

STANDARD INFORMATION

Standard: NFPA 33

Standard ID: Standard for Spray Application Using Flammable or Combustible Materials [NFPA 33:2023 Ed.2024]

Previous Standard ID: Standard for Spray Application Using Flammable or Combustible Materials [NFPA 33:2020 Ed.2021]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **June 1, 2027**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- New requirements for spray finishing in inflatable finishing workstations
- Requirements in the International Fire Code for fire rated construction and fire resistance requirements for spray rooms
- Revisions differentiate door construction requirements from walls and ceilings.
- Additional test requirements for materials used in wall or ceiling assemblies
- Revisions for total quantities of liquids allowed in mixing rooms based on floor area
- New requirements address how maximum allowable quantities should be determined when there are multiple mixing rooms, spray booths, and spray areas
- Revisions to differentiate liquid spray operations from powder spray operations
- Add hybrid systems (water and inert gas) to the list of available fire protection systems
- New requirements allow the user to establish an appropriate accumulation threshold and cleaning schedule that manages the hazards associated with the materials they use

Specific details of new/updated requirements are found in table below

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

| CLAUSE | VERDICT | COMMENT |
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| | | <i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</i> |
| 1 | Info | Administration |
| 1.1 | Info | Scope |
| | | <i>New clause added;</i> |
| 1.1.7 | | This standard shall apply to spray application processes and operations that are conducted outdoors within an air-inflated structure that meets the applicable requirements of Section 14.4. |
| 5 | Info | Construction and Design of Spray Areas, Spray Rooms, and Spray Booths |
| 5.1 | Info | Spray Areas |
| | | <i>New clause added;</i> |
| 5.1.1.1 | | The interior surfaces of the spray area shall be smooth, designed and installed to prevent pockets that can trap residues, and designed to facilitate ventilation and cleaning. |
| | | <i>New clause added;</i> |
| 5.1.1.2 | | Air intake filters that are a part of a wall, door, or ceiling assembly shall be listed in accordance with UL 900, Air Filter Units. |
| | | <i>New clause added;</i> |
| | | Doors that are a part of a wall or ceiling assembly shall be constructed of one of the following: |
| 5.1.1.3 | | (1) Noncombustible or limited-combustible materials or assemblies (2) Materials or assemblies that can successfully pass Test Method 2 in NFPA 701 (3) Materials that exhibit all of the following characteristics when tested in accordance with NFPA 286: (a) During the 40 kW (136,486 Btu/hr) exposure, flames do not spread to the ceiling. (b) The flame does not spread to the outer extremity of the sample on any wall or ceiling. (c) Flashover, as defined in NFPA 286, does not occur. (d) The peak heat release rate throughout the test does not exceed 800 kW (2,729,714 Btu/hr). (e) The total smoke release throughout the test does not exceed 1000 m ² (10,764 ft ²). |



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| | | (4) Materials that exhibit a maximum rate of heat release of 100 kW (341,214 Btu/hr) when tested in accordance with NFPA 289 using a 20 kW (68,242 Btu/hr) ignition source (5) Materials that are classified as welding curtains by ANSI/FM 4950, Welding Pads, Welding Blankets and Welding Curtains for Hot Work Operations |
| | | <i>New clause added;</i> |
| 5.1.1.4 | | Doors that are a part of a wall or ceiling assembly shall have integral seals that minimize leakage into or out of the spray area. |
| | | <i>New clause added;</i> |
| 5.1.15 | | The door support structure shall be constructed of steel or other noncombustible material. |
| 5.3 | Info | Spray Booths |
| | | <i>New clause added;</i> |
| 5.3.3 | | If doors that are a part of a wall or ceiling assembly are constructed of sheet metal, the construction shall meet one of the following: (1) Single-skin assemblies shall be no thinner than 1.2 mm (0.0478 in.) (2)* Each sheet of double-skin assemblies shall be no thinner than 0.9 mm (0.0359 in.) |
| 6 | Info | Electrical and Other Sources of Ignition |
| | | <i>New section added;</i> |
| | | Static Electricity |
| 6.7 | | All electrically conductive objects in the spray area, except those objects required by the process to be at high voltage, shall be electrically connected to ground with a resistance of not more than 106 ohms (1 megohm). See standard for details. |
| 7 | Info | Ventilation |
| | | <i>New section added;</i> |
| | | Performance Requirements |
| 7.2 | | Each spray area shall be provided with mechanical ventilation that is capable of confining and removing vapors and mists to a safe location and confining and controlling combustible residues, dusts, and deposits. See standard for details. |



