NFPA®

909

Code for the Protection of Cultural Resource Properties—Museums, Libraries, and Places of Worship

2021

NFPA® 909

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Protection of Cultural Resource Properties — Museums, Libraries, and Places of Worship

2021 Edition

This edition of NFPA 909, *Code for the Protection of Cultural Resource Properties — Museums, Libraries, and Places of Worship*, was prepared by the Technical Committee on Cultural Resources. It was issued by the Standards Council on November 2, 2020, with an effective date of November 22, 2020, and supersedes all previous editions.

This edition of NFPA 909 was approved as an American National Standard on November 22, 2020.

Origin and Development of NFPA 909

Since the first NFPA document was issued on this subject in 1948 *(Protecting Our Heritage)*, the Technical Committee on Cultural Resources has developed a series of recommended practices to govern these specialized buildings and sites. Five separate documents governing libraries, museums, places of worship, historic structures, and historic sites existed in 1996.

In each case, the documents were written as recommended practices or guides. There were a number of reasons why the documents were developed and maintained as such. One reason had to do with the delicate nature of the facilities and sites. Unlike commercial buildings, "new" historic structures are not constructed. In other words, all the historic structures are existing, making retrofit of many common fire protection systems impractical to install in some cases. In addition, retrofit of fire alarm systems or sprinkler systems can be cost prohibitive for a smaller, historically significant structure. Unfortunately, many of the readily available solutions to correct fire protection problems in other types of existing facilities might not be practical in the case of older, historic buildings.

A number of philosophical issues centered on the methods used to protect cultural resource facilities. One main item dealt with a structured fire prevention program that is carried out by the facility operator. The span of these protection schemes must account for structures ranging from single-family dwellings to public libraries to public museums.

In 1997, work on a comprehensive project to merge the five separate documents was completed. A new standard, NFPA 909, *Standard for the Protection of Cultural Resources, Including Museums, Libraries, Places of Worship, and Historic Properties*, consolidated the fire protection requirements for libraries, museums, and places of worship into one document. This milestone recognized that many traditional fire protection solutions do not work unless significant resources are applied to a given problem or situation. This same philosophy was carried over to the 2001 edition of NFPA 909. A continued focus of the 2001 edition was the need to have a structured fire prevention program that would be carried out by the facility operator.

The status of the 2001 edition was upgraded to a code, rather than a standard, in recognition of the wide range of requirements that exist in NFPA 909. Specifically, sections of NFPA 909 stipulate when and where certain requirements are mandatory. In addition to those changes, the chapter on historic structures and buildings was completely revised. That chapter defers to NFPA 914, *Code for Fire Protection of Historic Structures*.

The 2005 edition of NFPA 909 underwent a major reorganization in accordance with the *Manual of Style for NFPA Technical Committee Documents*. Technical changes included the deletion of a previous annex on fire risk assessment in heritage premises in favor of reference to more current approaches to the subject. Other changes included the type of automatic sprinklers to be used in cultural resource properties and the activation of fire dampers. In addition, emergency action checklists and inspection forms were added for places of worship.

The 2010 edition of NFPA 909 was a complete revision that reflected the addition of security to the committee's scope. Technical changes included the addition of "hazards other than fire" to the goals and objectives; required a vulnerability assessment; added new chapters on planning for protection, emergency operations, and security; and included a new annex describing commonly used premises protection systems and equipment.

Building on the myriad changes made for the 2010 edition, the committee added new provisions to the 2013 edition and clarified many requirements. The application and use of certain materials such as noncombustible and limited-combustible materials were revised to note how they are to be used rather than simply defining them. A number of changes were accepted that centered on the operational features of the facility — a critical component in these occupancies. The changes included determining the loss thresholds that a property can tolerate, maintaining a line of communication with the authority having jurisdiction, and clarifying the list of elements that the vulnerability assessment needs to consider. An expanded set of requirements was added to assist the governing body in executing supplemental inspections of automatic sprinkler systems with regard to concerns over interior corrosion.

Updates for the 2017 edition included expanded provisions for outdoor collections and archaeological sites and their protection against wildfire; further clarification of sprinkler system corrosion protection criteria; mandated integrated system testing per NFPA 4, *Standard for Integrated Fire Protection and Life Safety System Testing*; and the addition of numerous events to Annex B, Fire Experience in Cultural Properties.

