

NFPA® 1932

Standard on Use,
Maintenance, and
Service Testing of
In-Service Fire Department
Ground Ladders

2010 Edition



NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471
An International Codes and Standards Organization

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® DOCUMENTS
NOTICE AND DISCLAIMER OF LIABILITY CONCERNING THE USE OF NFPA DOCUMENTS

NFPA® codes, standards, recommended practices, and guides (“NFPA Documents”), of which the document contained herein is one, are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Documents.

The NFPA disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on NFPA Documents. The NFPA also makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

In issuing and making NFPA Documents available, the NFPA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the NFPA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The NFPA has no power, nor does it undertake, to police or enforce compliance with the contents of NFPA Documents. Nor does the NFPA list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the NFPA and is solely the responsibility of the certifier or maker of the statement.

ISBN: 978-087765960-0 (Print)
ISBN: 978-161665008-7 (PDF)

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA DOCUMENTS

ADDITIONAL NOTICES AND DISCLAIMERS

Updating of NFPA Documents

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Documents”) should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of Tentative Interim Amendments. An official NFPA Document at any point in time consists of the current edition of the document together with any Tentative Interim Amendments and any Errata then in effect. In order to determine whether a given document is the current edition and whether it has been amended through the issuance of Tentative Interim Amendments or corrected through the issuance of Errata, consult appropriate NFPA publications such as the National Fire Codes® Subscription Service, visit the NFPA website at www.nfpa.org, or contact the NFPA at the address listed below.

Interpretations of NFPA Documents

A statement, written or oral, that is not processed in accordance with Section 6 of the Regulations Governing Committee Projects shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Patents

The NFPA does not take any position with respect to the validity of any patent rights referenced in, related to, or asserted in connection with an NFPA Document. The users of NFPA Documents bear the sole responsibility for determining the validity of any such patent rights, as well as the risk of infringement of such rights, and the NFPA disclaims liability for the infringement of any patent resulting from the use of or reliance on NFPA Documents.

NFPA adheres to the policy of the American National Standards Institute (ANSI) regarding the inclusion of patents in American National Standards (“the ANSI Patent Policy”), and hereby gives the following notice pursuant to that policy:

NOTICE: The user’s attention is called to the possibility that compliance with an NFPA Document may require use of an invention covered by patent rights. NFPA takes no position as to the validity of any such patent rights or as to whether such patent rights constitute or include essential patent claims under the ANSI Patent Policy. If, in connection with the ANSI Patent Policy, a patent holder has filed a statement of willingness to grant licenses under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, copies of such filed statements can be obtained, on request, from NFPA. For further information, contact the NFPA at the address listed below.

Law and Regulations

Users of NFPA Documents should consult applicable federal, state, and local laws and regulations. NFPA does not, by the publication of its codes, standards, recommended practices, and guides, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

NFPA Documents are copyrighted by the NFPA. They are made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of safe practices and methods. By making these documents available for use and adoption by public authorities and private users, the NFPA does not waive any rights in copyright to these documents.

Use of NFPA Documents for regulatory purposes should be accomplished through adoption by reference. The term “adoption by reference” means the citing of title, edition, and publishing information only. Any deletions, additions, and changes desired by the adopting authority should be noted separately in the adopting instrument. In order to assist NFPA in following the uses made of its documents, adopting authorities are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. For technical assistance and questions concerning adoption of NFPA Documents, contact NFPA at the address below.

For Further Information

All questions or other communications relating to NFPA Documents and all requests for information on NFPA procedures governing its codes and standards development process, including information on the procedures for requesting Formal Interpretations, for proposing Tentative Interim Amendments, and for proposing revisions to NFPA documents during regular revision cycles, should be sent to NFPA headquarters, addressed to the attention of the Secretary, Standards Council, NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02169-7471; email: stds_admin@nfpa.org

For more information about NFPA, visit the NFPA website at www.nfpa.org.

Copyright © 2009 National Fire Protection Association®. All Rights Reserved.

