

NFPA[®]

232

**Standard for the
Protection of Records**

2017



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NFPA®232

Standard for the Protection of Records

2017 Edition

This edition of NFPA 232, *Standard for the Protection of Records*, was prepared by the Technical Committee on Record Protection. It was issued by the Standards Council on May 13, 2016, with an effective date of June 2, 2016, and supersedes all previous editions.

This edition of NFPA 232 was approved as an American National Standard on June 2, 2016.

Origin and Development of NFPA 232

The destructive fire in the general offices of the Chicago, Burlington, and Quincy Railway in Chicago on March 25, 1922, was clear proof that valuable and often irreplaceable business records, unless properly protected, can be destroyed even in so-called “fire-resistive” buildings. Following that destructive fire, the Committee on Record Protection was organized. Reports were submitted annually from 1923 through 1936 and again in 1939. In 1947, a standard was developed from the officially adopted committee reports of 1942 to 1946. In 1960, the standard underwent major editorial revision and was revised again in 1963, when the title was changed from *Protection of Records* to *Standard for the Protection of Records*, 1967, and 1970. In 1975, the standard was reconfirmed. The 1980 edition reformatted the standard to conform to the NFPA *Manual of Style* and revised the detail specifications to performance-oriented requirements. The 1986 edition was a reconfirmation of the 1980 edition.

Changes to the 1991 edition included a reclassification of certain types of records. New provisions were added for the construction, arrangement, and protection of file rooms. These changes further increased the chance that vital documents would be spared during most fire events.

The 1995 edition incorporated several editorial changes and the inclusion of a retroactivity clause and further addressed the protection requirements for non-paper records media.

The 2000 edition incorporated NFPA 232A; where appropriate, the information that had been contained in NFPA 232A was included as enforceable language. The documents were combined because both contained similar information. Requirements for housekeeping and emergency planning were included to provide guidance during emergency conditions and recovery operations.

In addition to being reformatted in accordance with the *Manual of Style for NFPA Technical Committee Documents*, the 2007 edition of NFPA 232 was reorganized to clearly provide requirements for each storage environment and to consolidate general requirements. Considerable effort was made to provide requirements for compartmented records centers.

In the 2012 edition, unenforceable language was removed and several editorial changes were incorporated. The term *authorized* was defined and substituted for the term *approved* throughout the document. Protection against exposure fire was collaborated among all chapters and clarified in Chapter 4. Chapter 7 was revised in its entirety, clarifying archive protection.

Guidance regarding storage of electronic media has been added to the 2017 edition, including a clear reference to NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*. Record definitions have been organized into subcategories addressing record medium, record type, and record status. The term *fire resistance* has been replaced with *fire resistance rating* throughout the document.

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Committee Scope: This Committee shall have primary responsibility for documents on the protection of books, papers, plans, and other records from loss incident to fire.

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Standard for the

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2017 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 F. 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 F.

Chapter 1 Administration

1.1* Scope.

1.1.1* This standard provides minimum requirements for protection of records, records protection equipment and facilities, and the types of records specified within this standard from the hazards of fire.

1.1.2 This standard provides requirements for the following categories of records storage environments in ascending order of increasing risk tolerance and descending protection requirements:

- (1) Vaults
- (2) Archives

- (3) File rooms
- (4) Compartmented records centers
- (5) Noncompartmented records centers

1.1.3 This standard also provides the requirements for the application of the types of records protection equipment specified within this standard.

1.1.4* This standard does not provide any requirements for the protection of cellulose nitrate film records. NFPA 40 shall be followed for protection requirements for cellulose nitrate film.

1.1.5 This standard does not provide any requirements for the storage and handling of useful records.

1.1.6 The responsible party, typically the owner of the records and not the authority having jurisdiction, shall determine classification of the records in accordance with this standard.

1.1.7* The responsible party, typically the owner of the records and not the authority having jurisdiction, shall determine which records justify the application of this standard.

1.2* Purpose. This standard is prepared for the use and guidance of those charged with purchasing, planning, surveying, classifying, retaining, designing, constructing, installing, inspecting, approving, listing, operating, or otherwise handling of records, or maintaining equipment and facilities that protect the types of records covered by this standard against the hazards of fire and its associated effects.

1.3 Retroactivity. The provisions of this standard reflect a consensus of what is necessary to provide an acceptable degree of protection from the hazards addressed in this standard at the time the standard was issued.

1.3.1 Unless otherwise specified, the provisions of this standard shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. Where specified, the provisions of this standard shall be retroactive.

1.3.2 In those cases where the responsible party, typically the owner of the records, determines that the existing situation presents an unacceptable degree of risk, the responsible party shall be permitted to apply retroactively any portions of this standard deemed appropriate.