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| | | <i>New section added;</i> |
| | | Routing of Exhaust Ducts |
| 7.4 | | Air exhausted from liquid spray operations shall be conducted by ducts directly to the outside of the building. See standard for details. |
| 8 | Info | Storage, Handling, and Distribution of Ignitable (Flammable and Combustible) Liquids |
| 8.3 | Info | Handling and Use |
| | | <i>New clause added;</i> |
| 8.3.5 | | The total aggregate volume of Class I, Class II, and Class IIIA liquids [FP < 200°F (93°C)] in a group of spray areas and mixing rooms shall not exceed the maximum allowable quantity of ignitable (flammable or combustible) liquids per control area in accordance with Table 8.2 and Table 8.3.5 based on the occupancy where the spray areas and mixing rooms are located. |
| 9 | Info | Protection |
| 9.1 | Info | General |
| | | <i>New section added;</i> |
| | | Powder Application Areas |
| 9.1.3 | | Spray areas used for powder application operations shall be in accordance with Section 15.9. See standard for details. |
| | | Protection Systems |
| | | The automatic fire protection system shall be permitted to be and shall be installed in accordance with any of the following: |
| 9.5 | | (1) A water sprinkler system that meets all the applicable requirements of NFPA 13 (2) A low expansion foam system that meets all the applicable requirements of NFPA 11 (3) A carbon dioxide extinguishing system that meets all the applicable requirements of NFPA 12 (4) A dry chemical extinguishing system that meets all the applicable requirements of NFPA 17 (5) A gaseous agent extinguishing system that meets all the applicable requirements of NFPA 2001 |



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| | | (6) A water mist fire protection system that meets all the applicable requirements of NFPA 750 <u>(7) A hybrid (water and inert gas) fire extinguishing system that meets all the applicable requirements of NFPA 770</u> |
| 9.6 | Info | Specific Process Protection |
| 9.6.2 | Info | Protection for Automated Liquid Electrostatic Spray Application Equipment <i>New clause added;</i> |
| 9.6.2.1.1 | | The optical flame detection shall, in the event of ignition, react to the presence of flame within one-half (0.5) second and shall accomplish all of the following: (1) Meet all the requirements of 9.6.1.1 (2) Disconnect power to the high-voltage elements in the spray area and de-energize the system (3) Stop any conveyors into and out of the spray area |
| 9.6.2.2 | | Automated liquid electrostatic spray application equipment that is unlisted shall be protected further by the following: (2) Manual activation stations shall be installed <u>and meet all of the following requirements:</u> <u>(a) At least one such station shall be within ready access of operating personnel.</u> <u>(b) If access to this station is likely to involve exposure to danger, an additional station shall be located adjacent to an exit from the area.</u> <u>(c) These devices shall activate the fire protection system as specified in 9.6.2.2(1) and satisfy the requirements of 9.6.1.1 and 9.6.2.2(1).</u> |
| 10 | Info | Operations and Maintenance |
| 10.3 | Info | Combustible Residues <i>New clause added;</i> |
| 10.3.1 | | A cleaning threshold and schedule shall be established by the user for the removal of combustible residues from the spray area, as defined in this standard, based upon the characteristics of the material and the rate of accumulation. |
| 14 | Info | Miscellaneous Spray Operations |
| 14.3 | Info | Limited Finishing Workstations <i>New section added;</i> |
| 14.3.2 | | A limited finishing workstation shall be designed and constructed in accordance with the requirements of 14.3.2.1 through 14.3.2.4. See standard for details. |



