

NFPA 30 – FIRST REVISIONS REPORT

PLEASE NOTE THIS REPORT WAS RE-CREATED AS PREVIOUSLY
THERE WAS ONLY A LINK TO THE FIRST REVISIONS. THE
CONTEXT OF THE MATERIAL HAS NOT CHANGED.



First Revision No. 22-NFPA 30-2012 [Section No. 2.2]

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1, *Fire Code*, 2012 edition.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2010 edition.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, 2010 edition.

NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems*, 2011 edition.

NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*, 2009 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2010 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2010 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2012 edition.

NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, 2011 edition.

NFPA 17, *Standard for Dry Chemical Extinguishing Systems*, 2009 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, 2010 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2010 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 2011 edition.

NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*, 2012 edition.

NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*, 2011 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 2011 edition.

NFPA 32, *Standard for Drycleaning Plants*, 2011 edition.

NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*, 2011 edition.

NFPA 34, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids*, 2011 edition.

NFPA 35, *Standard for the Manufacture of Organic Coatings*, 2011 edition.

NFPA 36, *Standard for Solvent Extraction Plants*, ~~2009~~ 2013 edition.

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines*, 2010 edition.

NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*, 2011 edition.

NFPA 58, *Liquefied Petroleum Gas Code*, 2011 edition.

NFPA 59A, *Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)*, 2009 edition.

NFPA 68, *Standard on Explosion Protection by Deflagration Venting*, 2007 edition.

NFPA 69, *Standard on Explosion Prevention Systems*, 2008 edition.

NFPA 70[®], *National Electrical Code*[®], 2011 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, 2010 edition.

NFPA 85, *Boiler and Combustion Systems Hazards Code*, 2011 edition.

NFPA 91, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids*, 2010 edition.

NFPA 99, *Health Care Facilities Code*, 2012 edition.

NFPA 101[®], *Life Safety Code*[®], 2012 edition.

NFPA 220, *Standard on Types of Building Construction*, 2012 edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, 2012 edition.

NFPA 303, *Fire Protection Standard for Marinas and Boatyards*, 2011 edition.

NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*, 2011 edition.

NFPA 326, *Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair*, 2010 edition.

NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations*, 2011 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2012 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2010 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2011 edition.

NFPA 5000[®], *Building Construction and Safety Code*[®], 2012 edition.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 14:27:48 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: An entry for NFPA 750, *Standard on Water Mist Fire Protection Systems*, has been added, since it is now referenced in Subsection 6.7.6. Referenced standards have been updated to current editions and titles have been corrected, where necessary.

Response Message:

Public Input No. 119-NFPA 30-2012 [Section No. 2.2]

Ballot Results

✔ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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First Revision No. 25-NFPA 30-2012 [Section No. 2.3.1]

2.3.1 API Publications.

American Petroleum Institute, 1220 L Street, NW, Washington, DC 20005-4070.

API Specification 12B, *Bolted Tanks for Storage of Production Liquids*, 15th edition, 2008.

API Specification 12D, *Field Welded Tanks for Storage of Production Liquids*, 11th edition, 2008.

API Specification 12F, *Shop Welded Tanks for Storage of Production Liquids*, 12th edition, 2008.

API 620, *Recommended Rules for the Design and Construction of Large, Welded, Low-Pressure Storage Tanks*, 11th edition, ~~2008~~ Addendum 2, 2010 .

API Standard 650, *Welded Steel Tanks for Oil Storage*, 11th edition, ~~2007~~ Addendum 2, 2009 .

API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, 4th edition, ~~2009~~ 2012 .

API Standard 2000, *Venting Atmospheric and Low-Pressure Storage Tanks*, 5th edition, 1998.

API 2350, *Overfill Protection for Storage Tanks in Petroleum Facilities*, ~~3rd~~ 4th edition, ~~2005~~ 2012 .

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 14:48:55 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The Technical Committee on Fundamentals has updated to current edition the subject API documents, with the exception of API Standard 2000. The new 6th edition of API Standard 2000 must be correlated with the text of Section 22.7 of NFPA 30, because of technical differences in the calculation procedures for determining venting capacities. This will be a Task Group assignment in the next revision cycle for NFPA 30.

Response Message:

[Public Input No. 30-NFPA 30-2012 \[Section No. 2.3.1\]](#)

Ballot Results

✓ This item has passed ballot

- 29 Eligible Voters
- 11 Not Returned
- 18 Affirmative All
- 0 Affirmative with Comments
- 0 Negative with Comments
- 0 Abstention

Not Returned

- Bond, John
- Brennecke, Gregory
- Crumholt, Curtis
- Drechsel, Carl
- Fernandes, Elson
- Gil, Frederic
- King, John
- Upton, Robert
- Wieczorek, Christopher
- Wolf, Kevin
- Woycheese, Jack

Affirmative All

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**First Revision No. 63-NFPA 30-2012 [Section No. 2.3.2]****2.3.2 ASME Publications.**

American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990.

ASME *Boiler and Pressure Vessel Code*, 2010.

ASME B31, *Code for ~~Pressure~~ Process Piping*, 2006 2012 .

ASME *Code for Unfired Pressure Vessels*, 2010.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submittal Date: Mon Oct 01 09:21:52 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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First Revision No. 64-NFPA 30-2012 [Section No. 2.3.3]

2.3.3 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM A 395, *Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures*, 1999 (reaffirmed 2009).

ASTM D 5, *Standard Test Method for Penetration of Bituminous Materials*, 2006.

ASTM D 56, *Standard Test Method for Flash Point by Tag Closed Cup Tester*, 2005 (reaffirmed 2010).

ASTM D 86, *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure*, ~~2009~~ 2011.

ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester*, ~~2005~~ 2012.

ASTM D 93, *Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester*, ~~2009~~ 2011.

ASTM D 323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*, 2008.

ASTM D 3278, *Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus*, 1996 (~~2004~~ reaffirmed 2011).

ASTM D 3828, *Standard Test Methods for Flash Point by Small Scale Closed Cup Tester*, 2009.

ASTM D 4359, *Standard Test for Determining Whether a Material is a Liquid or a Solid*, ~~1999~~ 1990 (~~2006~~ reaffirmed 2012).

ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, ~~2010~~ 2012.

ASTM F 852, *Standard Specification for Portable Gasoline Containers for Consumer Use*, 2008.

ASTM F 976, *Specification for Portable Kerosine and Diesel Containers for Consumer Use*, 2008.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submission Date: Mon Oct 01 09:23:41 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✔ **This item has passed ballot**

29 Eligible Voters
11 Not Returned
18 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

Bond, John
Brennecke, Gregory
Crumholt, Curtis
Drechsel, Carl
Fernandes, Elson
Gil, Frederic
King, John
Upson, Robert
Wieczorek, Christopher
Wolf, Kevin
Woycheese, Jack

Affirmative All

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**First Revision No. 65-NFPA 30-2012 [Section No. 2.3.6]****2.3.6 NMFTA Publications.**

National Motor Freight Traffic Association, 1001 North Fairfax Street, Suite 600,
Alexandria, VA 22314.

National Motor Freight Classification (NMFC), ~~2010~~ 2012 .

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submittal Date: Mon Oct 01 09:26:11 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upton, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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**First Revision No. 66-NFPA 30-2012 [Section No. 2.3.8]****2.3.8 STI Publications.**

Steel Tank Institute, 570 Oakwood Road, Lake Zurich, IL 60047.

STI SP001, *Standard for the Inspection of Aboveground Storage Tanks*, ~~2006~~ 5th edition, 2011 .

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submittal Date: Mon Oct 01 09:26:48 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upton, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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**First Revision No. 26-NFPA 30-2012 [Section No. 2.3.9]****2.3.9 UL Publications.**

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 30, *Standard for Metal Safety Cans*, 1995, Revised 2009.

UL 58, *Standard for Steel Underground Tanks for Flammable and Combustible Liquids*, 1996, Revised 1998.

ANSI/UL 80, *Standard for Steel Tanks for Oil Burner Fuels and Other Combustible Liquids*, 2007, Revised 2009.

ANSI/UL 142, *Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids*, 2006, Revised 2010.

UL 971, *Standard for Nonmetallic Underground Piping for Flammable Liquids*, 1995, Revised 2006.

ANSI/UL 1313, *Standard for Nonmetallic Safety Cans for Petroleum Products*, 1993, Revised 2007.

ANSI/UL 1314, *Standard for Special Purpose Metal Containers*, 2005, Revised 2009.

ANSI/UL 1316, *Standard for Glass-Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures*, 2006.

ANSI/UL 1746, *Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks*, 2007.

UL 2080, *Standard for Fire Resistant Tanks for Flammable and Combustible Liquids*, ~~2006~~ 2000 .

ANSI/UL 2085, *Standard for Protected Aboveground Tanks for Flammable and Combustible Liquids*, 1997, Revised ~~1999~~ 2010 .

ANSI/UL 2208, *Standard for Solvent Distillation Units*, 2005, Revised ~~2006~~ 2011 .

ANSI/UL 2245, *Standard for Below-Grade Vaults for Flammable Liquid Storage Tanks*, 2006.

UL 2368, *Standard for Fire Exposure Testing of Intermediate Bulk Containers for Flammable and Combustible Liquids*, ~~2004~~ 2012 .

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 14:59:31 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update referenced standard to most recent edition as indicated.

Response Message:

Public Input No. 8-NFPA 30-2012 [Section No. 2.3.9]

Ballot Results

✔ This item has passed ballot

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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**First Revision No. 67-NFPA 30-2012 [Section No. 2.3.10]****2.3.10 UN Publications.**

United Nations, Headquarters, New York, NY 10017.

Recommendations on the Transport of Dangerous Goods, ~~46th~~ 17th revised edition, ~~2009~~ 2011 .

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submittal Date: Mon Oct 01 09:27:29 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upton, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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First Revision No. 23-NFPA 30-2012 [Section No. 6.7.6]

6.7.6

Where provided, fire control systems shall be designed, installed, and maintained in accordance with the following NFPA standards, as applicable:

- (1) NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*
- (2) NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems*
- (3) NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*
- (4) NFPA 13, *Standard for the Installation of Sprinkler Systems*
- (5) NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*
- (6) NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*
- (7) NFPA 17, *Standard for Dry Chemical Extinguishing Systems*
- (8) NFPA 750 , *Standard on Water Mist Fire Protection Systems*
- (9) NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 14:37:25 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The technical Committee on Fundamentals agrees to the need for an entry for NFPA 750, Standard on Water Mist Fire Protection Systems.

Response Message:

[Public Input No. 118-NFPA 30-2012 \[Section No. 6.7.6\]](#)

Ballot Results

✔ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory
Crumholt, Curtis
Drechsel, Carl
Fernandes, Elson
Gil, Frederic
King, John
Upton, Robert
Wieczorek, Christopher
Wolf, Kevin
Woycheese, Jack

Affirmative All

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First Revision No. 28-NFPA 30-2012 [Section No. 7.4]

7.4 Application of Area Classification. (Reserved)

7.4.1

Area classification is used to assure that fixed electrical utilization equipment, electrical fixtures, and wiring are properly installed within Class I, Division 1; Class I, Zone 1; Class I, Division 2; or Class I, Zone 2 designated areas, as defined by Article 500 of NFPA 70[®], National Electrical Code[®].

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 16:52:06 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This statement establishes a purpose for Chapter 7. It also links to annex text that is being considered by the NFPA 30 Technical Committee on Fundamentals that discusses mobile motorized equipment in classified areas. See CI #29

Response Message:

Ballot Results

✓ This item has passed ballot

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All
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First Revision No. 62-NFPA 30-2012 [Section No. 9.4.1 [Excluding any Sub-Sections]]

Only the following approved containers, intermediate bulk containers, and portable tanks shall be used for Class I, Class II, and Class IIIA liquids:

- (1) Metal containers, metal intermediate bulk containers, and metal portable tanks meeting the requirements of and containing products authorized by the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN *Recommendations on the Transport of Dangerous Goods*
- (2) Plastic or metal consumer-use containers meeting the requirements of, and used for ~~petroleum products~~ within the scope of, one or more of the following specifications:
 - (a) ASTM F 852, *Standard Specification for Portable Gasoline Containers for Consumer Use*
 - (b) ASTM F 976, *Standard Specification for Portable ~~Kerosine~~ Kerosene and Diesel Containers for Consumer Use*
 - ~~ANSI/UL 1313, *Standard for Nonmetallic Safety Cans for Petroleum Products*~~
 - ~~ANSI/UL 30, *Standard for Metal Safety Cans*~~
 - ~~ANSI/UL 1314, *Standard for Special Purpose Metal Containers*~~
 - ~~FM Global, *Approval Standard for Safety Containers and Filling, Supply, and Disposal Containers* — Class Number 6051 and 6052~~
- (3) Nonmetallic or metallic commercial/industrial safety cans meeting the requirements of, and used within the scope of, one or more of the following specifications:
 - (a) ANSI/UL 30, *Standard for Metal Safety Cans*
 - (b) ANSI/UL 1313, *Standard for Nonmetallic Safety Cans for Petroleum Products*
 - (c) FM Global, *Approval Standard for Safety Containers and Filling, Supply, and Disposal Containers* — Class Number 6051 and 6052
- (4) Plastic containers that meet requirements set by, and contain products authorized by, the following:
 - (a) The U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN publication, *Recommendations on the Transport of Dangerous Goods*
 - (b) Items 256 or 258 of the *National Motor Freight Classification* (NMFC) for liquids that are not classified as hazardous by the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN publication *Recommendations on the Transport of Dangerous Goods*
- (5) Fiber drums that meet the following:

- (a) Requirements of Items 294 and 296 of the *National Motor Freight Classification* (NMFC) or of Rule 51 of the *Uniform Freight Classification* (UFC), for Types 2A, 3A, 3B-H, 3B-L, or 4A
 - (b) Requirements of, and containing liquid products authorized by, either the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Chapter I, or by the U.S. Department of Transportation exemption
- (6)* Rigid nonmetallic intermediate bulk containers that meet requirements set by 1 and contain products authorized by 1 the following:
- (a) The U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN publication, *Recommendations on the Transport of Dangerous Goods*, for Classes 31H1, 31H2, and 31HZ1
 - (b) The *National Motor Freight Classification* (NMFC), or the International Safe Transit Association for liquids that are not classified as hazardous by the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN publication *Recommendations on the Transport of Dangerous Goods*
- (7) Glass containers up to the capacity limits stated in [Table 9.4.3](#) and in accordance with U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Fri Sep 28 00:55:29 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This amendment separates consumer use containers from industrial and commercial-type containers. UL 1314 is deleted, as it does not cover products that are safety cans.