1.3.3 The retroactive requirements of this standard shall be permitted to be modified if their application clearly would be impractical in the judgment of the responsible party.

1.4 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.

1.4.1 Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.4.2 The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

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 10, *Standard for Portable Fire Extinguishers*, 2013 edition.

NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*, 2015 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2016 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2016 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 2017 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 2016 edition.

NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Film*, 2016 edition.

NFPA 54, *National Fuel Gas Code*, 2015 edition.

NFPA 58, *Liquefied Petroleum Gas Code*, 2017 edition.

NFPA 70®, *National Electrical Code*®, 2017 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*, 2016 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, 2016 edition.

NFPA 80A, *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, 2017 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 2015 edition.

NFPA 101®, *Life Safety Code*®, 2015 edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, 2015 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2015 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems*, 2017 edition.

NFPA 1600®, *Standard on Disaster/Emergency Management and Business Continuity Programs*, 2016 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2015 edition.

2.3 Other Publications.

2.3.1 ANSI/ARMA Publications. ARMA International, 11880 College Blvd., Suite 450, Overland Park, KS 66210.

ANSI/ARMA 5, *Vital Records Programs: Identifying, Managing, and Recovering Business-Critical Records*, 2010.

2.3.2 ANSI/UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 72, *Standard for Tests for Fire Resistance of Record Protection Equipment*, 2001, revised 2009.

ANSI/UL 155, *Standard for Tests for Fire Resistance of Vault and File Room Doors*, 2000, revised 2009.

ANSI/UL 263, *Fire Tests of Building Construction and Materials*, 2011.

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

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2015.

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 70®, *National Electrical Code*®, 2014 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment*, 2016 edition.

NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*, 2015 edition.

NFPA 1250, *Recommended Practice in Fire and Emergency Services Organization Risk Management*, 2015 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 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

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 or 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 Archive. A facility or area within a records center, designed for the protection of archival materials and records, typically designed to be fire resistive.

3.3.2 Authorized. Acceptable to the responsible party.

3.3.3 Building.

3.3.3.1* Fire-Resistive Building. A building of Type I or Type II (222) construction in which the structural members, including walls, partitions, columns, floors, and roofs are of noncombustible or limited-combustible materials.

3.3.3.2 Non-Fire-Resistive Building. A building of that type of construction in which the structural members, including walls, partitions, columns, floors, and roofs, do not qualify as fire-resistive as defined herein.

3.3.4 Communications Equipment. The electronic equipment that performs the telecommunications operations for the transmission of audio, video, and data, and includes power equipment (e.g., dc converters, inverters, and batteries), technical support equipment (e.g., computers), and conductors dedicated solely to the operation of the equipment. [70:100]

3.3.5* Compartment. In records storage environments, a space created by the subdivision of a building by fire-resistant construction.

3.3.6 Door.

3.3.6.1 File Room Door. A listed assembly that is designed to protect paper records against fire for the duration of the door's rated exposure.

3.3.6.2 Vault Door. A listed and labeled assembly, evaluated in accordance with ANSI/UL 155, that provides a specific degree of fire protection to the opening for the duration of the door's rated exposure.

3.3.7 File Room. A fire-resistive enclosure that provides less fire protection than a vault and is used for the storage of records.

3.3.8* Fire Resistance Rating. The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as determined by the tests, or methods based on tests, prescribed by this standard. [221, 2015]

3.3.9 Information Technology Equipment (ITE). Equipment and systems rated 600 volts or less, normally found in offices or other business establishments and similar environments classified as ordinary locations, that are used for creation and manipulation of data, voice, video, and similar signals that are

not communications equipment as defined in Part I of Article 100 and do not process communications circuits as defined in [800.2 of NFPA 70]. [70:645.2]

3.3.10 Information Technology Equipment System. Any electronic digital or analog computer, along with all peripheral, support, memory, programming, or other directly associated equipment, records, storage, and activities. [75:3.3.14]

3.3.11 Mobile Shelving. A system of records storage, usually a type of open-shelf file equipment, also known as track files, compaction files, or movable files, in which sections or rows of shelves are manually or electrically moved on tracks to provide access aisles.

3.3.12 Open-Shelf File Equipment. Any shelving that does not enclose file compartments on six sides.

3.3.13* Processing Area. An area used for preparing records for storage.

3.3.14 Record.

3.3.14.1* Record Medium.

3.3.14.1.1 Electronic Record. A record on information technology equipment or communications equipment (as defined by NFPA 75) or on off-line storage media such as computer tape, magnetic disk drives, optical disks, and flash drives.

3.3.14.1.2 Hardcopy Record. A record whose information or value is usable without the aid of support equipment or tools. Examples include paper records and art.