NFPA® 1932

Standard on

Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders

2010 Edition

This edition of NFPA 1932, *Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders*, was prepared by the Technical Committee on Fire Department Ground Ladders. It was issued by the Standards Council on October 27, 2009, with an effective date of December 5, 2009, and supersedes all previous editions.

This edition of NFPA 1932 was approved as an American National Standard on December 5, 2009.

Origin and Development of NFPA 1932

In 1958, new material was added to NFPA 193, *Standard Procedures for Aerial Ladder Testing*, to cover the care, maintenance, and testing of fire department ground ladders. Subsequent editions were published in 1959 and 1972.

In 1975, NFPA 193 was separated into two documents, NFPA 1931, *Standard on Fire Department Ground Ladders*, and NFPA 1904, *Recommended Practice for the Maintenance, Care, Testing and Use of Fire Department Aerial Ladders and Elevating Platforms*.

The 1979 edition of NFPA 1931 incorporated extensive revisions, including editorial and style changes.

In 1984, the text of NFPA 1931 was again divided into two documents. NFPA 1931 contained the requirements for the design and design verification testing for new ground ladders, and NFPA 1932 contained the requirements for the use, maintenance, and service testing of fire department ground ladders. The strength requirements for new ground ladders were increased in NFPA 1931, and the loads used for in-service testing of ground ladders were increased based on research that indicated that ground ladders needed to handle greater loads. An exception allowed the authority having jurisdiction to use a reduced test weight for the horizontal bending test for extension ladders built prior to 1984 with a restriction on the use of those ladders while phasing in the more stringent testing requirement.

The 1989 edition added requirements for routine maintenance as well as additional cautions regarding accidental heating of ladders. The horizontal bending test for folding ladders was added. The horizontal bending test for extension ladders was modified to reflect changes determined acceptable from field experience with the use of the test method.

The 1994 edition removed the exception that allowed the authority having jurisdiction to use a reduced test weight for the horizontal bending test for extension ladders built prior to 1984. The standard was revised to keep it up to date, including adding requirements for retrofitting heat sensor labels after appropriate testing.

The 1999 edition incorporated minor editorial revisions and rearranged the document to better organize the material.

The 2004 edition changed the title to *Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders* to better reflect that this is a standard that pertains to the ladder after it has been put in service. The document was reorganized according to the current NFPA *Manual of Style*, and ambiguous wording was clarified. An alternate method for loading a ladder during the horizontal bending test was permitted. The maximum temperature that ladders can be subjected to under non-fire conditions was reduced to 212°F (100°C). The optional hardness test was deleted. The conditions for removal of ground ladders from service because of failing inspections or testing were clarified.

The 2010 edition of this standard includes multi-purpose ladders. NFPA 1901, *Standard for Automotive Fire Apparatus*, now recognizes the installation of multi-purpose ladders in lieu of folding ladders on apparatus. As such, requirements for testing were necessary to ensure multi-purpose ladders are tested and maintained for fire service duty.

Technical Committee on Fire Department Ground Ladders

Brian D. Berchtold, *Chair*
U.S. Department of the Navy, DE [U]

Doyle M. Brewer, Jr., Denver Fire Department, CO [U]
John P. Brown, Nassau County Fire Service Academy,
NY [SE]
H. Curtis Clifford, First In, Inc., AZ [IM]
Samuel C. Cramer, Aluminum Ladder Company, SC [M]
James E. Glatts, FireOne, PA [RT]
Sheperd Neil Harper, City of Vacaville Fire Department,
CA [U]

Tom Hillenbrand, Underwriters Laboratories Inc.,
IL [RT]
A. K. Rosenhan, Mississippi State University, MS [SE]
Philip Schwab, Duo-Safety Ladder Corporation, WI [M]
Stephen A. Speer, Fire Service Safety Testing, NY [RT]
Christina Spoons, Westmont Fire Department, IL [U]
Jacob Waldschmidt, City of Kenosha Fire Department,
WI [U]

Alternates

James Johannessen, Underwriters Laboratories Inc.,
PA [RT]
(Alt. to T. Hillenbrand)

Peter F. Kertzie, Buffalo Fire Department, NY [U]
(Alt. to D. M. Brewer, Jr.)

