

NFPA 232A

Guide for Fire Protection for Archives and Records Centers

1995 Edition



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An International Codes and Standards Organization

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NFPA 232A

Guide for Fire Protection for Archives and Records Centers

1995 Edition

This edition of NFPA 232A, *Guide for Fire Protection for Archives and Records Centers*, was prepared by the Technical Committee on Records Protection and acted on by the National Fire Protection Association, Inc., at its Annual Meeting held May 22-25, 1995, in Denver, CO. It was issued by the Standards Council on July 21, 1995, with an effective date of August 11, 1995, and supersedes all previous editions.

This edition of NFPA 232A was approved as an American National Standard on August 11, 1995.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition.

Origin and Development of NFPA 232A

The Committee on Record Protection prepared NFPA 232A, *Guide for Fire Protection for Archives and Record Centers*, as a source for planning fire protection for collections of records stored in large volumes. It supplements NFPA 232, *Standard for the Protection of Records*, which does not contain provisions for protecting large archives and record centers. This document is neither a standard nor a recommended practice, but a guide that is intended to provide records managers and others responsible for safeguarding large collections with the information necessary to plan intelligently for fire protection. The guide was presented originally at the 1970 NFPA Annual Meeting, where it was tentatively adopted.

The revised 1980 edition was adopted officially on May 21, 1980, at the NFPA Annual Meeting in Boston, MA. It was released by the Standards Council on June 11, 1980. The 1986 edition was a reconfirmation of the 1980 edition.

The 1991 edition was revised completely in order to make it more understandable to the user. Most changes were editorial in nature. Substantive changes were made in two new chapters that address construction features as well as building equipment and associated facilities. New appendix material on salvage procedures for damaged library materials was added.

This edition of the standard incorporates editorial changes and provides expanded information with regard to fire alarm systems, maintenance of water-based fire protection systems, and security features.

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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 the protection of books, papers, plans, and other records from loss incident to fire.

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NOTICE: Information on referenced publications can be found in Chapter 8 and Appendix C.

Chapter 1 Introduction

1-1 Scope. This guide applies to collections of records in file rooms exceeding 50,000 ft³ (1416 m³) and to all archives and records centers.

Since its adoption in 1947, NFPA 232, *Standard for the Protection of Records*, has been the recognized standard for the protection of records against fire. However, this document is concerned primarily with relatively small quantities of records that are kept immediately accessible to the originator or user. NFPA 232A covers facilities larger than those contemplated in NFPA 232.

1-2 Purpose. The purpose of this guide is to provide recommendations for fire-safe storage in archives and records centers. It should be used where the size or character of the records holdings is not covered in NFPA 232, *Standard for the Protection of Records*, and to provide archivists, records managers, and others responsible for safeguarding large collections with the information necessary to plan intelligently for fire protection.

1-3 Definitions. For the purpose of this guide, the following terms have the meanings specified below.

Approved. Acceptable to the authority having jurisdiction.

NOTE: The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization concerned with product evaluations that is in a position to determine compliance with appropriate standards for the current production of listed items.

Archives. Noncurrent records preserved for their historic value; also applied to the building, structure, or enclosure where such records are deposited or retained.

Authority Having Jurisdiction. The organization, office, or individual responsible for approving equipment, an installation, or a procedure.

NOTE: The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building offi-

cial; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

File Room. An area used for the storage and reference of current records.

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.

Listed. Equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

Records Center. A building or enclosure used for the retention and reference of semicurrent records pending their ultimate disposition.

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

Chapter 2 General

2-1 Types of Record Media. This guide covers traditional paper records and records on magnetic, photographic, micrographic, and other special media. It is not possible to ensure total fire protection of records in archives and records center facilities. It is possible, however, to provide a very high level of fire protection that normally can limit the potential loss of records in such facilities. Therefore, it is important that the archivist or records manager is aware of the degree of protection available or, conversely, the degree of potential damage possible using the protection systems available for the archives or records center. The archivist or records manager should determine which, if any, of the records need the higher level of protection provided by the use of special vaults, safes, or insulated containers as specified in NFPA 232, *Standard for the Protection of Records*. It is essential that storage of cellulose nitrate film should not be permitted in archives or records centers. NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film*, should be referenced for these protection requirements.