3.3.14.2 Record Type.

3.3.14.2.1 Archival Material/Record. A record that was created or received and accumulated by a person or organization in the course of the conduct of affairs and that has been preserved because of its historical or continuing value.

3.3.14.2.2 Important Record. A record for which a reproduction, although acceptable as a substitute for the original, could be obtained only at considerable expense and labor or only after considerable delay.

3.3.14.2.3* Permanent Record. A record that has been determined to have sufficient value to warrant its permanent retention and preservation.

3.3.14.2.4* Useful Record. A record that is normally accumulated in operations and is kept for a time period established by the responsible party.

3.3.14.2.5* Vital Record. A record that is irreplaceable or that contains information for which temporary unavailability could constitute a serious legal or business impairment.

3.3.14.3 Record Status.

3.3.14.3.1 Active Record. A record that is needed to perform current operations.

3.3.14.3.2 Inactive Record. A record that does not have to be readily available for current business operations or use.

3.3.14.3.3 Unscheduled Record. A record in which the final disposition has not been authorized by the responsible party.

3.3.15 Records Center. A building or enclosure having a minimum storage volume of records exceeding 50,000 ft³ (1416 m³) used for the retention of records.

3.3.16 Records Protection Equipment. Self-contained movable devices of varying configurations, including insulated bodies with insulated doors or drawers or lids, nonrated multi-drawer devices housing individually rated drawer bodies, and other similar constructions.

3.3.17 Responsible Party. The owner of the records or such organization, office, or individual charged by the owner with the classification, retention scheduling, and disposition of records if so designated in writing by the owner at the time of such designation.

3.3.18 Risk Management. The process of planning, organizing, directing, and controlling the resources and activities of an organization in order to minimize detrimental effects on that organization. [1250, 2015]

3.3.19 Slab. A poured concrete floor–ceiling assembly.

3.3.20 Vault.

3.3.20.1 Ground-Supported Vault. A vault that is supported from the ground up and that is structurally independent of the building in which it is located.

3.3.20.2 Standard Records Vault. A completely fire-resistive enclosure used exclusively for records storage.

3.3.20.3 Structure-Supported Vault. A vault that is supported by the framework of a fire-resistive building and that can be supported individually on any floor of such a building.

3.3.21 Vault Floor. The ground-supported slab or the slab between vaults in a tier.

3.3.22 Vault Roof. The ceiling or roof of a single vault and the ceiling or roof of the top vault of a tier, but not the slab between vaults in a tier, which is classified as a floor.

Chapter 4 General Requirements

4.1* Required Levels of Protection. The requirements of Section 4.1 and its subsections shall be used by the responsible party to determine the levels of protection required for the types of records covered by this standard.

4.1.1 Records shall be permitted to be stored as shown in Table 4.1.1.

4.1.2 Vital records shall be maintained in a records vault or, for small volumes, in listed 2-hour records protection equipment in a fire-resistive building.

4.1.3 Archival material shall be maintained in an archive or vault.

4.1.4 Important, permanent, and unscheduled records shall be maintained in a records vault, a file room, an archive, or a records center.

4.1.5* Active or inactive records shall be maintained in a file room or a records center.

4.1.6* Duplication shall be permitted to be used as a method of record protection.

Table 4.1.1 Allowable Storage Environments

Record Type	Vault	Archive	File Room	Records Center
Vital	x	NP	NP	NP
Archival material	x	x	x	x
Important	x	x	NP	NP
Permanent	x	x	x	x
Active	x	x	x	x
Inactive	x	x	x	x
Unscheduled records	x	x	x	x

NP: Not permitted

Notes:

(1) Nothing in this table precludes the storage of records in an environment providing a higher level of protection.

(2) Any record type is permitted to be stored in records protection equipment rated for the media stored.

4.1.7* Where duplication is used as a method of record protection, the duplicated records shall be stored in a separate location not subject to a single fire event.

4.1.8 Where electronic records are stored on information technology equipment systems, the systems shall be protected in accordance with NFPA 75.

4.2* Establishment of Risk Tolerance.

4.2.1 The responsible party shall establish an acceptable level of risk tolerance for both limited and catastrophic events.

4.2.2 Vaults, archives, and records centers shall be protected by a professionally designed fire protection system specifically designed to achieve the stipulated level of risk tolerance.

4.2.3 If the design is not in strict compliance with established NFPA standards (e.g., NFPA 13), the authority having jurisdiction shall be permitted to require design verification through full-scale fire testing by an independent organization acceptable to the authority having jurisdiction.

4.3* Responsibility of the Records Manager and Archivist or Responsible Party. The responsible party shall determine which, if any, of the records need a higher level of protection as provided by the use of records and/or media vaults, safes, or insulated containers.

