

NFPA[®] 291

Recommended Practice for Water Flow Testing and Marking of Hydrants

2025 Edition



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NFPA® 291

Recommended Practice for

Water Flow Testing and Marking of Hydrants

2025 Edition

This edition of NFPA 291, *Recommended Practice for Water Flow Testing and Marking of Hydrants*, was prepared by the Technical Committee on Private Water Supply Piping Systems, released by the Correlating Committee on Automatic Sprinkler Systems. It was issued by the Standards Council on April 22, 2024, with an effective date of May 12, 2024, and supersedes all previous editions.

This edition of NFPA 291 was approved as an American National Standard on May 12, 2024.

Origin and Development of NFPA 291

The NFPA Committee on Public Water Supplies for Private Fire Protection presented the idea of indicating the relative available fire service water supply from hydrants in its 1934 report. The committee felt then and feels now that such an indication is of substantial value to water and fire departments. The following recommendations were initially adopted in 1935. The committee agreed that tests of individual hydrants did not give as complete and satisfactory results as group testing but expressed the opinion that tests of individual hydrants did have sufficient value to make the following recommendations worthy of adoption. This was reconfirmed with minor editorial changes in 1974.

The 1977 edition was completely rewritten and a chapter on the flow testing of hydrants was added.

The 1982 edition was reconfirmed by the committee.

The 1988 edition of the document noted several changes that clarified and reinforced certain recommendations. Specific guidance was added on the correct method of using a pitot tube to gain accurate test results.

The 1995 edition incorporated several changes in an attempt to make the document more user-friendly. Changes were also incorporated with regard to the layout of hydrant and water flow tests.

The 2002 edition clarified the recommendations for flow tests and was restructured to comply with the *Manual of Style for NFPA Technical Committee Documents*.

The 2007 edition represented a reconfirmation of the 2002 edition, as there were no technical changes.

The 2010 edition clarified the responsibility for marking of hydrants.

The 2013 edition of NFPA 291 added language recommending frequencies for flushing and flow testing of public hydrants in Section 4.13.

No technical revisions were made to the 2016 edition of NFPA 291.

The 2019 edition of NFPA 291 included the metric formula for discharge through circular orifices, and the table on discharge through circular orifices was updated to provide measurable velocity pressures in the metric system.

The 2022 edition of NFPA 291 revised the purpose and application of this recommended practice to better clarify its applicability. Definitions of the various hydrant types were added, and the list of equipment needed for field work was modified and expanded, describing the type of pressure gauges to be used and adding various types of discharge devices. Finally, a new test method for evaluating the available flow through a single hydrant was added to Chapter 4.

The 2025 edition of NFPA 291 adds annex language to Chapter 4 which clarifies that fire flow is not related to water supply for the design of a water-based fire protection system. Another revision in



Chapter 4 delineates the different inspection, testing, and maintenance recommendations for public and private hydrants. Chapter 5 offers recommendations for color coding private hydrants to provide first responders immediate knowledge of the flow characteristics of said hydrants.

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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.

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