Laurence J. Stewart, NFPA Staff Liaison

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 primary responsibility for documents on the design, inspection, testing, and use of ground ladders for the fire service.



Contents

Chapter 1 Administration	1932- 4	5.3 Additional Requirements for Metal Ground Ladders	1932- 7
1.1 Scope	1932- 4	5.4 Additional Requirements for Wood Ground Ladders	1932- 7
1.2 Purpose	1932- 4	5.5 Additional Requirements for Fiberglass Ground Ladders	1932- 7
1.3 Application	1932- 4		
Chapter 2 Referenced Publications	1932- 4	Chapter 6 Inspection and Maintenance of Ground Ladders	1932- 7
2.1 General	1932- 4	6.1 Inspection of Ground Ladders	1932- 7
2.2 NFPA Publications	1932- 4	6.2 Maintenance of Ground Ladders	1932- 7
2.3 Other Publications	1932- 4		
2.4 References for Extracts in Mandatory Sections	1932- 4	Chapter 7 Service Testing of Ground Ladders ...	1932- 8
Chapter 3 Definitions	1932- 4	7.1 Requirements for All Ground Ladders	1932- 8
3.1 General	1932- 4	7.2 Service Testing Requirements for All Ladders Except Pompier and Folding Ladders	1932- 8
3.2 NFPA Official Definitions	1932- 4	7.3 Service Testing Requirements for Pompier Ladders	1932-11
3.3 General Definitions	1932- 4	7.4 Service Testing Requirements for Folding and Multi-Purpose Ladders	1932-12
Chapter 4 Ground Ladder Mounting and Storage	1932- 5	Annex A Explanatory Material	1932-12
4.1 Requirements for Mounting of Ground Ladders	1932- 5	Annex B Informational References	1932-14
4.2 Requirements for Storage of Ground Ladders	1932- 6	Index	1932-15
Chapter 5 Use of Ground Ladders	1932- 6		
5.1 Requirements for All Ground Ladders	1932- 6		
5.2 Additional Requirements for Extension Ladders	1932- 6		

NFPA 1932**Standard on****Use, Maintenance, and Service Testing of
In-Service Fire Department Ground Ladders****2010 Edition**

IMPORTANT NOTE: This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading "Important Notices and Disclaimers Concerning NFPA Documents." They can also be obtained on request from NFPA or viewed at www.nfpa.org/disclaimers.

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet (•) between the paragraphs that remain.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex B. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

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

Chapter 1 Administration

1.1* Scope. This standard specifies requirements for the use, maintenance, inspection, and service testing of fire department ground ladders.

1.2* Purpose.

1.2.1 The purpose of this standard is to provide requirements for the use, maintenance, and service testing of fire department ground ladders that will result in reasonable safety for fire fighters and victims during the use of those ground ladders.

1.2.2 This standard also provides users of fire department ground ladders with a means to determine if in-service fire department ground ladders are fit for continued service.

1.3* Application. This standard applies to all ground ladders, regardless of year of manufacture, used by fire departments for rescue, fire-fighting operations, and training.

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 1931, *Standard for Manufacturer's Design of Fire Department Ground Ladders*, 2010 edition.

2.3 Other Publications.

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

ANSI A14.2, *Ladders — Portable Metal — Safety Requirements*, 2007.

ANSI A14.5, *Ladders — Portable Reinforced Plastic — Safety Requirements*, 2007.

2.3.2 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 1931, *Standard for Manufacturer's Design of Fire Department Ground Ladders*, 2010 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Shall. Indicates a mandatory requirement.

3.2.4 Should. Indicates a recommendation or that which is advised but not required.

3.2.5 Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

3.3 General Definitions.

3.3.1 Angle of Inclination. The angle incorporated between the beams and a level plane. [1931, 2010]

3.3.2 Base (Bed) Section. The lowest or widest section of an extension ladder. [1931, 2010]

3.3.3 Beam (Side Rail). The main structural side of the ground ladder. [1931, 2010]

3.3.4 Bedded Position. The position in which the fly section(s) of an extension ladder is fully retracted with the pawls engaged. [1931, 2010]