4.4 Fire Risk Evaluation Factors. In considering the protection of records stored en masse, the following basic factors shall be evaluated:

- (1) The exposure from the building housing the records, from nearby buildings, or from neighboring operations (e.g., the possibility of involving the records in a fire originating outside of the records facility)
- (2) The potential of fire initiation within the records facility, including the susceptibility of the records or containers to ignition
- (3) The potential of fire development posed by the stored records themselves, particularly as that potential relates to the available or proposed fire control capabilities or mechanisms
- (4) The potential impact of fire development in the stored records on the housing structure and adjacent operations

- (5) The fire control systems with the resultant extent and type of damage from fire, fire effects (e.g., heat, smoke), and fire-extinguishing efforts (principally water and physical disruption of records necessary to effect manual fire fighting)
- (6) The potential threat to life of occupants and fire service personnel
- (7)* The potential for arson

4.5* Exposure.

4.5.1 As part of the fire risk evaluation of Section 4.4, the responsible party shall include the potential for the records to be destroyed by a fire that initiates in an area external to the operations.

4.5.2 The building exterior and tenant separations shall meet or exceed the requirements of the local building code and this standard.

4.6* Operations in Records Storage Areas.

4.6.1 Records storage areas shall be separated from offices and research rooms by a minimum 1-hour rated fire barrier.

4.6.2 Other fire risks in the records storage areas shall be reduced by the following means:

- (1) Prohibiting the use of gasoline or diesel-fueled forklifts
- (2) Prohibiting the use of portable space heaters, lights on extension cords, hot plates, coffee makers, duplicating devices, battery chargers, welding or cutting torches, and other such ignition sources within storage areas
- (3) Prohibiting the storage of oils, paints, or other flammables in or contiguous to the records areas
- (4) Prohibiting smoking in the building
- (5) Prohibiting storage of cellulose nitrate film in records vaults, file rooms, archives, or records centers
- (6) Use of impact-resistant records protection equipment where buildings are not provided with automatic sprinkler protection

4.7 Housekeeping.

4.7.1 Stairwells, corridors, doorways, and any other portions of the means of egress for a building shall be free of combustibles, trash containers, and other materials.

4.7.2 Electrical rooms, mechanical rooms, and telephone closets shall be kept free of combustibles and locked.

4.7.3 Stacks, exhaust ducts, and filters shall be cleaned as frequently as necessary to prevent the buildup of combustible dusts and fibers.

4.7.4 Packing Materials.

4.7.4.1 Combustible packing materials, such as shredded paper, Styrofoam™ peanuts, plastic, and excelsior, shall be stored in metal containers with self-closing covers.

4.7.4.2 Areas where packing materials cannot be protected using these methods, such as dedicated crating and packing areas, shall be enclosed in 1-hour fire-resistive construction or shall be protected by an automatic sprinkler system.

4.7.5 Dumpsters.

4.7.5.1 Dumpsters or compactors used for bulk collection of trash or recyclable paper shall be constructed of metal with metal or plastic covers.

4.7.5.2 Dumpsters and other large trash containers, if inside buildings, shall be stored in one of the following:

- (1) In trash rooms having both automatic sprinklers and a 1-hour fire resistance rating
- (2) In loading dock areas having both automatic sprinklers and a 1-hour fire resistance rating

4.7.6 Trash shall be collected and disposed of to prevent unreasonable or excessive accumulation as necessary.

4.8 Emergency Planning.

4.8.1 General. Emergency planning shall be performed.

4.8.1.1 Emergency plans shall be based upon hazard identification and risk assessment in accordance with Section 5.3 of *NFPA 1600* and ANSI/ARMA 5.

4.8.1.2 A strategy to eliminate hazards or mitigate the effects of hazards that cannot be eliminated shall be developed in accordance with Section 5.4 of *NFPA 1600*.

4.8.2 Planning for Response.

4.8.2.1* An emergency management plan shall be developed and implemented.

4.8.2.1.1 There shall be an annual review to ensure that management and staff can implement and work with the plan and incorporate lessons learned from the review into an updated plan.

4.8.2.1.2 The plan shall include provisions for notifying the fire department of the type and location of the emergency and directing them to the site once they arrive.

