

NFPA® 24

Standard for the Installation of Private Fire Service Mains and Their Appurtenances

2022 Edition



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An International Codes and Standards Organization

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Standard for the

Installation of Private Fire Service Mains and Their Appurtenances

2022 Edition

This edition of NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, was prepared by the Technical Committee on Private Water Supply Piping Systems and released by the Correlating Committee on Automatic Sprinkler Systems. It was issued by the Standards Council on March 18, 2021, with an effective date of April 8, 2021, and supersedes all previous editions.

This edition of NFPA 24 was approved as an American National Standard on April 8, 2021.

Origin and Development of NFPA 24

In 1903, the NFPA Committee on Hose and Hydrants first presented *Specifications for Mill Yard Hose Houses*, taken substantially from a standard published by the Eastern Factory Insurance Association. This text was revised and adopted in 1904. The NFPA Committee on Field Practice amended the Specifications in 1926, published as NFPA 25.

In 1925, the Committee on Field Practice prepared a *Standard on Outside Protection, Private Underground Piping Systems Supplying Water for Fire Extinguishment*, which was adopted by NFPA. It was largely taken from the 1920 edition of the NFPA *Automatic Sprinkler Standard*, Section M on Underground Pipes and Fittings. In September 1931, a revision was made, with the resulting standard designated as NFPA 24. In the 1981 edition, the title was changed from *Standard for Outside Protection to Standard for the Installation of Private Fire Service Mains and Their Appurtenances*.

In 1953, on recommendation of the Committee on Standpipes and Outside Protection, the two standards (NFPA 24 and NFPA 25) were completely revised and adopted as NFPA 24. Amendments were made leading to separate editions in 1955, 1959, 1962, 1963, 1965, 1966, 1968, 1969, 1970, 1973, 1977, 1981, 1983, and 1987.

The 1992 edition included amendments to further delineate the point at which the water supply stops and the fixed fire protection system begins. Minor changes were made concerning special topics such as thrust restraint and equipment provisions in valve pits.

The 1995 edition clarified requirements for aboveground and buried piping. Revisions were made to provide additional information regarding listing requirements, signage, valves, valve supervision, hydrant outlets, system attachments, piping materials, and thrust blocks. User friendliness of the document was also addressed.

The 2002 edition represented a complete revision of NFPA 24. Changes included reorganization and editorial modifications to comply with the *Manual of Style for NFPA Technical Committee Documents*. Additionally, all of the underground piping requirements were relocated into a new Chapter 10.

The 2007 edition was revised in five major areas: Chapter 10 was updated editorially, and minor technical changes were made. Newly established leakage test criteria, as well as updated requirements for thrust blocks and restrained joints, were added to Chapter 10. Two annexes were new to this edition: Annex C, *Recommended Practice for Fire Flow Testing*, and Annex D, *Recommended Practice for Marking of Hydrants*. These two annexes were developed based on the 2002 edition of NFPA 291.

The 2010 edition was revised in three major areas: the provisions for location and identification of fire department connections, valves controlling water supply, and protection of fire service mains entering the building.

The 2013 edition of NFPA 24 included clarifications on the requirements for running piping under buildings, including annex figures depicting clearances. The Contractors Material and Test

Certificate for Underground Piping (Figure 10.10.1) was modified to include confirmation that the forward flow test of the backflow preventer had been conducted. A provision was also added that required the automatic drip valve to be in an accessible location that permits inspections in accordance with NFPA 25.

NFPA 24 underwent a structural rewrite for the 2016 edition. The hydrant definitions were clarified to describe the type of hydrant in question, as opposed to describing when and where they would be used. The valve arrangement requirements were rewritten for clarity, and annex figures added to provide figures that are consistent with NFPA 13. The title of Chapter 6 was changed from Valves to Water Supply Connections to better describe the material in the chapter. Revisions to Section 6.1 more clearly call out the permitted exceptions to indicating valves and permit nonlisted tapping sleeve and valve assemblies in connections to municipal water supplies. The center of hose outlet measurements was updated to include clear minimum and maximum values for the location of the outlet, along with the appropriate measurement for a hose house installation. The steel underground piping references have been removed from the table in Chapter 10 because steel pipe is required to be listed other than in the FDC line. A statement also was added to allow underground fittings to be used above the ground to transition to aboveground piping.

The 2019 edition included minor changes related to trenching and backfill. Acceptance testing requirements for aboveground piping were included. The standard was also revised to clarify the unacceptable use of steel piping for underground service.

The 2022 edition explains that NFPA 24 does not apply to dry fire hydrants used for drafting. Chapter 5 clarifies that a single fire department connection can supply multiple buildings where approved by the AHJ. Alternate distance criteria were added to Chapter 6 for post indicator valves and backflow preventors. A new section was added to Chapter 10 to clarify that the flush rates of NFPA 20 need to be used where a fire pump is connected to the water supply. Also, a new section has been added that provides an alternate cleaning procedure in place of traditional flushing. New annex material has been added to help determine ice thickness where taking water from a source exposed to freezing conditions.

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This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have overall responsibility for documents that pertain to the criteria for the design and installation of automatic, open and foam-water sprinkler systems including the character and adequacy of water supplies, and the selection of sprinklers, piping, valves, and all materials and accessories. This Committee does not cover the installation of tanks and towers, nor the installation, maintenance, and use of

central station, proprietary, auxiliary, and local signaling systems for watchmen, fire alarm, supervisory service, nor the design of fire department hose connections.

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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have the primary responsibility for documents on private piping systems supplying water for fire protection and for hydrants, hose houses, and valves. The Committee is also responsible for documents on fire flow testing and marking of hydrants.