having jurisdiction.

16.2 Definitions Specific to Chapter 16. For the purposes of this chapter, the terms in this section shall have the definitions given.