4.8.2.1.3 Emergency telephone numbers shall be posted conspicuously.

4.8.2.2 An emergency evacuation plan shall be prepared in cooperation with the local fire department and other applicable authorities and updated annually. The plan shall include the following:

- (1) Fire safety precautions when normal operational conditions are substantially changed
- (2) Fire safety precautions to make necessary adjustments for temporary storage
- (3) Modification of staff training and drills to adjust for circumstances created by special conditions
- (4) Provisions to notify the local fire service of special conditions expected to require adjustments to the emergency evacuation plan

4.8.2.3 Fire exit drills shall be conducted annually.

4.8.2.3.1 Fire exit drills shall be in accordance with *NFPA 101*.

4.8.3 Recovery Plan. A recovery plan shall be prepared in cooperation with the fire department, appropriate building staff, police, and insurance representatives. This plan shall be updated annually and shall include the following:

- (1) Procedures to identify and prioritize collections and other valuable materials in accordance with the facility's policy.
- (2) A list of recovery equipment suppliers (e.g., pumps, freezing equipment, storage facilities, and so forth) and tradespeople.

- (3) A current list of disaster recovery specialists for damaged fine arts, collections, and archives, such as conservators from museums, archives, and other cultural properties willing to lend mutual aid assistance.
- (4) A list of people assigned to assist with recovery operations, including staff to deal with the press, fire authorities, police, and authorities that can restrict entry following a fire of suspicious origin.
- (5) Measures to maintain up-to-date copies of important documents in a secure, off-site location. Examples of such records include, but are not limited to, the following:
 - (a) Collections inventories (e.g., accession, catalog, conservation, and loan documents along with copies of donation and gift forms)
 - (b) Historical records (including baptismal and wedding records)
 - (c) Essential business and insurance records
 - (d) Building plans and systems documentation (e.g., drawings, specifications, and operating manuals)
- (6) Procedures to identify and handle hazardous materials, such as asbestos or pentachlorophenol (PCPs), that can cause a health hazard or contaminate the structure or contents after a fire, including impoundment of fire-fighting water where it poses a hazard to the environment.

4.8.4 Fire Protection Plan.

4.8.4.1 Format of Plan.

4.8.4.1.1 A fire protection plan shall be developed for systematic achievement of fire safety goals and updated annually.

4.8.4.1.2 This plan shall include a yearly comprehensive facility inspection procedure with a documentation and corrective action process to ensure that all problems and hazards identified during the inspection are documented and corrected.

4.8.4.2 Fire Safety Log.

4.8.4.2.1 A permanent, current file of the facility's fire protection program shall be maintained.

4.8.4.2.2 Records documenting the following shall be kept in accordance with the corporate records retention schedule or the related installation code or standard:

- (1) Training of staff, including fire evacuation drills and use of portable fire extinguishers
- (2) Testing, inspection, and maintenance reports for all fire safety equipment and systems, including records of actions taken to correct deficiencies
- (3) "As-built" plans, specifications, wiring and layout diagrams, and acceptance test reports for all fire protection systems (e.g., fire detection and alarm systems, automatic fire suppression systems)
- (4) The facility's fire protection plan
- (5) The facility's emergency plan
- (6) Inspection reports by local code enforcement officials, the authority having jurisdiction, local fire service officials, and insurance loss control representatives, including records of actions taken to correct deficiencies identified during each inspection

- (7) Fire protection systems actuation and alarm reports complete with the cause of the alarm or activation, response, and corrective action(s) taken
- (8) Full reports, including cause, extent of damage, response, and recovery of all fire incidents

4.8.5 Training. The staff shall receive training in all aspects of the following:

- (1) The emergency management plan
- (2) The emergency evacuation plan
- (3) The recovery plan
- (4) The fire protection systems
- (5) The use of portable extinguishers

4.8.6 Inspection, Testing, and Maintenance.

4.8.6.1 Where water-based fire suppression systems protect records, they shall be inspected, tested, and maintained in accordance with NFPA 25.

4.8.6.2 Where other fire protection systems are installed, they shall be inspected, tested, and maintained in accordance with the related installation or maintenance standard.

4.9 Fire Suppression Systems and Signaling Equipment.

4.9.1* Where required, an automatic sprinkler system shall be designed and installed in accordance with NFPA 13.

4.9.2 Where records media are mixed (e.g., paper and magnetic tape), the design shall be for the highest hazard commodity.

4.9.3 In lieu of sprinkler protection, a gas extinguishing system shall be permitted to be in accordance with NFPA 2001 or NFPA 12A.

4.9.4 In lieu of sprinkler or gaseous extinguishing systems, a water mist system shall be permitted in accordance with NFPA 750.

4.9.5 Sprinkler and gas extinguishing systems shall be supervised by a listed fire alarm system.

4.9.6 Fire detection and alarm systems shall meet the requirements of NFPA 72.

4.9.7 Fire extinguishers shall be provided in accordance with NFPA 10.

4.10* Protection Against Exposure Fires.

4.10.1 The exterior walls of the vault, archive, file room, or records center facing adjacent buildings shall be protected or rated in accordance with the requirements of NFPA 80A and the local building code.

