

NFPA®

1961

**Standard on
Fire Hose**

2020



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NFPA® 1961

Standard on

Fire Hose

2020 Edition

This edition of NFPA 1961, *Standard on Fire Hose*, was prepared by the Technical Committee on Fire Hose and acted on by NFPA at its June Association Technical Meeting held June 17–20, 2019, in San Antonio, TX. It was issued by the Standards Council on August 5, 2019, with an effective date of August 25, 2019, and supersedes all previous editions.

This edition of NFPA 1961 was approved as an American National Standard on August 25, 2019.

Origin and Development of NFPA 1961

Standards on fire hose for both industrial use and fire department use were among the earliest standards issued by NFPA, with the first standard issued in 1898. NFPA 196 was issued in 1934 as *Standard Specification for Cotton Rubber-Lined Fire Hose for Public and Private Fire Department Use*. That standard remained in existence until 1958, when the Fire Hose Committee was again constituted to update the requirements. A tentative standard was issued in 1958 and the official standard was issued in 1960, recognizing the newer synthetic materials that were being used in the manufacture of fire hose. The 1960 standard covered fire hose in the 1 in., 1½ in., 2 in., and 2½ in. sizes for single- or multiple-jacket hose and 3 in. and 3½ in. sizes for multiple-jacket hose.

In the 1972 edition, the concept of single jacket relay supply hose in the trade sizes of 3 in., 4 in., 4½ in., 5 in., and 6 in. was introduced. In 1979, the standard was renumbered from NFPA 196 to NFPA 1961 to coincide with a general renumbering of the fire service standards.

In the 1992 edition, the term *rack and reel hose* was changed to *occupant use hose*, the requirements for forestry hose were updated, and the requirements for suction hose were added. The 1997 edition was a reconfirmation of the 1992 edition.

The 2002 edition was completely revised to conform to the *Manual of Style for NFPA Technical Committee Documents*, to clean up ambiguous language, and to clarify the requirements. Procurement-related issues were deleted from the requirements of the document, and an equivalency statement and a formal retroactivity statement were added. The minimum trade size requirement was dropped for all but supply hose. The requirements for specific lengths were changed to only require a tolerance on the stated nominal length. Positive pressure requirements for hard suction hose were deleted.

A cold resistance test was added for all hose. Specific requirements were added to test the hose for abrasion resistance, heat resistance, water resistance, degradation from repeated bending, and degradation from alternating pressures. The flexibility and compressibility test method for forestry hose that had previously referenced USDA Forest Service specifications was stated in the standard. The chapter on inspection and tests was reorganized around four subject areas: quality control, inspection, testing, and certification.

The 2007 edition was a general update of the 2002 edition and clarified ambiguous requirements. The section for testing elongation, twist, warp, and rise was revised to clarify the four distinct tests. This edition also required all new fire hose to be marked with the country of origin.

The 2013 edition of NFPA 1961 required that the maximum friction loss be within the requirements of ANSI/UL 19, *Lined Fire Hose and Hose Assemblies*. It also required that hose be marked with the manufacturer's identification as well as the country of origin. That edition also allowed the authority having jurisdiction (AHJ) to request from the manufacturer that the service test pressure marked on the hose be lower than the actual service test pressure, but not less than the minimum requirements of Chapter 4. Minor editorial changes also were made throughout for clarification and ease of use.

The major revision in the 2020 edition of NFPA 1961 is the new requirement that 1½ in. to 3 in. attack hose be tested in accordance with the radiant heat test in ANSI/UL 19, *Line Fire Hose and Line Assemblies*. The incidence of fire hose burn-through was brought to the attention of the technical committee and was reviewed by several stakeholders working to develop test methods to assess fire hose for resistance to radiant and conductive heat. The newly developed test methods in the 2018 edition of ANSI/UL 19 are now required by NFPA 1961 for testing attack hose. The definition for *booster hose* has also been added to the standard, as well as a new requirement in Chapter 4 that specifically addresses booster hose. Finally, NFPA 1961 now requires friction loss design test results to be available if requested at the time of purchase, in an effort to assist the consumer with decision-making.

Technical Committee on Fire Hose

Andrew D. Ellison, *Chair*

Unified Investigations and Science, MA [SE]

Jason Goodale, *Secretary*

Loveland Fire Rescue, CO [U]

Michael S. Aubuchon, Sr., North American Fire Hose Corporation, CA [M]

Bill C. Betz, Fairfax County Fire & Rescue Department, VA [U]

Scott M. Bryant, Fire & Risk Alliance LLC, MD [U]
Rep. Edison Electric Institute

Christopher B. Budzinski, City of Asheville Fire Department, NC [E]

Jonathan R. Cares, Town of Londonderry Fire Rescue, NH [U]

Michael Cedrone, FM Global, RI [I]
Rep. FM Global

Brian Fink, Fire Department City of New York, NY [E]
Rep. Fire Department City of New York

