

Code for the Protection of Historic Structures

2019



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NFPA® 914

Code for the

Protection of Historic Structures

2019 Edition

This edition of NFPA 914, *Code for the Protection of Historic Structures*, was prepared by the Technical Committee on Cultural Resources. It was issued by the Standards Council on November 5, 2018, with an effective date of November 25, 2018, and supersedes all previous editions.

This edition of NFPA 914 was approved as an American National Standard on November 25, 2018.

Origin and Development of NFPA 914

The Technical Committee on Cultural Resources was first organized in 1940 as the Committee on Libraries, Museums, and Historic Buildings. The first committee document, published in 1948, was the manual *Protecting Our Heritage: Historic Buildings, Museums, and Libraries.* A second edition of the manual was published in 1970.

The technical committee approved a request in November 1984 to develop a publication similar to NFPA 913, *Recommended Practice for the Protection of Historic Structures and Sites.* NFPA 913 was withdrawn in 1997, but its scope of coverage included protection criteria for historic structures for buildings that were to be rehabilitated for new uses. A recommended practice was prepared in draft form for the 1988 Annual Meeting but was not considered by the technical committee to be ready for publication. The technical committee continued to revise and organize the material, and the document was submitted once again at the 1989 Annual Meeting where the first edition was adopted. The original title was *Recommended Practice for Fire Protection in Rehabilitation and Adaptive Reuse of Historic Structures*.

In 1993, the technical committee moved to consolidate the various requirements for churches, museums, and libraries into a common standard. That consolidation was achieved in 1997 with the issuance of NFPA 909, Standard for the Protection of Cultural Resources, Including Museums, Libraries, Places of Worship, and Historic Properties. While this new standard was being developed, a further need to deal with the unique properties of historic structures was identified: in many applications, traditional requirements of codes and standards did not provide practical solutions to correcting fire protection deficiencies in historic properties.

Previous editions of NFPA 914 contained somewhat expanded fire protection guidelines, including the need to develop an overall fire protection plan that emphasized management's responsibility in addressing fire protection and the importance of preserving the historic integrity of these irreplaceable artifacts of history and culture. However, the document still did not contain a roadmap to accomplish these goals. The changes made to the 2001 edition of the document were quite substantial in this regard, including the designation of that edition as a code rather than as a recommended practice. The document gave clear guidance instead of good ideas. Designation as a code also allowed NFPA 914 to be adopted into law by a state or local jurisdiction, since it used mandatory language.

Given the unique nature of this document — an attempt to cover the gamut of existing structures with no occupancy change, structures that had been undergoing an adaptive reuse transformation, or those structures that simply had never been regulated before, given the lack of an authoritative document on this subject — the 2001 edition contained both a prescriptive approach as well as a performance-based approach to finding solutions to the life safety and fire safety problems in historic structures. In both cases, NFPA 914 maintained the importance of preventing or minimizing the intrusion of fire protection systems or solutions so as not to destroy the fabric or significance of the structure.

Also of significance in the 2001 edition was the addition of a process whereby individuals responsible for managing the fire protection plan for a building could be considered part of the

plan. This approach allowed specific direction to be given for a needs assessment, both from the fire protection management standpoint as well as from the historic significance standpoint. This process allowed the responsible parties to develop and implement a plan that encompassed all aspects of the historic structure or site so that it could be preserved for future generations. Guidance for this approach was added to the chapter on management operational systems.

The 2007 edition underwent a major reorganization to comply with the *Manual of Style for NFPA Technical Committee Documents* and to correlate better with the 2005 edition of NFPA 909, *Code for the Protection of Cultural Resource Properties* — *Museums, Libraries, and Places of Worship.* A new chapter on security and a new annex that illustrated compliance alternatives were added. Technical revisions were made pertaining to life safety performance criteria; temporary enclosures; deficiencies discovered during compliance audits; documentation of modifications to prescriptive requirements; housekeeping practices; hot work; cabling; commercial cooking and food service operations; additions, alterations, and repairs; roofing; plumbing; temporary wiring; fire doors; inspection, testing, and maintenance of fire protection systems; and the use of combustible packing materials. Revisions were also made regarding the type of automatic sprinklers to be used in historic structures properties, and information was added on management operations systems and emergency response plans.

