DELETED

Second Revision No. 1196-NFPA 13-2023 [Global Comment]

Based on the new definition of "blocking," replace "firestopped" or any derivations with the appropriate phrasing of "blocking."

The following sections need to be revised:

9.2.1.16.2

A.3.3.45.1

Supplemental Information

File Name	Description	Approved
PC-16_Blocking.docx	For editorial use - see this attached file for revisions including changing 'firestopped' with 'blocking'	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Sep 07 11:06:23 EDT 2023

Committee Statement

Committee Statement: The term "firestopping" was revised to say "blocking."

Response Message: SR-1196-NFPA 13-2023

Public Comment No. 160-NFPA 13-2023 [Global Input]

Public Comment No. 16-NFPA 13-2023 [Global Input]

Second Revision No. 1116-NFPA 13-2023 [Detail]

10.2.7.3 Obstructions ~~to Sprinkler~~ Below the Deflector Affecting Sprinkler Discharge Pattern Development.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 09 09:49:30 EDT 2023

Committee Statement

Committee Statement: 10.2.7.2 and 10.2.7.3 have the same titles and can confuse the user when applying the beam rules and three times rule to obstructions. This change in title makes it clear that the beam rule applies to obstructions within 18 in. of the deflector that extends to the level of the deflector or above. The change to 10.2.7.2 and 10.2.7.3 makes it clear that the three times rule applies to obstructions within 18 in. of the deflector that are completely below the level of the deflector.

Response Message: SR-1116-NFPA 13-2023

Public Comment No. 27-NFPA 13-2023 [Section No. 10.2.7.3]

Second Revision No. 1198-NFPA 13-2023 [Detail]

8.2.7* Air~~,Nitrogen, or Other Approved Gas~~ Supply.

8.2.7.1

Air~~, nitrogen, or other approved gas~~ under pressure, as permitted in Section 4.8, shall be maintained on dry pipe systems throughout the year.

8.2.7.2*

The air~~, nitrogen, or other approved gas~~ shall be supplied from a permanent source available at all times.

A.8.2.7.2

The ~~nitrogen or other approved gas~~air can be either generated on site or from storage containers, sized to provide a reliable supply for at least 6 months of expected maintenance use.

8.2.7.3*

The air~~, nitrogen, or other approved gas~~ supply shall be capable of restoring normal pressure in the system within 30 minutes.

A.8.2.7.3

When a single compressor serves multiple dry pipe systems, the 30-minute fill time is based on the single largest system.

When a single ~~nitrogen or other approved gas~~air source serves multiple dry pipe systems, the 30-minute fill time is based on the single largest system.

8.2.7.4

The requirement of 8.2.7.3 shall not apply in refrigerated spaces maintained below 5°F (-15°C), where the air~~, nitrogen, or other approved gas~~ supply is capable of restoring normal pressure in the system within ~~30~~60 minutes.

Supplemental Information

File Name	Description	Approved
SR_1198.docx	For editorial use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Sep 08 12:01:36 EDT 2023

Committee Statement

Committee Statement: The term "air, nitrogen, or other approved gas" has been revised to read "air" for consistency throughout the document.

Response Message: SR-1198-NFPA 13-2023

Public Comment No. 39-NFPA 13-2023 [Section No. 8.2.7]

Public Comment No. 59-NFPA 13-2023 [Section No. 8.2.7.4]

Second Revision No. 1200-NFPA 13-2023 [Detail]

~~**14.2.4**~~

~~ESFR sprinklers shall be permitted for use in buildings with unobstructed or obstructed construction.~~

A.14.2.7.2.1 [previously A.14.2.4]

Storage in single-story or multistory buildings can be permitted, provided the maximum ceiling/roof height as specified in Table 14.2.7.2.1 is satisfied for each storage area.

~~**14.2.4.1**~~

~~In buildings with obstructed construction where the depths of the solid structural members (beams, stem, and so forth) exceed 12 in. (300 mm), ESFR sprinklers shall be installed in each channel formed by the solid structural members.~~

~~**14.2.4.2**~~

~~In buildings with obstructed construction where ESFR sprinklers are installed in accordance with 14.2.4.1, the minimum requirements for sprinkler spacing and area of coverage shall comply with the requirements of 14.2.8 and 14.2.9.~~

~~**14.2.4.3**~~

~~In buildings with obstructed construction where ESFR sprinklers are installed in accordance with 14.2.4.1 and the sprinklers are located entirely above the bottom plane of the adjacent solid structural members (beams, stem, and so forth), the requirements for minimum sprinkler spacing per 14.2.9.4 shall apply within each channel formed by the solid structural members, but the requirements for minimum sprinkler area spacing per 14.2.8.3 and minimum sprinkler linear spacing per 14.2.9.4 for sprinklers between channels formed by the solid structural members shall not apply.~~

~~**14.2.4.4**~~

~~Where sprinklers are not located entirely above the horizontal plane created by any adjacent solid structural member, the minimum sprinkler spacing and area of coverage shall comply with the requirements of 14.2.8 and 14.2.9.~~

Supplemental Information

File Name	Description	Approved
SR_1200.docx		
Detail_SR_1200_14.2.4.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI
Submittal Date: Tue Sep 12 15:06:03 EDT 2023

Committee Statement

Committee Statement: The information was removed as it is redundant to, and conflicts with, section 14.2.10 as modified in the First Draft. Since Section 14.2.4 was deleted, A.14.2.4 was moved to A.14.2.8.2.1.

Response Message: SR-1200-NFPA 13-2023

Public Comment No. 86-NFPA 13-2023 [Section No. 14.2.4]

Public Comment No. 144-NFPA 13-2023 [Section No. A.14.2.4]

Second Revision No. 1201-NFPA 13-2023 [Detail]

10.2.8.4 Obstructions that Prevent Sprinkler Discharge from Reaching Hazard.

Continuous or noncontinuous obstructions that interrupt the water discharge in a horizontal plane more than 18 in. (450 mm) below the sprinkler deflector in a manner to limit the distribution from reaching the protected hazard shall comply with 9.5.5.3. *(See A.9.5.5.3.1.)*

~~**A.10.2.8.4**~~

~~**See A.9.5.5.3.1.**~~

10.3.7 Clearance to Storage (Standard Sidewall Spray Sprinklers). *(See 10.2.9.4.)*

~~**A.10.3.7**~~

~~**See 10.2.9.4.**~~

11.3 Extended Coverage Sidewall Spray Sprinklers. *(See 10.2.9.2.)*

~~**A.11.3**~~

~~**See 10.2.9.2.**~~

11.3.5.1.2.1

Sidewall sprinkler deflectors shall be located not more than 6 in. (150 mm) or less than 4 in. (100 mm) from walls on which they are mounted. *(See A.10.3.5.1.2.1.)*

~~**A.11.3.5.1.2.1**~~

~~**See A.10.3.5.1.2.1.**~~

12.1.10.3 Obstructions that Prevent Sprinkler Discharge from Reaching Hazard.

Continuous or noncontinuous obstructions that interrupt the water discharge in a horizontal plane more than 18 in. (450 mm) below the sprinkler deflector in a manner to limit the distribution from reaching the protected hazard shall comply with 9.5.5.3. *(See A.9.5.5.3.1.)*

~~**A.12.1.10.3**~~

~~**See A.9.5.5.3.1.**~~

14.2.8.1 Maximum Distance Between Sprinklers.

(3) Regardless of the storage or ceiling height arrangement, deviations from the maximum sprinkler spacing shall be permitted to eliminate obstructions created by structural elements (such as trusses, bar joists, and wind bracing) by moving a sprinkler along the branch line a maximum of 1 ft (300 mm) from its allowable spacing, provided

coverage for that sprinkler does not exceed 110 ft^2 (10 m^2) where all of the following conditions are met:

(a) The average actual floor area protected by the moved sprinkler and the adjacent sprinklers shall not exceed 100 ft^2 (9 m^2).

(b) Adjacent branch lines shall maintain the same pattern.

(c) In no case shall the distance between sprinklers exceed 12 ft (3.7 m). *(See Figure A.14.2.7.2.3.)*

~~**A.14.2.8.1(3)**~~

~~**See Figure A.14.2.7.2.3.**~~

30.3.2

When a threaded sprinkler is removed from a fitting or welded outlet, it shall not be reinstalled except as permitted by 30.3.2.1. *(See A.16.2.1.1.)*

~~**A.30.3.2**~~

~~**See A.16.2.1.1.**~~

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Nov 06 09:29:12 EST 2023

Committee Statement

Committee Statement: Revised to meet Manual of Style requirements and create consistency within the document.

Response Message: SR-1201-NFPA 13-2023

Second Revision No. 1204-NFPA 13-2023 [Detail]

16.12.3.1*

Unless the requirements of 16.12.3.1.1, 16.12.3.1.2, or 16.12.3.1.3 are met, the fire department connection(s) shall consist of two 2½ in. (65 mm) connections using NH internal threaded swivel fitting(s) with "2.5–7.5 NH standard thread," as specified in ~~NFPA 1963~~ NFPA 1960 .

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Nov 10 10:40:45 EST 2023

Committee Statement

Committee Statement: NFPA 1963 has been consolidated into NFPA 1960. This corrects the extracted information.

Response Message: SR-1204-NFPA 13-2023

Second Revision No. 1014-NFPA 13-2023 [Section No. 1.2.2]

1.2.2

Sprinkler systems and private fire service mains are specialized fire protection systems and shall require design and installation by ~~qualified~~ knowledgeable and experienced personnel.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 10:00:56 EDT 2023

Committee Statement

Committee Statement: The term "qualified" was changed to "knowledgeable and experienced" which allows companies to train their personnel for their job. Using the term knowledgeable and experienced allows AHJ's to establish acceptable criteria for those performing the work.

Response Message: SR-1014-NFPA 13-

Public Comment No. 154-NFPA 13-2023 [Section No. 1.2.2]

Second Revision No. 1114-NFPA 13-2023 [Section No. 1.5]

1.5* Equivalency.

Nothing in this standard shall prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

A.1.5

Subsequent editions of NFPA are not always adopted as soon as they are published and could lag several code cycles before the new edition is referenced. Where a newer edition of this standard is published, that standard should be permitted to be used in its entirety.

1.5.1

Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.5.2

The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 08 09:07:54 EDT 2023

Committee Statement

Committee Statement: Adding the information to the annex provides guidance to Authorities Having Jurisdiction that a newer standard may be used, if used in it's entirety.

Response Message: SR-1114-NFPA 13-2023

Public Comment No. 2-NFPA 13-2023 [New Section after 1.5]

Second Revision No. 1009-NFPA 13-2023 [Chapter 2]

Chapter 2 Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications.

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

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam,* 2024 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems,* ~~2023~~ 2024 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection,* 2025 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection,* 2023 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems,* 2023 edition.

NFPA 30, *Flammable and Combustible Liquids Code,* 2024 edition.

NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products,* 2023 edition.

NFPA 32, *Standard for Drycleaning Facilities,* 2021 edition.

NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials,* 2024 edition.

NFPA 34, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids,* 2024 edition.

NFPA 36, *Standard for Solvent Extraction Plants,* ~~2021~~ 2025 edition.

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines,* 2024 edition.

NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Film,* 2025 edition.

NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals,* ~~2023~~ 2024 edition.

NFPA 51, *Standard for the Design and Installation of Oxygen–Fuel Gas Systems for Welding, Cutting, and Allied Processes,* 2023 edition.

NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work,* 2024 edition.

NFPA 55, *Compressed Gases and Cryogenic Fluids Code,* 2023 edition.

NFPA 59, *Utility LP-Gas Plant Code,* 2024 edition.

NFPA 59A, *Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG),* 2023 edition.

NFPA 70®, National Electrical Code®, 2023 edition.

NFPA 72®, National Fire Alarm and Signaling Code®, 2025 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment,* 2024 edition.

NFPA 76, *Standard for the Fire Protection of Telecommunications Facilities,* 2024 edition.

NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment,* 2024 edition.

NFPA 86, *Standard for Ovens and Furnaces,* 2023 edition.

NFPA 91, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids,* 2020 edition.

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations,* 2024 edition.

NFPA 99, *Health Care Facilities Code,* 2024 edition.

NFPA 101®, Life Safety Code®, 2024 edition.

NFPA 120, *Standard for Fire Prevention and Control in Coal Mines,* 2023 edition.

NFPA 122, *Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities,* 2023 edition.

NFPA 130, *Standard for Fixed Guideway Transit and Passenger Rail Systems,* 2023 edition.

NFPA 140, *Standard on Motion Picture and Television Production Studio Soundstages, Approved Production Facilities, and Production Locations,* ~~2023~~ 2024 edition.

NFPA 150, *Fire and Life Safety in Animal Housing Facilities Code,* 2025 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols,* 2024 edition.

NFPA 214, *Standard on Water-Cooling Towers,* 2021 edition.

NFPA 259, *Standard Test Method for Potential Heat of Building Materials,* 2023 edition.

NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves,* 2021 edition.

NFPA 318, *Standard for the Protection of Semiconductor Fabrication Facilities,* 2025 edition.

NFPA 400, *Hazardous Materials Code,* 2025 edition.

NFPA 409, *Standard on Aircraft Hangars,* 2022 edition.

NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways,* 2022 edition.

NFPA 423, *Standard for Construction and Protection of Aircraft Engine Test Facilities,* 2022 edition.

NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films,* 2023 edition.

NFPA 703, *Standard for Fire-Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials,* 2024 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems,* 2023 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems,* 2023 edition.

NFPA 804, *Standard for Fire Protection for Advanced Light Water Reactor Electric Generating Plants,* 2020 edition.

NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,* 2020 edition.

NFPA 909, *Code for the Protection of Cultural Resource Properties — Museums, Libraries, and Places of Worship,* 2021 edition.

NFPA 915, *Standard for Remote Inspections and Tests,* 2024 edition.

NFPA 1960, *Standard for Fire Hose Connections, Spray Nozzles, Manufacturer's Design of Fire Department Ground Ladders, Fire Hose, and Powered Rescue Tools,* 2024 edition.

~~NFPA 1963, *Standard for Fire Hose Connections,* 2019 edition.~~

2.3 Other Publications.

2.3.1 ACI Publications.

American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331-3439.

ACI 318, *Building Code Requirements for Structural Concrete and Commentary*, 2019, Reapproved, 2022 .

ACI 355.2, *Qualification of Post-Installed Mechanical Anchors in Concrete and Commentary*, 2019.

2.3.2 ASCE Publications.

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400.

ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures,* 2022.

2.3.3 ASME Publications.

American Society ~~for~~ of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

Boiler and Pressure Vessel Code, Section IX, “Welding, Brazing, and Fusing Qualifications,” 2021.

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2019~~ 2022 .

ASME B1.20.1, *Pipe Threads, General Purpose, Inch*, 2013 (R2018).

ASME B16.1, *Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250*, 2020.

ASME B16.3, *Malleable Iron Threaded Fittings: Classes 150 and 300*, 2021.

ASME B16.4, *Gray Iron Threaded Fittings: Classes 125 and 250*, 2021.

ASME B16.5, *Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch Standard*, 2020.

ASME B16.9, *Factory-Made Wrought Buttwelding Fittings*, 2018.

ASME B16.11, *Forged Fittings, Socket-Welding and Threaded*, ~~2016, errata, 2017~~ 2021 .

ASME B16.15, *Cast Copper Alloy Threaded Fittings: Classes 125 and 250*, 2018.

ASME B16.18, *Cast Copper Alloy Solder Joint Pressure Fittings*, 2021.

ASME B16.22, *Wrought Copper and Copper Alloy Solder — Joint Pressure Fittings*, 2021.

ASME B16.25, *Buttwelding Ends*, 2017.

ASME B36.10M, *Welded and Seamless Wrought Steel Pipe*, 2018.

2.3.4 ASTM Publications.

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

ASTM A53/A53M, *Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless*, ~~2021~~ 2022 .

ASTM A106/A106M, *Standard Specification for Seamless Carbon Steel Pipe for High Temperature Service*, 2019.

ASTM A135/A135M, *Standard Specification for Electric-Resistance-Welded Steel Pipe*, 2021.

ASTM A234/A234M, *Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service*, ~~2019~~ 2023 .

ASTM A312/A312M, *Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes*, ~~2021~~ 2022 .

ASTM A403/A403M, *Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings*, 2022.

ASTM A795/A795M, *Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use*, 2021.

ASTM B32, *Standard Specification for Solder Metal*, 2020.

ASTM B43, *Standard Specification for Seamless Red Brass Pipe, Standard Sizes*, 2020.

ASTM B75/B75M, *Standard Specification for Seamless Copper Tube*, 2020.

ASTM B88, *Standard Specification for Seamless Copper Water Tube*, ~~2020~~ 2022 .

ASTM B251/B251M, *Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube*, 2017.

ASTM B446, *Standard Specification for Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625), Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219), and Nickel-Chromium-Molybdenum-Tungsten Alloy (UNS N06625) Rod and Bar*, 2019.

ASTM B813, *Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube*, 2016.

ASTM B828, *Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings*, 2016.

ASTM C635/C635M, *Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings*, ~~2017~~ 2022 .

ASTM C636/C636M, *Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels*, 2019.

ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, 2021.

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, ~~2020~~ 2022 .

ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C*, ~~2020~~ 2022 .

ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C*, ~~2018~~ 2022 .

ASTM E2768, *Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)*, reapproved 2018.

ASTM E2965, *Standard Test Method for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Consumption Calorimeter*, ~~2017~~ 2022 .

ASTM F437, *Standard Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80*, 2021.

ASTM F438, *Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40*, ~~2017~~ 2023 .

ASTM F439, *Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80*, 2019.

ASTM F442/F442M, *Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)*, ~~2020~~ 2023 .

ASTM F1121, *Standard Specification for International Shore Connections for Marine Fire Applications*, 1987, 2019.

ASTM SI 10, *IEEE/ASTM SI 10 American National Standard for Metric Practice*, ~~2017~~ 2016 .

2.3.5 AWS Publications.

American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166–6672.

AWS A5.8M/A5.8, *Specification for Filler Metals for Brazing and Braze Welding*, 2019.

AWS B2.1/B2.1M, *Specification for Welding Procedure and Performance Qualification*, 2021.

2.3.6 AWWA Publications.

American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

AWWA C104/A21.4, *Cement-Mortar Lining for Ductile-Iron Pipe and Fittings,*~~2016~~ 2023 .

AWWA C105/A21.5, *Polyethylene Encasement for Ductile-Iron Pipe Systems,* 2018.

AWWA C110/A21.10, *Ductile-Iron and Gray-Iron Fittings*, 2021.

AWWA C111/A21.11, *Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings,* 2017.

AWWA C115/A21.15, *Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges,* 2020.

AWWA C150/A21.50, *Thickness Design of Ductile-Iron Pipe,* 2021.

AWWA C151/A21.51, *Ductile-Iron Pipe, Centrifugally Cast,* 2017, errata, 2018.

AWWA C153/A21.53, *Ductile-Iron Compact Fittings*, 2019.

AWWA C300, *Reinforced Concrete Pressure Pipe, Steel-Cylinder Type,*~~2016~~ 2022 .

AWWA C301, *Prestressed Concrete Pressure Pipe, Steel-Cylinder Type*, 2014, Reaffirmed without Revision 2019.

AWWA C302, *Reinforced Concrete Pressure Pipe, Non-Cylinder Type*, ~~2016~~ 2022 .

AWWA C303, *Reinforced Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type*, 2017.

AWWA C600, *Installation of Ductile-Iron Water Mains and Their Appurtenances,* 2017.

AWWA C602, *Cement-Mortar Lining of Water Pipelines in Place, 4 in. (100 mm) and Larger*, ~~2017~~ 2023 .

AWWA C900, *Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. Through 60 in. (100 mm Through 1,500 mm)*, ~~2016~~ 2022 .

AWWA C906, *Polyethylene (PE) Pressure Pipe and Fittings, 4 in. (100 mm) Through 65 in. (1,650 mm), for Waterworks*, 2021.

AWWA C909, *Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 in. Through 24 in. (100 mm Through 600 mm), for Water, Wastewater, and Reclaimed Water Service*, ~~2016~~ 2022 .

AWWA M9, *Concrete Pressure Pipe*, 2008, errata, 2014.

AWWA M23, *PVC Pipe — Design and Installation*, 2020.

AWWA M55, *PE Pipe — Design and Installation*, 2020.

2.3.7 ICC-ES Publications.

ICC Evaluation Service, 900 Montclair Road, Suite A, Birmingham, AL 35213.

ICC-ES AC446, *Acceptance Criteria for Headed Cast-in Specialty Inserts in Concrete*, 2018.

2.3.8 IEEE Publications.

IEEE, Operations Center, 445 Hoes Lane, Piscataway, NJ 08854-4141.

IEEE 45, *Recommended Practice for Electric Installations on Shipboard*, 2002.

2.3.9 UL Publications.

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

UL 263, *Fire Tests of Building Construction and Materials*, 2011, revised 2022.

UL 723, *Test for Surface Burning Characteristics of Building Materials*, 2018.

UL 2556, *Wire and Cable Test Methods*, 2015, revised 2021.

2.3.10 ~~U.~~ ~~S.~~ Government Publications.

~~U.~~ ~~S.~~ Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 46, CFR, Parts 54.15-10 Safety and Relief Valves, 56.20 Valves, 56.20-5(a) Markings, 56.50-95 Overboard Discharges and Shore Connections, 56.60 Materials, and 58.01-40 Machinery, Angles of Inclination.

Title 46, CFR, Subchapter F, “Marine Engineering.”

Title 46, CFR, Subchapter J, “Electrical Engineering.”

2.3.11 Other Publications.

Merriam-Webster’s Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2020.

2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code,* 2024 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems,* ~~2023~~ 2024 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection,* 2025 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances,* 2025 edition.

~~NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems,* 2023 edition.~~

NFPA 5000®, Building Construction and Safety Code®, 2024 edition.

Supplemental Information

File Name	Description	Approved
13-2022_Chapter_2.docx	Reference updates	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Sun Jul 30 09:37:24 EDT 2023

Committee Statement

Committee Statement: Reference information updated.

Response Message: SR-1009-NFPA 13-2023

Second Revision No. 1122-NFPA 13-2023 [Section No. 3.3.11]

~~**3.3.11** Automated Inspection and Testing.~~

~~The performance of inspections and tests at a distant location from the system or component being inspected or tested through the use of electronic devices or equipment installed for the purpose. (AUT-SSI)~~

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 15:54:37 EDT 2023

Committee Statement

Committee Statement: Automated Inspection and Testing as defined is not used in the body of the document.

CC note 16-NFPA 13-2023 [Section No. 3.3.11]

Recommend that the definition be shown as an extract from NFPA 25.

Response Message: SR-1122-NFPA 13-2023

Second Revision No. 1071-NFPA 13-2023 [New Section after 3.3.142]

3.3.142* Non-Flat Obstruction.

An obstruction where the underside of the obstruction is not in the same plane and not capable of collecting heat. (AUT-SSI)

A.3.3.142 Non-Flat Obstruction.

An example of a non-flat obstruction would be a round duct or pipe. (AUT-SSI)

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 15:05:37 EDT 2023

Committee Statement

Committee Statement: The term "non-flat obstruction" has been provided since the term is now used in the body of the standard. The proposed annex language is intended to help clarify for the end user examples of non-flat obstructions.

Response Message: SR-1071-NFPA 13-2023

Public Comment No. 193-NFPA 13-2023 [New Section after 3.3.142]

Public Comment No. 199-NFPA 13-2023 [New Section after A.3.3.136]

Second Revision No. 1115-NFPA 13-2023 [New Section after 3.3.142]

3.3.143* Non-Solid Obstruction.

An obstruction that consists of openings that constitute at least 30 percent of the footprint of the obstruction. (AUT-SSI)

A.3.3.143 Non-Solid Obstruction.

Examples of a non-solid obstruction would include (1) a cable tray where the number of cables provided in the tray allow for openings that constitute 30 percent or more of the tray's footprint, or (2) a grouped obstruction where the open space between the objects within the footprint of the grouped obstruction is 30 percent or more. (AUT-SSI)

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 08 09:21:14 EDT 2023

Committee Statement

Committee Statement: The term "non-solid obstruction" has been provided since the term is now used in the body of the standard. The proposed annex language is intended to help clarify for the end user examples of non-solid obstructions.