Revisions for the 2021 edition include an added reference to the emergency action plan requirements of NFPA *101* to Chapter 6, as well as the addition of cyber attack and active shooter events to the vulnerability assessment criteria in Chapter 8. References to ASTM E119 and UL 263 have also been added for the determination of fire resistance rating and NFPA 241 for construction, alteration, and demolition operations in Chapter 9. Other revisions include expanded requirements for protection of wet collections, added guidance in Annex A on the selection of fire protection contractors, updated loss data and illustrative fires in Annex B, new information in Annex M on the second phase of the project addressing the effect of extinguishing agents on cultural resource materials, and updated referenced publications and extracts.

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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 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 909

Code for the

Protection of Cultural Resource Properties — Museums, Libraries, and Places of Worship

2021 Edition

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. 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 should be sent to the technical committee responsible for the source document.

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

Chapter 1 Administration

1.1 Scope.

1.1.1 This code describes principles and practices of protection for cultural resource properties (including, but not limited to, museums, libraries, and places of worship), their contents, and collections, against conditions or physical situations with the potential to cause damage or loss.

1.1.2 This code covers ongoing operations and rehabilitation and acknowledges the need to preserve culturally significant and character-defining building features and sensitive, often irreplaceable, collections and to provide continuity of operations.

1.1.3* Principles and practices for life safety in cultural resource properties are outside the scope of this code. Where this code includes provisions for maintaining means of egress and controlling occupant load, it is to facilitate the evacuation of items of cultural significance, allow access for damage limitation teams in an emergency, and prevent damage to collections through overcrowding or as an unintended consequence of an emergency evacuation.

1.1.4 Library and museum collections that are privately owned and not open to the public shall not be required to meet the requirements of this code.

1.2* Purpose. The purpose of this code shall be to prescribe a comprehensive program, consistent with the mission of the organization, that protects cultural resource properties and their contents and collections from conditions or physical situations having the potential to cause damage or loss.

1.3* Application. This code shall apply to culturally significant structures, spaces within other buildings used for culturally significant purposes, and their contents.

1.3.1 New Cultural Resource Property Occupancies. The requirements of this code shall apply to the following:

(1) New buildings or portions thereof occupied as a cultural resource property
(2) Additions made to a cultural resource property
(3) Existing buildings or portions thereof upon change of occupancy to a cultural resource property

1.3.2 Existing Cultural Resource Property Occupancies.

1.3.2.1 An existing building in which a cultural resource property occupancy is housed that was established prior to the effective date of this code shall be permitted to be approved for continued use if it conforms to or is made to conform to provisions of this code to the extent that, in the opinion of the authority having jurisdiction, reasonable protection is provided and maintained.

1.3.2.2 The requirements of this code shall apply when any of the following occur:

(1)* Changes in the construction classification, occupancy of a space, or the way a space is used
(2) Alterations, renovations, or modifications that affect the performance of existing fire protection features and systems, including fixed fire protection, detection and suppression, compartmentation, electronic premises security systems, and physical security devices
(3) Changes that add new sources of ignition or change the nature of the fire load
(4)* Modifications to operations that increase the vulnerability to deliberate acts by third parties, staff, or visitors; natural disasters; or other reasonably foreseeable hazards
(5) Changes in the contents that affect the performance of existing fire protection features and systems, including fixed fire protection, detection and suppression, compartmentation, electronic premises security systems, physical security devices, or features intended to mitigate the effects of other conditions or physical situations with the potential to cause damage or loss

1.3.2.3 Libraries, museums, and places of worship housed in historic structures shall also comply with the requirements of NFPA 914.

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:

(1) Technical documentation is submitted to the authority having jurisdiction to demonstrate equivalency or superiority.
(2) The system, method, or device is acceptable to the authority having jurisdiction.

1.4.2 Cultural resource properties or portions of such structures that do not strictly comply with this code shall be considered to be in compliance if it is shown that equivalent protection is provided or that in the opinion of the authority having jurisdiction no unacceptable risk is created or continued through noncompliance.

1.4.3 A designer capable of applying more complete and rigorous analysis to evaluate and address 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 eliminate 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 Compliance Options.

1.5.1 General. Building design, protection features, and protection programs meeting the collection preservation, building preservation, and continuity of operations goals and objectives of Chapter 4 shall comply with the provisions of 1.5.2, 1.5.3, or both.

1.5.2 Prescriptive-Based Options. A prescriptive-based design shall be in accordance with Chapters 1 through 8, Sections 9.1 through 9.12, Section 9.14, and Chapters 10 through 15 of this code.