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| | | <i>New section added;</i> |
| 14.4 | | Inflatable Finishing Workstations See standard for details. |
| 15 | Info | Powder Coating |
| | | <i>New section added;</i> |
| | | Construction and Design of Spray Booths and Spray Rooms |
| 15.5 | | Powder shall be confined by conducting coating operations within one of the following: See standard for details. |
| 15.6 | Info | Electrical and Other Sources of Ignition |
| | | <i>New clause added;</i> |
| 15.6.3.1 | | This requirement shall also apply to any personnel who enter the area. |
| 15.9 | Info | Protection |
| 15.9.5 | Info | Protection Systems |
| 15.9.5.1 | Info | Automatic Sprinkler Systems |
| | | <i>New clause added;</i> |
| 15.9.5.1.3.1 | | Hose streams for the occupancy, in accordance with NFPA 13, shall be included in the water suppression system's demand. |
| 15.9.6 | Info | Automated Spray Application Operations |
| 15.9.6.3 | Info | Protection for Automated Powder Application Equipment |
| | | The optical flame detection system shall, in the event of ignition, react to the presence of flame within one-half (0.5) second and shall bring about all of the following: |
| 15.9.6.3.1.1 | | <ul style="list-style-type: none"> (1) <u>Meet all the requirements of 15.9.6.1</u> (2) <u>Disconnect power to the high-voltage elements in the spray area and de-energize the system</u> (3) Stop any conveyors into and out of the spray area (4) Shut off the ventilation system (5) Close segregation dampers in associated ductwork to interrupt airflows (6) <u>Shut off application, transfer, and powder collection equipment</u> |



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| | | <i>New section added;</i> |
| | | Handheld Electrostatic Powder Spraying Equipment |
| 15.12 | | The provisions of Chapter 12 and other provisions of Chapter 15 shall apply to electrostatic handheld spraying equipment where it is used in powder coating. See standard for details. |
| 15.14 | Info | Electrostatic Fluid Beds |
| | | <i>New section added;</i> |
| 15.14.3 | | All electrically conductive objects within the powder coating area, except those objects required by the process to be at high voltage, shall be electrically connected to ground with a resistance of not more than 106 ohms (1 megohm). See standard for details. |
| | | <i>New clause added;</i> |
| 15.14.5.2 | | Areas of contact shall be sharp points or knife edges where possible. |
| 18 | Info | Spray Application Operations in Membrane Enclosures |
| 18.3 | Info | Membrane Material |
| | | Material used for membrane enclosures <u>shall be constructed of one of the following:</u> |
| | | <u>(1) Noncombustible or limited-combustible materials or assemblies</u> |
| | | <u>(2) Materials or assemblies that can successfully pass Test Method 2 in NFPA 701</u> |
| | | <u>(3) Materials that exhibit all of the following characteristics when tested in accordance with NFPA 286:</u> |
| | | <u>(a) During the 40 kW (136,486 Btu/hr) exposure, flames do not spread to the ceiling.</u> |
| | | <u>(b) The flame does not spread to the outer extremity of the sample on any wall or ceiling.</u> |
| | | <u>(c) Flashover, as defined in NFPA 286, does not occur.</u> |
| | | <u>(d) The peak heat release rate throughout the test does not exceed 800 kW (2,729,714 Btu/hr).</u> |
| | | <u>(e) The total smoke release throughout the test does not exceed 1000 m² (10,764 ft²).</u> |
| 18.3.1 | | <u>(4) Materials that exhibit a maximum rate of heat release of 100 kW (341,214 Btu/hr) when tested in accordance with NFPA 289 using a 20 kW (68,242 Btu/hr) ignition source</u> |
| | | <u>(5) Materials that are classified as welding curtains by ANSI/FM 4950, Welding Pads, Welding Blankets and Welding Curtains for Hot Work Operations</u> |