Response Message: SR-1115-NFPA 13-2023

Public Comment No. 194-NFPA 13-2023 [New Section after 3.3.142]

Public Comment No. 173-NFPA 13-2023 [New Section after 3.3.145.2]

Public Comment No. 200-NFPA 13-2023 [New Section after A.3.3.136]

Second Revision No. 1015-NFPA 13-2023 [Section No. 3.3.180]

~~**3.3.181** Qualified Personnel.~~

~~Competent and capable individual(s) having met the requirements and training for a given field acceptable to the AHJ. [**25,** 2023] (AUT-SSI)~~

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 10:11:58 EDT 2023

Committee Statement

Committee Statement: The term "qualified" was changed to "knowledgeable and experienced" which allows companies to train their personnel for their job. Using the term knowledgeable and experienced allows AHJ's to establish acceptable criteria for those performing the work. The term is no longer used in the standard and is being deleted based on the action taken in Section 1.2.2.

Response Message: SR-1015-NFPA 13-2023

Public Comment No. 155-NFPA 13-2023 [Section No. 3.3.180]

Second Revision No. 1070-NFPA 13-2023 [New Section after 3.3.221.9]

3.3.222.10 Vacuum Dry System.

A sprinkler system employing automatic sprinklers that are attached to a piping system containing air under negative gauge pressure, the release of which (as from the opening of a sprinkler) permits the air pressure detection to open the water flow valve, and the water then flows into the piping system and out the opened sprinklers. (AUT-SSI)

3.3.222.11 Vacuum Preaction System.

A sprinkler system employing automatic sprinklers that are attached to a piping system containing air under negative gauge pressure, with a supplemental detection system installed in the same areas as the sprinklers. (AUT-SSI)

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 14:46:45 EDT 2023

Committee Statement

Committee Statement: The terms "Vacuum Dry System" and "Vacuum Preaction System" are new in the body of the standard. Definitions for these terms needed to be been added.

Response Message: SR-1070-NFPA 13-2023

Second Revision No. 1065-NFPA 13-2023 [New Section after 3.3.241]

3.3.242* Vapor Corrosion Inhibitor (VCI).

A chemical compound (substance) that emits rust-inhibiting vapor to protect ferrous and nonferrous metals against corrosion in air-filled dry pipe or preaction sprinkler systems. (AUT-SSI)

A.3.3.242 Vapor Corrosion Inhibitor (VCI).

VCIs are also referred to as vapor phase corrosion inhibitors, volatile corrosion inhibitors, and vapor phase inhibitors (VPI). All of these terms relate to a specific class of corrosion inhibitors. The inhibitor forms a thin protective layer through adsorption separating the pipe from the air or water and provides protection against corrosion. Other classifications include passivating (anodic), cathodic, organic, and precipitation inhibitors. VCIs are appropriate for atmospheric or gaseous corrosion. This is corrosion happening in the air-filled portion of the sprinkler system containing water vapor. Corrosion will occur when the relative humidity is greater than 60 percent. VCIs can also provide protection in partially aqueous environments (partially water-filled pipes) and aqueous environments (water-filled pipes). VCIs can inhibit anodic reactors, cathodic reactions, or both. VCIs protecting against both anodic and cathodic reactions provide the best level of protection for applications in sprinkler systems. (AUT-SSI)

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 12:37:09 EDT 2023

Committee Statement

Committee Statement: This definition is needed as Vapor Corrosion Inhibitor (VCI) has been added to the body of the standard.

Response Message: SR-1065-NFPA 13-2023

Public Comment No. 181-NFPA 13-2023 [New Section after 3.3.241]

Public Comment No. 182-NFPA 13-2023 [New Section after A.3.3.241.2]

Second Revision No. 1124-NFPA 13-2023 [Section No. 7.2.5.1]

7.2.5.1* Corrosion Resistant.

A.7.2.5.1

Examples of such locations include the following:

(1) Paper mills
(2) Packing houses
(3) Tanneries
(4) Alkali plants
(5) Organic fertilizer plants
(6) Foundries
(7) Forge shops
(8) Fumigation, pickle, and vinegar works
(9) Stables
(10) Storage battery rooms
(11) Electroplating rooms
(12) Galvanizing rooms
(13) Steam rooms of all descriptions, including moist vapor dry kilns
(14) Salt storage rooms
(15) Locomotive sheds or houses
(16) Driveways
(17) Areas exposed to outside weather, such as piers and wharves exposed to salt air
(18) Areas under sidewalks
(19) Areas around bleaching equipment in flour mills
(20) All portions of cold storage buildings where a direct ammonia expansion system is used
(21) Portions of any plant where corrosive vapors prevail
(22) Area over and around swimming pools, chlorine storage rooms, and pool pump rooms

7.2.5.1.1

Listed corrosion-resistant sprinklers shall be installed in locations where chemicals, moisture, or other corrosive vapors sufficient to cause corrosion of such devices exist.

7.2.5.1.2*

Unless the requirements of 7.2.5.1.3 are met, corrosion-resistant coatings shall be applied only by the manufacturer of the sprinkler and in accordance with the requirements of 7.2.5.1.3 .

A.7.2.5.1.2

Care should be taken in the handling and installation of wax-coated or similar sprinklers to avoid damaging the coating.

7.2.5.1.3

Any damage to the protective coating occurring at the time of installation shall be repaired at once using only the coating of the manufacturer of the sprinkler in the approved manner so that no part of the sprinkler will be exposed after installation has been completed.

Supplemental Information

File Name	Description	Approved
7.2.5.1_Corrosion_Resistant.docx	For editorial use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 17:03:05 EDT 2023

Committee Statement

Committee Statement: The requirements for section 7.2.5.1 were not transferred during the reorganization of the 2019 edition of NFPA 13. This returns the requirements to the document.

CC note 1-NFPA 13-2023 [Section No. 7.2.5.1]

The heading of section 7.2.5.1 is "Corrosion Resistant" and it does not appear to have any requirements. The requirements appear to have been lost in the reorganization of the 2019 edition. Review section 6.2.6.1 of the 2016 edition to determine if the requirements of 6.2.6.1 and affiliated annex language should be reinstated into the standard.

Response Message: SR-1124-NFPA 13-2023

Second Revision No. 1125-NFPA 13-2023 [Section No. 7.2.6.1]

7.2.6.1

Plates, escutcheons, or other devices used to cover the annular space around a sprinkler shall be metallic or ~~shall be~~ listed for use around a sprinkler.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 17:43:40 EDT 2023

Committee Statement

Committee Statement: Revision made to comply with the Manual of Style.

CC note 2-NFPA 13-2023 [Section No. 7.2.6.1]

Review section 7.2.6.1 for compliance with the manual of style. It does not appear that the second shall is necessary and can be deleted.

Response Message: SR-1125-NFPA 13-2023

Second Revision No. 1059-NFPA 13-2023 [New Section after 7.4.4]

7.4.5 Flexible Sprinkler Hose Fittings.

Listed flexible sprinkler hose fittings and their anchoring components intended for use in installations connecting the sprinkler system piping to a sprinkler shall be installed in accordance with their listing and manufacturer's instructions.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 00:31:14 EDT 2023

Committee Statement

Committee Statement: This provides a maximum length for flexible sprinkler hose based on different ceiling types.

Response Message: SR-1059-NFPA 13-2023

Public Comment No. 171-NFPA 13-2023 [New Section after 7.9.5]

Second Revision No. 1017-NFPA 13-2023 [Section No. 7.5.2.2.5]

~~**7.5.2.2.5**~~

~~Torch cutting and welding shall not be permitted as a means of modifying or repairing sprinkler systems.~~

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 10:45:44 EDT 2023

Committee Statement

Committee Statement: This is an existing system requirement and is already included in Chapter 30.

This section also contradicts section 7.5.2.2.1.1.

Response Message: SR-1017-NFPA 13-2023

Public Comment No. 69-NFPA 13-2023 [Section No. 7.5.2.2.5]

Second Revision No. 1018-NFPA 13-2023 [Section No. 7.5.2.4.8]

7.5.2.4.8*

When welding is performed, the following shall apply:

(1) Holes in piping for outlets shall not be ~~cut to~~ less than the full inside diameter of fittings prior to welding in place of the fittings.

(2) Coupons shall be retrieved.

(3) Openings cut into piping shall be smooth bore, and all internal slag and welding residue shall be removed.

(4) Fittings shall not penetrate the internal diameter of the piping.

(5) Steel plates shall not be welded to the ends of piping or fittings.

(6) Fittings shall not be modified.

(7) Nuts, clips, eye rods, angle brackets, or other fasteners shall not be welded to pipe or fittings, except as permitted in 7.5.2.2.3 and 7.5.2.4.7.

(8) Completed welds shall be free from cracks, incomplete fusion, surface porosity greater than 1⁄16 in. (1.6 mm) diameter, and undercut deeper than 25 percent of the wall thickness or 1⁄32 in. (0.8 mm), whichever is less.

(9) Completed circumferential butt weld reinforcement shall not exceed 3⁄32 in. (2 mm).

(10) After completion of the weld for fittings directly connected to a sprinkler, the inside diameter of the entrance from the pipe into the weld shall not be less than the inside diameter of the fitting.

A.7.5.2.4.8

Loose welding slag or residue should be removed from piping, but a small amount should be acceptable as it is impossible to remove all the slag, especially in long runs of pipe.

Chapter 28 covering plans and calculations permits the friction loss for a welded fitting directly connected to the sprinkler to be excluded from the sprinkler system's hydraulic calculation. Laboratory test data has revealed that welded outlet fittings with the inside diameter reduced as a result of the pipe fabrication process can substantially reduce the flow discharged from an attached sprinkler that has a large K-factor for a given inlet size. As an example, for the 1 in. (25 mm) inlet size, reducing the inside diameter of the welded fitting at the entrance from the pipe will create a greater reduction in flow through a nominal K-28 sprinkler as compared to a smaller sprinkler K-factor attached to the fitting. Similarly, the reduction in flow through for a nominal K-16.8 sprinkler as a result of a reduced diameter inside diameter of ¾ in. (20 mm) size welded outlet fitting will be greater compared to a sprinkler having a smaller nominal K-factor attached. Since the flow velocities created by a nominal K-5.6 sprinkler with a ½ in. (15 mm) size inlet at a given pressure is much less compared to the maximum K-factor referenced for use with the ¾ in. (20 mm) and 1 in. (25 mm) size outlets, the negative impact on the flow through a nominal K-5.6 sprinkler as a result of a reduced inside diameter for a ½ in. (15 mm) size welded outlet is substantially less.

Even though the inside diameter of a welded outlet fitting is significantly greater than the orifice of an attached sprinkler, laboratory testing has indicated that a reduction in the inside diameter of a typical ¾ in. (20 mm) and 1 in. (25 mm) size welded outlet by approximately 10 percent can reduce the flow through the largest sprinkler K-factor referenced for use with these outlets by 20 percent.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 11:00:36 EDT 2023

Committee Statement

Committee Statement: Restricted welded outlet fittings can substantially reduce the flow through a sprinkler that is attached to the fitting. While the existing text indicates that the hole cut for the welded outlet fitting is not to be less than the inside diameter of the fitting, these revisions provide additional clarification that the fitting's inside diameter is not to be reduced as a result of the process for attaching the fitting to the pipe. The new annex text provides information regarding the impact of a reduced inside diameter on the flow through the sprinkler.

Response Message: SR-1018-NFPA 13-2023

Public Comment No. 119-NFPA 13-2023 [Section No. A.7.5.2.4.8]

Public Comment No. 118-NFPA 13-2023 [Section No. 7.5.2.4.8]

Second Revision No. 1019-NFPA 13-2023 [New Section after 7.9]

7.10 Air Supplies.

Where an air compressor is dedicated for the sprinkler system, the air compressor shall be listed for fire protection.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 12:10:40 EDT 2023

Committee Statement

Committee Statement: Air compressors are essential to system performance. Without durability and reliability testing that comes with listing against a product standard, sprinkler systems that rely on a dedicated air supply need to have listed compressors to ensure they operate as intended. A "shop air compressor" would not be held to the same requirements as an air compressor dedicated to a fire sprinkler system. UL has updated UL 1450 Motor-Operated Air Compressors, Vacuum Pumps, and Painting Equipment to include the specific testing parameters for compressors used for fire protection.

Response Message: SR-1019-NFPA 13-2023

Public Comment No. 82-NFPA 13-2023 [New Section after 7.9]

Second Revision No. 1062-NFPA 13-2023 [New Section after 8.2]

8.2.11 Vapor Corrosion Inhibitor.

8.2.11.1

The vapor corrosion inhibitor shall be from a listed assembly permanently installed in accordance with the manufacturer's instructions.

8.2.11.2

The vapor corrosion inhibitor equipment shall be maintained in accordance with Chapter 32 and manufacturer's instructions.

8.2.11.3

A means of verifying vapor concentration shall be provided for each system.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 09:24:33 EDT 2023

Committee Statement

Committee Statement: The technology has been available for many years and is now available as a listed product for use in dry pipe and preaction sprinkler systems.

Response Message: SR-1062-NFPA 13-2023

Public Comment No. 187-NFPA 13-2023 [New Section after 8.2]

Second Revision No. 1119-NFPA 13-2023 [Section No. 8.2.2.1.1]

8.2.2.1.1

The following orientations and arrangements shall be permitted for dry pipe systems:

(1) Upright sprinklers

(2)* Listed dry sprinklers

(3) Pendent sprinklers and sidewall sprinklers installed on return bends, where the sprinklers, return bend, and branch line piping are in an area maintained ~~at or above 40°F (4°C)~~ above freezing

(4) Horizontal sidewall sprinklers installed so that water is not trapped

(5) Pendent sprinklers and sidewall sprinklers where the sprinklers and branch line piping are in an area maintained ~~at or above 40°F (4°C)~~ above freezing , the water supply is potable, and the piping for the dry system is copper or CPVC specifically listed for dry pipe applications

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 15:45:26 EDT 2023

Committee Statement

Committee Statement: Portions of systems can be exposed to temperatures between 32 and 40 and not be subject to freezing. The revision maintains consistency within the document and with other NFPA documents.

CC note 30-NFPA 13-2023 [Global Input]

Review FR-1077 which modified 16.4.1.1 by eliminating the 40 degree requirement and thus should globally coordinate with rest of standard and other related standards. For example, Sections 8.2.2.2(5) and 8.3.2.6 (5) are two sections requiring similar requirements that will need coordination as well as NFPA 13R (6.7.2.1) and 13D (9.1.2.1) sections.

Response Message: SR-1119-NFPA 13-2023

Second Revision No. 1189-NFPA 13-2023 [Section No. 8.2.2.2]

8.2.2.2 Pressure Gauges.

Approved pressure gauges in accordance with Section 16.13 shall be provided as follows:

(1) On the water side and pneumatic side of the dry pipe valve

(2) At the air compressor supplying the system, where one is provided

(3) At the air~~, nitrogen, or other approved gas~~ receiver, where one is provided

(4) In each independent pipe from the pneumatic source to the dry pipe system

(5) At mechanical quick opening devices

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 13:38:41 EDT 2023

Committee Statement

Committee Statement: The term "air" is used for consistency throughout the standard. It is not necessary to repeat "air, nitrogen, or other approved gas" throughout the standard. This is already covered in Chapter 4 section 4.8.

Response Message: SR-1189-NFPA 13-2023

Public Comment No. 37-NFPA 13-2023 [Section No. 8.2.2.2]

Second Revision No. 1190-NFPA 13-2023 [Section No. 8.2.4]

8.2.4* Dry Pipe System Water Delivery.

Dry pipe systems shall be sized such that water will be discharged from the system test connection within the time required by 8.2.4.1 for dwelling units and 8.2.4.2 , 8.2.4.3 , 8.2.4.4 , or 8.2.4.5 for all other occupancies.

8.2.4.1 Dwelling Units.

For dry pipe systems protecting dwelling unit portions of any occupancy, initial water shall be discharged from the system test connection in not more than 15 seconds, starting at the normal air pressure on the system at the time of fully opened inspection test connection.

~~**8.2.4.1.1**~~

~~For dry pipe systems protecting dwelling unit portions of any occupancy, initial water shall be discharged from the system test connection in not more than 15 seconds, starting at the normal air pressure on the system at the time of fully opened inspection test connection.~~

~~**8.2.4.2**~~

~~For dry pipe systems protecting areas other than dwelling unit portions of any occupancy, initial water shall be discharged from the system test connection in accordance with 8.2.4.3 , 8.2.4.4 , 8.2.4.5 , 8.2.4.6 , or 8.2.4.7 .~~

8.2.4.2 Single Orifice Test Connection.

System size shall be such that initial water is discharged from the system test connection in not more than 60 seconds, starting at the normal air pressure on the system at the time of fully opened inspection test connection.

8.2.4.2.1*

A system size of not more than 500 gal (1900 L) shall be permitted without a quick-opening device and shall not be required to meet any specific water delivery requirement to the inspection test connection.

8.2.4.2.2

A system size of not more than 750 gal (2850 L) shall be permitted with a quick-opening device and shall not be required to meet any specific water delivery requirement to the inspection test connection.

8.2.4.3 Water Delivery Calculations.

8.2.4.3.1

Initial water shall be discharged from the system test connection based on calculations using a program listed by a nationally recognized testing laboratory.

8.2.4.3.2

Water delivery calculation for each dry pipe system shall be based on the hazard shown in Table 8.2.4.3.2.

Table 8.2.4.3.2 Dry Pipe System Water Delivery

Hazard	Number of Most Remote Sprinklers Initially Open	Maximum Time of Water Delivery (seconds)
Dwelling unit	1	15
Light	1	60
Ordinary I (Group 1)	2	50
Ordinary II (Group 2)	2	50
Extra I (Group 1)	4	45
Extra II (Group 2)	4	45
High-piled	4	40

8.2.4.3.3

Water delivery calculation shall be based on the time interval between the calculated point in time when the selected most remote sprinkler(s) open and the calculated point in time when the minimum design pressure at the most remote sprinkler is reached or surpassed and maintained.

8.2.4.4* Manifold Test Connection.

8.2.4.4.1

System size shall be such that initial water discharge from the system manifold test connection is not more than the maximum time of water delivery specified in Table 8.2.4.3.2, starting at the normal air pressure on the system at the time of fully opened inspection test connection.

8.2.4.4.2

When flow is from four sprinklers, the test manifold shall be arranged to simulate two sprinklers on the most remote sprinkler branch line and two sprinklers on the next adjacent branch line.

8.2.4.4.3

When flow is from two sprinklers, the test manifold shall be arranged to simulate two sprinklers on the most remote sprinkler branch line.

~~**8.2.4.4.4**~~

~~A system meeting the requirements of this section shall not be required to also meet the requirements of 8.2.4.3 , 8.2.4.4 , 8.2.4.5 , or 8.2.4.6 .~~

8.2.4.5

Dry pipe systems with water delivery times other than given in 8.2.4 shall be acceptable where listed by a nationally recognized testing laboratory.

8.2.4.6 Dry Pipe System Subdivision.

8.2.4.6.1

~~Subdivision~~ Subdividing of dry pipe systems using check valves to facilitate water delivery shall be permitted when all the conditions in 8.2.4.6.2 through 8.2.4.6.5 are met.

8.2.4.6.2

Check valves shall be located in a heated enclosure.

8.2.4.6.3

A ⅛ in. (3 mm) diameter hole shall be drilled in the clapper of each check valve to permit equalization of air or nitrogen pressure among various parts of the system.

8.2.4.6.4

Auxiliary drains shall be provided for each subdivided section of the system.

8.2.4.6.5

Where auxiliary drains are not provided for each subdivided section, a bypass around each check valve incorporating an approved and supervised normally closed indicating control valve shall be provided as a means to drain the subdivided section.

Supplemental Information

File Name	Description	Approved
Chapter_8.2.4.docx		
Chapter_8.2.4_SR-1190_.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 14:22:43 EDT 2023

Committee Statement

Committee Statement: When the Dry Pipe Systems section was revised, the calculation option for dwelling units was dropped. This clarifies that the dwelling units can also be calculated for pneumatic delivery.

Response Message: SR-1190-NFPA 13-2023

Public Comment No. 21-NFPA 13-2023 [Section No. 8.2.4]

Public Comment No. 22-NFPA 13-2023 [Section No. 8.2]

Public Comment No. 215-NFPA 13-2023 [Section No. 8.2.4.6.2]

Public Comment No. 38-NFPA 13-2023 [Section No. 8.2.4.8.3]

Second Revision No. 1199-NFPA 13-2023 [Section No. 8.2.7.5]

8.2.7.5 Compressed Air.

8.2.7.5.1

Air supply shall be from a dependable plant compressed air system or ~~an~~ a dedicated air compressor with an air receiver.

8.2.7.5.2*

Where an air compressor is dedicated for the sprinkler system, the air compressor shall be listed for fire protection.

A.8.2.7.5.2

Temporary use of nonlisted air compressors should be permitted when listed compressors are not immediately available.

8.2.7.5.3

Where the air compressor supplying a single dry pipe system has a capacity of less than 5.5 ft^3/min (160 L/min) at 10 psi (0.7 bar) , the air receiver shall not be required.

8.2.7.5.4

Where an air compressor is the dedicated air supply, it shall be installed in accordance with *NFPA 70*, Article 430.

8.2.7.5.5

The disconnecting means for an automatic air compressor shall not be a general use switch or a cord-and-plug connection.

Supplemental Information

File Name	Description	Approved
SR_1199.docx	For editorial use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Sep 08 13:34:30 EDT 2023

Committee Statement

Committee Statement: Air compressors are essential to system performance. Without durability and reliability testing that comes with listing against a product standard, sprinkler systems that rely on a dedicated air supply need to have listed compressors to ensure they operate as intended. Annex material has been added to address situations where an air compressor listed for fire protection is not readily available allowing the system to be placed in service.

Response Message: SR-1199-NFPA 13-2023

Public Comment No. 1-NFPA 13-2023 [New Section after 8.2.7.5.1]

Second Revision No. 1191-NFPA 13-2023 [Sections 8.2.7.6, 8.2.7.7]

8.2.7.6 Compressed Nitrogen.

8.2.7.6.1

Nitrogen supply shall be from a dependable nitrogen generator or from one or more industrial cylinders or containers.

~~**8.2.7.6.2**~~

~~A minimum leak rate of 1.5 psi (0.1 bar) per hour shall be used to determine the size of the compressed nitrogen supply.~~

8.2.7.6.2

Where a nitrogen generator is the dedicated nitrogen supply, it shall be installed in accordance with *NFPA 70*, Article 430.

8.2.7.6.3

The disconnecting means for a nitrogen generator shall not be a general use switch or a cord-and-plug connection.

8.2.7.6.4

Where nitrogen or other approved gas stored in high-pressure industrial cylinders is used, the gas shall be introduced through an approved regulator on the supply side of the pressure maintenance device(s).

8.2.7.6.5

A low pressure alarm shall be provided between the regulator in 8.2.7.6.3 and the air maintenance device(s) to notify the need for refilling cylinder(s).

8.2.7.6.6

Combinations of approved sources of air~~, nitrogen, or other gas~~ supplies shall be permitted.

Supplemental Information

File Name	Description	Approved
SR_1191.docx	For editorial use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 14:59:38 EDT 2023

Committee Statement

Committee Statement: It is not necessary to reference the leakage rate in this section as it is only required if the C Value is being increased to 120. Additionally, "other gases" do not need to be referenced in the nitrogen section.

Response Message: SR-1191-NFPA 13-2023

Public Comment No. 41-NFPA 13-2023 [Section No. 8.2.7.7]

Public Comment No. 40-NFPA 13-2023 [Section No. 8.2.7.6]

Second Revision No. 1192-NFPA 13-2023 [Section No. 8.2.8]

8.2.8 ~~Automatic Pressure Maintenance~~ Air Maintenance Devices .

~~8.2.8.1~~

~~The air, nitrogen, or other approved gas supply to more than one dry pipe system shall be connected to enable individual maintenance of pressure in each system.~~

8.2.8.1*

Unless the requirements of ~~8.2.10.4~~ 8.2.7.5.2 are met, each dry pipe system shall have a dedicated and listed ~~pressure~~ air maintenance device capable of controlling the required pressure on the system and the maximum flow of air~~, nitrogen, or other approved gas~~ into the system.

A.8.2.8.1

Air maintenance devices are unique components within the air supply and need to be listed for use. Compressors and pressure switches are not air maintenance devices~~, and this section does not require air compressors to be listed~~ .

8.2.8.2

Where the air compressor supplying a single dry pipe system has a capacity of less than 5.5 ft^3/min (160 L/min) at 10 psi (0.7 bar) , an air maintenance device shall not be required.

Supplemental Information

File Name	Description	Approved
SR_1192.docx	For editorial use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 15:05:30 EDT 2023

Committee Statement

Committee Statement: The charging statement is not necessary as the remaining two requirements state when air maintenance devices are required. Additionally, the rated pressure where 5.5 cfm is determined was omitted from the first draft revision. This also corrects the first draft revision where it appeared that the requirement for Air Maintenance Devices to be listed was lost.