The 2010 edition added criteria and survey forms for conducting vulnerability assessments to mitigate the risk of arson in historic structures; guidance on implementing operational controls; requirement for arc-fault circuit interrupters (AFCIs) to protect electrical circuits; criteria for protection against wildfires; criteria for the determination of contractor qualifications for working in historic structures; inspection, testing, and maintenance requirements for premises security systems; special event security and protection criteria; a new annex on case studies; a new annex on the protection of historic districts; a new annex on example code exceptions for historic buildings; and a new annex on security systems.

For the 2015 edition, the code's scope, goals, and objectives were revised to include security. Consistent with the revised scope, security requirements were revised, consolidated, and relocated to a new chapter on security following the chapter on fire prevention requirements. Plenum storage requirements were extracted from NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, and added to the chapter on fire prevention requirements.

For the 2019 edition, the title of NFPA 914 has been revised from *Code for Fire Protection of Historic Structures* to *Code for the Protection of Historic Structures*, and numerous provisions have been revised to reflect its expanded scope and purpose, which includes fire protection, security, and resiliency of historic structures and historic districts. New requirements for fire protection and life safety system commissioning and integrated fire protection and life safety system testing have been added.

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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 primary responsibility for documents on fire safety and security for libraries, museums, places of worship, and historic structures and their contents, but shall not overlap the provisions of NFPA 101, Life Safety Code, and NFPA 731, Standard for the Installation of Electronic Premises Security Systems.

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NFPA 914

Code for the

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2019 Edition

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

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 V. 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 V.

Chapter 1 Administration

1.1 Scope.

2019 Edition

- **1.1.1** This code describes principles and practices of protection and recovery for historic structures and districts.
- **1.1.2*** Collections within libraries, museums, and places of worship are not within the scope of this code.
- Δ 1.2* Purpose. This code prescribes minimum requirements for the protection and recovery of historic structures from vulnerabilities while preserving the elements, spaces, and features that make these structures historically or architecturally significant.
 - **1.3 Application.** This code applies to historic structures.
 - **1.3.1** This code covers ongoing operations, renovation, and restoration and acknowledges the need to preserve historically

- significant and character-defining building features and to provide for continuity of operations.
- **1.3.2** This code addresses those construction, protection, operational, and occupancy features that are necessary to minimize danger to life, structures, and historic fabric from the effects of fire and other vulnerabilities.
- **1.3.3** This code identifies the minimum fire and security criteria to permit prompt escape of the building occupants to a safe area and to minimize the impact of fire, damage from fire protection equipment, and security vulnerabilities to the structure or historic fabric.
- **1.3.4** The application of the security requirements of this code is based on the risk considerations determined in Chapter 9.
- **1.3.5** Libraries, museums, and places of worship housed in historic structures shall also comply with the requirements of NFPA 909.

1.4 Equivalency.

- **1.4.1** Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, or effectiveness, provided that the following conditions are met:
- Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.
- (2) The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.
- **1.4.2** Historic structures or portions of such structures that do not strictly comply with this code shall be considered to be in compliance if it can be shown that equivalent protection has been provided or that no specific hazard or security threat will be created or continued through noncompliance.
- **1.4.3** A designer capable of applying more complete and rigorous analysis to special or unusual problems shall have latitude in the development of the applicable design.
- **1.4.3.1** In such cases, the designer shall be responsible for demonstrating the validity of the approach.
- **1.4.3.2** This code shall not do away with the need for competent engineering judgment.
- **1.4.3.3** This code shall not be intended to be used as a design handbook
- **1.5* Enforcement.** This code shall be administered and enforced by the AHJ designated by the governing authority.

1.5.1 Organization.

- **1.5.1.1** The owner or governing body shall designate a fire safety manager who shall administer and enforce the fire safety requirements of this code.
- **1.5.1.2** The owner or governing body shall designate a security manager who shall administer and enforce the security requirements of this code.
- **1.5.2** Approvals by Other Authorities Having Jurisdiction. The fire safety manager shall require that the laws, rules, and regulations of all other regulatory agencies having jurisdiction shall be met when not in conflict with this code.