1.5.3 Performance-Based Options. A performance-based design shall be in accordance with Chapters 1 through 8, Sections 9.1 through 9.11, Section 9.13, and Chapters 10 through 15 of this code.

1.5.4 Management Operational Systems. Management operational systems that comply with Chapter 10 of this code shall be permitted as an element of a prescriptive-based or performance-based solution.

1.6* Enforcement. This code shall be administered and enforced by the authority having jurisdiction designated by the governing authority. *(See Annex F for sample wording for enabling legislation.)*

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.

Δ 2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA, 02169-7471.

NFPA 1, *Fire Code,* 2021 edition.

NFPA 4, *Standard for Integrated Fire Protection and Life Safety System Testing,* 2021 edition.

NFPA 10, *Standard for Portable Fire Extinguishers,* 2018 edition.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam,* 2021 edition.

NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems,* 2021 edition.

NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems,* 2021 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 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,* 2019 edition.

NFPA 17, *Standard for Dry Chemical Extinguishing Systems,* 2021 edition.

NFPA 17A, *Standard for Wet Chemical Extinguishing Systems,* 2021 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems,* 2020 edition.

NFPA 30, *Flammable and Combustible Liquids Code,* 2021 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment,* 2020 edition.

NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials,* 2021 edition.

NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Film,* 2019 edition.

NFPA 42, *Code for the Storage of Pyroxylin Plastic,* 2002 edition.

NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals,* 2019 edition.

NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work,* 2019 edition.

NFPA 54, *National Fuel Gas Code,* 2021 edition.

NFPA 70®, National Electrical Code®, 2020 edition.

NFPA 72®, National Fire Alarm and Signaling Code®, 2019 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment,* 2020 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems,* 2021 edition.

NFPA 90B, *Standard for the Installation of Warm Air Heating and Air-Conditioning Systems,* 2021 edition.

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations,* 2021 edition.

NFPA *101®, Life Safety Code®,* 2021 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems,* 2019 edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances,* 2019 edition.

NFPA 232, *Standard for the Protection of Records,* 2017 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 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls,* 2019 edition.

NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth,* 2019 edition.

NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations,* 2018 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,* 2021 edition.

NFPA 731, *Standard for the Installation of Premises Security Systems,* 2020 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems,* 2019 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems,* 2020 edition.

NFPA 914, *Code for the Protection of Historic Structures,* 2019 edition.

NFPA 1123, *Code for Fireworks Display,* 2018 edition.

NFPA 1144, *Standard for Reducing Structure Ignition Hazards from Wildland Fire,* 2018 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems,* 2021 edition.

NFPA 2010, *Standard for Fixed Aerosol Fire-Extinguishing Systems,* 2020 edition.

2.3 Other Publications.

2.3.1 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,* 2020.

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials,* 2019.

ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C,* 2019a.

ASTM E1591, *Standard Guide for Obtaining Data for Fire Growth Models,* 2013.

ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C,* 2018.

ASTM E2965, *Standard Test for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Consumption Calorimeter,* 2017.

N **2.3.2 ICC Publications.** International Code Council, 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001.

ICC A117.1, *Accessible and Usable Buildings and Facilities,* 2017.

Δ **2.3.3 UL Publications.** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 263, *Fire Tests of Building Construction and Materials,* 2011, revised 2019.

UL 294, *Access Control System Units,* 2018.

UL 723, *Test for Surface Burning Characteristics of Building Materials,* 2018.

2.3.4 Other Publications.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code,* 2018 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 2019 edition.

NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work,* 2019 edition.

NFPA 72®, National Fire Alarm and Signaling Code®, 2019 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems,* 2018 edition.

NFPA *101®, Life Safety Code®,* 2018 edition.

NFPA 731, *Standard for the Installation of Electronic Premises Security Systems,* 2017 edition.

NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,* 2015 edition.

NFPA 914, *Code for the Protection of Historic Structures,* 2019 edition.

NFPA 921, *Guide for Fire and Explosion Investigations,* 2017 edition.

NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas,* 2017 edition.

NFPA 1451, *Standard for a Fire and Emergency Service Vehicle Operations Training Program,* 2018 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program,* 2018 edition.

NFPA 5000®, Building Construction and Safety Code®, 2018 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this code. 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* Code. A standard that is an extensive compilation of provisions covering broad subject matter or that is suitable for adoption into law independently of other codes and standards.