Response Message: SR-1192-NFPA 13-2023

Public Comment No. 3-NFPA 13-2023 [Section No. A.8.2.8.2]

Public Comment No. 161-NFPA 13-2023 [Section No. 8.2.8.2]

Public Comment No. 42-NFPA 13-2023 [Section No. 8.2.8]

Public Comment No. 52-NFPA 13-2023 [Section No. 8.2.8.3]

Second Revision No. 1193-NFPA 13-2023 [Section No. 8.2.9.1]

8.2.9.1*

The connection from the air~~, nitrogen, or other approved gas~~ source shall not be less than ½ in. (15 mm) in diameter and shall enter the system above the priming water level of the dry pipe valve, or as otherwise specified by the manufacturer.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 15:26:12 EDT 2023

Committee Statement

Committee Statement: It is not necessary to repeat "air, nitrogen, or other approved gas" throughout the standard. This is already covered in Chapter 4 section 4.8

Response Message: SR-1193-NFPA 13-2023

Public Comment No. 43-NFPA 13-2023 [Section No. 8.2.9.1]

Second Revision No. 1020-NFPA 13-2023 [Section No. 8.3.2.5]

8.3.2.5 Air Pressure

Except as provided by 8.3.2.5.1 through 8.3.2.5.3, ~~air or nitrogen supervising pressure~~ supervisory air pressure for preaction systems shall be installed in conformance with the dry pipe system air pressure and supply rules of 8.2.6.

8.3.2.5.1

The relief valves required by 8.2.6 shall be permitted to be omitted for the type of preaction system described in 8.3.2.1(1) when the air pressure is supplied from a source that is not capable of developing pressures in excess of 15 psi (1.0 bar).

8.3.2.5.2

A preaction system type described in 8.3.2.1(2) and 8.3.2.1(3) shall maintain a minimum ~~supervising air or nitrogen pressure~~ supervisory air pressure of 7 psi (0.5 bar).

8.3.2.5.3

The air pressure values for the type of preaction system described in 8.3.2.1(1) shall be set in accordance with the manufacturer's installation instructions.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 12:36:42 EDT 2023

Committee Statement

Committee Statement: It is not necessary to repeat "air, nitrogen, or other approved gas" throughout the standard. This is already covered in Chapter 4 section 4.8.

Response Message: SR-1020-NFPA 13-2023

Public Comment No. 44-NFPA 13-2023 [Section No. 8.3.2.5]

Second Revision No. 1120-NFPA 13-2023 [Section No. 8.3.2.6]

8.3.2.6 Sprinklers.

The following sprinkler orientations and arrangements shall be permitted for preaction systems:

(1) Upright sprinklers

(2)* Listed dry sprinklers

(3) Pendent sprinklers and sidewall sprinklers installed on return bends, where the sprinklers, return bend, and branch line piping are in an area maintained ~~at or above 40°F (4°C)~~ above freezing

(4) Horizontal sidewall sprinklers, installed so that water is not trapped

(5) Pendent sprinklers and sidewall sprinklers, where the sprinklers and branch line piping are in an area maintained ~~at or above 40°F (4°C)~~ above freezing , the water supply is potable, and the piping for the preaction system is copper or CPVC specifically listed for dry pipe applications

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 15:47:29 EDT 2023

Committee Statement

Committee Statement: Portions of systems can be exposed to temperatures between 32 and 40 and not be subject to freezing. The revision maintains consistency within the document and with other NFPA documents.

CC note 30-NFPA 13-2023 [Global Input]

Review FR-1077 which modified 16.4.1.1 by eliminating the 40 degree requirement and thus should globally coordinate with rest of standard and other related standards. For example, Sections 8.2.2.2(5) and 8.3.2.6 (5) are two sections requiring similar requirements that will need coordination as well as NFPA 13R (6.7.2.1) and 13D (9.1.2.1) sections.

Response Message: SR-1120-NFPA 13-2023

Second Revision No. 1021-NFPA 13-2023 [Section No. 8.8.2.4]

8.8.2.4* Air ~~or Nitrogen~~ Supply.

Air ~~or nitrogen~~ supply for systems shall be one of the following:

(1) Air from the room of lowest temperature to reduce the moisture content

(2) Air compressor/dryer package listed for the application utilizing ambient air

(3) Compressed nitrogen gas from cylinders used in lieu of compressed air

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 12:38:32 EDT 2023

Committee Statement

Committee Statement: It is not necessary to repeat "air, nitrogen, or other approved gas" throughout the standard. This is already covered in Chapter 4 section 4.8.

Response Message: SR-1021-NFPA 13-2023

Public Comment No. 45-NFPA 13-2023 [Section No. 8.8.2.4]

Second Revision No. 1022-NFPA 13-2023 [Section No. 8.8.2.7.1 [Excluding any Sub-Sections]]

The air ~~or nitrogen~~ supply piping entering the freezer area shall be as stated in 8.8.2.7.1.1 and 8.8.2.7.1.2.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 12:39:25 EDT 2023

Committee Statement

Committee Statement: It is not necessary to repeat "air, nitrogen, or other approved gas" throughout the standard. This is already covered in Chapter 4 section 4.8.

Response Message: SR-1022-NFPA 13-2023

Public Comment No. 46-NFPA 13-2023 [Section No. 8.8.2.7.1 [Excluding any Sub-Sections]]

Second Revision No. 1069-NFPA 13-2023 [Section No. 8.11]

8.11 ~~Negative Pressure~~ Vacuum Systems. ~~(Reserved)~~

8.11.1 General.

8.11.1.1

Vacuum system equipment shall be listed for fire sprinkler system use.

8.11.1.2

Vacuum systems shall be installed in accordance with the manufacturer's installation instructions.

8.11.1.3

Sprinklers shall be listed for use under vacuum conditions.

8.11.2 Vacuum Dry Pipe.

8.11.2.1

Unless modified by 8.11.2 , vacuum dry pipe systems shall meet the requirements of Section 8.2 .

8.11.2.2

The relief valve required by 8.2.9.4 shall be set in accordance with the manufacturer's instructions.

8.11.3 Vacuum Preaction.

8.11.3.1

Unless modified by 8.11.3 , vacuum preaction systems shall meet the requirements of Section 8.3 .

8.11.3.2

The relief valve required by 8.2.9.4 shall be set in accordance with the manufacturer's instructions.

Supplemental Information

File Name	Description	Approved
13_SSI_SR-1069_8.11.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 14:28:29 EDT 2023

Committee Statement

Committee Statement: These systems are currently listed and being installed therefore NFPA 13 needed to establish installation criteria. Negative pressure was changed to Vacuum systems for consistency throughout the standard.

Response Message: SR-1069-NFPA 13-2023

Public Comment No. 127-NFPA 13-2023 [Section No. 8.11]

Second Revision No. 1133-NFPA 13-2023 [Section No. 9.2.5.1]

9.2.5.1

Sprinklers shall not be required in clothes closets, linen closets, and pantries, with or without doors, within dwelling units in hotels and motels where the area of the space does not exceed 24 ft^2 (2.2 m^2) and the walls and ceilings are surfaced with noncombustible or limited-combustible materials.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 18 13:33:34 EDT 2023

Committee Statement

Committee Statement: Commas were added to make the section grammatically correct.

CC note 52-NFPA 13-2023 [Section No. 9.2.5.1]

Review NFPA 13 9.2.5.1, NFPA 13D 8.3.3 and NFPA 13R 6.6.3 to determine whether the correct term is "and" or "or."

Response Message: SR-1133-NFPA 13-2023

Second Revision No. 1067-NFPA 13-2023 [Section No. 9.2.14]

9.2.14 Elevator Hoistways and Machine Rooms.

9.2.14.1 Elevators.

Sprinklers shall ~~not be required in locations complying with~~ 9.3.6 be permitted to be omitted in elevator machine rooms, machinery spaces, control rooms, control spaces, and hoistways in accordance with 9.2.14 unless required by 9.3.6 .

9.2.14.2 Elevator Pits.

Sprinklers shall not be required in elevator pits.

9.2.14.3 Elevator Machine Rooms, Machinery Spaces, Control Rooms, Control Spaces, and Hoistways.

Sprinklers shall not be required in elevator machine rooms, machinery spaces, control rooms, control spaces, or top of hoistways of elevators installed in accordance with the applicable provisions in NFPA *101* , or the applicable building code, where all the following conditions are met:

(1) The elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways are dedicated to elevator equipment only.

(2) The elevator machinery spaces, control rooms, control spaces, or hoistways are separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire resistance rating of not less than that specified by the applicable building code.

(3) No materials unrelated to elevator equipment are permitted to be stored in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways.

(4) The elevator machinery is not of the hydraulic type.

9.2.14.4 Hydraulic Elevators.

9.2.14.4.1

Sprinklers shall not be required in the elevator machine rooms, machinery spaces, control rooms, and control spaces where noncombustible hydraulic fluid is used.

9.2.14.4.2

Sprinklers shall not be required at the top of hoistways of hydraulic elevators.

9.2.14.5 Suspension Means.

Sprinklers shall not be required in elevator hoistways where the suspension means is in accordance with one of the following:

(1) A noncombustible suspension means

(2) A combustible suspension means in accordance with the FT-1 test method and tested to the vertical burn test requirements of UL 2556, *Wire and Cable Test Methods* , that does not continue to burn for more than 60 seconds and the indicator flag does not burn more than 25 percent

9.2.14.6* Noncombustible and Limited-Combustible Elevators.

Sprinklers shall not be required at the top of the hoistway where the hoistway for elevators is noncombustible or limited-combustible and the car enclosure materials meet the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators* .

A.9.2.14.6

Elevator cars that have been constructed in accordance with ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, have limited combustibility. Materials exposed to the interior of the car and the hoistway, in their end-use composition, are limited to a flame spread index of 0 to 75 and a smoke-developed index of 0 to 450, when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials* .

Supplemental Information

File Name	Description	Approved
PC_1067.docx	Word document for all revisions to section.	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 13:47:57 EDT 2023

Committee Statement

Committee Statement: Omitting sprinklers in elevator hoistways reduces life-safety risk that results from having to enter the hoistway for maintenance purposes. The committee does not have fire-loss data to support keeping sprinklers in elevator hoistways; hoistways are also rated assemblies. This combines the intent of PC 120 to move all the omission allowances to Section 9.2 with PCs 157, 158, 206, 95, and 96 which identify additional allowances for omission of sprinklers for suspension means using the FT-1 test method meeting the pass/fail criteria established in 9.2.14.5. The pass/fail criteria is inline with that specified for the finished construction of electrical cables as described in ANSI/UL 62, Flexible Cords and Cables.

Response Message: SR-1067-NFPA 13-2023

Public Comment No. 96-NFPA 13-2023 [New Section after 9.3.6.5]

Public Comment No. 94-NFPA 13-2023 [Section No. 9.3.6.2]

Public Comment No. 95-NFPA 13-2023 [New Section after 9.3.6.5]

Public Comment No. 157-NFPA 13-2023 [Section No. 9.2.14]

Public Comment No. 120-NFPA 13-2023 [Section No. 9.2.14]

Public Comment No. 206-NFPA 13-2023 [Section No. 9.3.6.2]

Second Revision No. 1025-NFPA 13-2023 [Section No. 9.3.4.1]

9.3.4.1 Combustible Construction.

Sprinklers shall be installed ~~beneath all stairways of~~ in stair shafts of combustible construction in accordance with 9.3.4.1.1 , 9.3.4.1.2 , and 9.3.4.1.3 .

9.3.4.1.1

Sprinklers shall be installed at the top of combustible stair shafts to protect the entire footprint of the shaft.

9.3.4.1.2*

Sprinklers shall be installed under the landings at each floor level.

9.3.4.1.3

Sprinklers shall be installed beneath the lowest intermediate landing.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 15:20:22 EDT 2023

Committee Statement

Committee Statement: This section has been misinterpreted to require sprinklers below every stair run of a combustible stair shaft and not just the locations required by 9.3.4.1.1, 9.3.4.1.2, and 9.3.4.1.3. This change clarifies the different requirements between combustible and non-combustible stair shafts.

CC note 19-NFPA 13-2023 [Section No. 9.3.4]

Review section 9.3.4 in its entirety to determine if the terms stairways should be changed to "stair shafts" throughout for consistency.

Response Message: SR-1025-NFPA 13-2023

Public Comment No. 23-NFPA 13-2023 [Section No. 9.3.4.1]

Second Revision No. 1026-NFPA 13-2023 [Section No. 9.3.4.2.3.1]

9.3.4.2.3.1*

Sprinklers shall be permitted to be omitted ~~from~~ under the first accessible landing above the bottom of the ~~stairwell~~ shaft when the space under the stairs at the bottom is blocked off so that storage cannot occur.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 15:37:36 EDT 2023

Committee Statement

Committee Statement: This change in section 9.3.4.2.3.1 aligns terminology with the other sections of 9.3.4.2.

Response Message: SR-1026-NFPA 13-2023

Public Comment No. 29-NFPA 13-2023 [Section No. 9.3.4.2.3.1]

Second Revision No. 1186-NFPA 13-2023 [Section No. 9.3.6]

9.3.6 ~~Elevator Machine Rooms, Machinery Spaces, Control Rooms, Control Spaces, and Hoistways~~ Elevators .

9.3.6.1 Combustible Suspension Means.

Sprinklers shall be installed at the top of hoistways where elevators use combustible suspension means that do not meet the requirements of 9.2.14.5(2) .

~~**9.3.6.2**~~

~~Automatic fire sprinklers shall not be required in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways of traction elevators installed in accordance with the applicable provisions in NFPA *101* , or the applicable building code, where all of the following conditions are met:~~

~~The elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways are dedicated to elevator equipment only.~~

~~The elevator machinery spaces, control rooms, control spaces, or hoistways are separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire resistance rating of not less than that specified by the applicable building code.~~

~~No materials unrelated to elevator equipment are permitted to be stored in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways.~~

9.3.6.2 Machine Rooms, Machinery Spaces, Control Rooms, and Control Spaces.

Sprinklers shall ~~not~~ be required in ~~the hoistway where the hoistway for passenger elevators is noncombustible or limited-combustible and the car enclosure materials meet the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*~~ elevator machine rooms, machinery spaces, control rooms, and control spaces containing combustible hydraulic fluid .

~~**A.9.3.6.2**~~

~~Passenger elevator cars that have been constructed in accordance with ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators,* Rule 204.2a (under A17.1a-1985 and later editions of the code) have limited combustibility. Materials exposed to the interior of the car and the hoistway, in their end-use composition, are limited to a flame spread index of 0 to 75 and a smoke-developed index of 0 to 450, when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials* .~~

9.3.6.3 ~~Hydraulic Fluid for Elevators.~~

Where provided, sprinklers in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways shall be standard response spray sprinklers.

~~**9.3.6.3.1**~~

~~Sprinklers shall be required in the elevator machine rooms, machinery spaces, control rooms, and control spaces where combustible hydraulic fluid is used.~~

~~**9.3.6.3.2**~~

~~Sprinklers shall not be required in elevator hoistways where hydraulic fluid is used.~~

~~**9.3.6.4***~~

~~Where provided, automatic sprinklers in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways shall be standard response.~~

~~A.9.3.6.4~~

~~ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators* , requires the shutdown of power to the elevator upon or prior to the application of water in elevator machine rooms or hoistways. This shutdown can be accomplished by a detection system with sufficient sensitivity that operates prior to the activation of the sprinklers *(see also NFPA 72 or other approved fire alarm code)* . As an alternative, the system can be arranged using devices or sprinklers capable of effecting power shutdown immediately upon sprinkler activation, such as a waterflow switch without a time delay. This alternative arrangement is intended to interrupt power before significant sprinkler discharge.~~

~~9.3.6.5~~

~~Where required, upright, pendent, or sidewall spray sprinklers shall be installed at the top of elevator hoistways.~~

Supplemental Information

File Name	Description	Approved
Elevator_sprinkler_installation_requirements_-_final.docx		
Elevator_sprinkler_installation_requirements_-_SR-1186.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 10:25:09 EDT 2023

Committee Statement

Committee Statement: This combines PC 121 to only include language requiring sprinklers in section 9.3 with PCs 94, 205, 176, 158, and 174 which include requirements for sprinkler protection of combustible suspension means in hoistways and combustible hydraulic fluid in elevator machine rooms, machinery spaces, control rooms, and control spaces as these create a greater fire risk.

Response Message: SR-1186-NFPA 13-2023

Public Comment No. 176-NFPA 13-2023 [New Section after 9.3.6]

Public Comment No. 174-NFPA 13-2023 [Section No. 9.3.6.2]

Public Comment No. 121-NFPA 13-2023 [Section No. 9.3.6]

Public Comment No. 205-NFPA 13-2023 [New Section after 9.3.6.5]

Public Comment No. 158-NFPA 13-2023 [Section No. 9.3.6]

Second Revision No. 1127-NFPA 13-2023 [Section No. 9.4.2.5]

9.4.2.5*

The following practices shall be observed to provide sprinklers of other than ordinary-temperature classification unless other temperatures are determined or unless high-temperature sprinklers are used throughout, and temperature selection shall be in accordance with Table 9.4.2.5(a), Table 9.4.2.5(b), and Figure 9.4.2.5:

(1)* Sprinklers in the high-temperature zone shall be of the high-temperature classification, and sprinklers in the intermediate-temperature zone shall be of the intermediate-temperature classification.

(2) Sprinklers located within 12 in. (300 mm) to one side or 30 in. (750 mm) above an uncovered steam main, heating coil, or radiator shall be of the intermediate-temperature classification.

(3) Sprinklers within 7 ft (2.1 m) of a low-pressure blowoff valve that discharges free in a large room shall be of the high-temperature classification.

(4) Sprinklers under glass or plastic skylights exposed to the direct rays of the sun shall be of the intermediate-temperature classification.

(5) Sprinklers in attics (peaked or flat) shall be of the intermediate-temperature classification.

(6) Sprinklers in enclosed show windows shall be of the intermediate-temperature classification.

(7) Sprinklers protecting commercial-type cooking equipment and ventilation systems shall be of the high- or extra-high-temperature classification as determined by use of a temperature-measuring device. *(See 8.9.6.)*

(8) Sprinklers protecting residential areas installed near specific heat sources identified in Table 9.4.2.5(b) shall be installed in accordance with Table 9.4.2.5(b).

(9) Ordinary-temperature sprinklers located adjacent to a heating duct that discharges air that is less than 100°F (38°C) are not required to be separated in accordance with Table 9.4.2.5(a) or Table 9.4.2.5(b).

(10) Sprinklers in walk-in type coolers and freezers with automatic defrosting shall be of the intermediate-temperature classification or higher.

(11) Sprinklers in closets containing ventless clothes dryers shall be of the intermediate-temperature classification or higher.

Table 9.4.2.5(a) Temperature Ratings of Sprinklers Based on Distance from Heat Sources

Type of Heat Condition	Ordinary-Temperature Rating	Intermediate-Temperature Rating	High-Temperature Rating
(1) Heating ducts			
(a) Above	More than 2 ft 6 in. (750 mm)	2 ft 6 in. or less (750 mm)	
(b) Side and below	More than 1 ft 0 in. (300 mm)	1 ft 0 in. or less (300 mm)	
(c) Diffuser	Any distance except as shown under Intermediate-Temperature Rating column	*Downward discharge:* Cylinder with 1 ft 0 in. (300 mm) radius from edge extending 1 ft 0 in. (300 mm) below and 2 ft 6 in. (750 mm) above *Horizontal discharge:* Semicylinder or cylinder with 2 ft 6 in. (750 mm) radius from edge in direction of flow extending 1 ft 0 in. (300 mm) below and 2 ft 6 in. (750 mm) above	

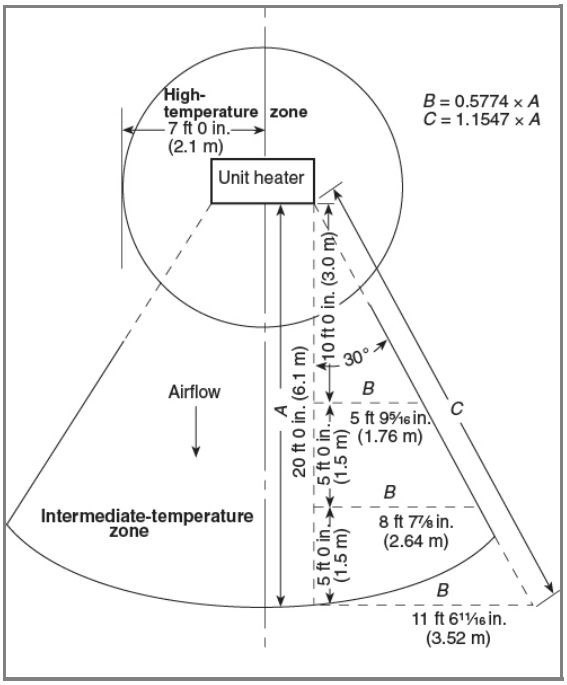
Type of Heat Condition	Ordinary-Temperature Rating	Intermediate-Temperature Rating	High-Temperature Rating
(2) Unit heater and radiant heater			
(a) Horizontal discharge		*Discharge side:* 7 ft 0 in. (2.1 m) to 20 ft 0 in. (6.1 m) radius pie-shaped cylinder *(see Figure 9.4.2.5)* extending 7 ft 0 in. (2.1 m) above and 2 ft 0 in. (600 mm) below heater; also 7 ft 0 in. (2.1 m) radius cylinder more than 7 ft 0 in. (2.1 m) above unit heater	7 ft 0 in. (2.1 m) radius cylinder extending 7 ft 0 in. (2.1 m) above and 2 ft 0 in. (600 mm) below unit heater
(b) Vertical downward discharge *(for sprinklers below unit heater, see Figure 9.4.2.5)*		7 ft 0 in. (2.1 m) radius cylinder extending upward from an elevation 7 ft 0 in. (2.1 m) above unit heater	7 ft 0 in. (2.1 m) radius cylinder extending from the top of the unit heater to an elevation 7 ft 0 in. (2.1 m) above unit heater
(3) Steam mains (uncovered)			
(a) Above	More than 2 ft 6 in. (750 mm)	2 ft 6 in. or less (750 mm)	
(b) Side and below	More than 1 ft 0 in. (300 mm)	1 ft 0 in. or less (300 mm)	
(c) Blowoff valve	More than 7 ft 0 in. (2.1 m)		7 ft 0 in. or less (2.1 m)

Table 9.4.2.5(b) Temperature Ratings of Sprinklers in Specified Residential Areas

	Minimum Distance from Edge of Source to Ordinary-Temperature Sprinkler		Minimum Distance from Edge of Source to Intermediate-Temperature Sprinkler	
Heat Source	in.	mm	in.	mm
Side of open or recessed fireplace	36	900	12	300
Front of recessed fireplace	60	1500	36	900
Coal- or wood-burning stove	42	1050	12	300
Kitchen range	18	450	9	225
Wall oven	18	450	9	225
Hot air flues	18	450	9	225
Uninsulated heat ducts	18	450	9	225
Uninsulated hot water pipes	12	300	6	150
Side of ceiling- or wall-mounted hot air diffusers	24	600	12	300
Front of wall-mounted hot air diffusers	36	900	18	450

Heat Source	Minimum Distance from Edge of Source to Ordinary-Temperature Sprinkler		Minimum Distance from Edge of Source to Intermediate-Temperature Sprinkler	
	in.	mm	in.	mm
Hot water heater or furnace	6	150	3	75
Light fixture {except LED}:				
0 W–250 W	6	150	3	75
250 W–499 W	12	300	6	150

Figure 9.4.2.5 High-Temperature and Intermediate-Temperature Zones at Unit Heaters and Radiant Heaters.



Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 19:03:43 EDT 2023

Committee Statement

Committee Statement: Parenthesis deleted from "(except LED)" in table 9.4.2.5(b) to maintain consistency between standards.

CC note 20-NFPA 13-2023 [Section No. 9.4.2.4]

As part of FR-1034, table 9.4.2.5(b) was revised to include "(except LED)." It is suggested that parenthesis be deleted from "except LED" in table 9.4.2.5(B) of NFPA 13 to maintain consistency between the standards.

Response Message: SR-1127-NFPA 13-2023

Second Revision No. 1110-NFPA 13-2023 [New Section after 9.4.4.4]

9.4.5 Sprinklers in Ordinary Hazard Group 2 Occupancies with Ceilings Over 30 ft (9.1 m).

Sprinklers having a nominal K-factor less than K-11.2 (K-160) shall not be permitted for use in Ordinary Hazard Group 2 and higher occupancy hazards where the ceiling height is greater than 30 ft (9.1 m).

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 04 13:34:09 EDT 2023

Committee Statement

Committee Statement: The added paragraph provides guidance to the reader regarding a new requirement in Chapter 19. The test data supports providing larger K-factor sprinklers for OH2 and higher hazard occupancies for all ceilings above 30 ft. (9.1 m).