Shaded text = Revisions. Δ = Text deletions and figure/table revisions. • = Section deletions. N = New material.

Chapter 2 Referenced Publications

- **2.1 General.** The documents or portions thereof listed in this chapter are referenced within this code 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 1, Fire Code, 2018 edition.
- NFPA 3, Standard for Commissioning of Fire Protection and Life Safety Systems, 2018 edition.
- NFPA 4, Standard for Integrated Fire Protection and Life Safety System Testing, 2018 edition.
 - NFPA 10, Standard for Portable Fire Extinguishers, 2018 edition.
- NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam, 2016 edition.
- NFPA 12, Standard on Carbon Dioxide Extinguishing Systems, 2018 edition.
- NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems, 2018 edition.
- NFPA 13, Standard for the Installation of Sprinkler Systems, 2019 edition.
- NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2019 edition.
- NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies, 2019 edition.
- NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 2019 edition.
- NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, 2017 edition.
- NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 2015 edition.
- NFPA 17, Standard for Dry Chemical Extinguishing Systems, 2017 edition.
- NFPA 17A, Standard for Wet Chemical Extinguishing Systems, 2017 edition.
- NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 2017 edition.
- NFPA 30, Flammable and Combustible Liquids Code, 2018 edition.
- NFPA 31, Standard for the Installation of Oil-Burning Equipment, 2016 edition.
- NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, 2019 edition.
 - NFPA 54, National Fuel Gas Code, 2018 edition.
 - NFPA 58, Liquefied Petroleum Gas Code, 2017 edition.
 - NFPA 70[®], National Electrical Code[®], 2017 edition.
- NFPA 72[®], National Fire Alarm and Signaling Code[®], 2019 edition.
- NFPA 80, Standard for Fire Doors and Other Opening Protectives, 2019 edition.
- NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems, 2018 edition.
- NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems, 2018 edition.
 - NFPA 92, Standard for Smoke Control Systems, 2018 edition.
- NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, 2017 edition.
 - NFPA 101®, Life Safety Code®, 2018 edition.
- NFPA 110, Standard for Emergency and Standby Power Systems, 2019 edition.

- NFPA 204, Standard for Smoke and Heat Venting, 2018 edition.
- NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances, 2019 edition.
- NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations, 2019 edition.
- NFPA 259, Standard Test Method for Potential Heat of Building Materials, 2018 edition.
- NFPA 289, Standard Method of Fire Test for Individual Fuel Packages, 2019 edition.
- NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, 2019 edition.
- NFPA 703, Standard for Fire Retardant—Treated Wood and Fire-Retardant Coatings for Building Materials, 2018 edition.
- NFPA 731, Standard for the Installation of Electronic Premises Security Systems, 2017 edition.
- NFPA 750, Standard on Water Mist Fire Protection Systems, 2019 edition.
- NFPA 780, Standard for the Installation of Lightning Protection Systems, 2017 edition.
- NFPA 909, Code for the Protection of Cultural Resource Properties Museums, Libraries, and Places of Worship, 2017 edition.
 - NFPA 1123, Code for Fireworks Display, 2018 edition.
- NFPA 1126, Standard for the Use of Pyrotechnics Before a Proximate Audience, 2016 edition.
- NFPA 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire, 2018 edition.
- NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems, 2018 edition.
- 2.3 Other Publications.
- △ 2.3.1 ANSI/UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.
 - ANSI/UL 263, Standard for Fire Tests of Building Construction and Materials, 2014.
 - ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials, 2008, revised 2013.
 - UL 1975, Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes, 2006.
- **N 2.3.2 ASCE Publications.** American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400.
 - ASCE/SEI 7, Minimum Design Loads for Buildings and Other Structures, 2010.
- Δ 2.3.3 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.
 - ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, 2016.
 - ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials, 2016a.
 - ASTM E136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C, 2016a.
 - ASTM E1591, Standard Guide for Obtaining Data for Fire Growth Models, 2013.
 - ASTM E2652, Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C, 2016