James E. Glatts, FireOne, PA [IM]

Sean Gray, Cobb County Fire And Emergency Services, GA [SE]

Jeff Hebenstreit, UL LLC, IL [RT]

Stephen Jackson, Waterway Hudson Valley, NY [IM]

Jayne L. Kahle, Rincon Valley Fire District, AZ [E]

Brian P. Kazmierzak, Penn Township Fire Department, IN [E]

Duane Leonhardt, Mercedes Textiles Ltd., Canada [M]
Rep. Fire Equipment Manufacturers' Association

Mark Allen Lighthill, KFH Industries, AL [M]

Michael Mayer, Task Force Tips, IN [M]

Vince Newberg, Delta Fire Systems, Inc., UT [IM]
Rep. National Association of Fire Equipment Distributors

David Quick, Manchester Fire Department, NH [U]

Marc T. Radecky, LLCFireCatt, MI [IM]

Jason D. Riggensbach, IDEX Corp/Akron Brass Company, OH [M]

John D. Schreiber, Colorado Springs Fire Department, CO [U]

John W. Stacey, Glenwood, IA [E]
Rep. International Association of Fire Chiefs

Tim Vanderlip, Los Angeles County Fire Department, CA [U]

David Walsh, Boston Fire Department, MA [E]

Samuel Wu, U.S. Department of Agriculture, CA [RT]

Alternates

Jeffrey L. Benson, IDEX Corp/Akron Brass Company, OH [M]
(Alt. to Jason D. Riggensbach)

Gregg Burzine, Fire Department City of New York, NY [E]
(Alt. to Brian Fink)

Jim Ford, Waterway North Jersey, NJ [IM]
(Alt. to Stephen Jackson)

Gregory Kozey, Koche Company, Inc., CT [M]
(Voting Alt.)

Douglas Menard, Boston Fire Department, MA [U]
(Alt. to David Walsh)

Jacqueline Wilmot, NFPA Staff Liaison

Ronald Nathan Miller, Asheville Fire Department, NC [E]
(Alt. to Christopher B. Budzinski)

Nicholas A. Nava, Exponent, MD [SE]
(Voting Alt.)

Nick Keith Proulx, Gilford, NH [U]
(Alt. to David Quick)

Ron Stanley, All-American Hose, PA [M]
(Voting Alt.)

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Committee Scope: This Committee shall have primary responsibility for documents on the size and design of fire hose connections, and the performance, maintenance, and selection of all types of fire hose, couplings, nozzles, and accessory equipment.

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Standard on

Fire Hose

2020 Edition

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Information on referenced and extracted publications can be found in Chapter 2 and Annex B.

Chapter 1 Administration

1.1* Scope. This standard shall define the design and construction requirements for new fire hose, the testing required to verify the design and construction, and the inspection and testing required of all new fire hose.

1.2* Purpose. The purpose of this standard shall be to establish the minimum requirements for new fire hose.

1.3 Application. This standard shall apply to new attack hose, occupant use hose, forestry hose, supply hose, and suction hose.

1.4 Retroactivity. This standard shall not be applied retroactively.

1.5 Equivalency. Nothing in this standard is intended to 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. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The system, method, or

device shall be approved for the intended purpose by the authority having jurisdiction.

1.6* Units. In this standard, inch-pound units for measurement are followed by an equivalent in metric units, but only the first stated value shall be regarded as the requirement.

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 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*, 2018 edition.

2.3 Other Publications.

2.3.1 ASQ Publications. American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203.

ASQ Z1.4, *Sampling Procedures and Tables for Inspection by Attributes*, 2003, reapproved 2013.

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

ASTM D380, *Standard Test Methods for Rubber Hose*, 1994, reapproved 2012.

ASTM D412, *Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers — Tension*, 2006a, reapproved 2016.

ASTM D573, *Standard Test Method for Rubber — Deterioration in an Air Oven*, 2004, reapproved 2015.

ASTM D1149, *Standard Test Methods for Rubber Deterioration — Cracking in an Ozone Controlled Environment*, 2007, reapproved 2012.

2.3.3 FM Publications. FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919-4923.

FM Approval 2111, *Factory Mutual Approval Standard for Fire Hose*, 2014.

2.3.4 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.

ANSI/UL 19, *Lined Fire Hose and Hose Assemblies*, 14th edition, 2018.

ANSI/UL 92, *Fire Extinguisher and Booster Hose*, 10th edition, July 2, 2008.

ANSI/UL 219, *Lined Fire Hose for Interior Standpipes*, 2013.

2.3.5 USDA Publications. USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

USDA Specification 5100-186d, *Forest Service Specification for Fire Hose, Cotton-Synthetic, Lined, Woven Jacket, 1 inch and 1½ inch*, May 2006.

USDA Specification 5100-187c, *Forest Service Specification for Fire Hose, Lightweight Synthetic, Lined, Woven Jacket*, March 2006.