

NFPA® 30B

Code for the Manufacture and Storage of Aerosol Products

2023 Edition



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Text revisions are shaded. A **Δ** before a section number indicates that words within that section were deleted and a **Δ** to the left of a table or figure number indicates a revision to an existing table or figure. When a chapter was heavily revised, the entire chapter is marked throughout with the **Δ** symbol. Where one or more sections were deleted, a • is placed between the remaining sections. Chapters, annexes, sections, figures, and tables that are new are indicated with an **N**.

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NFPA® 30B

Code for the

Manufacture and Storage of Aerosol Products

2023 Edition

This edition of NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*, was prepared by the Technical Committee on Aerosol Products. It was issued by the Standards Council on March 20, 2022, with an effective date of April 9, 2022, and supersedes all previous editions.

This edition of NFPA 30B was approved as an American National Standard on April 9, 2022.

Origin and Development of NFPA 30B

Before the development of NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*, fire protection requirements for the storage of flammable aerosols were contained in NFPA 30, *Flammable and Combustible Liquids Code*, where they were treated as Class IA flammable liquids. During the late 1970s and early- to mid-1980s, because of both actual fire incidents and full-scale fire testing, it became apparent that flammable aerosol products presented a severe fire challenge, one not fully contemplated by NFPA 30. Industry initiatives led to more full-scale fire testing and, eventually, to the establishment of an NFPA Technical Committee Project specifically directed at providing fire protection guidance for both manufacturing facilities and storage facilities.

The Technical Committee on Aerosol Products began its work in January 1988. The committee formed two task groups, one on manufacturing, the other on storage, to draft the technical language of this document. The results of the efforts of the two task groups culminated with adoption of the first edition of NFPA 30B at the 1990 NFPA Annual Meeting.

The Technical Committee on Aerosol Products continued to work on improvements to NFPA 30B. The second edition was published in 1994 with several major revisions to clarify the document's requirements and to more accurately reflect the fire behavior of aerosol products, particularly with regard to classification of aerosol products. The committee then continued its work, resulting in the 1998 edition — the third edition of NFPA 30B.

NFPA 30B implemented extensive revisions in the 2002 edition. A major testing effort resulted in complete revision of the wet-pipe sprinkler system design tables and their associated reference figures. The committee added 12 new tables to Chapter 6 (deleting the 5 tables from the 1998 edition) and 5 new figures demonstrating sprinkler configuration in accordance with these tables. The tables addressed palletized and solid pile storage and rack storage of Level 2 and Level 3 aerosol products, both cartoned and uncartoned. New sections on damage-limiting construction, fume incinerators, shrink-wrapping of aerosol products, and special protection design were added. NFPA 30B was also reformatted to conform to the *Manual of Style for NFPA Technical Committee Documents*, including reorganization and renumbering of chapters, elimination of exceptions, deletion of unenforceable language, and clarification of mandatory requirements.

The 2007 edition of NFPA 30B clarified the requirements for aisle widths in storage facilities.

In the 2011 edition, the committee revised the definition of aerosol container to reflect new requirements of the U.S. Department of Transportation that allow the use of plastic aerosol containers up to a maximum size of 1000 ml (33.8 fl oz). This revised definition prompted changes in several locations of the code to accommodate aerosol products in plastic containers. In support of the revised definition of aerosol container, the committee also added new material in Annex B that provided several sets of fire test data on the results of testing aerosols in plastic containers.

Revisions to the 2015 edition included developing classification and protection guidance for Aerosol Cooking Spray Products, Plastic Aerosol 1 Products, and Plastic Aerosol X Products. Existing fire protection requirements for Level 2 and Level 3 Aerosol Products were revised to include use of intermediate temperature sprinklers in unconditioned spaces, terminology was changed to correlate

with NFPA 13, *Standard for the Installation of Sprinkler Systems*, and larger orifice sprinklers were allowed for some sprinkler system designs. Aerosol product laboratories that handle flammable gases or flammable liquids were designated as Class A laboratory units in accordance with NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*. The provisions for hazardous (classified) location area classification were amended by combining requirements for button tippers and test baths into a single set of requirements and by adding requirements applicable to button tippers.

The 2019 edition added definitions for *palletized storage*, *solid-piled storage*, and *aerosol valve*. The definition of *aerosol product* was modified to include propellant-only products. Newly developed fire protection criteria were added for Plastic Aerosol 3 Products by TIA 1369, and fire protection requirements were clarified for ceiling-only protection and in-rack sprinklers in solid shelves.

For the 2023 edition, fire protection requirements have been added for two new categories, Plastic Aerosol 2 Products and Plastic Aerosol Cooking Spray Products, as well as new requirements for the disposal of aerosol containers at manufacturing and storage sites. A new chapter has been introduced to classify aerosol products, and the code scope has been revised to include gas-only aerosol products. The definition of *compartmented container* has been included, and the definitions of *aerosol propellant* and *flammable propellant* have been revised. Requirements for allowable quantities of aerosol products in production areas have been clarified. To maintain consistency across codes, “flammable and combustible liquids” are now referred to as “ignitable (flammable and combustible) liquids,” based on the 2021 edition of NFPA 30.