Response Message:

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters
7 Not Returned
18 Affirmative All
3 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned
Kirby, David

LeBlanc, John
McQuaid, John
Mehta, Navin
Tabar, David
Toner, Hugh Patrick
Workman, Martin

Affirmative All

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Affirmative with Comment

Carter, Glen A.

There are some format issues in this section. I can only trust that once corrected it matches the minutes and what was agreed to in the meeting. It is with those contingencies I vote affirmative.

Riegel, Roland A.

Agree with re-organizing of consumer, safety and other tank/container/can classes, but UL1314 Special Purpose Metal Cans was supposed to be included in the Consumer Use section. Appears to be an admin error, so just need to add item c) UL1314.

Tate, Beth

Appreciating a wording change being made to be consistent with consumer use standards, is is not clear if a consumer could use an industrial/commercial type container e.g. a metal safety container

**First Revision No. 61-NFPA 30-2012 [Section No. 9.5.5]****9.5.5***

Storage cabinets shall ~~be marked as follows~~ include the following marking :

~~WARNING-~~

FLAMMABLE

KEEP FIRE AWAY

9.5.5.1

The minimum letter height for FLAMMABLE (signal word) shall be 2.0 in. (50 mm) and the minimum letter height for KEEP FIRE AWAY (message) shall be 1.0 in. (25 mm).

9.5.5.2

All letters shall be uppercase and in contrasting color to the background.

9.5.5.3

The marking shall be located on the upper portion of the cabinet's front door(s) or frame.

9.5.5.4

Use of other languages, the international symbol for "flammable" (a flame in a triangle), the international symbol for "keep fire away" (a burning match in "no" circle) shall be permitted.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Fri Sep 28 00:52:37 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This amendment corrects an error made in the development of the 2012 edition of NFPA 30.

Response Message:

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John
McQuaid, John
Mehta, Navin
Tabar, David
Toner, Hugh Patrick
Workman, Martin

Affirmative All

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**First Revision No. 33-NFPA 30-2012 [Section No. 9.10.2.2]****9.10.2.2**

Portable fire extinguishers shall meet the following requirements:

- (1) At least one portable fire extinguisher having a capability of not less than 40:B shall be located outside of, but not more than 10 ft (3 m) from, the door opening into a liquid storage area.
- (2) At least one portable fire extinguisher having a capability of not less than 40:B shall be located within 30 ft (9 m) of any Class I or Class II liquids located outside of a liquid storage area or at least one portable fire extinguisher having a capacity of 80:B located within 50 ft (15 m) of such a storage area .

~~Exception: An acceptable alternative is at least one portable fire extinguisher having a capacity of 80:B located within 50 ft (15 m) of such a storage area.~~

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 17:53:59 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The proposed amendment eliminates the exception and clarifies that the intent of the exception was to apply only to 9.10.2.2(2).

Response Message:

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

20 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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Affirmative with Comment

Havens, Dwight H.

Fix the numbering in the first draft.


First Revision No. 34-NFPA 30-2012 [Section No. 10.7.1]
10.7.1

The maximum allowable quantities of liquids in each control area and in display and storage arrangements shall meet the requirements of this subsection and shall be as set forth in Table 10.7.1.

Table 10.7.1 MAQs for Storage and Display in Mercantile Occupancies

<u>Level of Protection</u>	<u>Storage Limits</u>	<u>Liquid Classification</u>		
		<u>IA^a</u>	<u>IB, IC, II, and IIIA — Any Combination</u>	<u>IIIB</u>
Unprotected ^b	MAQ ^{b, c}	60 gal	3750 gal per control area; a maximum of two control areas permitted per occupancy when separation is provided by a minimum 1-hour-rated fire separation wall	15,000 gal
	Maximum storage density		2 gal/ft ² in storage and display areas and adjacent aisles	
NFPA 13, ordinary hazard (group 2) sprinkler system ^{e, b}	MAQ ^{b, c}	120 gal	7500 gal per control area; a maximum of two control areas permitted per occupancy when separation is provided by a minimum 1-hour-rated fire separation wall	Unlimited
	Maximum storage density		4 gal/ft ² in storage and display areas and adjacent aisles	
NFPA 30, Chapter 16	MAQ ^{b, c}	120 gal	30,000 gal per occupancy	Unlimited

For SI units, 1 gal = 3.8 L; 1 ft² = 0.09 m².

^a Ground-level floor only.

^b ~~Does not include liquids exempted by 10.1.3.~~

^{c, b} For storage heights that do not exceed 12 ft (3.6 m).

^c Does not include liquids exempted by 10.1.3.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 18:22:20 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The action taken by the NFPA 30 Technical Committee on Storage and Warehousing of Containers and Portable Tanks more simply accomplishes the objective of Public Input 338. The Technical Committee agrees that not having a storage height restriction for unprotected storage is inconsistent with having such a restriction for storage protected in accordance with NFPA 13 Group 2. The Technical Committee has chosen the 12-foot height restriction for consistency’s sake.

Response Message:

[Public Input No. 38-NFPA 30-2012 \[Section No. 10.7.1\]](#)

Ballot Results

✔ **This item has passed ballot**

- 28 Eligible Voters
- 7 Not Returned
- 20 Affirmative All
- 1 Affirmative with Comments
- 0 Negative with Comments
- 0 Abstention

Not Returned

- Kirby, David
- LeBlanc, John
- McQuaid, John
- Mehta, Navin
- Tabar, David
- Toner, Hugh Patrick
- Workman, Martin

Affirmative All

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Affirmative with Comment

Havens, Dwight H.

Fix the table.



First Revision No. 35-NFPA 30-2012 [Section No. 10.8.4 [Excluding any Sub-Sections]]

The total aggregate quantity of Class I and Class II liquids that are not water-miscible and are packaged in plastic containers of 1 gal (3.8 L) capacity or greater shall be limited as follows:

- (1) A maximum total quantity of 30 gal (115 L) per display or storage array
- (2) A maximum total quantity of 60 gal (230 L) per display or storage array that is protected by an automatic sprinkler system having a design density of 0.60 gpm/ft² (24 mm/min/m²) over 2500 ft² (232 m²) and using high-temperature, K11.2 or larger quick-response sprinklers
- (3) A maximum total quantity of 60 gal (230 L) per display or storage array where stored in listed flammable liquids storage cabinets

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 18:27:17 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The NFPA 30 Technical Committee on Storage and Warehousing of Containers and Portable Tanks agrees that the more volatile nonwater-miscible Class I liquids should be included in this restriction. A maximum aggregate quantity has been imposed to limit the risk.

Response Message:

[Public Input No. 37-NFPA 30-2012 \[Section No. 10.8.4 \[Excluding any Sub-Sections\]\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

**First Revision No. 46-NFPA 30-2012 [Section No. 16.3.2]****16.3.2**

Unless otherwise specified in this chapter, single-row racks shall not be more than 4.5 ft (1.4 m) ~~wide~~ in depth and double-row racks shall not be more than 9 ft (2.8 m) ~~wide~~ in depth .

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 22:40:04 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: "Depth" is a more accurate descriptor.

Response Message:

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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First Revision No. 36-NFPA 30-2012 [Section No. 16.3.4]

16.3.4

Viscous liquids, as defined in [16.2.5](#), shall be permitted to be protected using either of the following, as applicable:

- (1) Criteria for a Class IIIB liquid in accordance with [Figure 16.4.1\(a\)](#) or [Figure 16.4.1\(b\)](#)
- (2) Criteria for cartoned unexpanded Group A plastics in accordance with [Figure 16.4.1\(b\)](#) [NFPA 13](#) - [Standard for the Installation of Sprinkler Systems](#)

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 18:41:16 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The inclusion of the specific type of Group A Plastic commodity is needed for a complete identification of the criteria required in NFPA 13. A direct reference to NFPA 13 rather than through Figure 16.4.1(a) is cleaner and avoids confusion.

Response Message:

[Public Input No. 41-NFPA 30-2012 \[Section No. 16.3.4\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

20 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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Affirmative with Comment

Havens, Dwight H.

Fix the numbering in the first draft.



First Revision No. 37-NFPA 30-2012 [Section No. 16.4.1 [Excluding any Sub-Sections]]

Where automatic sprinkler systems or low-expansion foam-water sprinkler systems are used to protect storage of liquids, [Figure 16.4.1\(a\)](#), [Figure 16.4.1\(b\)](#), or [Figure 16.4.1\(c\)](#), whichever is applicable, and the appropriate table in [Section 16.5](#) shall be used to determine protection criteria.

Figure 16.4.1(a) Fire Protection Criteria Decision Tree for Miscible and Nonmiscible Flammable and Combustible Liquids in Metal Containers.

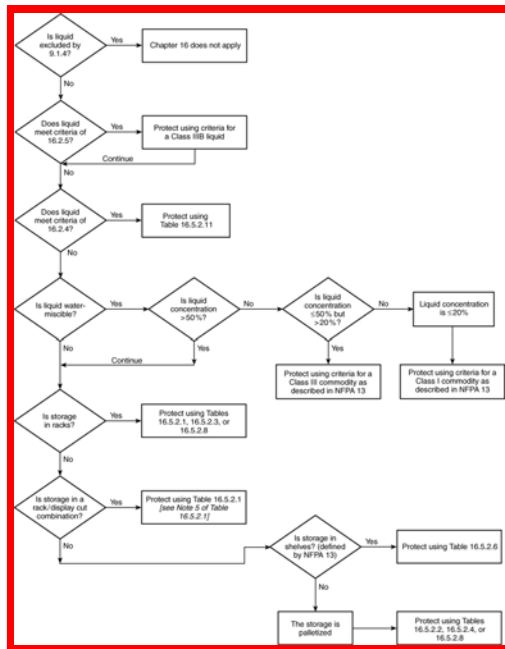


Figure 16.4.1(b) Fire Protection Criteria Decision Tree for Miscible and Nonmiscible Flammable and Combustible Liquids in Nonmetallic Containers.

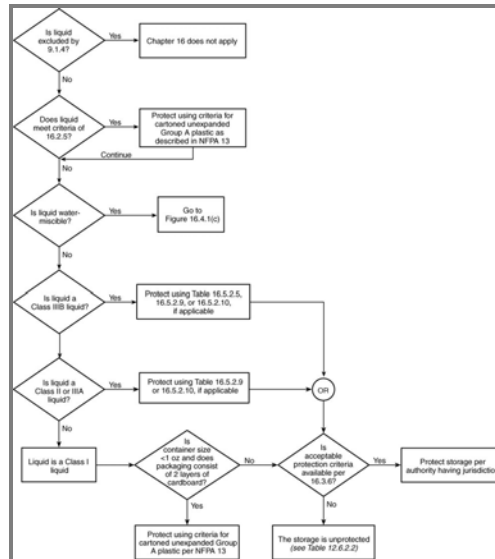
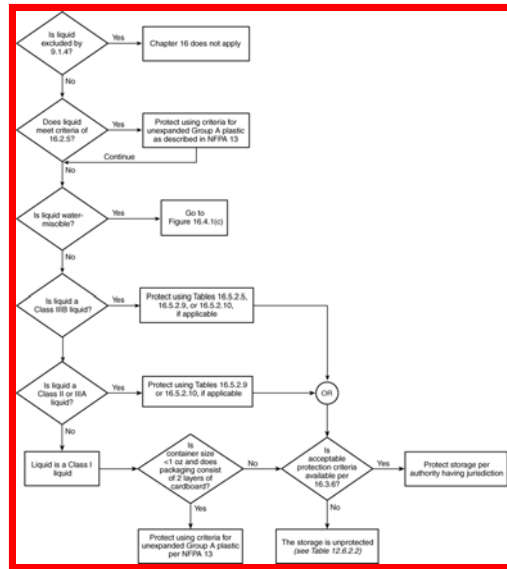
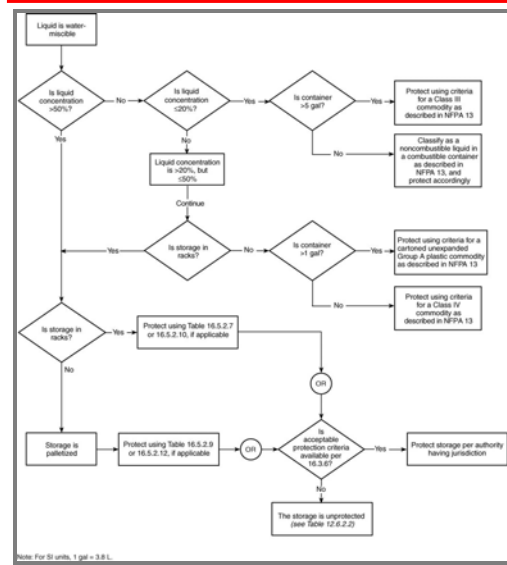
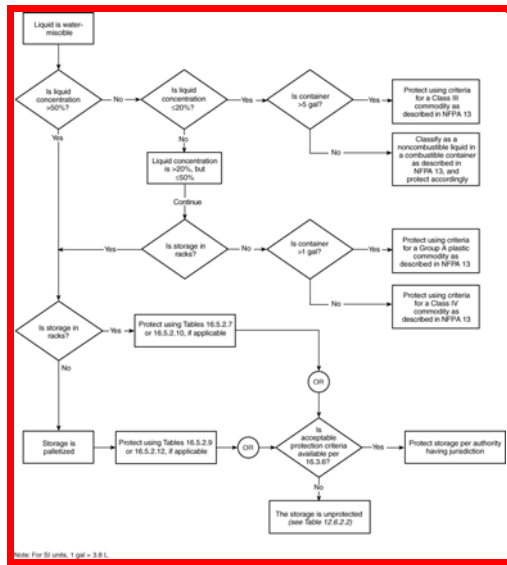


Figure 16.4.1(c) Fire Protection Criteria Decision Tree for Miscible Flammable and Combustible Liquids in Nonmetallic Containers.



Supplemental Information

File Name

Description

NFPA_30_A2014_Figure_16.4.1a.jpg	NFPA Figure 16.4.1(a) - No Change
NFPA_30_A2014_Figure_16.4.1b.jpg	NFPA 30 Figure 16.4.1(b) - As Amended
NFPA_30_A2014_Figure_16.4.1c.jpg	NFPA 30 Figure 16.4.1(c) - As Amended

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Thu Sep 27 18:45:13 EDT 2012

Committee Statement and Meeting Notes

Bellamy, Tracey D.