Response Message: SR-1110-NFPA 13-2023

Second Revision No. 1185-NFPA 13-2023 [Section No. 9.5.4.3]

9.5.4.3

~~Where sprinklers are installed under ceilings with a slope that exceeds 2 in 12 (16.7 percent) and protect storage in accordance with Chapters 20 through 26 , deflectors of sprinklers shall be aligned parallel to the floor of the storage area.~~ Deflectors of sprinklers shall be oriented as follows:

(1) Where ceilings have a slope of 2 in 12 or less, deflectors of sprinklers shall be aligned parallel to ceilings, roofs, or the incline of stairs, or parallel to the floor.

(2) Where ceilings have a slope of more than 2 in 12 and sprinklers protect nonstorage hazards in accordance with Chapter 19 , deflectors of sprinklers shall be aligned parallel to ceilings, roofs, or the incline of stairs, or parallel to the floor.

(3)* Where sprinklers are installed under ceilings with a slope that exceeds 2 in 12 (16.7 percent) and protect storage in accordance with Chapters 20 through 26 , deflectors of sprinklers shall be aligned parallel to the floor of the storage area.

A.9.5.4.3(3)

Computer simulations and full-scale fire tests as documented in the report entitled *Protection of Storage Under Sloped Ceilings Phase III: Large-Scale Testing Summary and Guidance*, written based on a project supported by the Fire Protection Research Foundation, have demonstrated the advantage of having sprinkler deflectors installed parallel to the floor when the slope of a ceiling over a storage occupancy exceeds 2 in 12. This orientation allows the water flux applied to a storage array to closely match the water flux obtained at the test labs, which were conducted under a horizontal flat ceiling. The previously referenced test program did not investigate the impact of sprinkler orientation parallel to the ceiling for nonstorage occupancies. While there are advantages to having sprinklers installed parallel to the floor when the slope of a ceiling exceeds 2 in 12, the sprinklers used to protect nonstorage occupancies have deflectors that create water flux distribution patterns that are significantly different than sprinklers used to protect storage. As nonstorage occupancies were not part of the scope of the Fire Protection Research Foundation project on sloped ceilings, coupled with the additional cost to install sprinklers with their deflectors parallel to the floor, the requirement to install sprinkler deflectors parallel to the floor under ceilings having a slope that exceeds 2 in 12 was limited to storage occupancies.

When this standard uses the term *parallel to the floor of the storage area*, it intends for this to be horizontal. In some cases, the floor of the building might have a slight slope to drain spilled fluids, but the intent of the standard is not to match this slope but have the deflectors be installed horizontally to comply with this requirement.

Supplemental Information

File Name	Description	Approved
SR_1185.docx	For editorial use.	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Sep 06 09:29:30 EDT 2023

Committee Statement

Committee Statement: The work done by the FPRF project on sloped ceilings showed that positioning the sprinkler with the deflector parallel to the floor had significant advantages in helping to achieve fire control and therefore should not be prohibited by the standard if the design professional chooses this installation orientation.

Response Message: SR-1185-NFPA 13-2023

Public Comment No. 87-NFPA 13-2023 [Sections 9.5.4.2, 9.5.4.3]

Second Revision No. 1027-NFPA 13-2023 [Section No. 9.5.5.3.3.1]

9.5.5.3.3.1

Supplemental sprinklers shall be quick response ~~having a~~ , or have a fast-response thermal element, having a nominal ordinary temperature rating unless otherwise required by 7.2.4 or 9.4.2.5.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 16:34:39 EDT 2023

Committee Statement

Committee Statement: The intent of the proposed language in the first draft was to allow any sprinkler that is quick-response, or has a fast-response thermal element, such as an extended-coverage sprinkler, to be used as a supplemental sprinkler. The proposed language allows the extended-coverage sprinkler to be an acceptable sprinkler for use as a supplemental sprinkler.

Response Message: SR-1027-NFPA 13-2023

Public Comment No. 195-NFPA 13-2023 [Section No. 9.5.5.3.3.1]

Second Revision No. 1028-NFPA 13-2023 [Section No. 9.5.5.3.4.2]

9.5.5.3.4.2

~~The spacing of supplemental~~ Supplemental sprinklers ~~under obstructions~~ shall be permitted to be spaced in accordance with ~~one of the following:~~ unobstructed construction requirements for the hazards they protect, unless otherwise modified elsewhere in this standard.

~~Where supplemental sprinklers are required below flat, solid obstructions not exceeding 2 ft. (0.6 m) in width, the maximum allowable linear spacing for the sprinklers shall be 8 ft (2.4 m).~~

~~Where supplemental sprinklers are required below nonflat or nonsolid obstructions, the maximum allowable linear and area spacing for the sprinklers shall be 4 ft (1.2 m) and 16 ft^2 (1.5 m^2).~~

~~Where a flat, solid continuous horizontal barrier having the same footprint of the obstruction is installed below an obstruction not exceeding 2 ft (0.6 m) in width, the maximum allowable linear spacing for the sprinklers shall be 8 ft (2.4 m).~~

~~Where supplemental sprinklers are required below flat, solid obstructions greater than 2 ft (0.6 m) but not exceeding 10 ft (0.3 m) in width, the maximum allowable linear spacing for the sprinklers shall be 10 ft (3.0 m).~~

~~Where a flat, solid continuous horizontal barrier having the same footprint of the obstruction is installed below an obstruction greater than 2 ft (0.6 m) but not exceeding 10 ft (0.3 m) in width, the maximum allowable linear spacing for the sprinklers shall be 10 ft (3.0 m).~~

~~Where supplemental sprinklers are required below flat, solid obstructions exceed 10 ft (3.0 m) in width, the sprinkler spacing for the supplemental sprinklers shall be in accordance with the requirements for the sprinklers installed under unobstructed construction.~~

~~Where a flat, solid continuous horizontal barrier having the same footprint of the obstruction is installed below an obstruction exceeding 10 ft (0.3 m) in width, the sprinkler spacing for the supplemental sprinklers shall be installed under unobstructed construction.~~

Supplemental Information

File Name	Description	Approved
SSI_SR-1028_9.5.5.3.4.2.docx		

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 17:18:28 EDT 2023

Committee Statement

Committee Statement: This is a general requirement that allows for spacing of supplemental sprinklers to not have to follow the spacing guidelines for the sprinklers installed at the ceiling. Subsections 1 through 7 have been removed and relocated to chapter 14 as they are more restrictive and apply to ESFR sprinklers.

Response Message: SR-1028-NFPA 13-2023

Public Comment No. 196-NFPA 13-2023 [Section No. 9.5.5.3.4.2]

Second Revision No. 1029-NFPA 13-2023 [Section No. 9.5.5.4]

9.5.5.4 Closets.

In all closets and compartments, including those closets housing mechanical equipment, that are not larger than 400 ft^3 (11.3 m^3) in size, a single sprinkler at the highest ceiling level shall be sufficient without regard to clearance, obstructions, or minimum distance to the wall.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 17:24:50 EDT 2023

Committee Statement

Committee Statement: The current section does not address clearance. Without this specific reference, the 18 in. clearance requirement for storage could be applied.

Response Message: SR-1029-NFPA 13-2023

Public Comment No. 24-NFPA 13-2023 [Section No. 9.5.5.4]

Second Revision No. 1037-NFPA 13-2023 [New Section after 10.2.4.2.2]

10.2.5 Sprinklers in Ordinary Hazard Group 2 Occupancies with Ceilings Over 30 ft (9.1 m).

Standard-response standard-coverage sprinklers shall not be permitted for use in Ordinary Hazard Group 2 occupancies where the ceiling height is greater than 30 ft (9.1 m).

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 09:22:31 EDT 2023

Committee Statement

Committee Statement: The added paragraph provides guidance to the reader regarding a new requirement in Chapter 19. Large-scale fire testing applicable to the requirement of this section demonstrated that for standard-coverage sprinklers, the use of quick-response sprinklers provided an acceptable level of fire control for simulated Ordinary Hazard Group 2 occupancy hazards.

Response Message: SR-1037-NFPA 13-2023

Second Revision No. 1034-NFPA 13-2023 [Section No. 10.2.6.1.2]

10.2.7.1.2 Obstructed Construction.

Under obstructed construction, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Installed with the deflectors within the horizontal planes of 1 in. to 6 in. (25 mm to 150 mm) below the structural members and a maximum distance of 22 in. (550 mm) below the ceiling/roof deck

(2) Installed with the deflectors at or above the bottom of the structural member to a maximum of 22 in. (550 mm) below the ceiling/roof deck where the sprinkler is installed in conformance with 10.2.7.2

(3) Installed in each bay of obstructed construction, with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling

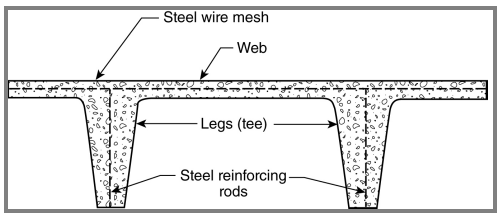
(4) Installed with the deflectors within the horizontal planes 1 in. to 6 in. (25 mm to 150 mm) below composite wood joists to a maximum distance of 22 in. (550 mm) below the ceiling/roof deck only where joist channels are provided with blocking to the full depth of the joists with material at least equivalent to the web construction so that individual channel areas do not exceed 300 ft^2 (28 m^2)

(5)* Installed with deflectors of sprinklers under concrete tee construction with stems spaced less than 7 ½ ft (2.3 m) on centers and a maximum depth of the stems of 30 in. (750 mm), located at or above a horizontal plane 1 in. (25 mm) below the bottom of the stems of the tees and complying with Table 10.2.8.2(a) or Table 10.2.8.2(b)

A.10.2.7.1.2(5) _

For concrete joists spaced less than 3 ft (900 mm) on center, the rules for obstructed construction shown in 10.2.7.1.2 apply. For concrete tee construction with stems spaced less than 7 ft 6 in. (2.3 m) on center, the sprinkler deflector can be located at or above a horizontal plane 1 in. (25 mm) below the bottom of the stems of the tees. This includes sprinklers located between the stems. [See Figure A.10.2.7.1.2(5) .]

Figure A.10.2.7.1.2(5) Typical Concrete Joist Construction.



10.2.7.1.2.1 Obstructed Construction for Ceilings with Slopes Not Exceeding 1 in 12.

Where the slope of the ceiling does not exceed 1 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

Where the maximum depth of the structural members, including concrete tees, is 18 in. (450 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members.

Where the maximum depth of the structural members, including concrete tees, is greater than 18 in. (450 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are firestopped to the full depth of the structural member with material equivalent to the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

Where composite wood joists are firestopped to the full depth of the joists with material equivalent to the web construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the joists only when a maximum distance of 22 in. (550 mm) can be maintained between the sprinkler deflector and the ceiling/roof deck.

10.2.7.1.2.2 Obstructed Construction for Ceilings with Slopes Not Exceeding 2 in 12.

Where the slope of the ceiling is greater than 1 in 12 but does not exceed 2 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

Where the maximum depth of the structural members, including concrete tees, is 12 in. (300 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members.

Where the maximum depth of the structural members, including concrete tees, is greater than 12 in. (300 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the structural member with material equivalent to or less combustible than the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

Where composite wood joists are provided with blocking to the full depth of the joists with material equivalent to or less combustible than the web construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the joists only when a maximum distance of 22 in. (550 mm) can be maintained between the sprinkler deflector and the ceiling/roof deck.

~~**10.2.7.1.2.3** Obstructed Construction for Ceilings with Slopes Not Exceeding 4 in 12.~~

~~Where the slope of the ceiling is greater than 2 in 12 but does not exceed 4 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:~~

~~Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.~~

~~Where the maximum depth of the structural members, including concrete tees, is 12 in. (300 mm) and are installed perpendicular to the ceiling slope, sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the structural member with material equivalent to or less combustible than the structural member's construction so that individual channel volumes do not exceed 300 ft^3 (8.5 m^3).~~

~~**10.2.7.1.2.4** Solid Obstructed Construction for Ceiling with Slopes Exceeding 4 in 12.~~

~~Where the slope of the ceiling is greater than 4 in 12, sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.~~

Supplemental Information

File Name	Description	Approved
10.2.6.1.2_PC_137.docx		
10.2.6.1.2_SR-1034.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 21:42:46 EDT 2023

Committee Statement

Committee Statement: Based on information from the FPRF testing program, the results of the testing incorporates the following into NFPA 13:

1. Return the positioning of standard spray sprinklers with respect to obstructed construction to the 2022 edition rules with two changes; one change to concrete tee construction, which will be substantiated below and usage of the new term "blocking" which was defined at the First Draft.

2. Allow the user, when protecting non-storage occupancies with a sloped ceiling, to select one of two options:

a. Locate the sprinkler in accordance with the old rules and take the 30% increase in design area

b. Locate the sprinkler in accordance with new rules in order to avoid the 30% increase. The sprinkler location rules for selecting this option will be in Chapter 19.

3. Allow the user to protect a storage occupancy with a sloped ceiling with the sprinkler location information in Chapter 20 rather than Chapter 10.

This approach has a less dramatic effect on the users of NFPA 13 and is still supported by the data of the test program. Ultimately, this approach is more likely to be more user friendly to the typical design professional and will provide options that were not permitted under the 2022 and previous editions of the standard while retaining the status quo for those familiar with the older rules and still wanting to select sprinkler protection using those parameters.

The one change to the 2022 edition rules that is being proposed here is the limit on the depth of the stems of concrete tees. Previous editions of the standard have permitted sprinklers to be installed under the concrete tees, regardless of the depth, which causes questions regarding the response of sprinklers under particularly deep tees. This comment proposes a limit of 30 inches to the depth of the tees in order to eliminate the concept of allowing an unlimited depth. The 30 inch depth limit is considered practical given the knowledge of common types of construction that have been protected successfully with fire sprinklers for decades and given some individual manufacturer's experience with fire tests to achieve a listing for specific product

Response Message: SR-1034-NFPA 13-2023

Public Comment No. 138-NFPA 13-2023 [New Section after A.10.2.5.2.3]

Public Comment No. 137-NFPA 13-2023 [Section No. 10.2.6.1.2]

Second Revision No. 1058-NFPA 13-2023 [Section No. 10.2.7.2]

10.2.8.2* Obstructions ~~to~~ At or Above the Deflector Affecting Sprinkler Discharge Pattern Development.

~~Sprinklers shall~~ Where the top of the obstruction is level with or above the plane of the deflector, sprinklers shall be arranged to comply with one of the following ~~arrangements~~ :

(1) Subsection 9.5.5.2, Table 10.2.8.2(a) or Table 10.2.8.2(b), and Figure 10.2.8.2(a) shall be followed.

(2) Sprinklers shall be permitted to be spaced on opposite sides of obstructions not exceeding 4 ft (1.2 m) in width, provided the distance from the centerline of the obstruction to the sprinklers does not exceed one-half the allowable distance permitted between sprinklers.

(3) Obstructions located against the wall and that are not over 30 in. (750 mm) in width shall be permitted to be protected in accordance with Figure 10.2.8.2(b).

(4) Obstructions located against the wall and that are not over 24 in. (600 mm) in width shall be permitted to be protected in accordance with Figure 10.2.8.2(c). The maximum distance between the sprinkler and the wall shall be measured from the sprinkler to the wall behind the obstruction and not to the face of the obstruction.

(5) Obstructions no greater than 12 in. (300 mm) in width in hallways up to 6 ft (1.8 m) in width shall be permitted in accordance with Figure 10.2.8.2(d) when the sprinkler is located within the allowable obstruction zone and the closest edge of the obstruction is a minimum of 12 in. (300 mm) away from the centerline of the sprinkler.

(6) Sprinklers shall be installed below fixed obstructions over 4 ft (1.2 m) wide.

(7) Sprinklers shall not be required under obstructions 4 ft. (1.2 m) or less wide when the provisions of Table 10.2.8.2(a) or Table 10.2.8.2(b) and Figure 10.2.8.2(a) are maintained.

Table 10.2.8.2(a) Positioning of Sprinklers to Avoid Obstructions to Discharge [Standard Spray Upright/Standard Spray Pendent (SSU/SSP)]

Distance from Sprinkler to Side of Obstruction *(A)* (ft)	Allowable Distance of Deflector Above Bottom of Obstruction *(B)* (in.)
Less than 1	0
1 or more	2½ or less
1½ or more	3½ or less
2 or more	5½ or less
2½ or more	7½ or less
3 or more	9½ or less
3½ or more	12 or less
4 or more	14 or less
4½ or more	16½ or less
5 or more	18 or less
5½ or more	20 or less
6 or more	24 or less
6½ or more	30 or less
7 or more	35 or less

Note: For *A* and *B*, refer to Figure ~~10.2.7.2(a)~~ 10.2.8.2(a) .

Table 10.2.8.2(b) Positioning of Sprinklers to Avoid Obstructions to Discharge [Standard Spray Upright/Standard Spray Pendent (SSU/SSP)]

Distance from Sprinkler to Side of Obstruction *(A)* (mm)	Allowable Distance of Deflector Above Bottom of Obstruction *(B)* (mm)
Less than 300	0
300 or more	65 or less

Distance from Sprinkler to Side of Obstruction *(A)* (mm)	Allowable Distance of Deflector Above Bottom of Obstruction *(B)* (mm)
450 or more	90 or less
600 or more	140 or less
750 or more	190 or less
900 or more	240 or less
1100 or more	300 or less
1200 or more	350 or less
1400 or more	420 or less
1500 or more	450 or less
1700 or more	510 or less
1800 or more	600 or less
2000 or more	750 or less
2100 or more	875 or less

Note: For *A* and *B*, refer to Figure ~~10.2.7.2(a)~~ 10.2.8.2(a) .

Figure 10.2.8.2(a) Positioning of Sprinkler to Avoid Obstruction to Discharge (SSU/SSP).

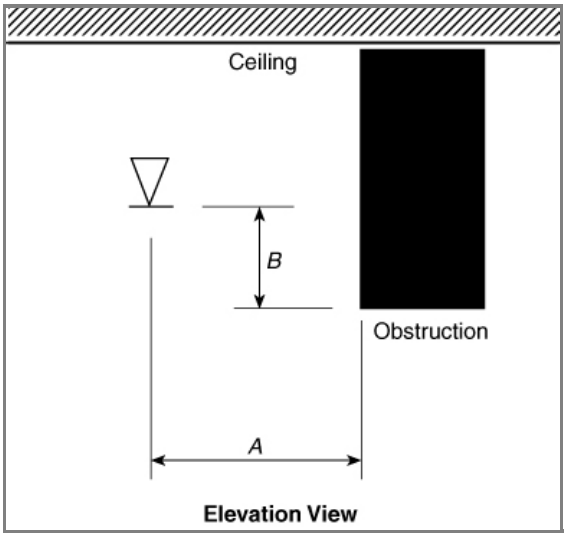


Figure 10.2.8.2(b) Obstruction Against Wall (SSU/SSP).

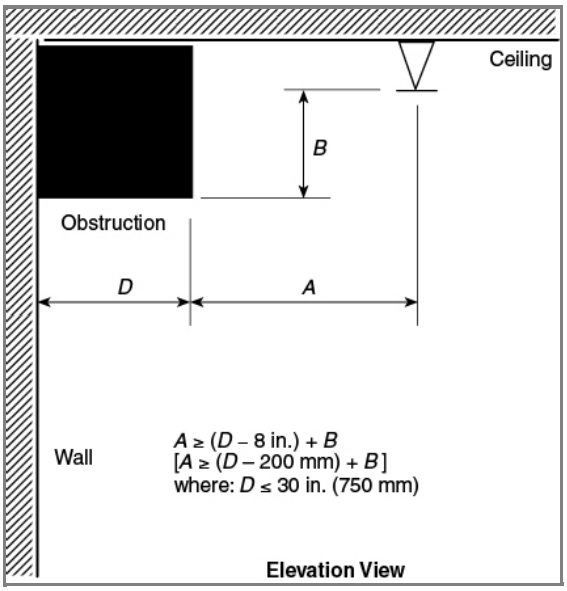


Figure 10.2.8.2(c) Obstructions Against Walls (SSU/SSP).

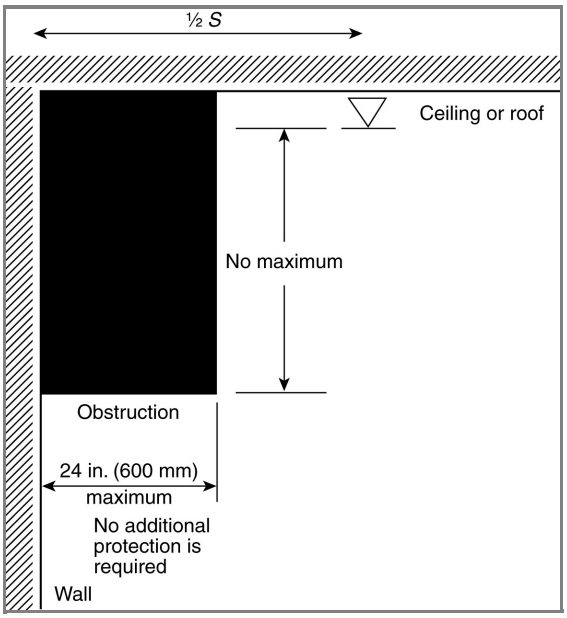
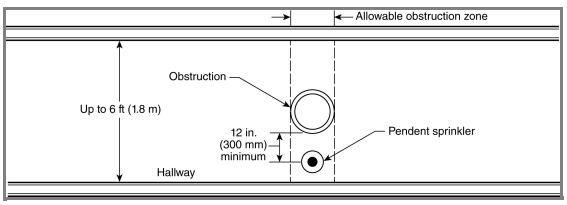


Figure 10.2.8.2(d) Obstruction in Hallway.



Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 20:28:43 EDT 2023

Committee Statement

Committee Sections 10.2.7.2 and 10.2.7.3 have the same titles and can confuse the user when

Statement: applying the beam rules and three times rule to obstructions. This change in title makes it clear that the beam rule applies to obstructions within 18 in. of the deflector that extends to the level of the deflector or above. The change to section 10.2.7.2 and 10.2.7.3 makes it clear that the three times rule applies to obstructions within 18 in. of the deflector that are completely below the level of the deflector.

Response Message: SR-1058-NFPA 13-2023

Public Comment No. 26-NFPA 13-2023 [Section No. 10.2.7.2]

Second Revision No. 1032-NFPA 13-2023 [Section No. 10.2.7.3.2.2]

10.2.8.3.2.2*

In light hazard occupancies, privacy curtains, as shown in Figure 10.2.8.3.2.1, shall not be considered obstructions where all of the following are met:

(1) The curtains are supported by fabric mesh on ceiling track.

(2) Openings in the mesh are equal to 70 percent or greater.

(3) The mesh extends a minimum of ~~22~~ 20 in. (~~550~~ 500 mm) down from ~~ceiling~~ the sprinkler deflector .

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 18:47:16 EDT 2023

Committee Statement

Committee Statement: The required distance to the mesh of privacy curtains has been modified to a distance related to the deflector versus the ceiling to align with the 2004 NIST test, "The Effect of Privacy Curtains on Sprinkler Spray" outcome.

Response Message: SR-1032-NFPA 13-2023

Public Comment No. 149-NFPA 13-2023 [Section No. 10.2.7.3.2.2]

Public Comment No. 152-NFPA 13-2023 [Section No. A.10.2.7.3.2.2]

Second Revision No. 1112-NFPA 13-2023 [Section No. 10.3.2 [Excluding any Sub-Sections]]

Sidewall sprinklers shall only be installed as follows:

(1) In light hazard occupancies with smooth, horizontal ceilings

(2) In light hazard occupancies with sloped, flat ceilings

(3) In ordinary hazard occupancies with smooth, flat ceilings not exceeding 30 ft (9.1 m) in height, where specifically listed for such use

(4) To protect areas below overhead doors

(5) At the top and bottom of elevator hoistways

(6) For the protection of steel building columns

(7) Under obstructions that require sprinklers

(8) For the protection of exterior projections and similar structures

(9)* Under cars in car stackers and car lift systems with cars stacked vertically placed under each level of cars

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 04 13:52:35 EDT 2023

Committee Statement

Committee Statement: The large-scale fire testing applicable to ceilings over 30 ft. (9.1 m) did not include the use of sidewall sprinklers.

Response Message: SR-1112-NFPA 13-2023

Second Revision No. 1033-NFPA 13-2023 [Section No. 10.3.6.2.2.1]

10.3.6.2.2.1*

In light hazard occupancies, privacy curtains, as shown in Figure 10.3.6.2.2, shall not be considered obstructions where all of the following are met:

(1) The curtains are supported by fabric mesh on ceiling track.