4.10.2 Where openings in an exposed wall are necessary, provision shall be made to prevent the transmission of heat or flames in accordance with the requirements of NFPA 80A and the local building code.

4.11 Existing Systems. Where new file rooms, vaults, archives, or record centers are developed in buildings equipped with existing fire protection systems, written confirmation shall be obtained from a qualified fire protection professional that the existing fire protection systems meet or exceed the requirements of NFPA 13 for the occupancy.

Chapter 5 Building Equipment and Facilities

5.1 Heating Systems.

5.1.1* Boilers and furnaces of central heating systems shall be separated from the remainder of the structure by rated fire walls or separations.

5.1.2 Oil-fired and gas-fired heating equipment, piping, and fuel oil storage facilities shall be installed and maintained in accordance with the requirements of NFPA 54, NFPA 58, and/or NFPA 31.

5.1.3 Heating equipment shall be inspected and serviced at least annually by qualified personnel or a service contractor.

5.1.4 All heating units shall have safety devices for the particular type of installation.

5.1.5 Combustibles, such as paper, wood, and textiles, shall be kept away from steam piping or other heat piping and ducts.

5.1.6* Where gas is used as fuel for heating, the requirements for safety and fire protection shall be in accordance with NFPA 54.

5.1.7 The requirements for the use of liquefied petroleum gas as fuel shall be in accordance with NFPA 58.

5.1.8 The installation of oil burners and equipment used with them shall be in accordance with NFPA 31.

5.1.9 The requirements of NFPA 90A shall be applied to air duct systems used for heating and ventilating.

5.2 Electrical Systems.

5.2.1 Installation and modifications to provide for the changing needs of the records center or archive, including lighting, television, sound systems, shop machinery, and appliances, shall be made by licensed or qualified electricians in accordance with *NFPA 70*.

5.2.2 The equipment shall be listed.

5.3* Locking Devices.

5.3.1 Locking devices on egress doors shall comply with NFPA 101.

5.3.2 A daily functional test protocol shall be conducted by an individual specifically assigned the responsibility.

5.4 Air-Conditioning and Ventilation Systems.

5.4.1 If provided, central air-conditioning equipment shall be located and installed in a manner that does not increase fire hazards in records centers, vaults, file rooms, or for archives' facilities.

5.4.2 Where air-conditioning ducts penetrate rated walls, they shall be equipped with automatic fire dampers and fan shutoffs in accordance with NFPA 90A.

5.5* Lightning Protection. NFPA 780 shall be used in applying methods of protecting buildings from damage by lightning.

Chapter 6 Standard Records Vault

6.1 General.

6.1.1 The vault shall be equipped, maintained, and supervised to minimize the possibility of origin of fire within and to prevent entrance of fire from outside for a specified period of time.

6.1.2 To resist the maximum expected exposure fire, a vault shall be constructed as specified herein with a minimum fire rating of 4 hours in noncombustible constructed buildings and 6 hours in combustible constructed buildings.

6.1.3 Structures or buildings containing vaults shall meet or exceed the requirements of the local building code.

6.2 Design.

6.2.1 In a fire-resistive building, the vault shall be of either the ground-supported or the structure-supported type.

6.2.2* In a non-fire-resistive building, the vaults shall be of the ground-supported type, and the walls of a building shall not be used as walls of the vault.

6.2.3* Plans and specifications shall be prepared and construction shall be supervised by a licensed or registered structural engineer or architect in consultation with a licensed or registered fire protection engineer.

6.2.4 The design and construction of a vault shall provide a flame barrier and a heat retardant to limit damage to the interior of the vault.

6.2.4.1 The vault design shall take into consideration floor loading to avoid settlement and consequent cracking.

6.2.4.2 The design shall maintain the integrity of the vault structure under the stresses and impacts to which it can be subjected during a fire.

6.3* Location. Vaults in non-fire-resistive buildings shall be located to reduce the probability of exposure to falling heavy objects.

6.4 Size. For the purpose of restricting the quantity of vital records exposed to destruction by fire in a single enclosure and reducing the possibility of fire originating within a vault, the vault volume shall not exceed 5000 ft³ (142 m³), and the interior height shall not exceed 12 ft (3.7 m). (*For conditions requiring storage of a larger volume of vital records, see Section 6.14.*)

6.5 Foundations.

6.5.1 Ground-Supported Vaults.

6.5.1.1 Foundations for vaults shall carry the entire load of the vault or tier of vaults and contents without settlement or cracking.

6.5.1.2 Unburied structural members supporting vaults shall have a fire resistance rating at least equal to that of the vault.

6.5.2 Structure-Supported Vaults.

6.5.2.1* The supporting structures for vaults shall be of a strength to carry the full load, including the wet weight of the vault structure and its contents.

