

NFPA®

34

Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids

2018



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NFPA® 34

Standard for

Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids

2018 Edition

This edition of NFPA 34, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids*, was prepared by the Technical Committee on Finishing Processes. It was issued by the Standards Council on November 10, 2017, with an effective date of November 30, 2017, and supersedes all previous editions.

This edition of NFPA 34 was approved as an American National Standard on November 30, 2017.

Origin and Development of NFPA 34

NFPA standards on safeguarding process tanks containing flammable and combustible liquids date from 1913, when standards prepared by the Committee on Explosives and Combustibles were adopted. Subsequently, jurisdiction was transferred to a new Committee on Manufacturing Hazards, which, in turn, was superseded by the current Technical Committee on Finishing Processes.

The original 1913 edition was completely revised in 1921 and 1922, at which time material on hardening and tempering tanks and flow coat work was added to the original standard.

Further revisions to keep the text up to date on various new aspects of the subject were adopted in 1922, 1926, 1936, 1940, 1946, 1952, 1957, 1959, 1963, 1966, 1971, 1974, 1979, 1982, 1987, 1989, 1995, 2000, 2003, 2006, and 2010.

The following major changes were adopted for the 2003 edition:

- (1) The scope of the standard was extended to cover water-based coatings.
- (2) The arrangement of the text was modified to comply with the *Manual of Style for NFPA Technical Committee Documents*, including the relocation of Chapter 11, Referenced Publications, to a new Chapter 2 and the addition of a new Chapter 3, Definitions, which incorporated all the definitions previously located in Chapter 1.
- (3) Chapter 6 (formerly Chapter 4), Electrical and Other Sources of Ignition, was extensively revised to recognize the Zone concept of area classification. Included in those revisions were the addition of appropriate definitions and revisions of the figures illustrating the area classifications in and around dipping and coating processes.
- (4) Subsection 7.6.1 (formerly 5.5.1) was revised to allow recirculation of exhaust air under certain conditions and to specify those conditions.
- (5) Chapter 9 (formerly Chapter 7), Protection, was revised to correlate with Chapter 9, Protection, of NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*.
- (6) Section 11.6 (formerly Section 9.6) was revised to require grounding, as well as deenergizing, of the electrostatic circuit.

The following major changes were adopted for the 2007 edition:

- (1) A number of definitions were changed to incorporate “preferred” definitions to ensure consistent meaning and use of defined terms throughout the National Fire Codes. Where “preferred” definitions cannot be used for certain terms, those terms have been delimited by the phrase “For the purposes of this standard, ...”.
- (2) New definitions were added for the terms electrostatic detearing, peripheral vapor containment, secondary enclosure, solvent cleaning, and ventilation.
- (3) Requirements for hazardous location electrical utilization equipment and wiring were further revised to correlate with *NFPA 70®*, *National Electrical Code®*, including appropriate Fine Print Notes from *NFPA 70*.
- (4) New diagrams were added to illustrate electrical area classification around open dipping and coating processes.
- (5) Quantity limitations for storing flammable and combustible liquids were changed to correlate with NFPA 30, *Flammable and Combustible Liquids Code*.
- (6) Chapter 9, Protection, was completely rewritten to accomplish the following:
 - (a) Correlate with NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*
 - (b) Add necessary requirements for interlocks for proper operation of fire protection systems
 - (c) Require fire protection systems to be designed so that operation does not result in a spill of the flammable or combustible liquid
 - (d) Require fire protection systems to discharge into the entire protected area
- (7) A section on solvent distillation units (i.e., solvent recyclers) was added.
- (8) Additional changes were made to correlate this standard with NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*.

The following major changes were adopted in the 2011 edition:

- (1) The scope of the standard was amended to specifically address printing processes, and appropriate changes were made throughout NFPA 34 where certain provisions applied specifically to the printing process or excluded printing processes.
- (2) The scope of the standard was amended to specifically include vapor degreasing processes and to specifically exclude processes that use only Class IIIB liquids.
- (3) New definitions for printing and for certain types of printing processes were added to Chapter 3.
- (4) A new paragraph, 5.2.1.1, was added to allow coating rolls to be covered with polymeric or other combustible materials.
- (5) Section 5.3, which requires the top of the coating tank to be a certain distance above the floor, was amended to apply only to tanks holding flammable or combustible liquid.
- (6) Exceptions were added to 5.9.1 and 5.9.2 to exclude sheet and web transport systems from the requirement to stop conveying systems under certain conditions.
- (7) Paragraph 5.10.1.3 was amended to prevent coating of workpieces whose surface temperature exceeds the boiling point of the coating media.
- (8) Subsection 6.2.2, which prohibits use of certain ignition-capable equipment, was amended to apply only to areas where flammable or combustible liquid is in use.
- (9) A new Figure 6.4(e) was added to illustrate the hazardous (classified) area around a printing press for purposes of electrical area classification.
- (10) Subsection 6.4.2 was amended to describe the hazardous (classified) area associated with ink tanks and reservoirs in printing processes.
- (11) Section 6.5, on electrical area classification of enclosed processes, was amended to apply only to dipping and coating processes. Printing processes are inherently open in nature.
- (12) A new subsection, 6.8.2, was added, requiring means to dissipate static electric charges from nonconductive substrates.
- (13) An exception was added to 9.5.1(4) to exclude sheet and web transport systems from the requirement to stop conveying systems under certain conditions, if stopping would cause a more hazardous situation.
- (14) A new Section 9.11 was added to address fire protection measures specific to printing processes.
- (15) Chapter 10 was amended to improve the requirements that address housekeeping, handling of liquid-impregnated rags, and waste.
- (16) Section 10.5 was completely rewritten to address use of Class I flammable liquids and Class II combustible liquids for cleaning operations.
- (17) A new Section 10.6 was added to address cleaning of combustible dusts and residues.
- (18) A new Section 10.10 was added to address solvent recovery systems.
- (19) A new annex item, A.9.3.1(3), was added to describe where carbon dioxide fire protection systems have been found useful in printing processes.