The included pdf images do not reflect the changes described in the text of the Committee Statement.



First Revision No. 39-NFPA 30-2012 [New Section after 16.5.1.1]

[Global FR-39](#) [Hide Deleted](#)

16.5.1.1.1

The protection criteria in Table 16.5.2.1 through Table 16.5.2.12 shall only be used with ceilings having a pitch of 2 in. 12 or less.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 18:51:22 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: All of the fire tests that have been performed to develop the sprinkler criteria in NFPA 30 have been done under horizontal ceilings. Experience has shown that in situations where the slope exceeds 2 in 12, sprinklers up the slope and remote from the fire can activate first, skewing the design area and pulling critical water from the water supply, without having an effect on the fire. At the same time, the hot gasses moving up the slope and away from the sprinklers directly over the fire causes a delay in activating sprinklers directly over the fire. This delay calls into question the ability of the discharge densities to actually control the fire once the sprinklers open because flammable and combustible liquids fires have such fast growth rates. Without a section such as this in the standard, people think that they can just use the criteria from NFPA 30 and then apply a 30% increase to the design area as referenced by NFPA 13 section 11.2.3.2.4. But this section of NFPA 13 was not intended to be used to protect flammable or combustible liquid fires and there is no evidence that a 30% increase to the design area and no increase to the density is sufficient protection for the commodities and storage arrangements handled by the tables in NFPA 30.

Response

Message:

[Public Input No. 5-NFPA 30-2012 \[New Section after 16.5.1.1\]](#)

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David
LeBlanc, John
McQuaid, John
Mehta, Navin
Tabar, David
Toner, Hugh Patrick
Workman, Martin

Affirmative All

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First Revision No. 40-NFPA 30-2012 [Section No. 16.5.1.5]

16.5.1.5

The ceiling heights given in Table 16.5.2.1 through Table 16.5.2.12, excluding Table 16.5.2.8, shall be permitted to be increased by a maximum of 10 percent if an equivalent percent increase in ceiling sprinkler design density is provided.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 18:59:00 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The allowance for a 10% increase in density would not apply to ESFR sprinklers covered by Table 16.8.2.8 as these sprinklers do not use a density design criteria.

Response Message:

Public Input No. 43-NFPA 30-2012 [Section No. 16.5.1.5]

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

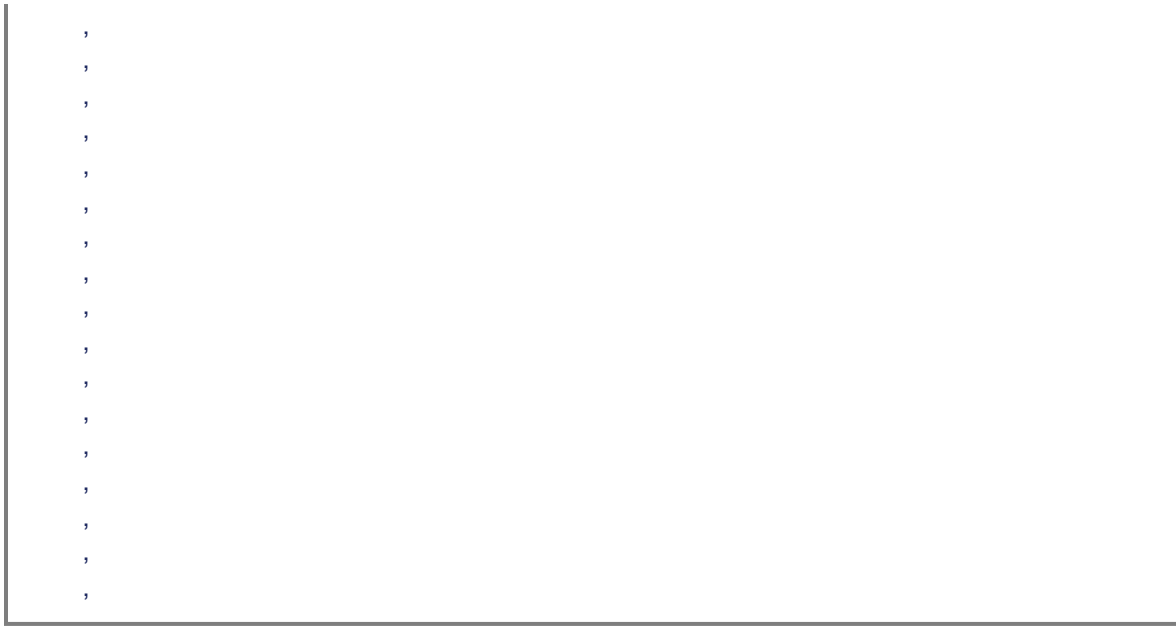
Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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First Revision No. 41-NFPA 30-2012 [Section No. 16.5.1.9]

16.5.1.9

For the purposes of Section 16.5, the following shall apply:

- (1) 1 gal = 3.8 L; 1 ft = 0.3 m; 1 ft² = 0.09 m²
- (2) 1 gpm/ft² is equivalent to 40.7 L/min/m² or 40.7 mm/min
- (3) A gauge pressure of 1 psi is equivalent to a gauge pressure of 6.9 kPa
- (4) SR = standard response sprinkler; QR = quick response sprinkler; ESFR = early suppression ~~fast response~~ fast-response sprinkler; OT = ordinary temperature; HT = high temperature
- (5) Where an ordinary-temperature sprinkler is indicated, an intermediate-temperature sprinkler shall be used where ambient conditions require.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 20:55:13 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: As originally proposed the two sprinkler temperature ratings could be confused as being alternatives in all cases. This approach clarifies the submitters intent.

Response Message:

[Public Input No. 44-NFPA 30-2012 \[Section No. 16.5.1.9\]](#)

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

20 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick
Workman, Martin

Affirmative All

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Affirmative with Comment

Tate, Beth

Suggest wording alteration from "where ambient conditions require" to "where required due to ambient conditions"

**First Revision No. 1-NFPA 30-2012 [Section No. 16.5.1.10]****16.5.1.10**

For the purposes of Section 16.5, the following shall apply to the in-rack sprinkler design layouts specified in [Table 16.5.2.1](#) through [Table 16.5.2.12](#):

- (1) ~~Layout A~~ [Layout 1](#), as referenced in [Table 16.5.2.1](#), shall mean one line of in-rack sprinklers 8 ft (2.4 m) above the floor in the longitudinal flue space, with sprinklers spaced not more than 10 ft (3 m) on center. ~~Sprinklers shall be staggered vertically.~~
- (2) ~~Layout B~~ [Layout 2](#), as referenced in [Table 16.5.2.1](#), shall mean one line of in-rack sprinklers 6 ft (1.8 m) above the floor and one line of in-rack sprinklers 12 ft (3.6 m) above the floor in the longitudinal flue space, with sprinklers spaced not more than 10 ft (3 m) on center. Sprinklers shall be staggered vertically.
- (3) ~~Layout C~~ [Layout 3](#), as referenced in [Table 16.5.2.1](#) and [Table 16.5.2.3](#), shall mean one line of in-rack sprinklers in the longitudinal flue space at every storage level above the floor except above the top tier, with sprinklers spaced not more than 10 ft (3 m) on center. Sprinklers shall be staggered vertically, where more than one level of in-rack sprinklers is installed.
- (4) ~~Layout D~~ [Layout 4](#), as referenced in [Table 16.5.2.1](#) and [Table 16.5.2.3](#), shall mean one line of in-rack sprinklers in the longitudinal flue space at every other storage level, except above the top tier, beginning above the first storage level, with sprinklers spaced not more than 10 ft (3 m) on center. Sprinklers shall be staggered vertically, where more than one level of in-rack sprinklers is installed.
- (5) ~~Layout E~~ [Layout 5](#), as referenced in [Table 16.5.2.1](#), shall mean one line of in-rack sprinklers in the longitudinal flue space at every storage level above the floor except above the top tier and face sprinklers at the first storage level at each rack upright. In-rack sprinklers shall be spaced not more than 9 ft (2.7 m) on center and shall be staggered vertically, where more than one level of in-rack sprinklers is installed.
- (6) ~~Layout F~~ [Layout 6](#), as referenced in [Table 16.5.2.1](#), shall mean one line of in-rack sprinklers in the longitudinal flue space at every other storage level above the first storage level except the top tier and face sprinklers at the first storage level at each rack upright. In-rack sprinklers shall be spaced not more than 10 ft (3 m) on center and shall be staggered vertically, where more than one level of in-rack sprinklers is installed.
- (7) ~~Layout G~~ [Layout 7](#), as referenced in [Table 16.5.2.8](#), shall be as shown in [Figure 16.6.4\(a\)](#).
- (8) [Layout H](#) [Layout 8](#), as referenced in [Table 16.5.2.8](#), shall be as shown in [Figure 16.6.4\(b\)](#) ~~[Figure 16.6.4\(d\)](#)~~ or [Figure 16.6.4\(c\)](#) ~~[Figure 16.6.4\(e\)](#)~~.
- (9) [Layout I](#) [Layout 9](#), as referenced in [Table 16.5.2.8](#), shall be as shown in [Figure 16.6.4\(d\)](#) ~~[Figure 16.6.4\(b\)](#)~~ or [Figure 16.6.4\(c\)](#) ~~[Figure 16.6.4\(e\)](#)~~.

Submitter Information Verification

Submitter Full Name: Bob Benedetti
Organization: National Fire Protection Assoc
Submittal Date: Tue Aug 28 09:43:28 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: There is confusion between the "Scheme" designations versus the "Layout" designations. Therefore, the Technical Committee is changing the designation of the "Layouts" to a numerical one. In addition, clarifying language has been added in accordance with Public Input #47 to link the Layout designations to the Tables in which they appear. In addition, the references to Figures for Layouts 7, 8, and 9, have been corrected in accordance with First Revision #60.

Response Message:

Committee Notes:

<u>Date</u>	<u>Submitted By</u>
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Aug 28, 2012	Bob Benedetti	Do same message for PIs 28 & 29
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[Public Input No. 104-NFPA 30-2012 \[Global Input\]](#)

[Public Input No. 105-NFPA 30-2012 \[Global Input\]](#)

[Public Input No. 106-NFPA 30-2012 \[Global Input\]](#)

Ballot Results

✔ This item has passed ballot

28 Eligible Voters
 7 Not Returned
 21 Affirmative All
 0 Affirmative with Comments
 0 Negative with Comments
 0 Abstention

Not Returned

Kirby, David
 LeBlanc, John
 McQuaid, John
 Mehta, Navin
 Tabar, David
 Toner, Hugh Patrick
 Workman, Martin

Affirmative All

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**First Revision No. 42-NFPA 30-2012 [Section No. 16.5.2.1]****16.5.2.1**

Table 16.5.2.1 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Single- or double-row rack storage
- (3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Metal containers, metal portable tanks, metal intermediate bulk containers
- (5) Relieving- or nonrelieving-style containers

Table 16.5.2.1 Design Criteria for Sprinkler Protection of Single- and Double-Row Rack Storage of Liquids in Metal Containers, Portable Tanks, and IBCs

Container Style and Capacity (gal)	Maximum Storage Height (ft)	Maximum Ceiling Height (ft)	Ceiling Sprinkler Protection				In-Rack Spr	
			Sprinkler		Design		Sprinkler	
			Type	Response	Density (gpm/ft ²)	Area (ft ²)	Type	Response
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB								
≤1	16	30	K≥11.2	QR (HT)	0.60	2000	K≥5.6 K=5.6 or 8.0	QR(OT)
	20	30	K≥11.2	SR or QR (HT)	0.60	2000	K≥5.6 K=5.6 or 8.0	QR(OT)
≤5	25	30	K≥8.0	SR or QR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	QR(OT)
>5 and ≤60	25	30	K≥11.2	SR (HT)	0.40	3000	K≥5.6 K=5.6 or 8.0	QR or SF (OT)
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASS								
≤5	40	50	K≥8.0	SR or QR (HT)	0.30	2000	K≥5.6 K=5.6 or 8.0	QR(OT)
>5 and ≤60	40	50	K≥8.0	SR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	QR(OT)
RELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC								
≤5	14	18	K≥11.2	pendent QR (HT) only	0.65	2000		No in-rack s
	25	30	K≥8.0	SR or QR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	QR(OT)
>5 and ≤60	25	30	K≥11.2	SR (HT)	0.60	3000	K≥5.6 K=5.6 or 8.0	QR(OT)
Portable tanks and IBCs	25	30	K≥11.2	SR (HT)	0.60	3000	K≥5.6 K=5.6 or 8.0	QR or SF (OT)
RELIEVING-STYLE CONTAINERS — LIQUID CLASS III								
≤ 5 gal	40	50	K≥8.0	SR or QR (HT)	0.30	2000	K≥5.6 K=5.6 or 8.0	QR(OT)
>5 and ≤60	40	50	K≥8.0	SR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	QR(OT)
Portable tanks and IBCs	40	50	K≥8.0	SR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	QR(OT)

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

SR: Standard response sprinkler. QR: Quick response sprinkler. OT: Ordinary temperature. HT: High temperature. For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

(1) In-rack sprinkler design based on 6 shall be based on the following: most hydraulically remote sprinklers in each of upper three levels or on 8 most hydraulically remote sprinklers, if only one level.

(a) Where one level of in-rack sprinklers is installed, the design shall include the 8 most hydraulically remote sprinklers.

(b) Where two levels of in-rack sprinklers are installed, the design shall include the 6 most hydraulically remote sprinklers on each level.

(c) Where three or more levels of in-rack sprinklers are installed, the design shall include the 6 most hydraulically remote sprinklers on the top three levels.

(2) Protection for uncartoned or case-cut nonsolid shelf display up to 6.5 ft. (2 m) and storage above on pallets in ~~pallets on racking, shelf racking~~ and stored on shelf materials, including open wire mesh, or 2 in. × 6 in. (50 mm × 150 mm) wooden slats, spaced a minimum of 2 in. (50 mm) apart.

(3) ~~For K=8.0 and larger ceiling sprinklers, increase ceiling~~ Increase ceiling density to 0.60 if more than one level of storage exists above the top level of in-rack sprinklers.

(4) Double-row racks limited to maximum 6 ft (1.8 m) width.

(5) For K=8.0 and larger ceiling sprinklers, increase ceiling density to 0.60 over 2000 ft² if more than one level of storage exists above the top level of in-rack sprinklers.