6.5.2.2 There shall be no combustible material in any portion of the building structural members that support the vault.

6.5.2.3 All building structural members that support the vault shall have a fire resistance rating at least equal to that of the vault.

6.6 Floor.

6.6.1 Floors shall be noncombustible and shall have floor surfacing limited to concrete sealer.

6.6.2 In structure-supported vaults, the floor of the fire-resistive building shall be permitted to serve as the floor of the vault, provided it is of noncombustible construction throughout and complies with the following:

- (1) Floors above grade shall be adequate to support the full load (wet weight) and shall have an unrestrained fire resistance rating equivalent to that required for the walls of the vault. (See Section 6.7.)
- (2) Floors above grade shall not be pierced for any purpose.
- (3) The floor of the vault installed above grade shall have a fire resistance rating that is not less than the fire resistance rating of the walls and ceiling.
- (4) If the floor of the supporting building cannot be upgraded to the required 4-hour fire resistance rating, the storage area shall not be considered a vault.

6.7 Walls.

6.7.1 Materials. Walls shall be noncombustible and of fire-resistive construction throughout.

6.7.2 Structure-Supported Vaults. The walls of a structure-supported vault shall follow the column lines of the building.

6.7.3 Reinforcing Rods. Reinforcing rods in concrete shall be located to limit the potential of failure from fire exposure.

6.7.4 Trim. Noncombustible material shall be used for trim or partitions within the vault.

6.7.5* Minimum Resistance.

6.7.5.1 The design shall provide the necessary minimum fire resistance rating (including compliance with the corresponding hose stream test) to account for structural considerations and variations in the quality of materials and workmanship.

6.7.5.2 The walls shall have lateral strength to withstand impact.

6.7.6 Openings in Walls.

6.7.6.1* The walls of vaults shall have no openings other than those necessary for access, electric lighting, power-limited circuits, ventilation, and sprinkler piping. (See 6.7.6.5 and 6.14.1.)

6.7.6.2 Door openings shall be protected with listed vault doors with a rating that meets or exceeds the ratings of the walls.

6.7.6.2.1 Doors shall not open into elevator, conveyor, or other shafts.

6.7.6.3 The number of door openings shall not exceed two for any single vault and shall be limited in size to that necessary for convenient ingress and egress and for ventilation.

6.7.6.4 Wall penetrations shall be sealed with a listed fire-rated through penetration assembly with a minimum rating that meets or exceeds the rating of the vault, to prevent smoke, heat, flame, or water penetration.

6.7.6.4.1 Conduit, if used, shall be sealed inside and outside.

6.7.6.5 Wall penetrations for sprinkler piping, electric lighting, conduit, and power-limited circuits shall be sealed with a listed fire-rated material with a minimum rating that meets or exceeds the rating of the vault to prevent smoke, heat, flame, or water penetration.

6.7.6.5.1 Conduit, if used, shall be sealed inside and outside.

6.7.6.6* Wall penetrations for ventilation shall be as small as possible and shall be protected to maintain the required rating of the wall.

6.7.6.6.1 In addition, smoke dampers activated by automatic sensing devices shall be provided.

6.7.7 Bonding.

6.7.7.1 Vault walls of masonry units shall be laid with corners that are well bonded for their full height.

6.7.7.2 If the floor construction of a fire-resistive building forms the roof of the vault, the joint between the top of the vault wall and the underside of the floor arch or slab shall be finished and filled with a listed sealing material that maintains the rating of the vault.

6.7.7.3 If any wall(s) of a building is of fire-resistive construction and forms part of the vault enclosure, the wall(s) of the vault that intersects with the building wall(s) shall be bonded or keyed into it.

6.7.7.3.1 The joints of the building walls to the vault shall be sealed with listed material that maintains the rating of the vault.

6.8 Independence from Building Structure.

6.8.1 Vault construction shall not be used as a support or bearing for the structural members of the building.

6.8.2 In ground-supported vaults, the walls and supports of vaults shall be structurally independent of the building.

6.9 Roof.

6.9.1 In non-fire-resistive buildings, the roofs of the vaults shall be entirely independent of the walls, floor, ceiling, columns, piers, or roof construction of the building.

6.9.2 In structure-supported vaults, the roof or the floor of the fire-resistive building shall be permitted to serve as the roof of the vault, provided it is of noncombustible construction throughout and complies with the following:

- (1) The roof of the vault shall be reinforced concrete or reinforced concrete on protected steel supports.
- (2) The roof of the vault shall have a fire resistance rating at least equivalent to that of the walls and shall have structural strength adequate to carry the design load or greater if subject to unusual impact or if exposed to fire from outside the vault.
- (3) All interior supports shall have a fire resistance rating equivalent to that of the walls.
- (4) The roofs of vaults shall not be pierced for any purpose.