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Committee Scope: This Committee shall have primary responsibility for documents on safeguarding against the fire and explosion hazards associated with the manufacturing, handling, and storage of aerosol products and low pressure dispensing containers.

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NFPA 30B

Code for the

Manufacture and Storage of Aerosol Products

2023 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. 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 and extracted publications can be found in Chapter 2 and Annex J.

Chapter 1 Administration

1.1 Scope.

1.1.1 This code shall apply to the manufacture, storage, and display of aerosol products as herein defined.

Δ 1.1.2* This code shall apply to the storage and display of products whose contents are comprised entirely of compressed or liquefied gas, provided that the containers meet the requirements of 3.3.1 through 3.3.4.

1.1.3 This code shall not apply to post-consumer processing of aerosol containers.

1.1.4* This code shall not apply to containers that do not meet the definition of *Aerosol Container* (see 3.3.1).

1.1.4.1 Containers that contain a product that meets the definitions in 3.3.2 and 3.3.3, but are larger than the limits specified in 3.3.1, shall not be classified as aerosol products, and this code shall not apply to the manufacture, storage, and display of such products.

1.2* **Purpose.** The purpose of this code is to provide minimum requirements for the prevention and control of fires and explosions in facilities that manufacture, store, or display aerosol products.

1.3 Application.

1.3.1 Chapters 5, 6, and 9 shall apply to facilities or portions of facilities that manufacture aerosol products, including gas-filling, product-filling, and packaging operations.

1.3.2 Chapters 5, 7, and 9 shall apply to facilities or portions of facilities that store aerosol products, such as storage areas, storage rooms, and warehouses.

1.3.3 Chapters 5, 8, and 9 shall apply to the storage and display of aerosol products in mercantile occupancies.

1.4* **Retroactivity.**

1.4.1 The provisions of this code are considered necessary to provide a reasonable level of protection from loss of life and property from fire and explosion. They reflect situations and the state of the art at the time the code was issued.

1.4.2 Unless otherwise noted, it is not intended that the provisions of this code be applied to facilities, equipment, structures, or installations that were existing or approved for construction or installation prior to the effective date of the code, 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.

1.5 **Equivalency.** Nothing in this code 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 code, provided technical documentation is submitted to the authority having jurisdiction to demonstrate equivalency, and the system, method, or device is approved for the intended purpose.

1.6 **Enforcement.** This code shall be administered and enforced by the authority having jurisdiction designated by the governing authority. (See Annex I 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 10, *Standard for Portable Fire Extinguishers*, 2022 edition.

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

NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems*, 2022 edition.

NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*, 2022 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2022 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2019 edition.

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

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, 2022 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 2018 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2022 edition.

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

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

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

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

NFPA 58, *Liquefied Petroleum Gas Code*, 2020 edition.

NFPA 68, *Standard on Explosion Protection by Deflagration Venting*, 2018 edition.

NFPA 69, *Standard on Explosion Prevention Systems*, 2019 edition.

NFPA 70®, *National Electrical Code®*, 2023 edition.

NFPA 72®, *National Fire Alarm and Signaling Code®*, 2022 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, 2022 edition.

NFPA 85, *Boiler and Combustion Systems Hazards Code*, 2019 edition.

NFPA 86, *Standard for Ovens and Furnaces*, 2023 edition.

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

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

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

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2022 edition.

2.3 Other Publications.

2.3.1 ASME Publications. American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

ANSI/ASME B56.1, *Safety Standard for Low-Lift and High-Lift Trucks*, 2018.

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

ASTM A47/A47M, *Standard Specification for Ferritic Malleable Iron Castings*, 1999, reapproved 2018.

ASTM A48/A48M, *Standard Specification for Gray Iron Castings*, 2003, reapproved 2016.

ASTM A395/A395M, *Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures*, 1999, reapproved 2018.

ASTM A536, *Standard Specification for Ductile Iron Castings*, 1984, reapproved 2019.

ASTM D92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester*, 2018.

ASTM D323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*, 2020.

2.3.3 UN Publications. United Nations, 760 United Nations Plaza, New York, NY 10017.

UN Recommendations on the Transport of Dangerous Goods, 2015.

2.3.4 US Government Publications. US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 49, Code of Federal Regulations, Part 173, Appendix H, "Method of Testing for Sustained Combustibility."

2.3.5 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*, 2021 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2022 edition.

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

NFPA 68, *Standard on Explosion Protection by Deflagration Venting*, 2018 edition.

NFPA 72®, *National Fire Alarm and Signaling Code*, 2022 edition.

NFPA 77, *Recommended Practice on Static Electricity*, 2019 edition.

NFPA 5000®, *Building Construction and Safety Code®*, 2021 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.