(6) Reduce in-rack sprinkler spacing to maximum 9 ft (2.7 m) centers.

(7) The minimum in-rack discharge pressure shall not be less than 10 psi.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 21:27:19 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This First Revision incorporates the following changes: 1) The heading "Layout" has been amended to include a reference to 16.5.1.10. REASON: Clarity and ease of use. 2) Under the heading "Layout", the letter designation for the in-rack sprinkler arrangements have been changed to a numeric designation, in accordance with First Revision #1. 3) Note 1 has been expanded to provide the user with design criteria for situations where two levels of in-rack sprinklers are installed. REASON: Previous edition only addressed installations with one level of in-racks and three or more levels of in-racks. 4) The K-factor column now allows for sprinklers with K greater than 5.6 or 8.0. REASON: Larger orifice sprinklers have been shown to improve performance. 5) A new Note 7 has been added to specify a minimum operating pressure. REASON: Allow for large orifice sprinklers and assure proper discharge pattern. 6) The sprinkler abbreviations are deleted. REASON: Already covered in 16.5.1.9(4). 7) The column labeled "Discharge Flow" is now labeled "Minimum Discharge Flow. REASON: This change emphasizes that there is a minimum flow required, in addition to the minimum discharge pressure, to assure proper discharge pattern. 8) Other clarifications have been made to Notes 2, 3, and 5. REASON: Improved design information. 9) In Note 4, "width" has been changed to "depth". REASON: "Depth" is a more accurate descriptor.

Response Message:

Public Input No. 107-NFPA 30-2012 [Section No. 16.5.2.1]

**First Revision No. 43-NFPA 30-2012 [Section No. 16.5.2.2]****16.5.2.2**

Table 16.5.2.2 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Palletized or stacked storage
- (3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Metal containers, metal portable tanks, metal intermediate bulk containers
- (5) Relieving- or nonrelieving-style containers

Table 16.5.2.2 Design Criteria for Sprinkler Protection of Palletized and Stacked Storage of Liquids in Metal Containers, Portable Tanks, and IBCs

<u>Container Style and Capacity (gal)</u>	<u>Maximum Storage Height (ft)</u>	<u>Maximum Ceiling Height (ft)</u>	<u>Ceiling Sprinkler Protection</u>				<u>Notes</u>	<u>Fire Test Ref. [See Table D.2 (b)]</u>
			<u>Sprinkler</u>		<u>Design</u>			
			<u>Type</u>	<u>Response</u>	<u>Density (gpm/ft²)</u>	<u>Area (ft²)</u>		
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA								
≤5	4	18	K≥8.0	SR or QR (HT)	0.21	1500	1	1
	5	18	K≥8.0	SR or QR (HT)	0.30	3000	—	2
	6.5	30	K≥11.2	QR (HT)	0.45	3000	—	3
>5 and ≤60	5	18	K≥11.2	SR (HT)	0.40	3000	—	4
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIB								
≤5	18	30	K≥8.0	SR or QR (HT)	0.25	3000	—	5
>5 and ≤60	10	20	K≥8.0	SR (HT)	0.25	3000	—	6
	18	30	K≥8.0	SR (HT)	0.35	3000	—	7
RELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA								
≤5	12	30	K≥11.2	pendent QR (HT) only	0.60	3000	2	8
>5 and ≤60	5	30	K≥11.2	SR (HT)	0.40	3000	—	9
	6.5	30	K≥11.2	SR (HT)	0.60	3000	3	10
Portable tanks	1-high	30	K≥8.0	SR (HT)	0.30	3000	—	14
and IBCs	2-high	30	K≥11.2	SR (HT)	0.60	3000	—	15
RELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIB								
≤5	18	30	K≥8.0	SR or QR (HT)	0.25	3000	—	11
>5 and ≤60	10	20	K≥8.0	SR (HT)	0.25	3000	—	12
	18	30	K≥8.0	SR (HT)	0.35	3000	—	13
Portable tanks	1-high	30	K≥8.0	SR (HT)	0.25	3000	—	16
and IBCs	2-high	30	K≥11.2	SR (HT)	0.50	3000	—	17
For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft ² = 0.09 m ² , 1 gpm/ft ² = 40.7 L/min/m ² = 40.7 mm/min.								
SR: Standard response sprinkler. QR: Quick response sprinkler. HT: High temperature.								
For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).								
Notes:								
(1) Minimum hose stream demand can be reduced to 250 gpm for 2 hours.								
(2) Sprinklers must also be hydraulically calculated to provide a density of 0.80 gpm/ft ² over 1000 ft ² .								

(3) Drums must be placed on open slatted pallet, not nested, to allow pressure relief from drums on lower levels.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Thu Sep 27 22:10:09 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The type of sprinkler abbreviations have been deleted because they are already covered by 16.5.1.9 (4). A cross reference to this Paragraph has been added.

Response Message:
[Public Input No. 57-NFPA 30-2012 \[Section No. 16.5.2.2\]](#)

Ballot Results

✔ **This item has passed ballot**

- 28 Eligible Voters
- 7 Not Returned
- 18 Affirmative All
- 3 Affirmative with Comments
- 0 Negative with Comments
- 0 Abstention

Not Returned

- Kirby, David
- LeBlanc, John
- McQuaid, John
- Mehta, Navin
- Tabar, David
- Toner, Hugh Patrick
- Workman, Martin

Affirmative All

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Affirmative with Comment

Bellamy, Tracey D.

The symbols do not display correctly with a ? being using instead of the proper symbol.

Havens, Dwight H.

Fix the table.

Rivers, Douglas A.

Need to replace the ? marks with the appropriate symbols such as = or < or >


First Revision No. 44-NFPA 30-2012 [Section No. 16.5.2.3]
16.5.2.3

Table 16.5.2.3 shall apply to the following:

- (1) Foam water sprinkler protection
- (2) Single- or double-row rack storage
- (3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Metal containers, metal portable tanks, metal intermediate bulk containers
- (5) Relieving- or nonrelieving-style containers

Table 16.5.2.3 Design Criteria for Foam-Water Sprinkler Protection of Single- or Double-Row Rack Storage of Liquids in Metal Containers, Portable Tanks, and IBCs

<u>Container Style and Capacity (gal)</u>	<u>Maximum Storage Height (ft)</u>	<u>Maximum Ceiling Height (ft)</u>	<u>Ceiling Sprinkler Protection</u>				<u>In-Rack Sprinkler</u>	
			<u>Sprinkler</u>		<u>Design</u>		<u>Sprinkler</u>	
			<u>Type</u>	<u>Response</u>	<u>Density (gpm/ft²)</u>	<u>Area (ft²)</u>	<u>Type</u>	<u>Response</u>
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB,								
≤5	25	30	K≥8.0	SR or QR (HT)	0.30	2000	K≥5.6 K=5.6 or 8.0	QR or SR (OT)
>5 and ≤60	25	30	K≥8.0	SR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	QR or SR (OT)
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASS								
≤60	40	50	K≥8.0	SR (HT)	0.30	2000	K≥5.6 K=5.6 or 8.0	QR or SR (OT)
RELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC								
≤5	25	30	K≥8.0	SR or QR (HT)	0.30	2000	K≥5.6 K=5.6 or 8.0	QR or SR (OT)
>5 and ≤60, portable tanks and IBCs	25	30	K≥8.0	SR (HT)	0.30	3000	K≥5.6 K=5.6 or 8.0	
RELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIE								
≤60	40	50	K≥8.0	SR (HT)	0.30	2000	K≥5.6 K=5.6 or 8.0	QR or SR (OT)

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

QR: Quick response sprinkler. SR: Standard response sprinkler. OT: Ordinary temperature. HT: High temperature. For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

(1) In-rack sprinkler design based on the 6 most hydraulically remote sprinklers in each of the upper three levels.

(2) Design area can be reduced to 1500 ft² when using a ~~pre-primed~~ preprimed foam-water system installed in accordance with NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, and maintained according to NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

(3) Design area can be reduced to 2000 ft² when using a ~~pre-primed~~ preprimed foam-water system installed in accordance with NFPA 16 and maintained according to NFPA 25.

(4) In-rack sprinkler hydraulic design can be reduced to three sprinklers operating per level, with three levels operating simultaneously, when using a ~~pre-primed~~ preprimed foam-water sprinkler system designed in accordance with NFPA 16 and maintained in accordance with NFPA 25.

The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 22:16:04 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Users do not know what the "Layout" means and where to find it. They are mixing up the "Layout" with the "Design Scheme" because the Design Scheme is a layout of in-rack sprinklers, which is what the Layout column is trying to describe. The simple addition of a reference to the section where the layout is described is tremendously helpful. Therefore, a reference to 16.5.1.10 has been added to the heading for the "Layout" column. The following additional changes have been made: 1) The letter designations for the in-rack design descriptions have been changed to number designations, in accordance with First Revision #1. 2) The in-rack sprinkler K-factor is now allowed to be greater than 5.6 and 8.0. REASON: Allows larger orifice sprinklers for improved performance. 3) Note 5 has been added to require a minimum discharge pressure. REASON: Assure proper water distribution. 4) The heading "Discharge Flow" is now labeled "Minimum Discharge Flow" REASON: Emphasize that this is a minimum. 5) The types of sprinkler abbreviations have been deleted because they are already covered by 16.5.1.9(4). A cross reference has been added.

Response**Message:**

[Public Input No. 108-NFPA 30-2012 \[Section No. 16.5.2.3\]](#)

Ballot Results

✔ This item has passed ballot


First Revision No. 51-NFPA 30-2012 [Section No. 16.5.2.4]
16.5.2.4

Table 16.5.2.4 shall apply to the following:

- (1) Foam water sprinkler protection
- (2) Palletized or stacked storage
- (3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Metal containers, metal portable tanks, metal intermediate bulk containers
- (5) Relieving- or nonrelieving-style containers

Table 16.5.2.4 Design Criteria for Foam-Water Sprinkler Protection of Palletized and Stacked Storage of Liquids in Metal Containers, Portable Tanks, and IBCs

<u>Container Style and Capacity</u> (gal)	<u>Maximum Storage Height</u> (ft)	<u>Maximum Ceiling Height</u> (ft)	<u>Ceiling Sprinkler Protection</u>				<u>Fire Test Ref. [See Table D.2 (d)]</u>	
			<u>Sprinkler</u>		<u>Design</u>			
			<u>Type</u>	<u>Response</u>	<u>Density</u> (gpm/ft ²)	<u>Area</u> (ft ²)		<u>Notes</u>
NONRELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA								
≤5, cartoned	11	30	K≥11.2	SR or QR (HT)	0.40	3000	1	1
≤5, uncartoned	12	30	K≥8.0	SR or QR (HT)	0.30	3000	1	2
>5 and ≤60 5 (1-high)		30	K≥8.0	SR (HT)	0.30	3000	1	3
RELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA								
>5 and ≤60	6.5 (2-high)	30	K≥8.0	SR (HT)	0.30	3000	2, 3	4
	10 (3-high)	33	K≥11.2	SR (HT)	0.45	3000	2, 3	6
	13.75 (4-high)	33	K≥11.2	SR (HT)	0.60	3000	2, 3	7
Portable tanks and IBCs	1- or 2-high	30	K≥8.0	SR (HT)	0.30	3000		5

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

QR: Quick response sprinkler. SR: Standard response sprinkler. HT: High temperature. For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

(1) Design area can be reduced to 2000 ft² when using a ~~pre-primed~~ preprimed foam-water system installed in accordance with NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, and maintained according to NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

(2) Both 3/4 in. (20 mm) and 2 in. (50 mm) listed pressure-relieving mechanisms are required on containers greater than 6 gal (23 L) capacity.

(3) Drums placed on open slatted pallet, not nested, to allow pressure relief from drums on lower levels.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 22:57:46 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The type of sprinkler abbreviations are already covered by 16.5.1.9 (4). A cross reference note has been added.

Response Message:

[Public Input No. 58-NFPA 30-2012 \[Section No. 16.5.2.4\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

18 Affirmative All

3 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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Affirmative with Comment

Bellamy, Tracey D.

The symbols do not display correctly with a ? being using instead of the proper symbol.

Havens, Dwight H.

Fix the table.

Rivers, Douglas A.

Need to replace the ? marks with the appropriate symbols such as = or < or >


First Revision No. 45-NFPA 30-2012 [Section No. 16.5.2.5]
16.5.2.5

Table 16.5.2.5 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Single-, double-, or multiple-row rack storage
- (3) Class IIIB nonmiscible liquids and Class IIIB miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Nonmetallic containers or intermediate bulk containers
- (5) Cartoned or uncartoned

Table 16.5.2.5 Design Criteria for Sprinkler Protection of Single-, Double-, and Multiple-Row Rack Storage of Class IIIB Liquids

<u>Closed</u> <u>-Cup</u> <u>Flash</u> <u>Point</u> <u>(°F)</u>	<u>Container</u> <u>or IBC</u> <u>Capacity</u> <u>(gal)</u>	<u>Packaging</u>	<u>Maximum</u> <u>Storage</u> <u>Height</u> <u>(ft)</u>	<u>Maximum</u> <u>Ceiling</u> <u>Height</u> <u>(ft)</u>	<u>Minimum</u> <u>Aisle</u> <u>Width (ft)</u>	<u>Rack</u> <u>Width</u> <u>Depth</u> <u>(ft)</u>	<u>Sprinkler</u> <u>Protection</u>	
							<u>Ceiling</u> <u>Sprinkler</u> <u>Type</u>	<u>De</u>
≥200	≤5	Plastic containers, cartoned or uncartoned	Unlimited	Unlimited	4	Any	Any	See 16.6 Fire Prot Sys Des Sch "A"
≥375	≤275	Flexible plastic liner within a composite continuously-wound corrugated paperboard intermediate bulk container (See Note 1)	28	30	8	Any	Any	See 16.6 Fire Prot Sys Des Sch "C"
≥375	≤6	Flexible plastic liner within a composite corrugated paperboard box	Unlimited	Unlimited	8	Any	Any	See 16.6 Fire Prot Sys Des Sch "C"

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 200°F = 93°C, 375°F = 190°C.

Note: Construction of intermediate bulk container to be a minimum of 8 layers of paperboard, with a minimum nominal thickness of 1¹/₂ in. (38 mm) at the center of any side panel.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 22:37:16 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The problem is that incorrect usage of a word brings confusion to the literal minded. The word WIDTH is used incorrectly. In the document NFPA 30, it refers to the distance between the front of the rack (where you load the product) and the back. That is actually DEPTH. WIDTH should refer to the distance from one END to the other END. Aisles are referred to correctly in terms of WIDTH since the front of the Aisle is the short side. The rack front is the long side, the WIDTH, the short side is what you wish to control and that is the DEPTH.

