

NFPA® 415

Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways

2013 Edition



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NFPA® 415

Standard on

Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways

2013 Edition

This edition of NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*, was prepared by the Technical Committee on Airport Facilities. It was issued by the Standards Council on May 29, 2012, with an effective date of June 18, 2012, and supersedes all previous editions.

This edition of NFPA 415 was approved as an American National Standard on June 18, 2012.

Origin and Development of NFPA 415

NFPA 415, *Standard on Aircraft Fueling Ramp Drainage*, was first adopted in 1961. Subsequent editions were published in 1966, 1973, 1977, 1983, 1987, and 1992.

NFPA 416, *Standard on Construction and Protection of Airport Terminal Buildings*, was first adopted in 1962. Subsequent editions were published in 1967, 1972, 1973, 1975, 1983, 1987, and 1993.

NFPA 417, *Standard on Construction and Protection of Aircraft Loading Walkways*, was first adopted in 1963. Subsequent editions were published in 1968, 1973, 1977, 1985, and 1990.

The 1997 edition of NFPA 415 combined those three documents and was given a new title, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*.

The 2002 edition was a partial revision of the 1997 edition.

The 2008 edition of this standard was a partial revision of the 2002 edition and included the following changes:

- (1) Revision of 4.1.2 to correlate with the provisions of NFPA 101®, *Life Safety Code*®, for interior finish
- (2) Revision of 6.2.4 to restrict the use of transparent and translucent walls in aircraft loading walkways
- (3) Revision of 6.3.2 and the addition of 6.3.2.1 to replace a reference to certain provisions of NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*, that no longer exist in that standard

The 2013 edition provides updated references to test standards.



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NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on fire safety for the construction and protection at airport facilities involving construction engineering but excluding airport fixed fueling systems.



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NFPA 415**Standard on****Airport Terminal Buildings, Fueling Ramp
Drainage, and Loading Walkways****2013 Edition**

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

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex D. 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 D.

Chapter 1 Administration

1.1 Scope. This standard specifies the minimum fire protection requirements for the construction and protection of airport terminal buildings. It specifies the minimum requirements for the design and maintenance of the drainage system of an aircraft fueling ramp to control the flow of fuel that can be spilled on a ramp and to minimize the resulting possible danger. In addition, it contains the minimum requirements for the design, construction, and fire protection of aircraft loading walkways between the terminal building and aircraft.

1.2* Purpose. The purpose of this standard is to provide a reasonable degree of protection for life and property from fire at airport terminal complexes.

1.2.1 Requirements applicable to ramp drainage systems are intended to limit the fire hazard from fuel spillage in the following ways:

- (1) Controlling the spread of a fuel spill to limit exposure to buildings, aircraft loading walkways, concourses, or elevated structures in order to prevent the fuel's liquid or vapors from reaching a source of ignition or accumulating within structures

- (2) Limiting the spread of the fuel spill over the ramp surface and preventing the transmission of vapors by the drainage system from exposing aircraft or other equipment parked or operating on the ramp

1.2.2 The purpose of this standard is also to specify minimum criteria for fire protection of aircraft loading walkways that can serve as egress routes from aircraft in the event that a fire caused by a flammable liquid spill on the airport ramp exposes the walkway and the aircraft.

1.3 Application. It is not intended that the provisions of this document be applied to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the document, except in those cases where it is determined by the authority having jurisdiction that the existing situation involves a distinct hazard to life or adjacent property.

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*, 2010 edition.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, 2010 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2013 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2010 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2012 edition.

NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, 2011 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 2011 edition.

NFPA 54, *National Fuel Gas Code*, 2012 edition.

NFPA 70®, *National Electrical Code®*, 2011 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*, 2013 edition.

NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, 2009 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 2012 edition.

NFPA 91, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids*, 2010 edition.

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, 2011 edition.

NFPA 101®, *Life Safety Code®*, 2012 edition.

NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, 2011 edition.

NFPA 407, *Standard for Aircraft Fuel Servicing*, 2012 edition.

NFPA 409, *Standard on Aircraft Hangars*, 2011 edition.

NFPA 5000®, *Building Construction and Safety Code®*, 2012 edition.

2.3 Other Publications.

2.3.1 AATCC Publications. American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215.



AATCC 192, "Weather Resistance of Textiles: Sunshine-Arc Lamp Exposure With and Without Wetting," 2009.

2.3.2 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.
www.astm.org

ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, 2012.

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

ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, 2008.

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. (Reserved)

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* 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.

3.2.4 Shall. Indicates a mandatory requirement.

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

3.3 General Definitions.

3.3.1 Aircraft Fueling Ramp. Any outdoor area at an airport, including aprons and hardstands, where aircraft are normally fueled or defueled.

3.3.2 Aircraft Loading Walkway. An aboveground device through which passengers move between a point in an airport terminal building and an aircraft. Included in this category are walkways that are essentially fixed and permanently placed, or walkways that are essentially mobile in nature and

that fold, telescope, or pivot from a fixed point at the airport terminal building.

3.3.3 Airport Ramp. Any outdoor area, including aprons and hardstands, where aircraft can be positioned, stored, serviced, or maintained, irrespective of the nature of the surface of the area.

3.3.4* Airport Terminal Building. A structure used primarily for air passenger enplaning or deplaning, including ticket sales, flight information, baggage handling, and other necessary functions in connection with air transport operations. This term includes any extensions and satellite buildings used for passenger handling or aircraft flight service functions. Aircraft loading walkways and "mobile lounges" are excluded.

3.3.5 Potential Fuel Spill Points. The points on or around the aircraft or airport ramp where fuel can be released. These points include fueling hydrants, fuel servicing vehicles, fuel tank fill connections, fuel vent openings, and fuel dump valves.

3.3.6 Satellite. A structure that can be adjacent to but separated from the airport terminal building, accessible above ground or through subway passages, and used to provide flight service operations, such as passenger check-in, waiting rooms, food service, enplaning or deplaning, etc.

Chapter 4 Airport Terminal Buildings

4.1 General.

4.1.1 Airport terminal buildings shall be of Type I, Type II, or Type IV construction, as defined in *NFPA 5000, Building Construction and Safety Code*. (See Annex B.)

4.1.2* Interior finish materials shall be limited to Class A or Class B regardless of the occupant load.

4.1.3 Aircraft fueling facilities and ramps shall be designed in accordance with NFPA 407, *Standard for Aircraft Fuel Servicing*, and Chapter 5 of this standard.

4.1.4 Belowgrade areas and blind spaces in airport terminal buildings shall be protected against flammable fuel and vapor penetration or shall be mechanically ventilated to provide at least four complete air changes per hour. The mechanical ventilation system shall be installed in accordance with NFPA 91, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids*.

4.1.5 Glazing Material—Covered Openings Facing the Ramp.

4.1.5.1 Openings covered with glazing material that have the lowest part of the glazing material not less than 7 ft (2.1 m) above each finished floor level shall not be required to comply with 4.1.5.3.

4.1.5.2 Openings covered with glazing material listed for use in a fire barrier and installed in accordance with the listing shall not be required to comply with 4.1.5.3.

4.1.5.3 Where potential fuel spill points are located less than 100 ft (30.5 m) horizontally from glazing material-covered openings in airport terminal building walls facing the airport ramp, they shall be provided with an automatically activated water spray system in accordance with 4.1.5.3.1 or an automatically activated, listed fire shutter system in accordance with 4.1.5.3.2. (See Annex C.)

4.1.5.3.1 Where an automatically activated water spray system(s) is provided, it shall be installed in accordance with NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*.