6.10* Vault Door.

6.10.1* The vault door shall be listed and labeled in accordance with ANSI/UL 155.

6.10.2 The vault door shall have a fire resistance rating, in hours, equivalent to the fire resistance rating of the walls of the vault, as follows:

- (1) 6-hour vault — 6-hour door
- (2) 4-hour vault — 4-hour door

6.10.3 Installation of the vault door unit shall be made in conformity with instructions supplied by the manufacturer and shall be entrusted only to those experienced in such installation work.

6.10.4* The door-locking mechanism shall permit the door to be opened easily from the inside to prevent an individual from accidentally being locked in the vault.

6.10.5 Doors shall be equipped with an automatic closing device operated by a heat-actuated or smoke-actuated release for doors that are held in the open position.

6.11 Electrical Service.

6.11.1 All electrical service within the vault shall be enclosed in conduit and installed in accordance with *NFPA 70*.

6.11.2 The wiring shall provide as many fixed lamps as needed for illumination.

6.11.2.1 Pendant lamps and extension cords shall not be used within a vault.

6.11.2.2 Fixed lighting shall be used for illumination of all portions of the vault to preclude the use of matches or other hazardous lighting.

6.11.3 Lighting shall be limited to enclosed sealed-type fixtures controlled by a two-pole switch equipped with a pilot light outside the vault.

6.11.3.1 No other electrical devices or appliances shall be permitted within the vault.

6.11.3.2 Power-limited circuits shall be permitted within the vault.

6.12 Operating Practices.

6.12.1* Filing equipment shall be noncombustible throughout.

6.12.2 All records shall be stored in fully enclosed noncombustible containers.

6.12.3 The records in the filing equipment shall be not less than 3 in. (76 mm) above the floor.

6.12.4 Records containers shall be separated by at least 6 in. (152 mm) from piping and conduit that penetrates the wall. Where sprinklers are installed, records containers shall be kept 18 in. (457 mm) below sprinkler deflectors.

6.12.5 The vault shall be under supervision from opening until closing time, and inspections shall be made daily, particularly before closing time, to ensure that all records containers are closed, no records are left on top of the records containers or are elsewhere exposed, all wastepaper is removed, and the vault doors are closed and locked.

6.12.6 Vaults shall not be used as working spaces.

6.12.6.1 Desks, chairs, reference tables, or other surfaces suitable as working surfaces shall not be permitted in a vault.

6.12.7 Persons other than those authorized to handle the records shall not be permitted in the vaults.

6.13 Fire Suppression and Signaling Equipment.

6.13.1* Vaults shall be protected with an automatic fire suppression system in accordance with NFPA 13, NFPA 750, or NFPA 2001.

6.13.2 Where automatic fire detection systems are installed for providing warning of fire inside the vault, they shall be in accordance with Section 6.11 and *NFPA 72*.

6.13.3 Portable fire extinguishers rated for Class A fires in accordance with NFPA 10 shall be provided outside of the vault within 25 ft (7.6 m) of the vault door.

6.13.4 Where standpipe systems are provided, they shall be installed in accordance with NFPA 14 and they shall be located outside the vault and within 25 ft (7.6 m) of the vault door.

6.14 Oversize Vault.

6.14.1 Where the volume of vital records exceeds that which can be stored in a record vault of maximum permitted size [5000 ft³ (142 m³)], an oversize vault with a volume of not greater than 25,000 ft³ (708 m³) shall be designed and constructed as a standard vault and equipped with an automatic fire suppression system in accordance with NFPA 13, NFPA 750, or NFPA 2001.

6.14.2 Filing equipment shall be noncombustible but shall not be required to be completely enclosed.

6.14.3 Where mobile shelving is used, smoke detection in accordance with 6.13.3 shall be provided in addition to automatic sprinklers.

6.14.4 In accordance with 6.11.3, no electrically operated mobile shelving shall be permitted.

6.15 Existing Systems. Where new vaults are developed in buildings equipped with existing fire protection systems, the responsible party shall obtain written confirmation from a qualified fire protection professional approved by the authority having jurisdiction that the existing fire protection systems meet or exceed the requirements of NFPA 13 for the occupancy.

Chapter 7 Archives**7.1 General Requirements.**

7.1.1* Structures or buildings containing archives shall meet or exceed the requirements of the local building code.

7.1.2* Automatic sprinkler systems or other automatic suppression systems installed in accordance with NFPA 13, NFPA 750, or NFPA 2001 shall be required in all areas of an archive.

7.1.3* For an archive, the maximum storage volume of archival materials or records shall not exceed 125,000 ft³ (3540 m³) in a single compartment.