Response Message:

[Public Input No. 20-NFPA 30-2012 \[Section No. 16.5.2.5\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

18 Affirmative All

3 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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Affirmative with Comment

- Bellamy, Tracey D.
The symbols do not display correctly with a ? being using instead of the proper symbol.
- Havens, Dwight H.
Fix the table.
- Rivers, Douglas A.
Need to replace the ? marks with the appropriate symbols such as = or < or >



First Revision No. 52-NFPA 30-2012 [Section No. 16.5.2.6]

16.5.2.6

Table 16.5.2.6 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Shelf storage
- (3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Nonrelieving-style metal containers

Table 16.5.2.6 Design Criteria for Sprinkler Protection of Shelf Storage of Liquids in Metal Containers

<u>Container Style and Capacity (gal)</u>	<u>Maximum Storage Height (ft)</u>	<u>Maximum Ceiling Height (ft)</u>	<u>Ceiling Sprinkler Protection</u>				<u>Notes</u>	<u>Fire Test Ref. / See Table D.2 (f)</u>
			<u>Sprinkler</u>		<u>Design</u>			
			<u>Type</u>	<u>Response</u>	<u>Density (gpm/ft²)</u>	<u>Area (ft²)</u>		
≤1 nonrelieving style	6	18	K ≥8.0 <u>5.6</u>	SR or QR (HT)	0.19	1500	1, 2	1

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

QR: Quick response sprinkler. SR: Standard response sprinkler. HT: High temperature. For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

- (1) Protection limited to mercantile shelving that is 2 ft (600 mm) or less in depth per side, with backing between each side.
- (2) Minimum hose stream demand can be reduced to 250 gpm for 2 hours.
- (3) The minimum aisle width shall not be less than 5 ft (1.5 m).

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 23:02:34 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: 1) The type of sprinkler abbreviations are already covered by 16.5.1.9 (4). A cross reference has been added. 2) The minimum aisle width, as reflected by the tests on which these criteria are based, has been added in new Note 3. 3) The sprinkler K-factor has been changed to reflect what was actually used in the test.

Response Message:

Public Input No. 53-NFPA 30-2012 [Section No. 16.5.2.6]

Ballot Results

✔ This item has passed ballot

- 28 Eligible Voters
- 7 Not Returned
- 18 Affirmative All
- 3 Affirmative with Comments
- 0 Negative with Comments
- 0 Abstention

Not Returned

- Kirby, David
- LeBlanc, John
- McQuaid, John
- Mehta, Navin
- Tabar, David
- Toner, Hugh Patrick
- Workman, Martin

Affirmative All

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Affirmative with Comment

- Bellamy, Tracey D.

The symbols do not display correctly with a ? being using instead of the proper symbol.
Havens, Dwight H.
Fix the table.
Rivers, Douglas A.
Need to replace the ? marks with the appropriate symbols such as = or < or >


First Revision No. 47-NFPA 30-2012 [Section No. 16.5.2.7]
16.5.2.7

Table 16.5.2.7 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Single- or double-row rack storage
- (3) Water-miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Glass or plastic containers
- (5) Cartoned or uncartoned
- (6) Minimum 8 ft (2.4 m) aisle width

Table 16.5.2.7 Design Criteria for Sprinkler Protection of Single- and Double-Row Rack Storage of Water-Miscible Liquids in Glass or Plastic Containers

<u>Container Style and Capacity</u>	<u>Maximum Storage Height (ft)</u>	<u>Maximum Ceiling Height (ft)</u>	<u>Ceiling Sprinkler Protection</u>		<u>Notes</u>	<u>Fire Test Ref. [See Table D.2(g)]</u>
			<u>Ceiling Sprinkler Protection</u>	<u>In-Rack Sprinklers</u>		
16 oz, cartoned	Unlimited	Unlimited	See 16.6.1, Fire Protection System Design Scheme "A"	See 16.6.1, Fire Protection System Design Scheme "A"	1, 2	3
≤1 gal, cartoned	Unlimited	Unlimited	See 16.6.2, Fire Protection System Design Scheme "B"	See 16.6.2, Fire Protection System Design Scheme "B"	1, 2	1
≤60 gal, cartoned or uncartoned	25	30	See 16.6.2, Fire Protection System Design Scheme "B"	See 16.6.2, Fire Protection System Design Scheme "B"	1, 2	2

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

Notes:

- (1) Minimum aisle width in all cases is 8 ft (2.4 m).
- (2) Maximum rack ~~width in~~ depth in all cases is 9 ft (2.7 m).

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Thu Sep 27 22:46:11 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Note 2 has been changed by replacing the word "width" with the more accurate descriptor "depth".
Response Message:

Ballot Results

✔ **This item has passed ballot**

- 28 Eligible Voters
- 7 Not Returned
- 18 Affirmative All
- 3 Affirmative with Comments
- 0 Negative with Comments
- 0 Abstention

Not Returned

- Kirby, David
- LeBlanc, John
- McQuaid, John
- Mehta, Navin
- Tabar, David
- Toner, Hugh Patrick
- Workman, Martin

Affirmative All

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Affirmative with Comment

Bellamy, Tracey D.

The symbols do not display correctly with a ? being using instead of the proper symbol.

Havens, Dwight H.

Fix the table.

Rivers, Douglas A.

Need to replace the ? marks with the appropriate symbols such as = or < or >

**First Revision No. 48-NFPA 30-2012 [Section No. 16.5.2.8]****16.5.2.8**

Table 16.5.2.8 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Single- or double-row rack storage or palletized storage
- (3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
- (4) Relieving-style metal containers

Table 16.5.2.8 Design Criteria for Single-Row Rack, Double-Row Rack, and Palletized Storage of Liquids in Relieving-Style Metal Containers

<u>Container Style and Capacity</u> (gal)	<u>Maximum Storage Height</u> (ft)	<u>Maximum Ceiling Height</u> (ft)	<u>Ceiling Sprinkler Protection</u>		<u>In-Rack Sprinkler Protection</u>		
			<u>Sprinkler Type</u>	<u>Design (Number of Sprinklers @ Stated Pressure)</u>	<u>Sprinkler Type</u>	<u>Response</u>	<u>End Sprinkler Design Pressure/Minimum Discharge Flow</u>
LIQUID CLASSES IB, IC, II, IIIA, IIIB							
RACK STORAGE with MAXIMUM 6 ft RACK WIDTH DEPTH and MINIMUM 7.5 ft							
≤5, cartoned or uncartoned	14	24	Pendent ESFR K≥14.0 (OT)	12 @ 50 psi	K = 11.2	QR (OT) QR (OT)	10 psi 36 gpm
	14	24	Pendent ESFR K≥25.0 (OT)	12 @ 25 psi		No in-rack sprinklers require	
LIQUID CLASSES IB, IC, II, IIIA, IIIB							
RACK STORAGE with MAXIMUM 9 ft RACK WIDTH DEPTH and 8 ft MINIMUM A							
≤1, cartoned only	20	30	Pendent ESFR K≥14.0 (OT)	12 @ 75 psi		No in-rack sprinklers require	
≤1, cartoned only	25	30	Pendent ESFR K≥14.0 (OT)	12 @ 50 psi	K = 8.0	QR (OT)	15 psi 31 gpm
≤5, cartoned or uncartoned	25	30	Pendent ESFR K≥14.0 (OT)	12 @ 75 psi	K = 8.0	QR (OT)	30 psi 44 gpm
LIQUID CLASSES IB, IC, II, IIIA, IIIB PALLETIZED STORAGE with MINIMUM 7.5 ft							
≤1, cartoned only	8	30	Pendent ESFR K≥14.0 (OT)	12 @ 50 psi	—	—	—
≤5, cartoned or uncartoned	12	30	Pendent ESFR K≥14.0 (OT)	12 @ 75 psi	—	—	—

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 psi = 6.9 kPa.

ESFR: Early suppression fast response sprinkler. QR: Quick response sprinkler. OT: Ordinary temperature. For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

(1) The in-rack sprinkler water demand shall be based on the simultaneous operation of the most hydraulically remote sprinklers as follows:

- (a) Seven sprinklers where only one level of in-rack sprinklers is installed.
- (b) Fourteen sprinklers (seven on each of the two top levels) where more than one level of in-rack sprinklers is installed.

- (2) The in-rack sprinkler water demand should be balanced with the ceiling sprinkler water demand at their point of connection.
- (3) One-gallon and 1-quart containers are not required to be relieving style.
- (4) Provide minimum 3 in. transverse flue at rack uprights.
- (5) For Class IIIB liquids, see also Table 16.5.2.5.
- (6) Racks can have open-mesh wire intermediate shelving on lower levels.
- (7) The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Thu Sep 27 22:49:07 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: 1) For description of racks, in section headings, the word "width" has been replaced with the more accurate descriptor "depth". 2) In column for in-rack sprinkler layout, a cross reference has been added to 16.5.1.10 and the letter designations for the in-rack arrangements have been changed to number designations, in accordance with First Revision #1. 3) Abbreviations have been replaced with a reference to 16.5.1.9(4) and 16.5.1.9(5). 4) Note 7 has been added. REASON: minimum discharge pressure to assure proper water distribution 5) End sprinkler discharge pressure has been changed to minimum discharge flow. REASON: assure proper water distribution 6) Additional changes to complete with amendments made to other Tables in this Chapter.

Response Message:

Ballot Results

✔ This item has passed ballot

9 Eligible Voters
7 Not Returned
0 Affirmative All
2 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

Kirby, David
LeBlanc, John
McQuaid, John
Mehta, Navin
Tabar, David
Toner, Hugh Patrick
Workman, Martin

Affirmative with Comment

Havens, Dwight H.

Fix the table.

Rivers, Douglas A.

Need to replace the ? marks with the appropriate symbols such as = or < or >



First Revision No. 53-NFPA 30-2012 [Section No. 16.5.2.9]

16.5.2.9

Table 16.5.2.9 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Palletized storage
- (3) Class II and Class III nonmiscible and Class II and Class III miscible liquids
- (4) Listed and labeled rigid nonmetallic intermediate bulk containers

Table 16.5.2.9 Design Criteria for Sprinkler Protection of Palletized Storage of Class II and Class III Liquids in Listed and Labeled Rigid Nonmetallic IBCs

<u>Maximum Capacity</u> (gal)	<u>Maximum Storage Height</u>	<u>Maximum Ceiling Height</u> (ft)	<u>Ceiling Sprinkler Protection</u>				<u>Fire Test Ref. [See Table D.2 (i)]</u>	
			<u>Sprinkler</u>		<u>Design</u>			
			<u>Type</u>	<u>Response</u>	<u>Density</u> (gpm/ft ²)	<u>Area</u> (ft ²)		<u>Notes</u>
793	1-high	30	K \geq 11.2 SR	(HT)	0.45	3000	1, 2, 4	1
793	2-high	30	K \geq 11.2 SR	(HT)	0.60	3000	1, 2, 3, 4	2

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min, 1 ft² = 0.9 m².

~~SR: Standard response sprinkler. HT: High temperature. For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).~~

Notes:

- (1) Foam-water sprinkler protection shall be permitted to be substituted for water sprinkler protection, provided the same design criteria are used.
- (2) Rigid nonmetallic intermediate bulk containers shall be listed and labeled in accordance with UL 2368, *Standard for Fire Exposure Testing of Intermediate Bulk Containers for Flammable and Combustible Liquids*, ; FM Class 6020, Approval Standard for Intermediate Bulk Containers; or an equivalent test procedure.
- (3) The sprinkler operating gauge pressure shall be a minimum 30 psi (207 kPa).
- ~~(4) See also Section E.1.~~

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 23:45:59 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The type of sprinkler abbreviations are already covered by 16.5.1.9 (4). A reference has been added. The reference to E.1 is not needed. FM Approvals has a published test standard for evaluating IBCs.

Response Message:

[Public Input No. 55-NFPA 30-2012 \[Section No. 16.5.2.9\]](#)

Ballot Results

✔ This item has passed ballot

- 28 Eligible Voters
 - 7 Not Returned
 - 18 Affirmative All
 - 3 Affirmative with Comments
 - 0 Negative with Comments
 - 0 Abstention

Not Returned

- Kirby, David
- LeBlanc, John
- McQuaid, John
- Mehta, Navin
- Taba, David
- Toner, Hugh Patrick
- Workman, Martin

Affirmative All

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Affirmative with Comment

Bellamy, Tracey D.
The symbols do not display correctly with a ? being using instead of the proper symbol.

Havens, Dwight H.

Fix the table.

Rivers, Douglas A.

Need to replace the ? marks with the appropriate symbols such as = or < or >


First Revision No. 49-NFPA 30-2012 [Section No. 16.5.2.10]
16.5.2.10

Table 16.5.2.10 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Single- or double-row rack storage
- (3) Class II and Class III nonmiscible and Class II and Class III miscible liquids
- (4) Listed and labeled rigid nonmetallic intermediate bulk containers

Table 16.5.2.10 Design Criteria for Sprinkler Protection of Single- and Double-Row Rack Storage of Class II and Class III Liquids in Listed and Labeled Rigid Nonmetallic IBCs

<u>Maximum Capacity</u> (gal)	<u>Maximum Storage Height</u> (ft)	<u>Maximum Ceiling Height</u> (ft)	<u>Ceiling Sprinkler Protection</u>		<u>Notes</u>	<u>Fire Test Ref. [See Table D.2(j)]</u>
			<u>Sprinkler Type</u>	<u>Design</u>		
793	25	30	Standard spray	See 16.6.2, Fire Protection System Design Scheme "B"	1, 2, 3, 4	1

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

Notes:

- (1) Rigid nonmetallic intermediate bulk containers are listed and labeled in accordance with UL 2368, *Standard for Fire Exposure Testing of Intermediate Bulk Containers for Flammable and Combustible Liquids*, or an equivalent test procedure.
- (2) Maximum rack ~~width~~ depth is 9 ft (2.7 m).
- (3) Minimum aisle width is 8 ft (2.4 m).
- (4) ~~See also Section E.1.~~

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Thu Sep 27 22:51:30 EDT 2012

Committee Statement and Meeting Notes



First Revision No. 54-NFPA 30-2012 [Section No. 16.5.2.11]

16.5.2.11

Table 16.5.2.11 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Palletized or stacked storage
- (3) Unsaturated polyester resins (UPRs) with not more than 50 percent by weight of Class IC, II, or IIIA liquid
- (4) Metal containers; nonrelieving style allowed only up to 6 gal (23 L)

Table 16.5.2.11 Design Criteria for Sprinkler Protection of Palletized or Stacked Storage of Unsaturated Polyester Resins in Metal Containers

Capacity (gal)	Maximum Storage Height (ft)	Maximum Ceiling Height (ft)	Ceiling Sprinkler Protection				Fire Test Ref. [See Table D.2 (k)]	
			Sprinkler		Design			
			Type	Response	Density (gpm/ft ²)	Area (ft ²)		Notes
>5 and <60	10	33	K \geq 11.2	SR (HT or OT)	0.45	3000	1, 2, 3	1

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min. SR: Standard response sprinkler. OT: Ordinary temperature. HT: High temperature.