(2) Openings in the mesh are equal to 70 percent or greater.

(3) The mesh extends a minimum of ~~22~~ 20 in. (~~550~~ 500 mm) down from ~~ceiling~~ the sprinkler deflector .

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 18:52:44 EDT 2023

Committee Statement

Committee Statement: The required distance to the mesh of privacy curtains has been modified to a distance related to the deflector versus the ceiling to align with the 2004 NIST test, "The Effect of Privacy Curtains on Sprinkler Spray" outcome.

Response Message: SR-1033-NFPA 13-2023

Public Comment No. 153-NFPA 13-2023 [Section No. A.10.3.6.2.2.1]

Public Comment No. 151-NFPA 13-2023 [Section No. 10.3.6.2.2.1]

Second Revision No. 1111-NFPA 13-2023 [Section No. 11.2.1]

11.2.1 Extended Coverage Sprinklers.

Extended coverage sprinklers shall only be installed as follows:

(1) In unobstructed construction consisting of flat, smooth ceilings with a slope not exceeding a pitch of 1 in 6 (a rise of 2 units in a run of 12 units, a roof slope of 16.7 percent)

(2) In unobstructed or noncombustible obstructed construction, where specifically listed for such use

(3) Within trusses or bar joists having web members not greater than 1 in. (25 mm) maximum dimension or where trusses are spaced greater than 7½ ft (2.3 m) on center and where the ceiling slope does not exceed a pitch of 1 in 6 (a rise of 2 units in a run of 12 units, a roof slope of 16.7 percent)

(4) Extended coverage upright and pendent sprinklers installed under smooth, flat ceilings that have slopes not exceeding a pitch of 1 in 3 (a rise of 4 units in a run of 12 units, a roof slope of 33.3 percent), where specifically listed for such use

(5) Extended coverage sidewall sprinklers installed in accordance with 11.3.5.2.1 in slopes exceeding a ceiling pitch of 2 in 12

(6) Extended coverage upright and pendent sprinklers installed in obstructed construction, in accordance with 11.2.4.1

(7) Extended coverage sprinklers installed to protect areas below a single overhead door(s)

11.2.1.1

Extended-coverage pendent sprinklers having a nominal K-factor of K-22.4 (K-320) or less shall not be permitted for use in Ordinary Hazard Group 2 and higher occupancy hazards where the ceiling height is greater than 30 ft (9.1 m).

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 04 13:49:57 EDT 2023

Committee Statement

Committee Statement: The added paragraph provides guidance to the reader regarding a new requirement in Chapter 19. Large-scale fire testing applicable to the requirements of this section did not include the use of extended-coverage sprinklers with a K-factor of less than K-25.2 (K-360). Testing at FM Global, however, has demonstrated that upright extended-coverage sprinklers with a K-factor of K-11.2 (K-160) and K-14.0 (K-200) can be effective for Ordinary Hazard Group 1 and 2 occupancies where the ceiling height is greater than 30 ft (9.1 m), whereas the testing at FM Global did not demonstrate this for the pendent version of these extended-coverage sprinklers.

Response Message: SR-1111-NFPA 13-2023

Second Revision No. 1038-NFPA 13-2023 [Section No. 11.2.4.1.2]

11.2.4.1.2 Obstructed Construction.

Under obstructed construction, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Installed with the deflectors within the horizontal planes of 1 in. to 6 in. (25 mm to 150 mm) below noncombustible structural members and a maximum distance of 22 in. (550 mm) below the ceiling/roof deck

(2) Installed with the deflectors at or above the bottom of noncombustible structural members to a maximum of 22 in. (550 mm) below the noncombustible ceiling/roof deck where the sprinkler is installed in conformance with 11.2.5.1.2

(3) Installed in each bay of combustible or noncombustible obstructed construction, with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling

(4) Installed in accordance with their listing where sprinklers are listed for use under other ceiling construction features or for different distances

~~**11.2.4.1.2.1** Obstructed Construction for Ceilings with Slopes Not Exceeding 1 in 12.~~

~~Where the slope of the ceiling does not exceed 1 in 12 under obstructed construction, the sprinkler deflector shall be located in accordance with one of the following arrangements:~~

~~Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.~~

~~Where the maximum depth of the noncombustible structural members is 18 in. (450 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members.~~

~~Where the maximum depth of the noncombustible structural members is greater than 18 in. (450 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members only when the channels formed by obstructed construction are firestopped to the full depth of the structural member with material equivalent to the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).~~

~~Sprinkler deflectors shall be installed in accordance with their listing where sprinklers are listed for use under other ceiling construction features or for different distances~~

11.2.4.1.2.2 Obstructed Construction for Ceilings with Slopes Not Exceeding 2 in 12 with Solid Structural Members.

Where the slope of the ceiling is greater than 1 in 12 but does not exceed 2 in 12 under solid obstructed construction, the sprinkler deflector shall be located in accordance with one of the following arrangements:

Sprinklers shall be installed in each individual channel of solid obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

Where the maximum depth of the noncombustible solid structural members is 12 in. (300 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members.

Where the maximum depth of the noncombustible solid structural members is greater than 12 in. (300 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members only when the channels formed by obstructed construction are firestopped to the full depth of the structural member with material equivalent to the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

Sprinkler deflectors shall be installed in accordance with their listing where sprinklers are listed for use under other ceiling construction features or for different distances.

11.2.4.1.2.3 Obstructed Construction for Ceilings with Slopes Not Exceeding 4 in 12 with Solid Structural Members.

Where the slope of the ceiling is greater than 2 in 12 but does not exceed 4 in 12 under solid obstructed construction, the sprinkler deflector shall be located in accordance with one of the following arrangements:

Sprinklers shall be installed in each individual channel of solid obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

Where the maximum depth of the noncombustible solid structural members is 12 in. (300 mm) and are installed perpendicular to the ceiling slope, sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members only when the channels formed by obstructed construction are firestopped to the full depth of the structural member with material equivalent to the structural member's construction so that individual channel volumes do not exceed 300 ft^3 (8.5 m^3).

Sprinkler deflectors shall be installed in accordance with their listing where sprinklers are listed for use under other ceiling construction features or for different distances.

11.2.4.1.2.4 Obstructed Construction for Ceiling Slopes Exceeding 4 in 12 with Solid Structural Members.

Where the slope of the ceiling is greater than 4 in 12 under solid obstructed construction, sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 1 in. (25 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

11.2.4.1.2.5 Obstructed Construction with Nonsolid Structural Members.

Where the slope of the ceiling is greater than 1 in 12 under nonsolid obstructed construction, sprinklers shall be installed in accordance with the rules for unobstructed construction with the sprinkler deflector above the bottom of the structural member.

Supplemental Information

File Name	Description	Approved
PC_85.docx	For editorial use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 09:37:56 EDT 2023

Committee Statement

Committee Statement: Based on the discussion at the First Draft Meeting and a re-evaluation of the information from the FPRF testing program, the following changes are recommended:

1. Return the positioning of standard spray sprinklers with respect to obstructed construction to the 2022 edition rules with two changes; one change to concrete tee construction, which will be substantiated below and usage of the new term “blocking” which was defined at the First Draft.

2. Allow the user, when protecting non-storage occupancies with a sloped ceiling, to select one of two options:

a. Locate the sprinkler in accordance with the old rules and take the 30% increase in design area

b. Locate the sprinkler in accordance with new rules in order to avoid the 30% increase. The sprinkler location rules for selecting this option will be in Chapter 19.

3. Allow the user to protect a storage occupancy with a sloped ceiling with the sprinkler location information in Chapter 20 rather than Chapter 10.

This approach has a less dramatic effect on the users of NFPA 13 and is still supported by the data of the test program. Ultimately, this approach is more likely to be more user friendly to the typical design professional and will provide options that were not permitted under the 2022 and previous editions of the standard while retaining the status quo for those familiar with the older rules and still wanting to select sprinkler protection using those parameters.

Response Message: SR-1038-NFPA 13-2023

Public Comment No. 85-NFPA 13-2023 [Section No. 11.2.4.1.2]

Second Revision No. 1039-NFPA 13-2023 [Section No. 12.1.8.8]

12.1.8.8 Deflector Orientation (Residential Sidewall Sprinklers).

Residential sidewall sprinklers, where installed under a sloped ceiling with a slope exceeding 2 in 12, shall be located in accordance with one of the following:

(1) At the high point of the slope and positioned to discharge downward along the slope as shown in Figure 12.1.8.8(a)

(2) Along slopes not exceeding 8 in 12 with the deflector installed parallel to the slope and positioned to discharge across the slope as shown in Figure 12.1.8.8(b)

Figure 12.1.8.8(a) Sidewall Deflector Orientation with Discharge Parallel to the Slope.

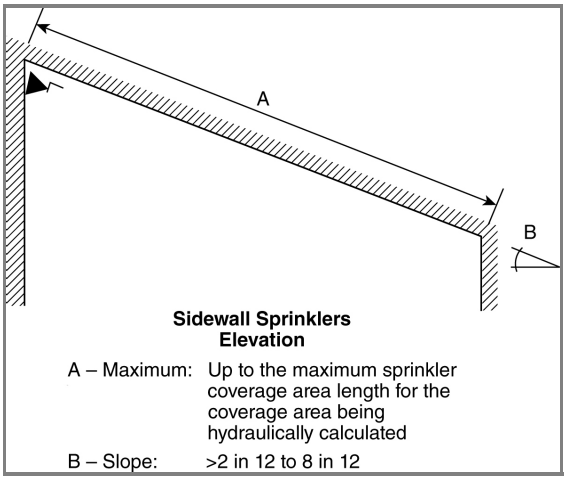
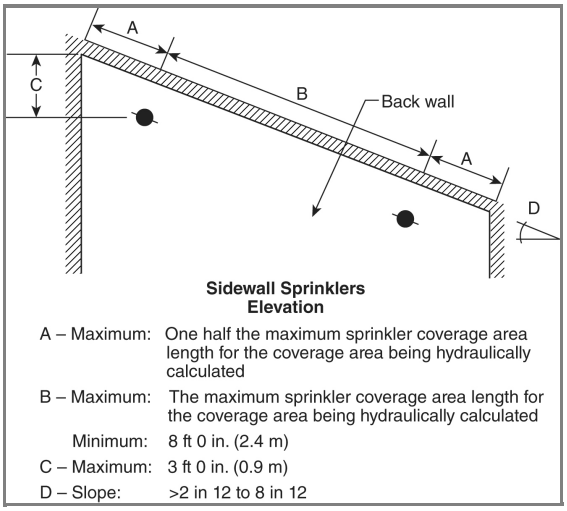


Figure 12.1.8.8(b) Sidewall Deflector Orientation with Discharge Perpendicular to the Slope.



Supplemental Information

File Name	Description	Approved
fig_12.1.8.8_a_and_b.png	Attached new figures with markups	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 09:44:57 EDT 2023

Committee Statement

Committee Statement: The new figures illustrate the concept for positioning sidewall sprinklers under sloped ceilings.

Response Message: SR-1039-NFPA 13-2023

Public Comment No. 190-NFPA 13-2023 [Section No. 12.1.8.8]

Second Revision No. 1128-NFPA 13-2023 [Sections 13.2.1, 13.2.2]

13.2.1 General.

All requirements of Section 9.5 shall apply to CMSA sprinklers except as modified in Section 13.2.

13.2.1.1

CMSA pendent sprinklers shall be installed in accordance with Section 9.5 and the manufacturer's installation instructions in lieu of the requirements in Section 13.2.

13.2.1.2

CMSA sprinklers shall be installed only in buildings where the roof or ceiling slope does not exceed 4 in 12.

13.2.1.3

CMSA sprinklers shall be permitted to be used in wet, dry, or preaction systems and shall be installed in accordance with their listing.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Thu Aug 17 19:15:18 EDT 2023

Committee Statement

Committee Statement: Section numbering corrected.

CC note 23-NFPA 13-2023 [Section No. 13.2.1.2]

The new 13.2.1.2 appears to be an independent requirement like the existing 13.2.2 and therefore should not be under general as a subsection but be its own section. Review the numbering of new 13.2.1.2 as part of FR 1149. Should this be a subsection under general or be its own section, such as 13.2.2. It appears that it should be its own section.

Response Message: SR-1128-NFPA 13-2023

Second Revision No. 1134-NFPA 13-2023 [Section No. 13.2.6.4.1]

13.2.5.4.1

Sprinklers shall be permitted to be placed less than 8 ft (2.4 m) on center where the following conditions are satisfied:

(1) Baffles shall comply with the criteria in ~~13.2.8.1.2~~ 14.2.10.2.1 .

(2) Baffles shall be solid and rigid material that will stay in place before and during sprinkler operation.

(3) Baffles shall be not less than 8 in. (200 mm) long and 6 in. (150 mm) high.

(4) The tops of baffles shall extend between 2 in. (50 mm) and 3 in. (75 mm) above the deflectors of upright sprinklers.

(5) The bottoms of baffles shall extend downward to a level at least even with the deflectors of pendent sprinklers.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 18 14:19:23 EDT 2023

Committee Statement

Committee Statement: The obstruction guidelines for CMSA sprinklers are now located in chapter 14.

Response Message: SR-1134-NFPA 13-2023

Second Revision No. 1040-NFPA 13-2023 [Section No. 13.2.6.4.2]

13.2.5.4.2

Where sprinklers are installed in every channel formed by solid obstructed construction with the deflectors above the bottom of the structural members, ~~the structural members shall be considered baffles in accordance with~~ ~~13.2.6.4.1~~ sprinklers in adjacent channels shall be permitted to be placed less than 8 ft (2.4 m) on center .

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:02:50 EDT 2023

Committee Statement

Committee Statement: The sprinklers in adjacent channels can be closer than 8 feet on center due to the solid obstructed construction between them.

Response Message: SR-1040-NFPA 13-2023

Public Comment No. 51-NFPA 13-2023 [Section No. 13.2.6.4.2]

Second Revision No. 1117-NFPA 13-2023 [Section No. 13.2.7.1.2]

13.2.6.1.2 Obstructed Construction.

13.2.6.1.2.1 Obstructed Construction for Ceilings with Slopes Not Exceeding 1 in 12.

Where the slope of the ceiling does not exceed 1 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 6 in. (150 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

(2) Where the maximum depth of the noncombustible structural members, including concrete tees, is 18 in. (450 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members.

(3) Where the maximum depth of the noncombustible structural members, including concrete tees, is greater than 18 in. (450 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the noncombustible structural member with material equivalent to the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

(4) Where wood joists or composite wood joists are provided with blocking to the full depth of the joists with material equivalent to or less combustible than the web construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the joists only when a maximum distance of 22 in. (550 mm) can be maintained between the sprinkler deflector and the ceiling/roof deck.

13.2.6.1.2.2 Obstructed Construction Less than or Equal to 50 Percent Open for Ceilings with Slopes Not Exceeding 2 in 12.

Where the slope of the ceiling is greater than 1 in 12, but does not exceed 2 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 6 in. (150 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

(2) Where the maximum depth of the noncombustible structural members, including concrete tees, is 12 in. (300 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members.

(3) Where the maximum depth of the noncombustible structural members, including concrete tees, is greater than 12 in. (300 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the noncombustible structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the noncombustible structural member with material equivalent to the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

(4) Where wood joists or composite wood joists are provided with blocking to the full depth of the joists with material equivalent to or less combustible than the web construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the joists only when a maximum distance of 22 in. (550 mm) can be maintained between the sprinkler deflector and the ceiling/roof deck.

13.2.6.1.2.3 Obstructed Construction Less than or Equal to 50 Percent Open for Ceilings with Slopes Not Exceeding 4 in 12.

Where the slope of the ceiling is greater than 2 in 12, but does not exceed 4 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located a minimum of 6 in. (150 mm) and a maximum of 12 in. (300 mm) below the ceiling/roof deck.

(2) Where the maximum depth of the structural members, including concrete tees, is 12 in. (300 mm) and are installed perpendicular to the ceiling slope, sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the structural member with material equivalent to or less combustible than the structural member's construction so that individual channel volumes do not exceed 300 ft^3 (8.5 m^3).

13.2.6.1.2.4 Obstructed Construction Greater than 50 Percent Open.

Where the slope of the ceiling is greater than 1 in 12 under obstructed construction that is greater than 50 percent open, sprinklers shall be installed in accordance with the rules for unobstructed construction.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 09 11:52:02 EDT 2023

Committee Statement

Committee Statement: The reality of the physics involved in the buoyancy of fire plumes is that construction that meets the definition of “obstructed construction” that is between 50% and 69% open will allow significant heat to travel up the slope and open sprinklers remote from the fire. The 50% lower limit may seem arbitrary, but concern exists for situations where the majority of the structural member is open and yet the member meets the definition of “obstructed”. Care needs to be taken in the installation of such sprinklers and they cannot be installed using the same rules as situations where the construction is more solid and will impede the flow of hot gasses up the slope.

Response Message: SR-1117-NFPA 13-2023

Public Comment No. 93-NFPA 13-2023 [Section No. 13.2.7.1.2]

Second Revision No. 1043-NFPA 13-2023 [Section No. 14.2.7.1]

14.2.6.1

When ESFR sprinklers are used for the protection of light or ordinary hazard occupancies, ~~14.2.7.1.1 through 14.2.7.1.3 shall be permitted~~ the obstruction to the sprinkler discharge pattern of ESFR sprinklers shall be permitted to meet the obstruction discharge requirements of 10.2.8.2.

~~**14.2.7.1.1**~~

~~In light hazard occupancies, the protection area limitations of ESFR sprinklers shall be permitted to meet the protection area requirements of Table 10.2.4.2.1(a) .~~

~~**14.2.7.1.2**~~

~~In light and ordinary hazard occupancies, the sprinkler spacing of ESFR sprinklers shall be permitted to meet the sprinkler spacing requirements of 10.2.5 .~~

~~**14.2.7.1.3**~~

~~In light and ordinary hazard occupancies, the obstruction to the sprinkler discharge pattern of ESFR sprinklers shall be permitted to meet the obstruction discharge requirements of 10.2.7.2 .~~

Supplemental Information

File Name	Description	Approved
SR_1043.docx		
SR_1043.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:15:55 EDT 2023

Committee Statement

Committee Statement: When ESFR sprinklers are protecting light and ordinary hazard occupancies in new systems they are permitted to follow the obstruction requirements of standard spray sprinklers. When ESFR sprinklers are used to protect light and ordinary hazard occupancies in existing system modifications, the ESFR sprinklers are allowed to follow the area, spacing, and obstruction requirements for standard spray sprinklers. The existing system modification allowances for ESFR sprinklers have been relocated to chapter 30.

Response Message: SR-1043-NFPA 13-2023

Public Comment No. 166-NFPA 13-2023 [Section No. 14.2.7.1]

Public Comment No. 30-NFPA 13-2023 [Section No. 14.2.7]

Second Revision No. 1118-NFPA 13-2023 [Section No. 14.2.10.1.2]

14.2.9.1.2 Obstructed Construction.

14.2.9.1.2.1 Obstructed Construction Less than or Equal to 50 Percent Open for Ceilings with Slopes Not Exceeding 1 in 12.

Where the slope of the ceiling does not exceed 1 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located below the ceiling/roof deck in accordance with 14.2.9.1.1.

(2) Where the maximum depth of the structural members, including concrete tees, is 18 in. (450 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members.

(3) Where the maximum depth of the structural members, including concrete tees, is greater than 18 in. (450 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the structural member with material equivalent to or less combustible than the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

14.2.9.1.2.2 Obstructed Construction Less than or Equal to 50 Percent Open for Ceilings with Slopes Not Exceeding 2 in 12.

Where the slope of the ceiling is greater than 1 in 12, but does not exceed 2 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located below the ceiling/roof deck in accordance with 14.2.9.1.1.

(2) Where the maximum depth of the structural members, including concrete tees, is 12 in. (300 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members.

(3) Where the maximum depth of the structural members, including concrete tees, is greater than 12 in. (300 mm) but does not exceed 24 in. (600 mm), sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the structural member with material equivalent to or less combustible than the structural member's construction so that individual channel volumes do not exceed 400 ft^3 (11.3 m^3).

14.2.9.1.2.3 Obstructed Construction Less than or Equal to 50 Percent Open for Ceilings with Slopes Not Exceeding 4 in 12.

Where the slope of the ceiling is greater than 2 in 12, but does not exceed 4 in 12, the sprinkler deflector shall be located in accordance with one of the following arrangements:

(1) Sprinklers shall be installed in each individual channel of obstructed construction with the deflectors located below the ceiling/roof deck in accordance with 14.2.9.1.1.

(2) Where the maximum depth of the structural members, including concrete tees, is 12 in. (300 mm) and the structural members are installed perpendicular to the ceiling slope, sprinkler deflectors shall be permitted to be installed within a horizontal plane not exceeding 6 in. (150 mm) vertically below the bottom of the structural members only when the channels formed by obstructed construction are provided with blocking to the full depth of the structural member with material equivalent to or less combustible than the structural member's construction so that individual channel volumes do not exceed 300 ft^3 (8.5 m^3).

14.2.9.1.2.4 Obstructed Construction Greater than 50 Percent Open.

Where the slope of the ceiling is greater than 1 in 12 under obstructed construction that is greater than 50 percent open, sprinklers shall be installed in accordance with the rules for unobstructed construction.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 09 12:04:48 EDT 2023

Committee Statement

Committee Statement: The reality of the physics involved in the buoyancy of fire plumes is that construction that meets the definition of "obstructed construction" that is between 50% and 69% open will allow significant heat to travel up the slope and open sprinklers remote from the fire. The 50% lower limit may seem arbitrary, but concern exists for situations where the majority of the structural member is open and yet the member meets the definition of "obstructed". Care needs to be taken in the installation of such sprinklers and they cannot be installed using the same rules as situations where the construction is more solid and will impede the flow of hot gasses up the slope.

Response Message: SR-1118-NFPA 13-2023

Public Comment No. 92-NFPA 13-2023 [Section No. 14.2.10.1.2]

Second Revision No. 1129-NFPA 13-2023 [Section No. 14.2.11.2.1]

14.2.10.2.1

ESFR sprinklers shall be arranged to comply with Table 14.2.10.2.1(a) or Table 14.2.10.2.1(b) and Figure 14.2.10.2.1 for obstructions at the ceiling, such as beams, ducts, lights, and top chords of trusses and bar joists.

Table 14.2.10.2.1(a) Positioning of Sprinklers to Avoid Obstructions to Discharge (ESFR Sprinklers)

Distance from Sprinkler to Side of Obstruction *(A)* (ft)	Allowable Distance of Deflector Above Bottom of Obstruction *(B)* (in.)
Less than 1	0
1 or more	1½ or less
1½ or more	3 or less
2 or more	5½ or less
2½ or more	8 or less
3 or more	10 or less
3½ or more	12 or less
4 or more	15 or less
4½ or more	18 or less
5 or more	22 or less
5½ or more	26 or less
6 or more	31 or less

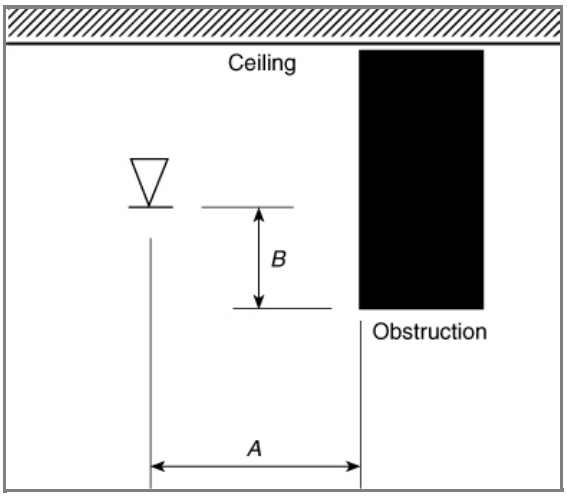
Note: For *A* and *B*, refer to Figure ~~14.2.11.2.1~~ 14.2.10.2.1 .

Table 14.2.10.2.1(b) Positioning of Sprinklers to Avoid Obstructions to Discharge (ESFR Sprinklers)

Distance from Sprinkler to Side of Obstruction *(A)* (mm)	Allowable Distance of Deflector Above Bottom of Obstruction *(B)* (mm)
Less than 300	0
300 or more	40 or less
450 or more	75 or less
600 or more	140 or less
750 or more	200 or less
900 or more	250 or less
1100 or more	300 or less
1200 or more	375 or less
1400 or more	450 or less
1500 or more	550 or less
1700 or more	650 or less
1800 or more	775 or less

Note: For *A* and *B*, refer to Figure ~~14.2.11.2.1~~ 14.2.10.2.1 .

Figure 14.2.10.2.1 Positioning of Sprinkler to Avoid Obstruction to Discharge (~~CMSA~~ ESFR Sprinklers).



Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 18 09:44:49 EDT 2023

Committee Statement

Committee Statement: "CMSA" was corrected to say "ESFR" in Figure 14.2.11.2.1.

CC note 26-NFPA 13-2023 [Section No. 14.2.11]

Review Figure 14.2.11.2.1, which references CMSA in the ESFR chapter, recommend revising the figure to say ESFR.

Response Message: SR-1129-NFPA 13-2023

Second Revision No. 1046-NFPA 13-2023 [Section No. 14.2.11.2.2]

14.2.10.2.2

The requirements of 14.2.10.2.1 shall not apply where one of the following conditions is satisfied:

(1) Sprinklers are spaced on opposite sides of an ~~an~~ obstruction less than 24 in. (600 mm) wide, provided the distance from the centerline of the obstruction to the sprinklers does not exceed one-half the allowable distance between sprinklers.

(2) Supplemental sprinklers have been installed under the obstruction.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:35:33 EDT 2023

Committee Statement

Committee Statement: Grammatical correction to delete the additional "an."

Response Message: SR-1046-NFPA 13-2023

Public Comment No. 197-NFPA 13-2023 [Section No. 14.2.11.2.2]

Second Revision No. 1047-NFPA 13-2023 [New Section after 14.2.11.3.5]

14.2.10.3.5 Spacing of Supplemental Sprinklers.

14.2.10.3.5.1*

When supplemental sprinklers are required, in addition to the requirements of 9.5.5.3.3 the spacing of supplemental sprinklers under obstructions shall be in accordance with one of the following:

(1) Where supplemental sprinklers are required below non-flat or non-solid obstructions, the sprinklers shall be located no more than 2 ft (0.6 m) horizontally from the edges of the obstruction and be installed using linear and area spacing that does not exceed 4 ft (1.2 m) and 16 ft^2 (1.5 m^2), respectively.

(2) Where supplemental sprinklers are required below flat, solid obstructions not exceeding 2 ft (0.6 m) in width, the maximum allowable linear spacing for the sprinklers shall be 8 ft (2.4 m).

(3) Where a flat, solid continuous horizontal barrier having the same footprint of the obstruction is installed below an obstruction not exceeding 2 ft (0.6 m) in width, the maximum allowable linear spacing for the sprinklers shall be 8 ft (2.4 m).

(4) Where supplemental sprinklers are required below flat, solid obstructions greater than 2 ft (0.6 m), but not exceeding 10 ft (3.0 m) in width, the maximum allowable linear spacing for the sprinklers shall be 10 ft (3.0 m).

(5) Where a flat, solid continuous horizontal barrier having the same footprint of the obstruction is installed below an obstruction greater than 2 ft (0.6 m), but not exceeding 10 ft (3.0 m) in width, the maximum allowable linear spacing for the sprinklers shall be 10 ft (3.0 m).

(6) Where supplemental sprinklers are required below flat, solid obstructions greater than 10 ft (3.0 m) in width, the supplemental sprinkler spacing shall be in accordance with the sprinkler's spacing requirements for when the sprinkler is installed under unobstructed construction.

(7) Where a flat, solid continuous horizontal barrier having the same footprint of the obstruction is installed below an obstruction greater than 10 ft (3.0 m) in width, the supplemental sprinkler spacing shall be in accordance with the sprinkler's spacing requirements for when the sprinkler is installed under unobstructed construction.

A.14.2.10.3.5.1

The installation of supplemental sprinklers below non-flat or non-solid obstructions using linear spacing that is less than the required minimum spacing indicated for the sprinkler is acceptable for this application. This is due to the lack of heat collection under the obstruction. As a result, the intent of the close spacing of the supplemental sprinklers is to allow the sprinkler closest to the point of fire origin to operate in a timely fashion, similar to an in-rack sprinkler, and provide the amount of sprinkler discharge needed to the fire area below the obstruction in order to obtain either fire control or fire suppression. As a result, sprinkler skipping due to the close spacing of these sprinklers is not a concern.

14.2.10.3.5.2

When supplemental sprinklers are installed in accordance with 14.2.10.3.5.1 , supplemental sprinklers shall not be required to be equipped with water shields.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:41:25 EDT 2023

Committee Statement

Committee Statement: The spacing requirements for supplemental sprinklers were provided within Section 9.5.5.3.4.2 at the first draft meeting, which applied to all occupancy hazards. For the second draft, the guidelines that were previously in Section 9.5.5.3.4.2 are being relocated into a new section of Chapter 14 so that the guidelines previously provided in Section 9.5.5.3.4.2 only apply to CMSA and ESFR sprinklers protecting storage occupancies. For CMSA sprinklers chapter 13 points you to these requirements in chapter 14.

This language is being added to help clarify that water shields are not required for the supplemental sprinklers when installed in accordance with Section 14.2.11.3.6.2.

Because the installation of supplemental sprinklers could be installed on spacing that is less than that required for ceiling sprinklers, Annex language is being added to help clarify for an AHJ that having this closer spacing is acceptable as well as explaining the reason why this is the case.

Response Message: SR-1047-NFPA 13-2023

Public Comment No. 198-NFPA 13-2023 [New Section after 14.2.11.3.5]

Public Comment No. 201-NFPA 13-2023 [New Section after A.14.2.11.3.2]

Public Comment No. 202-NFPA 13-2023 [New Section after 14.2.11.3.5]

Second Revision No. 1136-NFPA 13-2023 [Section No. 14.2.11.3.5]

14.2.10.2.3 Sprinkler Pipe.

Upright sprinklers shall be permitted to be positioned with respect to the sprinkler pipe that feeds them in accordance with one of the following:

(1) Attached directly to sprinkler pipe less than or equal to 4 in. (100 mm) nominal in diameter

(2) Offset horizontally a minimum of 6 in. (150 mm) from the sprinkler pipe

(3) Supplied by a riser nipple (sprig) to elevate the sprinkler deflector a minimum of 12 in. (300 mm) from the centerline of any sprinkler pipe over 4 in. (100 mm) nominal in diameter

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 18 14:54:22 EDT 2023

Committee Statement

Committee Statement: Section has been relocated to acknowledge that it is an obstruction to pattern development.

CC note 28-NFPA 13-2023 [Section No. 14.2.11]

Review FR-1068 section 14.2.11.3.5 (sprinklers on sprinkler pipe) for location. This section appears to deal with pattern development and may be better placed in 14.2.11.2.

Response Message: SR-1136-NFPA 13-2023

Second Revision No. 1048-NFPA 13-2023 [Section No. 16.1.3.1]

16.1.3.1

The use of reconditioned valves and devices ~~as replacement equipment in existing systems shall be permitted~~ shall not be permitted in new systems .

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:49:32 EDT 2023

Committee Statement

Committee Statement: Reconditioned valves and devices are only permitted in existing systems and is covered in chapter 30. This revision makes it clear that reconditioned valves and devices are not permitted in new systems.

Response Message: SR-1048-NFPA 13-2023

Public Comment No. 134-NFPA 13-2023 [Section No. 16.1.3.1]

Second Revision No. 1049-NFPA 13-2023 [Section No. 16.2.7.7.1]

16.2.7.7.1*

The list shall include the following:

(1) Sprinkler ~~Identification Number~~ identification number (SIN), if equipped~~; or~~, the manufacturer, model, K-factor, deflector type, thermal sensitivity, ~~and~~ pressure rating, and temperature rating

(2) Manufacturer's sprinkler wrench model number for each sprinkler type

(3) General description

(4) Quantity of each type of sprinkler installed in the property

(5) Quantity of each type of sprinkler to be contained in the cabinet

(6) Issue or revision date of the list

A.16.2.7.7.1

The minimum information in the list contained in the spare sprinkler cabinet should be marked with the sprinkler identification described in 7.2.1; a general description of the sprinkler, including upright, pendent, residential, ESFR, and so forth; the quantity of each type of sprinkler installed in the property; the quantity of sprinklers that is to be maintained in the spare sprinkler cabinet; and a sprinkler wrench type.

An example of the list is shown in Figure A.16.2.7.7.1.

Figure A.16.2.7.7.1 Sample List.

Sprinklers Contained in this Cabinet

Sprinkler Identification, SIN	General Description	Temperature Rating, °F	Sprinkler Quantity Maintained	Sprinkler Wrench Type
TY9128	Extended coverage, K-25, upright	165	6	W-Type 1 sprinkler wrench
VK494	Residential concealed pendent	155	6	Standard sprinkler wrench 21475MB

Sprinklers Contained in this Cabinet

Sprinkler Identification, SIN	General Description	Temperature Rating, °F	Sprinkler Quantity Maintained	Sprinkler Wrench Type	Sprinkler Quantity in the Property
TY9128	Extended coverage, K-25, upright	165	6	W-Type 1 sprinkler wrench	20
VK494	Residential concealed pendent	155	6	Standard sprinkler wrench 21475MB	20

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:57:14 EDT 2023

Committee Statement

Committee Statement: Having the number and type of sprinklers installed in the property will aid when it comes time to test sprinklers as required by NFPA 25, rather than having to perform a survey to determine this information. In addition some editorial corrections were made and the figure in the annex was updated to add a new column.

Response Message: SR-1049-NFPA 13-2023

Public Comment No. 145-NFPA 13-2023 [Section No. A.16.2.7.7.1]

Public Comment No. 146-NFPA 13-2023 [Section No. A.16.2.7.7.1]

Public Comment No. 143-NFPA 13-2023 [Section No. 16.2.7.7.1]

Second Revision No. 1057-NFPA 13-2023 [Sections 16.3.1, 16.3.2, 16.3.3, 16.3.4, 16.3.5, 16.3.6, 16...]

16.3.1* General.

Sprinkler piping shall comply with the requirements of this section.

A.16.3.1

It is not the intent of this section to apply the minimum pipe size requirements to all devices and appurtenances. Devices such as valve trim, air maintenance devices, and air hoses can have nominal sizes less than those prescribed in 16.3.1 .

~~**16.3.1.1** Black and Galvanized Steel Pipe.~~

~~**16.3.1.1.1**~~

~~Black and galvanized steel pipe shall be in accordance with 16.3.2 , 16.3.3 , or 16.3.4 .~~

~~**16.3.1.2** Copper Tube.~~

~~**16.3.1.2.1**~~

~~Copper tube shall be in accordance with 16.3.5 .~~

~~**16.3.1.3** Brass Pipe.~~

~~**16.3.1.3.1**~~

~~Brass pipe shall be in accordance with 16.3.6 .~~

~~**16.3.1.4** Stainless Steel Pipe.~~

~~**16.3.1.4.1**~~

~~Stainless steel pipe shall be in accordance with 16.3.7 .~~

16.3.2* Steel Pipe — Welded or Roll-Grooved.

~~When steel pipe referenced in Table 7.3.1.1 is used and joined by welding as referenced in 7.5.2 or by roll-grooved pipe and fittings as referenced in 7.5.3 , the minimum nominal wall thickness for pressures up to 300 psi (21 bar) shall be in accordance with Schedule 10 for pipe sizes up to 5 in. (125 mm), 0.134 in. (3.4 mm) for 6 in. (150 mm) pipe, 0.188 in. (4.8 mm) for 8 in. and 10 in. (200 mm and 250 mm) pipe, and 0.330 in. (8.4 mm) for 12 in. (300 mm) pipe.~~

16.3.2.1

Black and galvanized pipe sizes shall be no less than 1 in. (25 mm) nominal.

16.3.2.2

When steel pipe referenced in Table 7.3.1.1 is used and joined by welding as referenced in 7.5.2 or by roll-grooved pipe and fittings as referenced in 7.5.3, the minimum nominal wall thickness for pressures up to 300 psi (21 bar) shall be in accordance with Schedule 10 for pipe sizes up to 5 in. (125 mm), 0.134 in. (3.4 mm) for 6 in. (150 mm) pipe, 0.188 in. (4.8 mm) for 8 in. and 10 in. (200 mm and 250 mm) pipe, and 0.330 in. (8.4 mm) for 12 in. (300 mm) pipe.

16.3.3 Steel Pipe — Threaded.

~~When steel pipe referenced in Table 7.3.1.1 is joined by threaded fittings referenced in 7.5.1 or by fittings used with pipe having cut grooves, the minimum wall thickness shall be in accordance with Schedule 30 pipe [in sizes 8 in. (200 mm) and larger] or Schedule 40 pipe [in sizes less than 8 in. (200 mm)] for pressures up to 300 psi (21 bar).~~

16.3.3.1

Black and galvanized pipes sizes shall be no less than 1 in. (25 mm) nominal.

16.3.3.2

When steel pipe referenced in Table 7.3.1.1 is joined by threaded fittings referenced in 7.5.1 or by fittings used with pipe having cut grooves, the minimum wall thickness shall be in accordance with Schedule 30 pipe [in sizes 8 in. (200 mm) and larger] or Schedule 40 pipe [in sizes less than 8 in. (200 mm)] for pressures up to 300 psi (21 bar).

16.3.4 Nonmetallic Pipe.

16.3.4.1

Nonmetallic pipe shall be in accordance with 16.3.10.

16.3.4.2

Nonmetallic pipe shall be no less than ¾ in. (20 mm) nominal.

16.3.5 Specially Listed Steel Pipe.

Pressure limitations and wall thickness for steel pipe specially listed in accordance with 7.3.3 shall be permitted to be in accordance with the pipe listing requirements.

16.3.6* Copper Tube.

~~Copper tube as specified in the standards listed in Table 7.3.1.1 shall have a wall thickness of Type K, Type L, or Type M where used in sprinkler systems.~~

16.3.6.1

Copper tube shall be no less than ¾ in. (20 mm) nominal.

16.3.6.2

Copper tube as specified in the standards listed in Table 7.3.1.1 shall have a wall thickness of Type K, Type L, or Type M where used in sprinkler systems.

16.3.7 Brass Pipe.

~~Brass pipe specified in Table 7.3.1.1 shall be permitted in the standard weight in sizes up to 6 in. (150 mm) for pressures up to 175 psig (12 bar) and in the extra strong weight in sizes up to 8 in. (200 mm) for pressures up to 300 psig (21 bar).~~

16.3.7.1

Brass pipe shall be no less than ¾ in. (20 mm) nominal.

16.3.7.2

Brass pipe specified in Table 7.3.1.1 shall be permitted in the standard weight in sizes up to 6 in. (150 mm) for pressures up to 175 psig (12 bar) and in the extra strong weight in sizes up to 8 in. (200 mm) for pressures up to 300 psig (21 bar).

16.3.8 Stainless Steel Pipe.

~~Stainless steel pipe as referenced in the standards listed in Table 7.3.1.1 shall be in accordance with Schedules 10S or 40S pipe.~~

16.3.8.1

Stainless steel pipe shall be no less than ¾ in. (20 mm) nominal.

16.3.8.2

Stainless steel pipe as referenced in the standards listed in Table 7.3.1.1 shall be in accordance with Schedules 10S or 40S pipe.

Supplemental Information

File Name	Description	Approved
Section_16.3.1_PC_221_and_31.docx	Reorginaztion of 16.3.1 through 16.3.7	
SSI_SR-1057_16.3.1_reorg_map.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 19:56:16 EDT 2023

Committee Statement

Committee Statement: Section 16.3.1 through 16.3.7 have been reorganized removing pointers, combining the requirements for pipe types for ease of use. A new general requirement was added clarifying that the minimum pipe sizes are in reference to sprinkler pipe and not devices and appurtenances such as valve trim.

CC note 29-NFPA 13-2023 [Section No. 16.3.1]

Review FR-1074 modifies sections to 16.3.1, which includes adding minimum pipe sizes to Chapter 16. The statement from the public input was "Minimum pipe sizes are discussed in the plans and calculations chapter, however it would be beneficial to the user of the standard to have the information upfront in the installation of piping, valves and appurtenances chapter." Since minimum pipe sizes are only specified in the Plans and Calculation chapter for actual sprinkler line pipe sizes, the new requirements needs further coordination with other Chapter 16 sections since they technically now refer to ALL pipe, not necessarily pipe with sprinklers. This would also apply to such things as air maintenance devices, etc. that are allowed smaller galvanized pipe sizes.

Response Message: SR-1057-NFPA 13-2023

Public Comment No. 221-NFPA 13-2023 [Section No. 16.3]

Public Comment No. 31-NFPA 13-2023 [Section No. 16.3.1]

Second Revision No. 1074-NFPA 13-2023 [Section No. 16.4.1.1.1]

16.4.1.1.1*

The weather temperature used to determine if ~~an unheated~~ a portion of a system is subject to freezing and required to be protected in accordance with 16.4.1.1 shall be the ~~lowest mean temperature for one day~~ average annual extreme minimum temperature , obtained from an approved source.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 18:10:17 EDT 2023

Committee Statement

Committee Statement: The current language in NFPA 13 differs from NFPA 13R (6.7.2.1.2) & NFPA 13D (9.1.2.2). The term “lowest mean” temperature is not typically use by climatologists and “average annual extreme” is a more appropriate description as evidenced in the zone map.

Response Message: SR-1074-NFPA 13-2023

Second Revision No. 1051-NFPA 13-2023 [Section No. 16.4.2.4]

16.4.2.4

Where conditions that contribute to MIC are found or known to exist , the owner(s) shall notify the sprinkler system installer and develop a plan to treat the system using one of the following methods:

(1) Install system piping that will not be affected by the MIC microbes.

(2) Treat all water that enters the system using a listed bacterial inhibitor.

(3) Implement an approved plan for monitoring the interior conditions of the pipe at established time intervals and locations.

(4) Install a corrosion monitoring station and monitor at established intervals.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 11:58:41 EDT 2023

Committee Statement

Committee Statement: The MIC could be found as a result of a water analysis, as required in chapter 5, or could be known to exist. The owner, owner's representative, or engineer of record (representing the owner) is responsible for informing the system installer.

Response Message: SR-1051-NFPA 13-2023

Public Comment No. 110-NFPA 13-2023 [Section No. 16.4.2.4]

Second Revision No. 1052-NFPA 13-2023 [Section No. 16.4.2.5]

16.4.2.5

Where conditions are found or are known to exist that contribute to unusual corrosive properties, the owner(s) shall notify the sprinkler system installer, and a plan shall be developed to treat the system using at least one of the following methods:

(1) Install system piping that is corrosion resistant.

(2) Treat water that enters the system using a listed corrosion inhibitor.

(3) Implement an approved plan for monitoring the interior conditions of the pipe at established intervals and locations.

(4) Install approved corrosion monitoring stations and monitor at established intervals.

(5) Fill dry-pipe or preaction systems with at least 98 percent pure nitrogen in lieu of air to mitigate against corrosion.

(6) Use a listed nitrogen generator that is sized and installed in accordance with the manufacturer's instructions.

(7) Use a listed vapor corrosion inhibitor delivery system sized and installed in accordance with the manufacturer's instructions.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 12:30:18 EDT 2023

Committee Statement

Committee Statement: Chapter 5 requires a water analysis and review of environmental conditions that would indicate whether the water conditions would contribute to internal corrosion or environmental conditions would contribute to external conditions. In addition, vapor corrosion systems were recognized in the list as this is new listed technology.

Response Message: SR-1052-NFPA 13-2023

Public Comment No. 188-NFPA 13-2023 [Section No. 16.4.2.5]

Public Comment No. 112-NFPA 13-2023 [Section No. 16.4.2.5]

Second Revision No. 1053-NFPA 13-2023 [Section No. 16.4.4]

16.4.4 Protection of Piping Subject to Mechanical Damage.

Where concealed pipe other than steel is ~~run~~ installed through holes or notches in studs, joists, rafters, or similar members less than 1.25 in. (32 mm) from the nearest edge of the member, the following provisions shall apply:

(1) Steel shield plates shall be provided.

(2) Steel shield plates shall have a minimum thickness of 0.0575 in. (1.463 mm) (No. 16 gauge).

(3) Steel shield plates shall cover the area of the pipe where the member is notched or bored.

(4)* Steel shield plates shall extend a minimum of 2 in. (50 mm) along the member.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 12:41:16 EDT 2023

Committee Statement

Committee Statement: "Installed" is a more appropriate term than "run" for pipe installation.

Response Message: SR-1053-NFPA 13-2023

Public Comment No. 113-NFPA 13-2023 [Section No. 16.4.4]

Second Revision No. 1060-NFPA 13-2023 [New Section after 16.8.7]

16.8.8 Flexible Sprinkler Hose Fitting Length.

16.8.8.1*

Flexible sprinkler hose fittings shall not exceed 12 ft (3.7 m) in length when installed above a rigid ceiling.

A.16.8.8.1

Rigid ceilings are ceilings that could include cleanroom ceiling structures, freezers, steel, concrete, masonry, wood, gypsum board, or similar rigid materials. These ceilings typically have a penetration for the sprinkler, and it would be difficult to inappropriately relocate the sprinkler.

16.8.8.2

Flexible sprinkler hose fittings shall not exceed 6 ft (1.8 m) in length when installed above an acoustical tile and lay-in panel ceiling.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 06:27:08 EDT 2023

Committee Statement

Committee Statement: This provides a maximum length for flexible sprinkler hose based on different ceiling types.

Response Message: SR-1060-NFPA 13-2023

Second Revision No. 1013-NFPA 13-2023 [Section No. 16.12.3.1.1]

16.12.3.1.1

Where local fire department connections do not conform to ~~NFPA 1963~~ NFPA 1960 , the authority having jurisdiction shall be permitted to designate the connection to be used.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 02:04:14 EDT 2023

Committee Statement

Committee Statement: NFPA 1963 has been consolidated into NFPA 1960. This corrects the extracted information.

Response Message: SR-1013-NFPA 13-2023

Second Revision No. 1064-NFPA 13-2023 [Sections 16.14.2.2, 16.14.2.3]

16.14.2.2

When the water delivery requirement has been determined in accordance with ~~8.2.4.7~~ 8.2.4.3 or ~~8.2.4.8~~ 8.2.4.4 for two sprinklers, the trip test connection shall be arranged to simulate two sprinklers on the most remote sprinkler branch line.

16.14.2.3

When the water delivery requirement has been determined in accordance with ~~8.2.4.7~~ 8.2.4.3 or ~~8.2.4.8~~ 8.2.4.4 for four sprinklers, the trip test connection shall be arranged to simulate two sprinklers on the most remote sprinkler branch line and two sprinklers on the next adjacent branch line.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 10:27:26 EDT 2023

Committee Statement

Committee Statement: Updated references to align with the reorganization of 8.2. In addition, the term "test connection" was revised to "trip test connection" for consistency within the document.

CC note 31-NFPA 13-2023 [Section No. 16.14.2]

Review FR-1090 16.14.2 for consistent use of terminology. Committee should review 16.14.2.4 (not revised) with new sections 16.14.2.2 and 16.14.2.3. 16.14.2.2 and new 16.14.2.3 use the term "remote branch line" whereas 16.14.2.4 uses the term "end of most distant sprinkler pipe." In addition the existing text uses the term "trip test connection" whereas the new text uses "test connection." Review 16.14.3.3 (existing text) for consistency with changes for system types requiring trip test connections (16.14.3.1). Should 16.14.3.3 include non-interlock preaction systems?

Response Message: SR-1064-NFPA 13-2023

Second Revision No. 1137-NFPA 13-2023 [Section No. 16.14.2.4]

16.14.2.4*

The trip test connection shall be located on the end of the most ~~distant~~ remote ~~sprinkler pipe~~ branch line (s) and ~~shall~~ be equipped with an accessible shutoff valve not less than 1 in. (25 mm) size.

A.16.14.2.4

An evaluation of the location of the remote branch line should be performed with consideration to volume and distance of piping network to ensure the most demanding or worst-case scenario is modeled.

16.14.2.4.1

Disconnection of the trip test connection and plugging of the valve between test cycles shall be permitted.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Fri Aug 18 15:14:47 EDT 2023

Committee Statement

Committee Statement: While the majority of dry pipe systems are normally sized in a typical manner, some configurations could create greater volume demands that are not necessarily the furthest away.

CC note 31-NFPA 13-2023 [Section No. 16.14.2]

Review FR-1090 16.14.2 for consistent use of terminology. Committee should review 16.14.2.4 (not revised) with new sections 16.14.2.2 and 16.14.2.3. 16.14.2.2 and new 16.14.2.3 use the term "remote branch line" whereas 16.14.2.4 uses the term "end of most distant sprinkler pipe." In addition the existing text uses the term "trip test connection" whereas the new text uses "test connection." Review 16.14.3.3 (existing text) for consistency with changes for system types requiring trip test connections (16.14.3.1). Should 16.14.3.3 include non-interlock preaction systems?

Response Message: SR-1137-NFPA 13-2023

Second Revision No. 1054-NFPA 13-2023 [Section No. 16.17]

16.17* Signs.