3.2.4* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall. Indicates a mandatory requirement.

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

3.2.7 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase "standards development process" or "standards development activities," the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Addition. An increase in the building area, aggregate floor area, height, or number of stories of a structure.

3.3.2 Alter/Alteration. A modification, replacement, or other physical change to an existing facility. [**5000,** 2018]

3.3.3 Analysis.

3.3.3.1 ***Sensitivity Analysis.*** An analysis performed to determine the degree to which a predicted output will vary given a specified change in an input parameter, usually in relation to models. [***101,*** 2018]

3.3.3.2 ***Uncertainty Analysis.*** An analysis performed to determine the degree to which a predicted value will vary. [***101,*** 2018]

3.3.4 Arson. The crime of maliciously and intentionally, or recklessly, starting a fire or causing an explosion. [**921,** 2017]

3.3.5 Barrier.

3.3.5.1 ***Fire Barrier.*** A continuous membrane or a membrane with discontinuities created by protected openings with a specified fire protection rating, where such membrane is designed and constructed with a specified fire resistance rating to limit the spread of fire. [***101,*** 2018]

3.3.5.2 ***Smoke Barrier.*** A continuous membrane, or a membrane with discontinuities created by protected openings, where such membrane is designed and constructed to restrict the movement of smoke. [**5000,** 2018]

3.3.6 Book Stack. Shelving dedicated to the storage of library materials.

3.3.6.1* ***Multi-Tier Book Stack.*** A system of back-to-back metal (steel or wrought iron) bracket shelving stacked by being bolted together into multiple levels or tiers at approximately 7 ft (2.1336 m) intervals to form a book stack with walkways for each tier suspended from the posts or columns supporting the bracket shelving sections in each range.

3.3.6.2 ***Single-Tier Book Stack.*** Freestanding bracket, cantilever, or case shelving enclosed on one floor by a fire compartment.

3.3.7* Buildings. Structures, usually enclosed by walls and a roof, constructed to provide support or shelter for an intended occupancy. [**5000,** 2018]

3.3.7.1 ***Existing Building.*** A building erected or officially authorized prior to the effective date of the adoption of this edition of the code by the agency or jurisdiction. [***101,*** 2018]

N **3.3.7.2** ***Historic Building.*** For the purpose of this code, a building that is designated, or deemed eligible for such designation, by a local, regional, or national jurisdiction as having historical, architectural, or cultural significance. [**914,** 2019]

3.3.8 Character-Defining Feature. A prominent or distinctive aspect, quality, or characteristic of a cultural resource property that contributes significantly to its physical character.

3.3.9 Collections. Prehistoric, historic, or religious objects, works of art, scientific specimens, archival documents, archeological sites and artifacts, library media, and cultural materials assembled according to some rational scheme and maintained for the purpose of preservation, research, study, exhibition, publication, or interpretation.

3.3.10 Collections Storage Room. An enclosure providing a safe and secure environment for collections including vaults and bookstacks.

3.3.11 Combination System. See 3.3.84.1.

3.3.12 Compact Storage Module. An assembly of shelving sections mounted on carriages with the arrangement of carriages on tracks so as to provide one moving aisle serving multiple carriages between fixed end ranges. *[See Figure H.1(a) and Figure H.1(b).]*

3.3.13 Compact Storage System. A storage installation composed of multiple compact storage modules. *[See Figure H.1(c).]*

3.3.14 Compartment. See 3.3.24.

3.3.15 Compliance. Adherence or conformance to laws and standards. [**914,** 2019]

3.3.15.1 ***Compliance Audit.*** An examination or inspection by the authority having jurisdiction or a designee to verify adherence to or conformance with design features and management programs required for the building to continue to satisfy the provisions of an approved performance-based alternative to a prescriptive code requirement.

3.3.16 Conservation. The professional practice of examination, documentation, treatment, and preventative care devoted to the preservation of a cultural resource property, collections, or both.

3.3.17* Cultural Resource Properties. Buildings, structures, or sites, or portions thereof, that are culturally significant or that house culturally significant collections for museums, libraries, and places of worship.

3.3.18 Damage Limitation. Written procedures that outline and prioritize the actions to take following a disaster to minimize property damage and loss.