For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

- (1) Drums placed on open, slatted pallet, not nested, to allow pressure relief from drums on lower levels.
- (2) Storage areas containing unsaturated polyester resin (UPR) should not be located in the same spill containment area or drainage path of other Class I or Class II liquids, unless protected as required for such other liquids.
- (3) Both ¾ in. (20 mm) and 2 in. (50 mm) listed and labeled pressure-relieving devices are required on containers that exceed 6 gal (23 L) capacity.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 23:57:56 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The type of sprinkler abbreviations are already covered by 16.5.1.9 (4). A cross-reference has been added.

Response Message:

[Public Input No. 59-NFPA 30-2012 \[Section No. 16.5.2.11\]](#)

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters
 7 Not Returned
 18 Affirmative All
 3 Affirmative with Comments
 0 Negative with Comments
 0 Abstention

Not Returned

Kirby, David
 LeBlanc, John
 McQuaid, John
 Mehta, Navin
 Tabar, David
 Toner, Hugh Patrick
 Workman, Martin

Affirmative All

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Affirmative with Comment

Bellamy, Tracey D.
 The symbols do not display correctly with a ? being using instead of the proper symbol.
 Havens, Dwight H.

Fix the table.

Rivers, Douglas

Need to replace the ? marks with the appropriate symbols such as = or < or >



First Revision No. 55-NFPA 30-2012 [Section No. 16.5.2.12]

16.5.2.12

Table 16.5.2.12 shall apply to the following:

- (1) Automatic sprinkler protection
- (2) Palletized or stacked storage
- (3) Miscible liquids with concentration of flammable or combustible components no greater than 80 percent by volume
- (4) Glass or plastic containers

Table 16.5.2.12 Design Criteria for Sprinkler Protection of Palletized or Stacked Storage of Miscible Liquids in Glass or Plastic Containers

<u>Ceiling Sprinkler Protection</u>								
<u>Container Style and Capacity</u>	<u>Maximum Storage Height (ft)</u>	<u>Maximum Ceiling Height (ft)</u>	<u>Sprinkler</u>		<u>Design</u>		<u>Notes</u>	<u>Fire Test Ref. [See Table Annex D.2(1)]</u>
			<u>Type</u>	<u>Response</u>	<u>Density (gpm/ft²)</u>	<u>Area (ft²)</u>		
≤8 oz	5	38	K ≥ 11.2	QR (OT)	0.47	2000	—	P60 and P61

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

~~QR: Quick response sprinkler. OT: Ordinary temperature.~~ For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Fri Sep 28 00:02:32 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The type of sprinkler abbreviations are already covered by 16.5.1.9 (4). A cross-reference has been added.

Response Message:

Public Input No. 60-NFPA 30-2012 [Section No. 16.5.2.12]

Ballot Results

✓ This item has passed ballot

**First Revision No. 56-NFPA 30-2012 [Section No. 16.6.1.4]****16.6.1.4**

In-rack sprinklers shall meet the following requirements:

- (1) In-rack sprinklers shall be ~~nominal K=~~ ordinary temperature-rated quick-response sprinklers and shall have a nominal K-factor equal to or greater than 8.0, ordinary temperature-rated quick response sprinklers. Intermediate-temperature sprinklers shall be used where ambient conditions require.
- (2) In-rack sprinklers shall be installed below each barrier level.
- (3) In-rack sprinklers shall provide a minimum ~~end- operating pressure (gauge pressure) of 50 psi (345 kPa) out of the flow of 57 gpm out of each of the~~ hydraulically most remote six sprinklers (three on two lines), if one barrier level is provided, or out of each of the hydraulically most remote eight sprinklers (four on two lines), if two or more barrier levels are provided. The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Fri Sep 28 00:04:47 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: As originally proposed the two sprinkler temperature ratings could be confused as being alternatives in all cases. This approach clarifies the submitters intent. Other changes have been made for clarification.

Response Message:

Public Input No. 61-NFPA 30-2012 [Section No. 16.6.1.4]

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

20 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

**First Revision No. 57-NFPA 30-2012 [Section No. 16.6.1.9]****16.6.1.9**

Barriers shall not be required for liquids with closed-cup flash points of 450°F (230° C) or greater. If barriers are omitted, the following shall apply:

- (1) Ceiling sprinkler protection shall provide a minimum density of 0.3 gpm/ft² over the most hydraulically remote 2000 ft² (12 mm/min over 180 m²) using ordinary- temperature, standard-response sprinklers ~~with a~~ sprinklers shall have a nominal K-factor equal to or greater than 8.0. ~~Intermediate- temperature sprinklers shall be used where ambient conditions require.~~
- (2) The ceiling sprinkler water demand and the in-rack water demand shall be balanced at their point of connection.
- (3) The sprinklers located at the rack face shall be staggered vertically.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Fri Sep 28 00:14:49 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: As originally proposed the two sprinkler temperature ratings could be confused as being alternatives in all cases. This approach clarifies the submitters intent.

Response Message:

[Public Input No. 65-NFPA 30-2012 \[Section No. 16.6.1.9\]](#)

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

19 Affirmative All

2 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

**First Revision No. 58-NFPA 30-2012 [Section No. 16.6.2.4]****16.6.2.4**

In-rack sprinklers shall meet the following requirements:

- (1) In-rack sprinklers shall be ~~nominal K=~~ ordinary temperature-rated quick-response sprinklers and shall have a nominal K-factor equal to or greater than 8.0, ordinary temperature-rated quick response sprinklers. Intermediate-temperature sprinklers shall be used where ambient conditions require.
- (2) In-rack sprinklers shall be installed below each barrier level.
- (3) For containers that do not exceed 60 gal (230 L) capacity and where there is only one horizontal barrier, in-rack sprinklers shall provide a minimum ~~end operating pressure (gauge pressure) of 50 psi (345 kPa) out~~ discharge flow of 57 gpm out of each of the hydraulically most remote six sprinklers (three on two lines), if one barrier level is provided, or out of each of the hydraulically most remote eight sprinklers (four on two lines), if two or more barrier levels are provided. The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.
- (4) For containers that exceed 60 gal (230 L) capacity, but do not exceed 793 gal (3000 L), in-rack sprinklers shall provide a ~~minimum operating pressure (gauge pressure) of 50 psi (345 kPa) from the~~ minimum discharge flow of 57 gpm out of each of the hydraulically most remote 12 sprinklers, six each on two lines. The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Fri Sep 28 00:21:16 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The proposal introduces an allowance for larger orifice in-rack sprinklers with an equivalent flow to that prescribed by the current 50 psi operating pressure on a K8.0 sprinkler and provides for the use of intermediate temperature sprinklers for such ambient temperature conditions as might be encountered in an unconditioned warehouses. Additional changes have been made to correlate with amendments made elsewhere in this chapter.

Response Message:

[Public Input No. 62-NFPA 30-2012 \[Section No. 16.6.2.4\]](#)

Ballot Results

✓ **This item has passed ballot**

**First Revision No. 59-NFPA 30-2012 [Section No. 16.6.3.3]****16.6.3.3**

In-rack sprinklers shall meet the following requirements:

- (1) In-rack sprinklers shall be ~~nominal K=8.0, ordinary temperature-rated, quick-response sprinklers.~~ ordinary temperature-rated, quick-response sprinklers. Sprinklers shall have a nominal K-factor equal to or greater than 8.0. An intermediate-temperature sprinkler shall be used where ambient conditions require.
- (2) In-rack sprinklers shall be installed below each barrier level.
- (3) In-rack sprinklers shall provide a minimum ~~end operating pressure (gauge pressure) of 14 psi (97 kPa) out~~ discharge flow of 30 gpm out of each of the hydraulically most remote six sprinklers (three on two lines), if one barrier level is provided, or out of each of the hydraulically most remote eight sprinklers (four on two lines), if two or more barrier levels are provided. The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Fri Sep 28 00:27:59 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Changes have been made to correlate with amendments made elsewhere in this chapter.

Response Message:

[Public Input No. 64-NFPA 30-2012 \[Section No. 16.6.3.3\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

19 Affirmative All

2 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John



First Revision No. 60-NFPA 30-2012 [Section No. 16.6.4]

16.6.4 In-Rack Sprinkler Layouts for Table 16.5.2.8.

Where indicated in Table 16.5.2.8, in-rack sprinklers shall be installed in accordance with Figure 16.6.4(a), Figure 16.6.4(b), Figure 16.6.4(c), Figure 16.6.4(d), or Figure 16.6.4(e), whichever is applicable, as follows:

- (1) Where Layout 7 is required, in-rack sprinklers shall be installed in accordance with Figure 16.6.4(a).
- (2) Where Layout 8 is required, in-rack sprinklers shall be installed in accordance with Figure 16.6.4(b) or Figure 16.6.4(c).
- (3) Where Layout 9 is required, in-rack sprinklers shall be installed in accordance with Figure 16.6.4(d) or Figure 16.6.4(e), whichever is applicable.

Figure 16.6.4(a) Double-Row Rack Sprinkler Layout 7 .

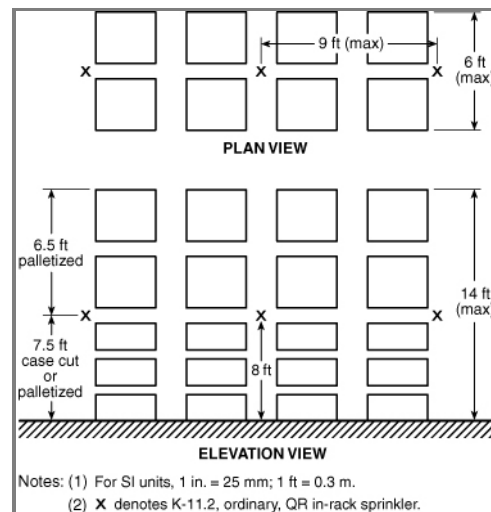


Figure 16.6.4(b) Double-Row Rack Sprinkler Layout 8 — Option #1.

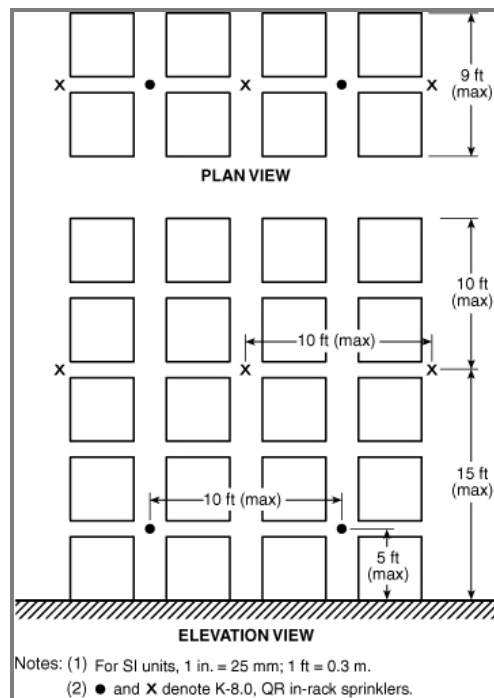


Figure 16.6.4(c) Double-Row Rack Sprinkler Layout 8 — Option #2.

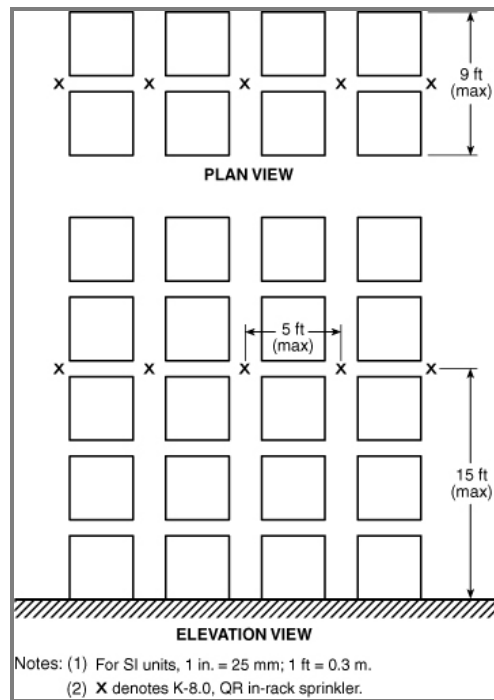


Figure 16.6.4(d) Double-Row Rack Sprinkler Layout 9 — Option #1.

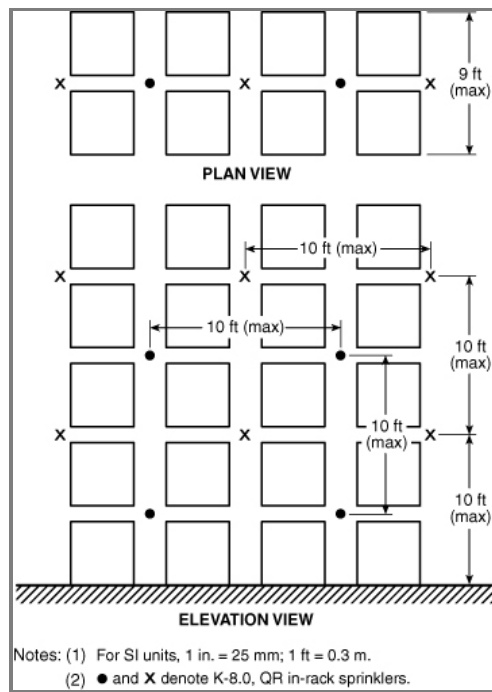


Figure 16.6.4(e) Double-Row Rack Sprinkler Layout 9 — Option #2.