~~**(Reserved)**~~ A copy of the information from all required signage shall be kept in the documentation cabinet in an electronic and/or hardcopy format.

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 15:07:25 EDT 2023

Committee Statement

Committee Statement: Important signage (such as general information and hydraulic information sign) is often missing or illegible. Keeping a copy of this important information in the required documentation cabinet is prudent. The information from these signs could easily be stored in an electronic manner. (Note that A.16.7 has a table of required signage).

Response Message: SR-1054-NFPA 13-2023

Public Comment No. 164-NFPA 13-2023 [Section No. 16.17]

Second Revision No. 1055-NFPA 13-2023 [Section No. 29.1]

29.1* Approval of Sprinkler Systems ~~and Private Fire Service Mains~~ .

~~The installing contractor shall do the following:~~

~~Notify the authority having jurisdiction and the property owner or the property owner's authorized representative of the time and date testing will be performed~~

~~Perform all required acceptance tests *(see Section 29.2)*~~

~~Complete and sign the appropriate contractor's material and test certificate(s) *(see Figure A.29.1)*~~

~~Remove all caps and straps prior to placing the sprinkler system in service~~

29.1.1

The installing contractor shall do the following:

(1) Notify the authority having jurisdiction and the property owner or the property owner's authorized representative of the time and date testing will be performed

(2) Perform all required acceptance tests *(see Section 29.2)*

(3) Complete and sign the appropriate contractor's material and test certificate(s) *(see Figure A.29.1)*

(4) Remove all caps and straps prior to placing the sprinkler system in service

29.1.2

The approval of sprinkler systems shall be permitted to be performed remotely in accordance with NFPA 915 .

29.1.3

The requirements of 29.2.7 shall apply when acceptance tests are automated.

Supplemental Information

File Name	Description	Approved
SR_1055.docx		
SR_1055.docx	For prod use	

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 15:24:00 EDT 2023

Committee Statement

Committee Statement: This provides AHJs a reference for remote testing should they choose this option. NFPA 915 is a new standard which provides requirements when performing remote testing. Private fire service mains have been removed from this section as they are covered under the scope of NFPA 24. For approval of private fire service mains, NFPA 24 should be consulted.

Response Message: SR-1055-NFPA 13-2023

Public Comment No. 32-NFPA 13-2023 [Section No. 29.1]

Second Revision No. 1066-NFPA 13-2023 [New Section after 29.2.7.4]

29.2.8 Negative Pressure Systems.

29.2.8.1

Vacuum dry pipe systems shall meet all of the acceptance testing requirements for dry pipe systems.

29.2.8.2

Vacuum preaction systems shall meet the acceptance testing requirements for preaction systems.

Submitter Information Verification

Committee: AUT-SSI
Submittal Date: Wed Aug 02 12:47:20 EDT 2023

Committee Statement

Committee Statement: Acceptance requirements are needed in this Standard for Vacuum Systems.
Response Message: SR-1066-NFPA 13-2023

Public Comment No. 126-NFPA 13-2023 [New Section after 29.2.7.4]

Second Revision No. 1044-NFPA 13-2023 [New Section after 30.6.4]

30.6.5

For modifications to existing systems equipped with ESFR sprinklers where ESFR sprinklers are used for the protection of light or ordinary hazard occupancies, 30.6.5.1 through 30.6.5.3 shall be permitted.

30.6.5.1

In light hazard occupancies, the protection area limitations of ESFR sprinklers shall be permitted to meet the protection area requirements of Table 10.2.4.2.1(a) .

30.6.5.2

In light and ordinary hazard occupancies, the sprinkler spacing of ESFR sprinklers shall be permitted to meet the sprinkler spacing requirements of 10.2.5 .

30.6.5.3

In light and ordinary hazard occupancies, the obstruction to the sprinkler discharge pattern of ESFR sprinklers shall be permitted to meet the obstruction discharge requirements of 10.2.7.2 .

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Tue Aug 01 10:25:58 EDT 2023

Committee Statement

Committee Statement: This section allows buildings that have existing ESFR designs which undergo a renovation adding light or ordinary hazard areas to utilize existing ESFR sprinkler coverage for those spaces.

Response Message: SR-1044-NFPA 13-2023

Public Comment No. 165-NFPA 13-2023 [New Section after 30.6.4]

Second Revision No. 1023-NFPA 13-2023 [Section No. A.7.1.1]

A.7.1.1

Included among items requiring listing are sprinklers, some pipe and some fittings, hangers, alarm devices, valves controlling flow of water to sprinklers, supervisory switches, and electrically operated solenoid valves. Products are typically investigated in accordance with published standards. Examples of standards used to investigate several products installed in sprinkler systems are referenced in Table A.7.1.1. This table does not include a comprehensive list of all product standards used to investigate products installed in sprinkler systems.

Table A.7.1.1 Examples of Standards for Sprinkler System Products

Category	Standard
Sprinklers	CAN/UL/ULC 199, *Automatic Sprinklers for Fire Protection Service*
	FM 2000, *Automatic Sprinklers for Fire Protection*
	FM 2030, *Residential Automatic Sprinklers for Fire Protection*
	FM 2008, *Quick Response Storage Sprinklers for Fire Protection*
	FM 1632, *Telescoping Sprinkler Assemblies for Use in Fire Protection Systems for Anechoic Chambers*
Air Compressors and Vacuum Pumps	UL 1450, *Motor-Operated Air Compressors, Vacuum Pumps, and Painting Equipment*
Antifreeze and Corrosion Control	UL 2901, *Antifreeze Solutions for Use in Fire Sprinkler Systems*
	UL 2901A, *Outline of Investigation for Corrosion Control Additives for Use in Fire Sprinkler Systems*
Valves	UL 193, *Alarm Valves for Fire Protection Service*
	FM 1041, *Alarm Check Valves*
	UL 260, *Dry Pipe and Deluge Valves for Fire-Protection Service*
	FM 1021, *Dry Pipe Valves*
	FM 1020, *Automatic Water Control Valves*
	UL 262, *Gate Valves for Fire-Protection Service*
	FM 1120/1130, *Fire Service Water Control Valves (OS & Y and NRS Type Gate Valves)*
	UL 312, *Check Valves for Fire-Protection Service*
	FM 1210, *Swing Check Valves*
	UL 1091, *Butterfly Valves for Fire-Protection Service*
	FM 1112, *Indicating Valves (Butterfly or Ball Type)*
	UL 1468, *Direct Acting Pressure Reducing and Pressure Restricting Valves*
	UL 1739, *Pilot-Operated Pressure-Control Valves for Fire Protection Service*
	FM 1362, *Pressure Reducing Valves*
	FM 1011/1012/1013, *Deluge and Preaction Sprinkler Systems*
	FM 1031, *Quick Opening Devices (Accelerators, Exhausters) for Dry Pipe Valves*
	UL 1486, *Quick Opening Devices for Dry Pipe Valves for Fire Protection Service*
	UL 346, *Waterflow Indicators for Fire Protective Signaling Systems*
	FM 1042, *Vane-Type Waterflow Alarm Indicators*
	FM 1045, *Waterflow Detector Check Valves*
	FM 1140, *Quick Opening Valves ¼ Inch Through 2 Inch Nominal Size*

Category	Standard
Hangers	UL 203, *Pipe Hanger Equipment for Fire Protection Service*
	FM 1951/1952/1953, *Pipe Hanger Components for Automatic Sprinkler Systems*
	FM 1950, *Seismic Sway Braces for Pipe, Tubing and Conduit*
	UL 203A, *Sway Brace Devices for Sprinkler System Piping*
Fittings	CAN/UL 213, *Rubber Gasketed Fittings for Fire-Protection Service*
	FM 1920, *Pipe Couplings and Fittings for Aboveground Fire Protection Systems*
	UL 1474, *Adjustable Drop Nipples for Sprinkler Systems*
	FM 1631, *Adjustable and Fixed Sprinkler Fittings ½ Inch through 1 Inch Nominal Size*
	UL 2443, *Flexible Sprinkler Hose with Fittings for Fire Protection Service*
	FM 1637, *Flexible Sprinkler Hose with Threaded End Fittings*
Pipe — Aboveground	UL 852, *Metallic Sprinkler Pipe for Fire Protection Service*
	FM 1630, *Steel Pipe for Automatic Fire Sprinkler Systems*
	CAN/UL 1821, *Thermoplastic Sprinkler Pipe and Fittings for Fire Protection Service*
	FM 1635, *Plastic Pipe and Fittings for Automatic Sprinkler Systems*
	FM 1636, *Fire Resistant Barriers for Use with CPVC Pipe and Fittings in Light Hazard Occupancies*
Pipe — Underground	CAN/UL/ULC 1285, *Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service*
	FM 1612, *Polyvinyl Chloride (PVC) Pipe and Fittings for Underground Fire Protection Service*
	FM 1613, *Polyethylene (PE) Pipe and Fittings for Underground Fire Protection Service*
	FM 1610, *Ductile Iron Pipe and Fittings, Flexible Fittings and Couplings*
	UL 194, *Gasketed Joints for Ductile-Iron Pipe and Fittings for Fire Protection Service*
	FM 1620, *Pipe Joints and Anchor Fittings for Underground Fire Service Mains*

Supplemental Information

File Name	Description	Approved
13-2022_Annex_A.7.1.1.docx		

Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Mon Jul 31 13:20:14 EDT 2023

Committee Statement

Committee A new requirement has been added which requires dedicated air compressors to be

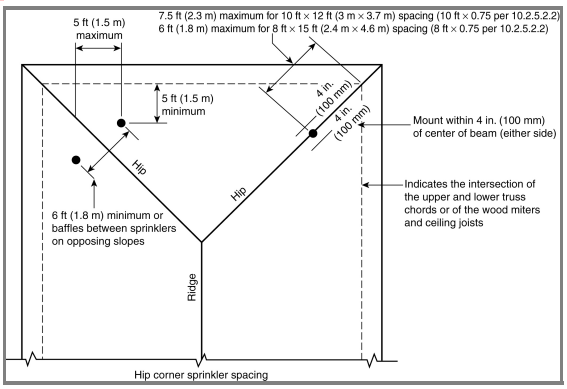
Statement:	listed for fire protection use. This provides a standard that can be used for listing of the air compressor.
Response Message:	SR-1023-NFPA 13-2023

Second Revision No. 1073-NFPA 13-2023 [Section No. A.10.2.6.1.4.5]

A.10.2.7.1.4.5

See Figure A.10.2.7.1.4.5.

Figure A.10.2.7.1.4.5 Hip Roof Installations.



Submitter Information Verification

Committee: AUT-SSI

Submittal Date: Wed Aug 02 17:55:45 EDT 2023

Committee Statement

Committee Statement: The reference to 8.6.3.2.3 is an old reference prior to the 2019 edition of NFPA 13. The reference has been updated.

Response Message: SR-1073-NFPA 13-2023

Second Revision No. 1132-NFPA 13-2023 [Chapter D]

Annex D Sprinkler System Information from the ~~2021~~ 2024 Edition of the *Life Safety Code*

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

D.1 Introduction.

This annex is provided as an aid to the user of NFPA 13 by identifying those portions of the 2021 edition of NFPA *101* that pertain to sprinkler system design and installation. It is not intended that this annex provide complete information regarding all aspects of fire protection addressed by NFPA *101*. It is important to note that this information was copied from NFPA *101* but did not use NFPA's extract policy and is not intended to be a part of the requirements of NFPA 13.

D.1.1

The following sections cover situations where NFPA *101* provides different guidance on the design or installation of a fire sprinkler system from NFPA 13. In some cases, this different guidance is based on descriptions of unique situations handled by NFPA *101*. In other cases, this different guidance stems from the different objective for NFPA *101*, life safety of the occupant, rather than the property protection afforded by NFPA 13.

D.1.1.1 Features of Fire Protection.

D.1.1.1.1 Atriums.

Glass walls and inoperable windows shall be permitted in lieu of the fire barriers where all the following are met:

(1) Automatic sprinklers are spaced along both sides of the glass wall and the inoperable windows at intervals not to exceed 6 ft (1.8 m).

(2) The automatic sprinklers specified in 8.6.7(1)(c)(i) of NFPA *101* are located at a distance from the glass wall not to exceed 12 in. (300 mm) and arranged so that the entire surface of the glass is wet upon operation of the sprinklers.

(3) The glass wall is of tempered, wired, laminated, or ceramic glass held in place by a retention system that allows the glass framing system to deflect without breaking (loading) the glass before the sprinklers operate.

(4) The automatic sprinklers required by 8.6.7(1)(c)(i) of NFPA *101* are not required on the atrium side of the glass wall and the inoperable window where there is no walkway or other floor area on the atrium side above the main floor level.

(5) Doors in the glass walls are of glass or other material that resists the passage of smoke.

(6) Doors in the glass walls are self-closing or automatic-closing upon detection of smoke.

(7) The glass is continuous vertically, without horizontal mullions, window treatments, or other obstructions that would interfere with the wetting of the entire glass surface.

[***101*:**8.6.7(1)(c)]

D.1.1.2 Special Structures and High-Rise Buildings.

High-rise buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with NFPA *101*, Section 9.7. A sprinkler control valve and a waterflow device shall be provided for each floor. [***101*:**11.8.3.1]

D.1.1.3 Lodging or Rooming Houses.

D.1.1.3.1

In buildings sprinklered in accordance with NFPA 13 closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size. [***101*:**26.3.6.2.5]

D.1.1.3.2

In existing lodging or rooming houses, sprinkler installations shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2). [***101*:**26.3.6.2.6]

D.1.1.4 New Hotels and Dormitories.

The provisions for draft ~~stops~~ curtains and closely spaced sprinklers in NFPA 13 shall not be required for openings complying with 8.6.9.1of NFPA *101* where the opening is within the guest room or guest suite. [***101*:**28.3.5.4]

D.1.1.5 Existing Hotels and Dormitories.

In guest rooms and in guest room suites, sprinkler installations shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2). [***101*:**29.3.5.5]

D.1.1.6 New Apartment Buildings.

D.1.1.6.1 Closets.

In buildings sprinklered in accordance with NFPA 13, closets shall meet the following requirements:

(1) Closets less than 12 ft^2 (1.1 m^2) in individual dwelling units shall not be required to be sprinklered.

(2) Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size.

[***101*:**30.3.5.3]

D.1.1.6.2 Convenience Openings.

The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for convenience openings complying with 8.6.9.1 of NFPA *101* where the convenience opening is within the dwelling unit. [***101*:**30.3.5.4]

D.1.1.7 Existing Apartment Buildings.

D.1.1.7.1

In individual dwelling units, sprinkler installation shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2). Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size. [***101*:**31.3.5.3]

D.1.1.7.2

In buildings sprinklered in accordance with NFPA 13 bathrooms not greater than 55 ft^2 (5.1 m^2) in individual dwelling units shall not be required to be sprinklered. [***101*:**31.3.5.4]

D.1.1.7.3

The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for convenience openings complying with 8.6.9.1 of NFPA *101* where the convenience opening is within the dwelling unit. [***101*:**31.3.5.5]

D.1.1.8 Existing Residential Board and Care Occupancies.

D.1.1.8.1

Standard-response sprinklers shall be permitted for use in hazardous areas in accordance with 33.2.3.2 of NFPA *101*. [***101*:**33.2.2.2.4]

D.1.1.8.2

Where an automatic sprinkler system is installed, for either total or partial building coverage, all of the following requirements shall be met:

(1) The system shall be in accordance with Section 9.7 of NFPA *101* and shall initiate the fire alarm system in accordance with 33.2.3.4.1, as modified by 33.2.3.5.3.1 through 33.2.3.5.3.6 of NFPA *101*.

(2) The adequacy of the water supply shall be documented to the authority having jurisdiction.

[***101*:**33.2.3.5.3]

D.1.1.8.2.1

In prompt evacuation capability facilities, all of the following shall apply:

(1) An automatic sprinkler system in accordance with ~~NFPA 13D~~ 9.7.1.1(2) of NFPA *101* shall be permitted.

(2) Automatic sprinklers shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier.

[***101*:**33.2.3.5.3.1]

D.1.1.8.2.2

In slow and impractical evacuation capability facilities, all of the following shall apply:

(1) An automatic sprinkler system in accordance with ~~NFPA 13D~~ 9.7.1.1(2) of NFPA *101* with a 30-minute water supply, shall be permitted.

(2) All habitable areas and closets shall be sprinklered.

(3) Automatic sprinklers shall not be required in bathrooms not exceeding 55 ft^2 (5.1 m^2), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier.

[***101*:**33.2.3.5.3.2]

D.1.1.8.2.3

In prompt and slow evacuation capability facilities, where an automatic sprinkler system is in accordance with ~~NFPA 13~~ 9.7.1.1(1) of NFPA *101* sprinklers shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier. [***101*:**33.2.3.5.3.3]

D.1.1.8.2.4

In prompt and slow evacuation capability facilities in buildings four or fewer stories above grade plane, systems in accordance with ~~NFPA 13R~~ 9.7.1.1(3) of NFPA *101* shall be permitted. [***101*:**33.2.3.5.3.4]

D.1.1.8.2.5

In impractical evacuation capability facilities in buildings four or fewer stories above grade plane, systems in accordance with ~~NFPA 13R~~ 9.7.1.1(3) of NFPA *101* shall be permitted. All habitable areas and closets shall be sprinklered. Automatic sprinklers shall not be required in bathrooms not exceeding 55 ft^2 (5.1 m^2), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier. [***101*:**33.2.3.5.3.5]

D.1.1.8.2.6

Initiation of the fire alarm system shall not be required for existing installations in accordance with 33.2.3.5.6 of NFPA *101*. [***101*:**33.2.3.5.3.6]

D.1.1.8.2.7

All impractical evacuation capability facilities shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 33.2.3.5.3 of NFPA *101*. [***101***:33.2.3.5.3.7]

D.1.1.9 New Mercantile Occupancies.

D.1.1.9.1 Protection of Vertical Openings.

Any vertical opening shall be protected in accordance with Section 8.6 of NFPA *101,* except under the following conditions:

(1) In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101,* unprotected vertical openings shall be permitted at one of the following locations:

   (a) Between any two floors

   (b) Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above

(2) In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.

(3) The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for unenclosed vertical openings permitted in 36.3.1(1) and 37.3.1(2) of NFPA *101*.

[***101***:36.3.1]

D.1.1.9.2

Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:

(1) The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with 7.1.3.2 of NFPA *101*.

(2) Such rooms or areas shall be protected by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, but the exceptions in NFPA 13 allowing the omission of sprinklers from such rooms shall not be permitted.

[***101***:36.4.4.9.2]

D.1.1.10 Existing Mercantile Occupancies.

D.1.1.10.1 Protection of Vertical Openings.

Any vertical opening shall be protected in accordance with Section 8.6 of NFPA *101*, except under any of the following conditions:

(1) In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, unprotected vertical openings shall be permitted at one of the following locations:

   (a) Between any two floors

   (b) Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above

(2) In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.

(3) The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for unenclosed vertical openings permitted in 36.3.1(1) and 36.3.1(2) of NFPA *101*.

[***101***:37.3.1]

D.1.1.10.2

Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:

(1) The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with 7.1.3.2 of NFPA *101*.

(2) Such rooms or areas shall be protected by an approved automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, but the exceptions in NFPA 13 allowing the omission of sprinklers from such rooms shall not be permitted.

[***101*:**37.4.4.9.2]

D.1.1.11 Industrial Occupancies.

D.1.1.11.1 Special Provisions — High-Rise Buildings.

The provisions of 11.8.5.3.4(1) of NFPA *101* for jockey pumps and 11.8.5.3.4(2) of NFPA *101* for air compressors serving dry-pipe and preaction systems shall not apply to special-purpose industrial occupancies. [***101*:**40.4.2.4]

D.2 Life Safety Code.

D.2.1 Features of Fire Protection.

D.2.1.1 Design Requirements. (Reserved)

D.2.1.2 Installation Requirements.

D.2.1.2.1 Atriums.

Glass walls and inoperable windows shall be permitted in lieu of the fire barriers where all the following are met:

(1) Automatic sprinklers are spaced along both sides of the glass wall and the inoperable windows at intervals not to exceed 6 ft (1.8 m).

(2) The automatic sprinklers specified in 8.6.7(1)(c)(i) of NFPA *101* are located at a distance from the glass wall not to exceed 12 in. (300 mm) and arranged so that the entire surface of the glass is wet upon operation of the sprinklers.

(3) The glass wall is of tempered, wired, laminated, or ceramic glass held in place by a retention system that allows the glass framing system to deflect without breaking (loading) the glass before the sprinklers operate.

(4) The automatic sprinklers required by 8.6.7(1)(c)(i) of NFPA *101* are not required on the atrium side of the glass wall and the inoperable window where there is no walkway or other floor area on the atrium side above the main floor level.

(5) Doors in the glass walls are of glass or other material that resists the passage of smoke.

(6) Doors in the glass walls are self-closing or automatic-closing upon detection of smoke.

(7) The glass is continuous vertically, without horizontal mullions, window treatments, or other obstructions that would interfere with the wetting of the entire glass surface.

[***101*:**8.6.7(1)(c)]

D.2.2 Special Structures and High-Rise Buildings.

D.2.2.1 Design Criteria.

High-rise buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7 of NFPA *101*. A sprinkler control valve and a waterflow device shall be provided for each floor. [***101*:**11.8.3.1]

D.2.3 New Assembly Occupancies.

D.2.3.1 Design Criteria.

D.2.3.1.1 Protection of Vertical Openings.

Any vertical opening shall be enclosed or protected in accordance with Section 8.6 of NFPA *101*, unless otherwise permitted by one of the following:

(1) Stairs or ramps shall be permitted to be unenclosed between balconies or mezzanines and main assembly areas located below, provided that the balcony or mezzanine is open to the main assembly area.

(2) Exit access stairs from lighting and access catwalks, galleries, and gridirons shall not be required to be enclosed.

(3) Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 of NFPA *101* shall be permitted to have unprotected vertical openings between any two adjacent floors, provided that such openings are separated from unprotected vertical openings serving other floors by a barrier complying with 8.6.5 of NFPA *101*.

(4) Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 of NFPA *101* shall be permitted to have convenience stair openings in accordance with 8.6.9.2 of NFPA *101*.

[***101:***12.3.1]

D.2.3.2 Installation Requirements. (Reserved)

D.2.4 Existing Assembly Occupancies.

D.2.4.1 Design Criteria.

D.2.4.1.1 Protection of Vertical Openings.

Any vertical opening shall be enclosed or protected in accordance with Section 8.6 of NFPA *101*, unless otherwise permitted by one of the following:

(1) Stairs or ramps shall be permitted to be unenclosed between balconies or mezzanines and main assembly areas located below, provided that the balcony or mezzanine is open to the main assembly area.

(2) Exit access stairs from lighting and access catwalks, galleries, and gridirons shall not be required to be enclosed.

(3) Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 of NFPA *101* shall be permitted to have unprotected vertical openings between any two adjacent floors, provided that such openings are separated from unprotected vertical openings serving other floors by a barrier complying with 8.6.5 of NFPA *101*.

(4) Assembly occupancies protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 of NFPA *101* shall be permitted to have convenience stair openings in accordance with 8.6.9.2 of NFPA *101*.

(5) Use of the following alternative materials shall be permitted where assemblies constructed of such materials are in good repair and free of any condition that would diminish their original fire resistance characteristics:

(a) Existing wood lath and plaster

(b) Existing ½ in. (13 mm) gypsum panels

(c) Existing installations of ¼ in. (6.3 mm) thick wired glass that are, or are rendered, inoperative and fixed in the closed position

(d) Other existing materials having similar fire resistance capabilities

[***101:***13.3.1]

D.2.4.2 Installation Requirements. (Reserved)

D.2.5 New Educational Occupancies. (Reserved)

D.2.6 Existing Educational Occupancies. (Reserved)

D.2.7 New Day-Care Occupancies. (Reserved)

D.2.8 Existing Day-Care Occupancies. (Reserved)

D.2.9 New Health Care Occupancies. (Reserved)

D.2.10 Existing Health Care Occupancies. (Reserved)

D.2.11 New Ambulatory Health Care Occupancies. (Reserved)

D.2.12 Existing Ambulatory Health Care Occupancies. (Reserved)

D.2.13 New Detention and Correctional Occupancies. (Reserved)

D.2.14 Existing Detention and Correctional Occupancies. (Reserved)

D.2.15 One- and Two-Family Dwellings. (Reserved)

D.2.16 Lodging or Rooming Houses.

D.2.16.1 Design Requirements. (Reserved)

D.2.16.2 Installation Requirements.

D.2.16.2.1

In buildings sprinklered in accordance with NFPA 13 closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size. [***101***:26.3.6.2.5]

D.2.16.2.2

In existing lodging or rooming houses, sprinkler installations shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2). [***101***:26.3.6.2.6]

D.2.17 New Hotels and Dormitories.