3.3.19 Design Specification. A building characteristic and other conditions that are under the control of the design team. [**5000,** 2018]

3.3.20 Design Team. A group of stakeholders including, but not limited to, representatives of the architect, client, and any pertinent engineers and other designers. [***101,*** 2018]

3.3.21 Electronic Premises Security System. See 3.3.84.2.

3.3.22 Exposure Fire. A fire that starts at a location that is remote from the area being protected and grows to expose that which is being protected. [***101,*** 2018]

3.3.23 Fire Alarm System. See 3.3.84.3.

3.3.24 Fire Compartment. A space within a building that is enclosed by fire barriers on all sides, including the top and bottom. [***101,*** 2018]

3.3.25 Fire Hazard. Any situation, process, material, or condition that, on the basis of applicable data, can cause a fire or explosion or provide a ready fuel supply to augment the spread or intensity of a fire or explosion, all of which pose a threat to life or property.

3.3.26 Fire Model. Mathematical prediction of fire growth, environmental conditions, and potential effects on structures, systems, or components based on the conservation equations or empirical data. [**805,** 2015]

3.3.27 Fire Protection System. See 3.3.84.4.

Δ **3.3.28 Fire Resistance Rating.** The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as established in accordance with the test procedures of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*.

3.3.29* Fire Retardant. A liquid, solid, or gas that tends to inhibit combustion when applied on, mixed in, or combined with combustible materials. [**1,** 2018]

3.3.30* Fire Safety Manager. A person identified by the governing body who is responsible for developing, implementing, exercising, and conducting routine evaluations of fire safety provisions of the code.

N **3.3.31 Fire Suppression.** The activities involved in controlling and extinguishing fires. [**1500,** 2018]

Δ **3.3.32 Fire Watch.** The assignment of a person or persons to an area for the express purpose of notifying the fire department, the building occupants, or both, of an emergency; preventing a fire from occurring; extinguishing small fires; protecting the public from fire and life safety dangers. [**1,** 2018]

3.3.33 Firestop. A specific system, device, or construction consisting of the materials that fill the openings around penetrating items such as cables, cable trays, conduits, ducts, pipes, and their means of support through the wall or floor openings to prevent the spread of fire. [**5000,** 2018]

3.3.34 Fuel Load. The total quantity of combustible contents of a building, space, or fire area, including interior finish and trim, expressed in heat units or the equivalent weight in wood. [**921,** 2017]

3.3.35 Goal. A nonspecific overall outcome to be achieved that is measured on a qualitative basis. [***101,*** 2018]

3.3.36 Governing Body. The board of directors, trustees, owner, or other body charged with governance and fiduciary responsibility of a cultural resource property.

3.3.37 Hazard. A condition or a physical situation with a potential for loss or damage.

3.3.38* Hazardous Area. An area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure. [**5000,** 2018]

3.3.39 Historic Fabric. Original or added building or construction materials, features, and finishes that existed during the period that is deemed to be most architecturally or historically significant, or both.

3.3.40* Historic Structure. A building, bridge, lighthouse, monument, pier, vessel, or other construction that is designated or that is deemed eligible for such designation by a local, regional, or national jurisdiction as having historic, architectural, or cultural significance.

3.3.41 Hot Work. Work involving burning, welding, or a similar operation that is capable of initiating fires or explosions. [**51B,** 2019]

3.3.42* Impairment. An abnormal condition, during either a planned or emergency event, where a system, component, or function is inoperable. [**72,** 2019]

3.3.43* Incendiary Fire. A fire that has been deliberately ignited under circumstances in which the person knows the fire should not be ignited.

3.3.44 Initiating Device. A system component that originates transmission of a change-of-state condition, such as in a smoke detector, manual fire alarm box, or supervisory switch. [**72,** 2019]

3.3.45 Input Data Specification. Information required by the verification method. [***101,*** 2018]

3.3.46* Library. Any building or place in which books and other media are kept for reading, reference, research, or lending.

3.3.47 Limited-Combustible Material. See 9.12.7.2.

3.3.48* Management Operational Systems. Management initiatives, such as oversight and intervention, planning, and staff training used as an element in achieving compliance with prescriptive or performance-based code solutions.

3.3.49 Means of Egress. A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge. [***101,*** 2018]

3.3.50 Modification. The reconfiguration of any space, the addition or elimination of any door or window, the addition or elimination of load-bearing elements, the reconfiguration or extension of any system, or the installation of any additional equipment. [**5000,** 2018]

3.3.51* Museum. An institution that acquires, conserves, researches, communicates, and exhibits material evidence of people and their environment for purposes of study, education, and enjoyment.

3.3.52 Noncombustible Material. See 9.12.7.1.