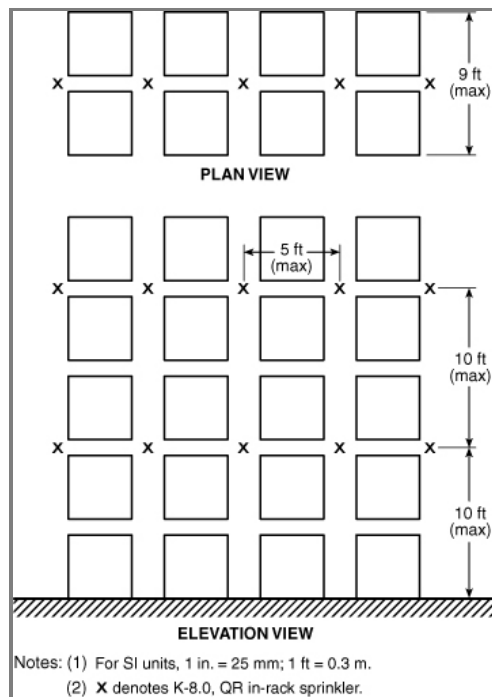


Figure 16.6.4(b) Double-Row Rack Sprinkler Layout 8 — Option #1.

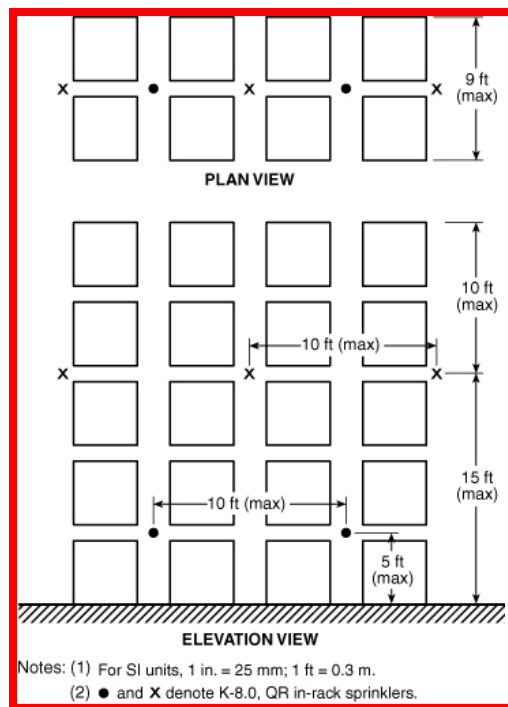
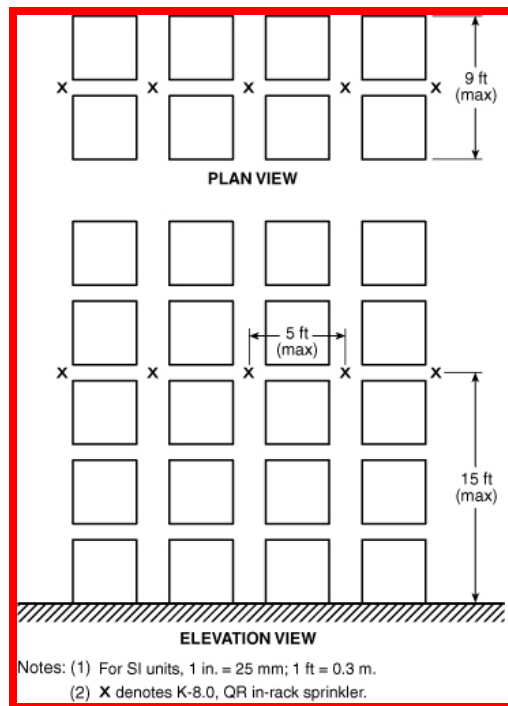


Figure 16.6.4(c) Double-Row Rack Sprinkler Layout 8 — Option #2.



Supplemental Information

<u>File Name</u>	<u>Description</u>
NFPA_30_A2014_Figure_16.6.4b.jpg	NFPA 30 Figure 16.6.4(b) - Formerly Figure 16.6.4(d)
NFPA_30_A2014_Figure_16.6.4c.jpg	NFPA 30 Figure 16.6.4(c) - Formerly Figure 16.6.4(e)
NFPA_30_A2014_Figure_16.6.4d.jpg	NFPA 30 Figure 16.6.4(d) - Formerly Figure 16.6.4(b)
NFPA_30_A2014_Figure_16.6.4e.jpg	NFPA 30 Figure 16.6.4(e) - Formerly Figure 16.6.4(c)

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Submittal Date: Fri Sep 28 00:32:44 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The Technical Committee agrees with Public Input #110. The Layout designations have been changed in accordance with First Revision #1 and the placement of the Figures will be changed so that they appear in the correct numerical order.

Response Message:

[Public Input No. 110-NFPA 30-2012 \[Section No. 16.6.4\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters
 7 Not Returned
 21 Affirmative All
 0 Affirmative with Comments
 0 Negative with Comments
 0 Abstention

Not Returned

Kirby, David
 LeBlanc, John
 McQuaid, John
 Mehta, Navin
 Tabar, David
 Toner, Hugh Patrick
 Workman, Martin

Affirmative All

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First Revision No. 14-NFPA 30-2012 [Section No. 22.7.2]

22.7.2 Weak Roof-to-Shell Seam Construction.

If used, a weak roof-to-shell seam shall be constructed to fail preferential to any other seam and shall be designed in accordance with API Standard 650, *Welded Steel Tanks for Oil Storage*, or ANSI/UL 142, *Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids* .

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 10:27:00 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: UL 142 no longer includes the concept of the weak roof-to-shell seam construction.

Response Message:

Ballot Results

✔ This item has passed ballot

26 Eligible Voters

6 Not Returned

19 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bareta, Gregory

Davis, Charles

Kirby, David

Renkes, Robert

Shepard, Clark

Wechsler, David

Affirmative All

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Affirmative with Comment
Curran, Sullivan D.
no comments



First Revision No. 9-NFPA 30-2012 [Section No. 24.5.6]

24.5.6*

Access aisles ~~of at least~~ not less than 3 ft (0.9 m) in width shall be ~~maintained for movement of fire-fighting personnel and fire protection equipment, provided and~~ maintained from the exterior of the storage tank building into the building and around all storage tanks.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 09:27:05 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This amendment and that of First Revision FR #10 address the concerns raised by Public Input #14.

Response Message:

Public Input No. 14-NFPA 30-2012 [Section No. 24.5.6]

Ballot Results

✓ **This item has passed ballot**

26 Eligible Voters

6 Not Returned

19 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bareta, Gregory

Davis, Charles

Kirby, David

Renkes, Robert

Shepard, Clark

Wechsler, David

Affirmative All

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Affirmative with Comment
Curran, Sullivan D.
no comments



First Revision No. 2-NFPA 30-2012 [New Section after 24.13.5]

[Global FR-2](#) [Hide Deleted](#)

24.13.5.1

Emergency relief vents on protected aboveground tanks complying with UL 2085 containing Class II and Class III liquids shall be allowed to discharge inside the building.

Submitter Information Verification

Submitter Full Name: Bob Benedetti
Organization: National Fire Protection Assoc
Submittal Date: Thu Aug 30 15:39:47 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: UL 2085 protected aboveground tanks are designed and constructed to withstand a two-hour fire test of 2000°F during which no single point temperature may exceed 400°F and the average temperature rise throughout the internal tank can be no greater than 260°F. Given the stringent testing requirement, activation of the emergency vent is likely only under extreme fire conditions over an extended period of time. Further, NFPA 30 requires that emergency vents placed on vent pipes that extend beyond twelve inches from the tank be reengineered to account for the potential back pressure and ensure activation at the appropriate pressure. It is not unusual to see vent lines extending 30 or 40 feet or more through a building in order to achieve the exterior discharge. Allowing the emergency vent to discharge inside eliminates the need to reengineer the venting and ensures proper sizing and activation of the emergency vent.

Response Message:

[Public Input No. 22-NFPA 30-2012 \[New Section after 24.13.5\]](#)

Ballot Results

✔ This item has passed ballot

26 Eligible Voters
6 Not Returned
17 Affirmative All
1 Affirmative with Comments
2 Negative with Comments
0 Abstention

Not Returned

Bareta, Gregory
Davis, Charles
Kirby, David

**First Revision No. 18-NFPA 30-2012 [New Section after 28.11.1]**[Global FR-18](#) [Hide Deleted](#)**28.11.4**

The person responsible for loading or unloading shall remain in attendance during the operation or be able to locally or remotely monitor and control the operation for the duration of the operation.

Exception : A responsible person shall not be required where a hazards analysis shows that the loading or unloading operation can be safely shut down in an emergency.

28.11.4.1* __

The responsible person shall be trained to recognize unsafe conditions and take appropriate actions.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 12:35:35 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The text proposed by the NFPA 30 Technical Committee on Operations is more comprehensive and it correlates with the operational provisions of NFPA 385, Standard for Tank Vehicles for Flammable and Combustible Liquids. See First Revision #19 for the Annex to 28.11.4.1.

Response Message:

[Public Input No. 35-NFPA 30-2012 \[New Section after 28.11.1\]](#)

Ballot Results

✔ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

20 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bareta, Gregory

Kirby, David

Kohn, Donald

Renkes, Robert

Shepard, Clark



First Revision No. 24-NFPA 30-2012 [Section No. A.6.7.5]

~~A.6.7.5~~

~~See NFPA 13, Standard for the Installation of Sprinkler Systems, and NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, for information on these subjects.~~

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 14:41:27 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: A.6.7.5 can be deleted because it duplicates information already found in Subsection 6.7.6.

Response Message:

[Public Input No. 125-NFPA 30-2012 \[Section No. A.6.7.5\]](#)

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

**First Revision No. 4-NFPA 30-2012 [Section No. A.9.5.5]****A.9.5.5**

ANSI Z535.2.2007, *Environmental and Facility Safety Signs*, Section 9.2, was used to determine the letter height, based on a safe viewing distance of 25 ft (7.5 m). Markings can be reflective to improve visibility. See ASTM D4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, for more information on providing reflective surfaces. If international symbols are used, they should be a minimum of 2.0 in. (50 mm) in size.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Wed Sep 26 15:20:49 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This sentence was inadvertently omitted in the production of the 2012 edition of NFPA 30.

Response Message:

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Kirby, David

LeBlanc, John

McQuaid, John

Mehta, Navin

Tabar, David

Toner, Hugh Patrick

Workman, Martin

Affirmative All

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First Revision No. 3-NFPA 30-2012 [Section No. A.21.7.4.1]

A.21.7.4.1

For further information, see API 2015, *Cleaning Petroleum Storage Tanks*; ~~API 2015A, *A Guide for Controlling the Lead Hazard Associated with Tank Entry and Cleaning* ; and API 2015B, *Cleaning Open Top and Covered Floating Roof Tanks*.~~ and API 2016, *Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks* .

Submitter Information Verification

Submitter Full Name: Bob Benedetti
Organization: National Fire Protection Assoc
Submittal Date: Thu Aug 30 15:52:19 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: API 2015A and 2015B are no longer in publication or use. The information provided in these documents is now provided in API 2016

Response Message:

Public Input No. 32-NFPA 30-2012 [Section No. A.21.7.4.1]

Ballot Results

✓ **This item has passed ballot**

26 Eligible Voters
 6 Not Returned
 19 Affirmative All
 1 Affirmative with Comments
 0 Negative with Comments
 0 Abstention

Not Returned

Bareta, Gregory
 Davis, Charles
 Kirby, David
 Renkes, Robert
 Shepard, Clark
 Wechsler, David

Affirmative All

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First Revision No. 10-NFPA 30-2012 [Section No. A.24.5.6]

A.24.5.6

~~NFPA 101 - Life Safety Code~~, provides information on the design of exit facilities. The purpose of the access aisles is to provide for ease of maintenance and emergency operations.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 09:32:53 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This amendment and that of First Revision FR #9 address the concerns raised by Public Input #14.

Response Message:

Ballot Results

✓ **This item has passed ballot**

7 Eligible Voters

6 Not Returned

0 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bareta, Gregory

Davis, Charles

Kirby, David

Renkes, Robert

Shepard, Clark

Wechsler, David

Affirmative with Comment

Curran, Sullivan D.

no comments

**First Revision No. 19-NFPA 30-2012 [New Section after A.28.11.3]**[Global FR-19](#) [Hide Deleted](#)**A.28.11.4.1**

Emergency and safety procedures include, but are not limited to, the following:

- (1) Procedures for bonding and grounding the tank vehicle
- (2) Proper use of portable extinguishers
- (3) Procedures for recognizing and eliminating sources of ignition
- (4) Procedures for recognizing and understanding contingency plans for handling a spill or leak
- (5) Procedures for notifying the appropriate agencies in an emergency

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Thu Sep 27 12:41:06 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: This is advisory text for proposed new text in 28.11.4 and is intended to provide correlation between 28.11.4 and the operational provisions of NFPA 385, Standard for Tank Vehicles for Flammable and Combustible Liquids.

Response Message:

Ballot Results

✓ **This item has passed ballot**

28 Eligible Voters

7 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bareta, Gregory

Kirby, David

Kohn, Donald

Renkes, Robert

Shepard, Clark



First Revision No. 50-NFPA 30-2012 [Section No. D.4 [Excluding any Sub-Sections]]

Table D.4(a) provides recommended sprinkler system design criteria for Class IIIB liquids having flash points greater than 450°F (230°C). Table D.4(b) provides cross-references to fire tests (summarized in the SFPE *Directory of Fire Tests Involving Storage of Flammable and Combustible Liquids in Small Containers*, 3rd edition), on which these recommendations are based.

Table D.4(a) Water Sprinkler Protection for Single-, Double-, or Multiple-Row Open Frame Rack Storage of Class IIIB Liquids (Flash Point 450°F) in Plastic Containers (Nonmiscible Liquids or Miscible Liquids with >50% by Volume Combustible Contents)

<u>Liquid Type or Closed-Cup Flash Point (°F)</u>	<u>Container Size (gal)</u>	<u>Maximum Building or Ceiling Height (ft)</u>	<u>Packaging Type</u>	<u>Maximum Storage Height (ft)</u>	<u>Minimum Aisle Width (ft)</u>	<u>Rack Width Depth (ft)</u>	<u>Sprinkler Protection Criteria</u>
							<u>Ceiling Sprinkler Type, Temperature Rating</u>
≥450	≤5	30	Cartoned	25	8	≤9	Any K-14.0 ESFR ordinary standard spray sprinkler
				15	8	≤9	Any K-14.0 14.0 ESFR ordinary standard spray sprinkler
			Uncartoned or mixed cartoned and uncartoned	25	8	≤9	Any Standard spray sprinkler

For SI units, 1 ft = 0.3 m.