D.2.17.1 Design Requirements. (Reserved)

D.2.17.2 Installation Requirements.

The provisions for draft ~~stops~~ curtains and closely spaced sprinklers in NFPA 13 shall not be required for openings complying with 8.6.9.1 of NFPA *101* where the opening is within the guest room or guest suite. [***101***:28.3.5.4]

D.2.18 Existing Hotels and Dormitories.

D.2.18.1 Design Requirements. (Reserved)

D.2.18.2 Installation Requirements.

In guest rooms and in guest room suites, sprinkler installations shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2). [***101***:29.3.5.5]

D.2.19 New Apartment Buildings.

D.2.19.1 Design Requirements. (Reserved)

D.2.19.2 Installation Requirements.

D.2.19.2.1 Closets.

In buildings sprinklered in accordance with NFPA 13:

(1) Closets less than 12 ft^2 (1.1 m^2) in individual dwelling units shall not be required to be sprinklered.

(2) Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size.

[***101***:30.3.5.3]

D.2.19.2.2 Convenience Openings.

The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for convenience openings complying with 8.6.9.1 of NFPA *101* where the convenience opening is within the dwelling unit. [***101*:**30.3.5.4]

D.2.20 Existing Apartment Buildings.

D.2.20.1 Design Requirements. (Reserved)

D.2.20.2 Installation Requirements.

D.2.20.2.1

In individual dwelling units, sprinkler installation shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2). Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size. [***101*:**31.3.5.3]

D.2.20.2.2

The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for convenience openings complying with 8.6.9.1 of NFPA *101* where the convenience opening is within the dwelling unit. [***101*:**31.3.5.5]

D.2.21 New Residential Board and Care Occupancies. (Reserved)

D.2.22 Existing Residential Board and Care Occupancies.

D.2.22.1 Design Requirements. (Reserved)

D.2.22.2 Installation Requirements.

D.2.22.2.1

Standard-response sprinklers shall be permitted for use in hazardous areas in accordance with 33.2.3.2 of NFPA *101*. [***101*:**33.2.2.2.4]

D.2.22.2.2

In prompt and slow evacuation facilities, where an automatic sprinkler system is in accordance with NFPA 13 sprinklers shall not be required in closets not exceeding 24 ft^2 (2.2 m^2) and in bathrooms not exceeding 55 ft^2 (5.1 m^2), provided that such spaces are finished with lath and plaster or materials providing a 15-minute thermal barrier. [***101*:**33.2.3.5.3.3]

D.2.23 New Mercantile Occupancies.

D.2.23.1 Design Requirements. (Reserved)

D.2.23.2 Installation Requirements.

D.2.23.2.1 Protection of Vertical Openings.

Any vertical opening shall be protected in accordance with Section 8.6 of NFPA *101*, except under any of the following conditions:

(1) In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, unprotected vertical openings shall be permitted at one of the following locations:

  (a) Between any two floors

  (b) Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above

(2) In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.

(3) The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for unenclosed vertical openings permitted in 36.3.1(1) and 36.3.1(2) of NFPA *101*.

(4) Unenclosed vertical openings in accordance with 8.6.9.2 of NFPA *101* shall be permitted and the provision of 8.6.9.2(5) shall not apply.

(5) Unenclosed vertical openings in accordance with 8.6.9.7 of NFPA *101* shall be permitted and the number of contiguous stories shall not be limited.

[***101:***36.3.1]

D.2.23.2.2

Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:

(1) The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with 7.1.3.2 of NFPA *101*.

(2) Such rooms or areas shall be protected by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, but the exceptions in NFPA 13 allowing the omission of sprinklers from such rooms shall not be permitted.

(3) Service elevators opening into the exit passageway shall not open into areas other than exit passageways.

(4) Where exit stair enclosures discharge into the exit passageway, the provisions of 7.2.1.5.7 of NFPA *101* shall apply, regardless of the number of stories served.

[***101*:**36.4.4.9.2]

D.2.24 Existing Mercantile Occupancies.

D.2.24.1 Design Requirements. (Reserved)

D.2.24.2 Installation Requirements.

D.2.24.2.1 Protection of Vertical Openings.

Any vertical opening shall be protected in accordance with Section 8.6 of NFPA *101*, except under any of the following conditions:

(1) In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, unprotected vertical openings shall be permitted at one of the following locations:

  (a) Between any two floors

  (b) Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above

(2) In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.

(3) The draft ~~stop~~ curtain and closely spaced sprinkler requirements of NFPA 13 shall not be required for unenclosed vertical openings permitted in 36.3.1(1) and 37.3.1(2) of NFPA *101*.

(4) Unenclosed vertical openings in accordance with 8.6.9.2 of NFPA *101* shall be permitted.

[***101***:37.3.1]

D.2.24.2.2

Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:

(1) The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with 7.1.3.2 of NFPA *101*.

(2) Such rooms or areas shall be protected by an approved automatic sprinkler system in accordance with 9.7.1.1(1) of NFPA *101*, but the exceptions in NFPA 13 allowing the omission of sprinklers from such rooms shall not be permitted.

(3) Service elevators opening into the exit passageway shall not open into areas other than exit passageways.

(4) Where exit stair enclosures discharge into the exit passageway, the provisions of 7.2.1.5.7 of NFPA *101* shall apply, regardless of the number of stories served.

[***101***:37.4.4.9.2]

D.2.25 New Business Occupancies.

D.2.25.1 Design Requirements. (Reserved)

D.2.25.2 Installation Requirements. (Reserved)

D.2.26 Existing Business Occupancies.

D.2.26.1 Design Requirements. (Reserved)

D.2.26.2 Installation Requirements. (Reserved)

D.2.27 Industrial Occupancies. (Reserved)

D.2.27.1 Design Criteria.

D.2.27.1.1 Special Provisions — High-Rise Buildings.

The provisions of 11.8.5.3.4(1) of NFPA *101* for jockey pumps and 11.8.5.3.4(2) of NFPA *101* for air compressors serving dry-pipe and preaction systems shall not apply to special-purpose industrial occupancies. [***101***:40.4.2.4]

D.2.28 Storage Occupancies. (Reserved)

Supplemental Information

File Name	Description	Approved
13-2022_Annex_D.docx	Revisions to extracts for Annex D	

Submitter Information Verification

Committee: AUT-SSI
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Committee Statement: Extracts updated.

CC note 22-NFPA 13-2023 [Chapter D]

Review extracts for NFPA 101, 2024 edition and update accordingly.

Response Message: SR-1132-NFPA 13-2023

Second Revision No. 1010-NFPA 13-2023 [Chapter G]

Annex G Informational References

G.1 Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

G.1.1 NFPA Publications.

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

NFPA 1, *Fire Code*, 2024 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2025 edition.

NFPA 13E, *Recommended Practice for Fire Department Operations in Properties Protected by Sprinkler and Standpipe Systems*, 2020 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, 2025 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, ~~2023~~ 2024 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, 2025 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 2023 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 2023 edition.

NFPA 70®, *National Electrical Code*®, 2023 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*®, 2025 edition.

NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, 2022 edition.

NFPA *101*®, *Life Safety Code*®, 2024 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols*, 2024 edition.

NFPA 204, *Standard for Smoke and Heat Venting*, 2024 edition.

NFPA 220, *Standard on Types of Building Construction*, 2024 edition.

NFPA 232, *Standard for the Protection of Records*, 2022 edition.

NFPA 259, *Standard Test Method for Potential Heat of Building Materials*, 2023 edition.

NFPA 291, *Recommended Practice for Fire Flow Testing and Marking of Hydrants*, 2025 edition.

NFPA 409, *Standard on Aircraft Hangars*, 2022 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2023 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems*, 2023 edition.

G.1.2 Other Publications.

G.1.2.1 ACI Publications.

American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331-3439.

ACI 318, *Building Code Requirements for Structural Concrete and Commentary*, 2019, reapproved 2022 .

ACI 355.2, ~~*Qualification of*~~ *Post-Installed Mechanical Anchors in Concrete — Qualification Requirements and Commentary*, ~~2019~~ 2022 .

G.1.2.2 ACPA Publications.

American Concrete Pipe Association, 5605 N. MacArthur Blvd., Suite 340, Irving, TX 75038.

Concrete Pipe Handbook.

G.1.2.3 AISC Publications.

American Institute of Steel Construction, 130 East Randolph, Suite 2000, Chicago, IL 60601.

ANSI/ AISC 360, *Specification for Structural Steel Buildings,*~~2016~~ 2022 .

Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings.

G.1.2.4 ASCE Publications.

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400.

ASCE/SEI 7, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures,* 2022.

ASCE 19, *Structural Applications of Steel Cables for Buildings*, 2016.

G.1.2.5 ASME Publications.

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

Boiler and Pressure Vessel Code, Section IX, “Welding, Brazing, and Fusing Qualifications,” ~~2021~~ 2023 .

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2019~~ 2022 .

ASME B16.1, *Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250*, 2020.

ASME B1.20.1, *Pipe Threads, General Purpose, Inch*, 2013 (R2018).

ASME B31, *Standards of Pressure Piping* , 2022.

G.1.2.6 ASTM Publications.

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

ASTM A126, *Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings*, 2004, reapproved 2019.

ASTM A135/A135M, *Standard Specification for Electric-Resistance-Welded Steel Pipe*, 2021.

ASTM A197/A197M, *Standard Specification for Cupola Malleable Iron*, 2000, reapproved 2019.

ASTM A307, *Standard Specification for Carbon Steel Bolts, Studs, Threaded Rod 60,000 psi Tensile Strength*, 2021.

ASTM A603, *Standard Specification for Metallic-Coated Steel Structural Wire Rope*, 2019.

ASTM A1023/A1023M, *Standard Specification for Stranded Carbon Steel Wire Ropes for General Purposes*, 2021.

ASTM B31, *Standards of Pressure Piping*, collection with various dates.

ASTM C136/C136M, *Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates*, 2020.

ASTM C635/C635M, *Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings*, ~~2017~~ 2022 .

ASTM C636/C636M, *Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels*, 2019.

ASTM D2487, *Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)*, ~~2020~~ 2017 .

ASTM E8/E8M, *Structural Test Methods for Tension Testing of Metallic Materials*, ~~2021~~ 2022 .

ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, ~~2021a~~ 2023a .

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, ~~2020~~ 2022 .

ASTM E580/E580M, *Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions*, 2022.

ASTM F437, *Standard Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80*, 2021.

ASTM F438, *Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40*, ~~2017~~ 2023 .

ASTM F439, *Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80*, 2019.

ASTM F442/F442M, *Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)*, ~~2020~~ 2023 .

ASTM F2164, *Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure*, 2021.

G.1.2.7 AWS Publications.

American Welding Society, 8669 NW 36 Street #130, Miami, FL 33166-6672.

AWS B2.1/B2.1M, *Specification for Welding Procedure and Performance Qualification*, 2021.

G.1.2.8 AWWA Publications.

American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

AWWA C105/A21.5, *Polyethylene Encasement for Ductile-Iron Pipe Systems*, 2018.

AWWA C111/A21.11, *Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings*, 2017.

AWWA C115/A21.15, *Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges*, 2020.

AWWA C150/A21.50, *Thickness Design of Ductile-Iron Pipe*, 2021.

AWWA C206, *Field Welding of Steel Water Pipe*, 2017.

AWWA C600, *Installation of Ductile-Iron Water Mains and Their Appurtenances*, 2017.

AWWA C602, *Cement-Mortar Lining of Water Pipelines in Place, 4 in. (100 mm) and Larger*, ~~2017~~ 2023 .

AWWA C606, *Grooved and Shouldered Joints*, 2015.

AWWA C900, *Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. Through 60 in. (100 mm Through 1,500 mm)*, ~~2016~~ 2022 .

AWWA M9, *Concrete Pressure Pipe*, 2008, Errata, 2014.

AWWA M11, *Steel Pipe — A Guide for Design and Installation*, 4th Edition, 2004, Errata, 2013, Errata 2014, ~~2017~~ Addenda Sept. 2019 .

AWWA M14, *Backflow Prevention and Cross-Connection Control — Recommended Practices*, 2015.

AWWA M23, *PVC Pipe — Design and Installation*, 2020.

AWWA M41, *Ductile-Iron Pipe and Fittings*, 2009.

AWWA M55, *PE Pipe — Design and Installation*, 2020.

G.1.2.9 DIPRA Publications.

Ductile Iron Pipe Research Association, P.O. Box 190306, Birmingham, AL 35219.

Thrust Restraint Design for Ductile Iron Pipe, 2016.

G.1.2.10 FM Publications.

FM Global, 270 Central Avenue, Johnston, RI 02919-4949.

Flammability Characterization of Lithium-ion Batteries in Bulk Storage, 2013.

FM Approvals 1011/1012/1013, *Deluge and Preaction Sprinkler Systems*, 2020.

FM Approvals 1020, *Automatic Water Control Valves*, 2020.

FM Approvals 1021, *Dry Pipe Valves*, 2020.

FM Approvals 1031, *Quick Opening Devices (Accelerators, Exhausters) for Dry Pipe Valves*, 2019.

FM Approvals 1041, *Alarm Check Valves*, 2006.

FM Approvals 1042, *Vane-Type Waterflow Alarm Indicators*, 2016.

FM Approvals 1045, *Waterflow Detector Check Valves*, 2005.

FM Approvals 1112, *Indicating Valves (Butterfly or Ball Type)*, 2020.

FM Approvals 1120/1130, *Fire Service Water Control Valves (OS & Y and NRS Type Gate Valves)*, 1997.

FM Approvals 1140, *Quick Opening Valves ¼ Inch Through 2 Inch Nominal Size*, 1998.

FM Approvals 1210, *Swing Check Valves*, 2004.

FM Approvals 1362, *Pressure Reducing Valves*, 2020.

FM Approvals 1610, *Ductile Iron Pipe and Fittings, Flexible Fittings and Couplings*, 2016.

FM Approvals 1612, *Polyvinyl Chloride (PVC) Pipe and Fittings for Underground Fire Protection Service*, 2016.

FM Approvals 1613, *Polyethylene (PE) Pipe and Fittings for Underground Fire Protection Service*, 2017.

FM Approvals 1620, *Pipe Joints and Anchor Fittings for Underground Fire Service Mains*, 1975.

FM Approvals 1630, *Steel Pipe for Automatic Fire Sprinkler Systems*, 2021.

FM Approvals 1631, *Adjustable and Fixed Sprinkler Fittings ½ Inch through 1 Inch Nominal Size*, 2006.

FM Approvals 1632, *Telescoping Sprinkler Assemblies for Use in Fire Protection Systems for Anechoic Chambers*, 2003.

FM Approvals 1635, *Plastic Pipe and Fittings for Automatic Sprinkler Systems*, 2021.

FM Approvals 1636, *Fire Resistant Barriers for Use with CPVC Pipe and Fittings in Light Hazard Occupancies*, 2003.

FM Approvals 1637, *Flexible Sprinkler Hose with Threaded End Fittings*, 2010.

FM Approvals 1920, *Pipe Couplings and Fittings for Aboveground Fire Protection Systems*, 2007.

FM Approvals 1950, *Seismic Sway Braces for Pipe, Tubing and Conduit* , 2013.

FM Approvals 1951/1952/1953, *Pipe Hanger Components for Automatic Sprinkler Systems*, 2016.

FM Approvals 2000, *Automatic Sprinklers for Fire Protection*, 2018.

FM Approvals 2008, *Quick Response Storage Sprinklers for Fire Protection*, 2018.

FM Approvals 2030, *Residential Automatic Sprinklers for Fire Protection*, 2009.

FM Class Number 4651, *Plastic Suspended Ceiling Panels*, 1978.

FM Loss Prevention Data Sheet 8-9, Storage of Class 1, 2, 3, 4 and Plastic Commodities, 2022.

G.1.2.11 FMRC Publications.

FM Global Research, FM Global, 270 Central Avenue, Johnston, RI 02919-4949.

FMRC J. I. 0X1R0.RR, "Large-Scale Fire Tests of Rack Storage Group A Plastics in Retail Operation Scenarios Protected by Extra Large Orifice (ELO) Sprinklers."

G.1.2.12 FPRF Publications.

Fire Protection Research Foundation, 1 Batterymarch Park, Quincy, MA 02169-7471 .

Antifreeze Solutions Supplied through Spray Sprinklers — Final Report, November 2012.

Antifreeze Systems in Home Fire Sprinkler Systems — Literature Review and Research Plan, June 2010.

Antifreeze Systems in Home Fire Sprinkler Systems — Phase II Final Report, December 2010.

High Volume/Low Speed Fan and Sprinkler Operation — Ph. 2 Final Report, 2011.

Large-Scale Test Evaluation of Early Suppression Fast-Response (ESFR) Automatic Sprinklers, 1986.

Lithium Ion Batteries Hazard and Use Assessment, 2011.

Lithium Ion Batteries Hazard and Use Assessment Phase IIB, Flammability Characterization of Li-ion Batteries for Storage Protection, 2013.

Lithium Ion Batteries Hazard and Use Assessment — Phase III, 2016.

Protection of Rack Stored Exposed Expanded Group A Plastics with ESFR Sprinklers and Vertical Barriers, 2014.

Protection of Storage Under Sloped Ceilings Phase III: Large-Scale Testing Summary and Guidance,

G.1.2.13 ICC Publications.

International Code Council, 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001.

AC193, *Acceptance Criteria for Mechanical Anchors in Concrete Elements*, 2018, editorially revised December 2020 .

AC308, *Post-installed Adhesive Anchors in Concrete Elements*, ~~2019~~ 2023 .

International Building Code, 2021.

Uniform Building Code, 1997.

G.1.2.14 IMO Publications.

International Maritime Organization, 4 Albert Embankment, London, SEI 7SR, United Kingdom.

International Convention for the Safety of Life at Sea, 1974 (SOLAS 74), as amended, regulations II-2/3 and II-2/26.

G.1.2.15 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet, 8, CP 401, 1214 Vernier, Geneva Switzerland.

ISO 6182-1, *Fire protection — Automatic sprinkler systems — Part 1: Requirements and test methods for sprinklers*, 2021.

G.1.2.16 NFSA Publications.

National Fire Sprinkler Association, 514 Progress Drive, Suite A, Linthicum Heights, MD 21090.

Valentine and Isman, *Kitchen Cabinets and Residential Sprinklers,* November 2005.

G.1.2.17 SNAME Publications.

Society of Naval Architects and Marine Engineers, 99 Canal Center Plaza, Suite 500, Alexandria, VA 22314.

Technical Research Bulletin 2-21, “Aluminum Fire Protection Guidelines.”

G.1.2.18 UL Publications.

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

Commodity Hazard Comparison of Expanded Plastic in Portable Bins and Racking, Project 99NK29106, NC4004, September 8, 2000.

"Fact Finding Report on Automatic Sprinkler Protection for Fur Storage Vaults," November 25, 1947.

Technical Report of Fire Testing of Automotive Parts in Portable Storage Racking, Project 99NK29106, NC4004, January 5, 2001.

UL 193, *Alarm Valves for Fire Protection Service*, 2016, revised 2021.

UL 194, *Gasketed Joints for Ductile-Iron Pipe and Fittings for Fire Protection Service*, 2005, revised 2016.

CAN/UL/ULC 199, *Automatic Sprinklers for Fire Protection Service*, 2022.

UL 203, *Pipe Hanger Equipment for Fire Protection Service*, 2020.

UL 203A, *Sway Brace Devices for Sprinkler System Piping*, 2015, revised 2019.

CAN/UL 213, *Rubber Gasketed Fittings for Fire-Protection Service*, ~~2020~~ 2022 .

UL 260, *Dry Pipe and Deluge Valves for Fire-Protection Service*, 2004, revised 2018.

UL 262, *Gate Valves for Fire-Protection Service*, 2004, revised ~~2018~~ 2023 .

UL 263, *Fire Tests of Building Construction and Materials*, 2011, revised 2022.

UL 312, *Check Valves for Fire-Protection Service*, ~~2010, revised 2018~~ 2022 .

UL 346, *Waterflow Indicators for Fire Protective Signaling Systems*, 2005, revised 2019.

UL 515A, *Outline of Investigation for Electrical Resistance Trace Heating and Associated Controls for Use in Sprinkler and Standpipe Systems,* 2019.

UL 852, *Metallic Sprinkler Pipe for Fire Protection Service*, 2008, revised ~~2018~~ 2023 .

UL 1091, *Butterfly Valves for Fire- Protection Service*, ~~2004, revised 2010~~ 2022 .

CAN/UL/ULC 1285, *Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service*, 2022.

UL 1450, *Motor-Operated Air Compressors, Vacuum Pumps, and Painting Equipment* , 2021.

UL 1468, *Direct Acting Pressure Reducing and Pressure Restricting Valves*, 2016, revised 2018.

UL 1474, *Adjustable Drop Nipples for Sprinkler Systems*, 2004.

UL 1486, *Quick Opening Devices for Dry Pipe Valves for Fire Protection Service*, 2004, revised 2018.

UL 1739, *Pilot-Operated Pressure-Control Valves for Fire Protection Service*, 2017, revised 2019.

CAN/UL 1821, *Thermoplastic Sprinkler Pipe and Fittings for Fire Protection Service*, 2019.

UL 2443, *Flexible Sprinkler Hose with Fittings for Fire Protection Service*, 2015, revised 2021.

UL 2901, *Antifreeze Solutions for Use in Fire Sprinkler Systems*, 2019, revised 2022 .

UL 2901A, *Outline of Investigation for Corrosion Control Additives for Use in Fire Sprinkler Systems*, 2019.

UL Subject 723S, *Outline of Investigation for Drop-Out Ceilings Installed Beneath Automatic Sprinklers*, 2006.

G.1.2.19 U. S. Government Publications.

U. S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 46, Code of Federal Regulations, Part 72.05-5, "Definitions."

G.1.2.20 Other Publications.

Nam, Soonil; Antonio Braga; Hsiang-Cheng Kung; and Joan M. A. Troup, "Fire Protection for Non-Storage Occupancies with High Ceiling Clearances," Fire Safety Science — Proceedings of the 7th International Symposium, International Association for Fire Safety Science, 2002, pp. 493–504. www.iafss.org/publications/fss/7/493/view/fss_7–493.pdf.

Nam, S., "Fire Protection at High Ceiling Clearance Facilities," International Association for Fire Safety Science, 2007. www.iafss.org/publications/aofst/7/84/view/aofst_7–84.pdf.

Thrust Restraint Design Equations and Tables for Ductile Iron and PVC Pipe, EBAA Iron, Inc.

Wire Rope Users Manual.

G.2 Informational References.

The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

G.2.1 NFPA Publications.

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

NFPA 850, *Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations*, ~~2020~~ 2025 edition.

G.2.2 AWWA Publications.

American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

AWWA C116/A21.16, *Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray Iron Fittings*, 2015.

AWWA C203, *Coal-Tar Protective Coatings and Linings for Steel Water Pipe*, 2020.

AWWA C205, *Cement-Mortar Protective Lining and Coating for Steel Water Pipe 4 in. (100 mm) and Larger — Shop Applied*, 2018.

AWWA C208, *Dimensions for Fabricated Steel Water Pipe*, 2017.

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AWWA C303, *Reinforced Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type*, 2017.

G.2.3 DIPRA Publications.

Ductile Iron Pipe Research Association, P.O. Box 190306, Birmingham, AL 35219.

Installation Guide for Ductile Iron Pipe, 2021.

G.2.4 FM Publications.

FM Global, 270 Central Avenue, ~~P.O. Box 7500,~~ Johnston, RI 02919-4949.

FM Approvals 2311, *Vacuum and Pressure Gauges for Fire Protection Systems*, 2008.

G.2.5 SAE Publications.

SAE International, Society of Automotive Engineers, 901 15th Street, NW, Suite 520, Washington, DC 20005.

SAE AIR 4127, *Steel: Chemical Composition and Hardenability (Stabilized Type), Revision A, Stabilized*, December 2015.

G.2.6 Uni-Bell PVC Pipe Publications.

Uni-Bell PVC Pipe Association, 201 E. John Carpenter Freeway, Suite 750, Irving, TX 75062.

Handbook of PVC Pipe, 5th edition.

G.2.7 ~~U. S.~~ Government Publications.

~~U. S.~~ Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

~~U. S.~~ Federal Standard No. 66C, *Standard for Steel Chemical Composition and Harden Ability*, April 18, 1967, change notice No. 2, April 16, 1970. (Superseded by SAE AIR4127)

G.3 References for Extracts in Informational Sections.

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NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2025 edition.

NFPA *101*®, *Life Safety Code*®, 2024 edition.

NFPA 5000®, *Building Construction and Safety Code*®, 2024 edition.

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