2-2 Arrangement. Storage devices include, but are not limited to, traditional file cabinets, records storage boxes (corrugated or solid fiberboard cartons), transfer cases, and miscellaneous containers of varying construction. The usual arrangement consists of either cartons on freestanding shelving or filing cabinets. Locations can vary from a separate area within a general office complex to specially constructed records facilities. It is not uncommon for records to be stored in basements or attics, in office spaces, in factories or warehouses, or in underground or other readily available facilities, with all such facilities of various types of construction and levels of fire safety. Keeping all records storage at least 3 in. (76 mm) above the floor minimizes the effect of flooding.

2-3 Fire Risk Evaluation Factors. In considering the protection of records stored in mass, several basic factors should be evaluated:

(a) 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);

(b) The potential of fire initiation within the records facility, including the susceptibility of the records or containers to ignition;

(c) 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;

(d) The potential impact of fire development in the stored records on the housing structure and adjacent operations;

(e) 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); and

(f) The potential threat to life to occupants and fire service personnel.

2-4 Exposure. A maximum amount of care or the most sophisticated of protection systems within the records storage area is of little value for records stored within a structure that burns as a result of some occurrence or operation outside of the records area. Any archivist or records manager should consider the potential of the records being destroyed by a fire that initiates in an area external to the operations. The degree of additional risk imposed by neighbors varies according to the type and height of the building, the nature or hazard of the neighbors, and the type of protection used by the neighboring operations. Any reasonable degree of protection for records stored in mass quantities in any multistory building should include fire-resistive construction adequately designed to withstand the maximum fire impact of the exposing occupancy within. The same applies to single-story buildings unless a proper fire wall separates the records area from the remainder of the building. Where records need to be housed in a building that could burn around them, properly rated vaults, safes, or insulated containers capable of resisting a total burn-out as specified in NFPA 232, *Standard for the Protection of Records*, should be used and are the only known means of protection that can provide reasonable assurance of records recovery. Where a separate building or a segregated floor or section of a fire-resistive building is used for records storage, however, the methods described in the chapters that follow provide a degree of protection commensurate with the type of system selected.

2-5 Facility Design. The inherent risks in the storage of large quantities of records and the requirement for incorporation of appropriate passive and active systems to deter, detect, contain, and control records storage fires mandate that an experienced and competent fire protection engineer be consulted regarding the design of new facilities or major alterations to existing facilities.

2-6 Fire Prevention Program. The most important factor in preventing fire loss in records facilities is the maintenance of a good fire prevention program based on good housekeeping, orderliness, maintenance of equipment, and absolute prohibition of smoking or use of open-flame devices. All of these items are fundamental precepts of good records management. Experience has shown, however, that regardless of how careful or complete the fire prevention program, the risk of fire initiation through either human error or situations beyond the control of the archivist or records manager (such as lightning striking the facility) is a distinct possibility, and any program based entirely on fire prevention activities is perpetually at risk of a major disaster.

2-7 Operations in Records Storage Areas. Work within records storage areas normally is limited to placing records in, retrieving records from, or removing records from storage. Any additional operations could introduce ignition hazards and could be inappropriate in records storage areas. In archival facilities, records storage areas should be separated from processing areas, offices, and research rooms by a proper fire wall. Records center facilities involve considerably more staff activity in the records storage areas. Wherever records centers and archives are located within the same facility, the archival storage area should be separated from the records center storage area by a fire wall.

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

(a) The use of manual instead of power-operated equipment;

(b) The use of electric instead of gas-fueled fork lifts;

(c) 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;

(d) Prohibiting the storage of oils, paints, or other flammables in or contiguous to the records areas.

2-8 Fire Retardant Treatments. Attempts have been made to develop economical methods of increasing the fire resistance of typical records storage cartons. The method tried most frequently is coating the cartons with an intumescent type of fire retardant paint. Tests of cartons protected by such paint that has been properly applied show that the coating prevents actual ignition of the cardboard. However, intumescent paint does not intumesce effectively under approximately 400°F (204°C). The temperature of even a small exposure fire (such as might occur on a library cart) could weaken the paper in the box to the point where the box breaks open under the weight of the paper it contains, exposing the ordinary combustible paper contents of the box. Similar results have occurred in tests of boxes that have been covered with aluminum foil, with the additional effect of transmission of heat through the aluminum, causing ignition of the cardboard carton beneath it. In a small-scale test conducted as a joint effort of the NFPA Technical Committee on Record Protection and the U.S. General Services Administration, the effect of a fire retardant