*See Table D.4(b) for references to fire tests on which the protection criteria given in this table are based.

Table D.4(b) Summary of Fire Test References for Table D.4(a)

Ref. No.	Technical Justification and Test Identifier in Directory
1	Results of Tests P-21 through P-31.
2	Results of Test P-46.
3	Results of Tests P-56 and P-57.
4	Results of Test P-44.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Thu Sep 27 22:53:12 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: In the column heading, "Rack Width" has been replaced with the more accurate descriptor "Rack Depth".

Response Message:

Ballot Results

✔ This item has passed ballot

29 Eligible Voters

11 Not Returned

17 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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Affirmative with Comment

Havens, Dwight H.

Need to fix the table presentation. It is not comprehensible to the general public in its current formatting.

**First Revision No. 5-NFPA 30-2012 [Section No. D.5.10]****D.5.10**

Aisle width should not be not less than 7.5 ft (2.3 m). ~~See Table D.5 -~~

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Wed Sep 26 15:26:15 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: The reference to Table D.5 is not relevant.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

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First Revision No. 71-NFPA 30-2012 [Section No. I.1.2.2]

I.1.2.2 AIChE Publications.

American Institute of Chemical Engineers, 3 Park Avenue, New York, NY 10016.

Fisher, H.G., and Forrest, H.S., "Protection of Storage Tanks from Two-Phase Flow Due to Fire Exposure," *Process Safety Progress*, Vol. 14, July 1995, pp. 183–199.

Guidelines for Analyzing and Managing the Security Vulnerabilities of Fixed Chemical Sites, ~~2000~~ 2003.

Guidelines for Chemical Process Quantitative Risk Analysis, 2nd edition, ~~October 2000~~ 1999.

Guidelines for Pressure Relief and Effluent Handling Systems, 1998.

Houser, J., ~~et al~~ et. al, "Vent Sizing for Fire Considerations: External Fire Duration, Jacketed Vessels, and Heat Flux Variations Owing to Fuel Consumption," *Journal of Loss Prevention in the Process Industries*, Vol. 14 No. 5, September 2001, pp. 403–412.

Nugent, D.P., Freeman, J.L., and Oliszewicz, M.P., *Guidelines for Safe Warehousing of Chemicals*, 1998.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submission Date: Mon Oct 01 09:34:08 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

 **This item has not been balloted**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

**First Revision No. 72-NFPA 30-2012 [Section No. I.1.2.3]****I.1.2.3 ANSI Publications.**

American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ANSI Z129.1, *Hazardous Industrial Chemicals—Precautionary Labeling*, 2005.

ANSI Z535.2, *Environmental and Facility Safety Signs*, ~~2007~~ 2011.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submission Date: Mon Oct 01 09:35:09 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

**First Revision No. 8-NFPA 30-2012 [Section No. I.1.2.4]****I.1.2.4 API Publications.**

American Petroleum Institute, 1220 L Street, NW, Washington, DC 20005.

API RP 70, *Security for Offshore Oil and Natural Gas Operations*, ~~2010~~ 1st edition, 2003.

API RP 70I, *Security for Worldwide Offshore Oil and Natural Gas Operations*, 2004.

API 12R1, *Setting, Maintenance, Inspection, Operation, and Repair of Tanks in Production Service*, ~~2002~~ 2008.

API RP 500, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2*, ~~2005~~ Revision 2, 1998.

API RP 505, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2*, ~~1997~~ 2002.

API 620, *Recommended Rules for the Design and Construction of Large, Welded, Low-Pressure Storage Tanks*, ~~10th~~ 11th edition, ~~2004~~ 2012.

API Standard 650, *Welded Steel Tanks for Oil Storage*, ~~10th~~ 11th edition, ~~1998~~ 2011.

API 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, ~~3rd~~ 4th edition, ~~2004~~ 2012.

API Standard 1164, *SCADA Security*, ~~2004~~ Edition 2, 2009.

API 1501, *Filtration and Dehydration of Aviation Fuels*, 1st edition, 1965.

API 1604, *Removal and Disposal of Used Underground Petroleum Storage Tanks*, 3rd edition, ~~1996~~ reaffirmed 2001.

API RP 1615, *Installation of Underground Petroleum Storage Systems*, ~~5th~~ 6th edition, ~~1996~~ 2011.

API RP 1621, *Bulk Liquid Stock Control at Retail Outlets*, 2001.

API 1631, *Interior Lining of Underground Storage Tanks*, 5th edition, ~~2004~~ reaffirmed 2010.

API RP 1632, *Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems*, 3rd edition, ~~1996~~ reaffirmed 2010.

API 2003, *Protection Against Ignition Arising Out of Static, Lightning, and Stray Currents*, ~~6th~~ 7th edition, ~~1998~~ 2008.

API 2015, *Cleaning Petroleum Storage Tanks*, 6th edition, ~~2004~~ reaffirmed 2006.

API 2015A, *A Guide for Controlling the Lead Hazard Associated with Tank Entry and Cleaning*, 1982.

API ~~2015B~~ 2016, *Cleaning Open Top and Covered Floating Roof Tanks*, ~~1984~~. Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks. 1st edition, reaffirmed 2006.

API 2214, *Spark Ignition Properties of Hand Tools*, 4th edition, 2004.

API 2217A, *Guidelines for Work in Inert Confined Spaces in the Petroleum Industry*, ~~3rd~~ 4th edition, ~~2005~~ 2009.

API 2218, *Fireproofing Practices in Petroleum and Petrochemical Processing Plants*, 2nd edition, 1999.

API 2219, *Safe Operating Guidelines for Vacuum Trucks in Petroleum Service*, ~~2nd~~ 3rd edition, ~~1999~~ 2005 .

API 2350, *Overfill Protection for Storage Tanks in Petroleum Facilities*, ~~3rd~~ 4th edition, ~~2005~~ 2012 .

~~API~~, API *Security Guidelines for the Petroleum Industry*, 3rd edition, 2005.

API Standard 2610, *Design, Construction, Operation, Maintenance, and Inspection of Terminal and Tank Facilities*, 2nd edition, 2005.

“An Engineering Analysis of the Effects of Oxygenated Fuels on Marketing Vapor Recovery Equipment,” September 1990.

API 4589, *Fugitive Hydrocarbon Emissions from Petroleum Production Operations, Volumes I and II*, ~~1980~~ 1993 .

API/National Petrochemical and Refiners Association, *Security Vulnerability Assessment Methodology*, 2nd edition, 2004.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submission Date: Wed Sep 26 19:47:48 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: These changes update the referenced API documents to the latest editions. Withdrawn references are deleted. This First Revision also incorporates the recommendation of Public Input #46.

Response Message:

Public Input No. 31-NFPA 30-2012 [Section No. I.1.2.4]

Ballot Results

✔ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic



First Revision No. 73-NFPA 30-2012 [Section No. I.1.2.6]

I.1.2.6 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D 4206, *Standard Test Method for Sustained Burning of Liquid Mixtures Using the Small Scale Open-Cup Apparatus*, 2004 1996 (reaffirmed 2007) .

~~ASTM D 4207, *Standard Test Method for Sustained Burning of Low Viscosity Liquid Mixtures by the Wick Test*, 1991.~~

ASTM D 6469, *Standard Guide for Microbial Contamination in Fuels and Fuel Systems*, 2004 2011 .

ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2000 2012 .

ASTM E 502, *Standard Test Method for Selection and Use of ASTM Standards for the Determination of Flash Point of Chemicals by Closed Cup Methods*, 1994 2007 .

ASTM Manual on Flash Point Standards and Their Use, 1992.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submittal Date: Mon Oct 01 09:35:53 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✔ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

17 Affirmative All

1 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl
Fernandes, Elson
Gil, Frederic
King, John
Upson, Robert
Wieczorek, Christopher
Wolf, Kevin
Woycheese, Jack

Affirmative All

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Affirmative with Comment

Havens, Dwight H.
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**First Revision No. 70-NFPA 30-2012 [Section No. I.1.2.13]****I.1.2.13 PEI Publications.**

Petroleum Equipment Institute, P.O Box 2380, Tulsa, OK 74101-2380.

PEI RP100, *Recommended Practices for Installation of Underground Liquid Storage Systems*, ~~1990~~ 2011 .

PEI RP200, *Recommended Practices for Installation of Aboveground Storage Systems for Motor Vehicle Fueling*, ~~1994~~ 2008 .

PEI RP600, *Recommended Practices for Overfill Prevention for Shop-Fabricated Aboveground Tanks*, ~~2007~~ 2012 .

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submission Date: Mon Oct 01 09:33:14 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

**First Revision No. 69-NFPA 30-2012 [Section No. I.1.2.15]****I.1.2.15 STI Publications.**

Steel Tank Institute, 570 Oakwood Road, Lake Zurich, IL 60047.

SP001, *Standard for Inspection of Aboveground Storage Tanks*, ~~2006~~ 5th edition, 2011 .

STI-P3, *Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks*, ~~1996~~ 2012 .

STI R931, *Double Wall AST Installation and Testing Instructions*, ~~1993~~ 2012 .

STI RP 892, *Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems*, ~~1994~~ 2012 .

STI RP R011, *Recommended Practice for Anchoring of Steel Underground Storage Tanks*, 2006.

STI, ACT-100[®], *Specification for External Corrosion Protection of FRP Composite Steel Underground Tanks*, F894, 1997.

Keeping Water Out of Your Storage System, 2004.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submission Date: Mon Oct 01 09:29:31 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

**First Revision No. 6-NFPA 30-2012 [Section No. I.1.2.16]****I.1.2.16 UL Publications.**

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 30, *Standard for Metal Safety Cans*, 1995, Revised 2009.

ANSI/UL 142, *Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids*, 2006, Revised 2010.

ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*, ~~2003~~ 2011 .

ANSI/UL 1313, *Standard for Nonmetallic Safety Cans for Petroleum Products*, ~~2005~~, Revised 2007.

UL 1316, *Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures*, ~~1994~~, Revised 2006.

ANSI/UL 1709, *Standard for Rapid Rise Fire Tests of Protection Materials for Structural Steel*, 2005, Revised ~~2007~~ 2011 .

ANSI/UL 1746, *Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks*, 2007.

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Wed Sep 26 19:42:41 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update referenced standard to most recent edition as indicated.

Response Message:

Public Input No. 9-NFPA 30-2012 [Section No. I.1.2.16]

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

**First Revision No. 7-NFPA 30-2012 [Section No. I.1.2.17]****I.1.2.17 ULC Publications.**

Underwriters' Laboratories of Canada, 7 Underwriters Road, Scarborough, Ontario M1R 3B4, Canada.

CAN/ULC-S603.1, *Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids*, ~~2003~~ 2011 .

Submitter Information Verification

Submitter Full Name: [Not Specified]

Organization: [Not Specified]

Submittal Date: Wed Sep 26 19:45:58 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update referenced standard to most recent edition as indicated.

Response Message:

Public Input No. 10-NFPA 30-2012 [Section No. I.1.2.17]

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

11 Not Returned

18 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bond, John

Brennecke, Gregory

Crumholt, Curtis

Drechsel, Carl

Fernandes, Elson

Gil, Frederic

King, John

Upson, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All

**First Revision No. 68-NFPA 30-2012 [Section No. I.1.2.18]****I.1.2.18 UN Publications.**

United Nations Publications, 2 United Nations Plaza, Room DC2-853, New York, NY 10017.

Recommendations on the Transport of Dangerous Goods, 17th revised edition, 2011.

Submitter Information Verification

Submitter Full Name: Robert Benedetti

Organization: National Fire Protection Assoc

Submittal Date: Mon Oct 01 09:28:50 EDT 2012

Committee Statement and Meeting Notes

Committee Statement: Update references to latest edition and correct titles, as necessary.

Response Message:

Ballot Results

✓ **This item has passed ballot**

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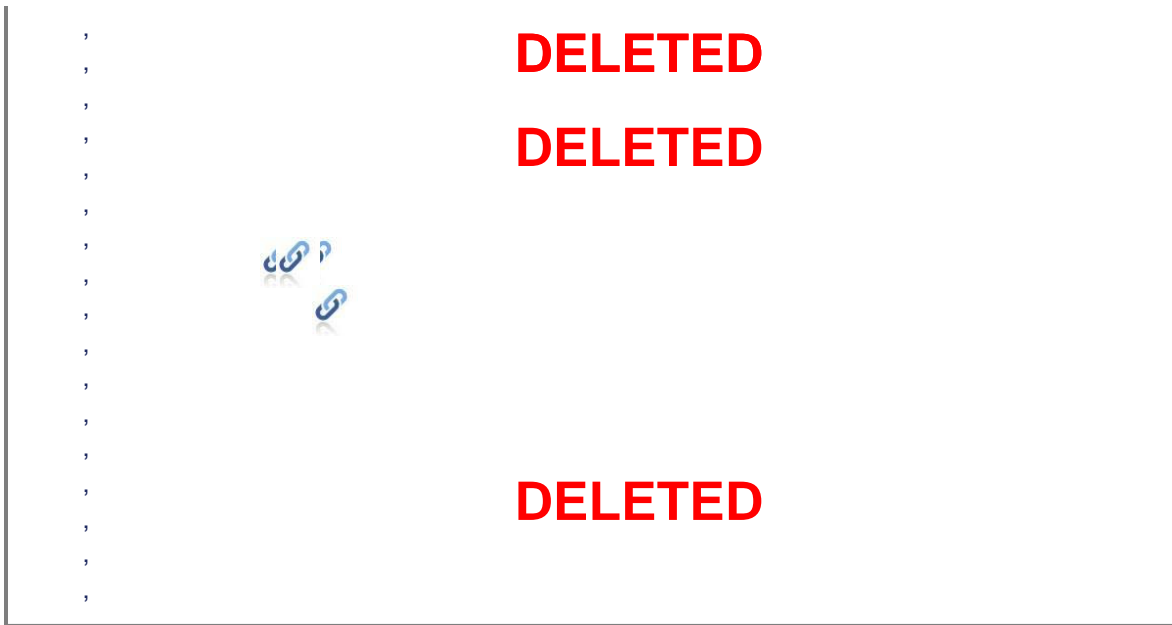
Upton, Robert

Wieczorek, Christopher

Wolf, Kevin

Woycheese, Jack

Affirmative All



DELETED