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MEMORANDUM

TO: Technical Committee on Finishing Processes

FROM: Yiu Lee, *Committee Administrator*

DATE: August 19, 2021

SUBJECT: NFPA 33 Proposed Tentative Interim Amendment (TIA) No. 1602

The attached proposed Tentative Interim Amendment (TIA) Log No. 1602 is being submitted to you for ballot to Revise 1.1.6, Add a new definition “Inflatable Finishing Workstation” to section 3.3, Add a new Section 14.4 and E.1.2.2. This proposed TIA was submitted by Tom Williams, of Mobile Environmental Solutions, LLC, and we have written agreements of the processing of the submitted TIA from Mark Dubbin, of Las Cruces Fire Department, and Brent Thor, of Thor and Associates, Inc.

This proposed TIA will be published for public comment in the August 2021 issue of *NFPA News* with a Public Comment Closing Date of September 22, 2021. Any public comments received will be circulated to the committee. Finally, the Standards Council will review and consider the issuance of this TIA.

In accordance with Section 5 of the *Regulations Governing the Development of NFPA Standards*, you are being balloted on the technical merits of the proposed TIA and whether this matter is of an emergency nature.

The ballot can now be accessed through the NFPA online ballot system at the following link: [NFPA Ballot Link](#). The link will bring you to your profile page and once you sign in, select the My Committees tab and click on the blue Vote button which will direct you to the ballot site.

Please complete the ballot on or before **September 2, 2021, 11:59 pm ET**.

While completing your ballot, please remember the following:

- **A comment is required for both Question No. 1 and Question No. 2 for the online TIA ballot. Comments must accompany all Negative, Abstaining and Agree votes.**
- **If you vote “Agree” on Question 1, simply add “Agree” to the comment field and if you vote “Agree” on Question 2, insert the applicable letter(s) selections in the comment field which can be found in the Instructions box on the ballot site.**

You must hit SUBMIT to SAVE your work. **Note:** the system session will time you out after 60 minutes; any work not submitted at that time will not be saved! You may return to finish or change your ballot at any time up to the closing date. Ballot comments exceeding 4,000 characters must be submitted in a Word document via email, to Yiu Lee at ylee@nfpa.org.



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Note: Please remember that the return of ballots and attendance at committee meetings are required in accordance with the Regulations Governing the Development of NFPA Standards.

NFPA 33-2021 Edition

Standard for Spray Application Using Flammable or Combustible Materials

TIA Log No.: 1602

Reference: 1.1.6, Inflatable Finishing Workstation(new), 14.4(new) and E.1.2.2(new)

Comment Closing Date: September 22, 2021

Submitter: Tom Williams, Mobile Environmental Solutions, LLC

www.nfpa.org/33

1. *Revise 1.1.6 to read as follows:*

1.1.6 This standard shall ~~not~~ apply to spray application processes ~~or~~ and operations that are conducted outdoors within inflatable enclosures.

2. *Add a new definition “Inflatable Finishing Workstation” to section 3.3 and associated Annex material to read as follows:*

3.3.x* Inflatable Finishing Workstation. A power-ventilated apparatus whose shape is maintained by air pressure in cells or tubes forming all or part of the enclosure of the usable area and in which the occupants are not within the pressurized area used to support the structure and confine the vapors, mists, residues, dusts, or deposits generated by a spray application process.

A.3.3.X Inflatable Finishing Workstation. An inflatable finishing workstation is not a spray booth, spray room, or limited finishing workstation as defined in this standard.

3. *Add a new Section 14.4 to read as follows:*

14.4 Inflatable Finishing Workstations.

14.4.1 General.

14.4.1.1 An inflatable finishing workstation shall be designed and operated in accordance with the requirements of 14.4.2 through 14.4.8 and *NFPA 5000*.

14.4.1.2 In addition to the requirements of this section, an inflatable finishing workstation shall meet all applicable requirements of Chapter 10 and Chapter 19.

14.4.1.3 An inflatable finishing workstation shall not be used for processes in which combustible dry powders are applied.

14.4.2 Location.

14.4.2.1 An inflatable finishing workstation shall only be used outdoors.

14.4.2.2 The location of an inflatable finishing workstation shall meet the following conditions:

(1) Separated by a minimum distance of 6.1 m (20 ft) from any permanent or temporary structures

(2) Separated by a minimum distance of 6.1 m (20 ft) from a public way

14.4.2.3 An inflatable finishing workstation shall not block emergency vehicle access to adjacent structures.

14.4.3 Construction and Design.

14.4.3.1 An inflatable finishing workstation, including the floor, shall be constructed of materials that are noncombustible or limited-combustible as defined in Section 4.5 and Section 4.6 or that can successfully pass Test Method 2 in NFPA 701.

14.4.3.2* Materials that enclose the spray area shall be static dissipative.

A.14.4.3.2 Typically, a dissipative material is one having a surface resistivity equal to or greater than 10^5 but less than 10^9 ohms per square or a volume resistivity equal to or greater than 10^5 but less than 10^9 ohm-meters. Some applications might require different resistivities, though the intent is to dissipate charge. See ASTM D257, *Standard Test Methods for DC Resistance or Conductance of Insulating Materials*, for a procedure to determine resistivity.

14.4.3.3* A means for grounding shall be provided.

A.14.4.3.3 See NFPA 70 and NFPA 77 for additional information.

14.4.3.4 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.

14.4.3.5 Air intake filters that are part of a wall or ceiling assembly shall be listed in accordance with UL 900, *Air Filter Units*.

14.4.3.6 An inflatable finishing workstation shall include a means for anchoring.

14.4.3.6.1 * The method of anchoring shall be acceptable to the AHJ.

A.14.4.3.6.1 The manufacturer should provide the recommended anchoring method.

14.4.4 Means of Egress. The number and location of exits shall comply with Chapter 40 of NFPA 101.

14.4.4.1 The inflatable finishing workstation shall be considered to contain high-hazard contents when determining the means of egress.

14.4.4.2 A minimum of two means of egress shall be provided.

14.4.5 Ventilation.

14.4.5.1 Performance Requirements.

14.4.5.1.1 The inflatable finishing workstation shall be provided with mechanical ventilation capable of confining and removing vapors and mists to a safe location and capable of confining and controlling combustible residues, dusts, and deposits.

14.4.5.1.2 The concentration of the vapors and mists in the exhaust stream of the ventilation system shall not exceed 10 percent of the lower flammable limit.

14.4.5.2* Safety Design Data Form. A safety design data form or a nameplate that states the operating conditions for which the enclosure was designed, built, altered, or extended shall be accessible to the operator.

A.14.4.5.2 The safety design data form or nameplate, at a minimum, should include the following:

(1) Maximum solvent release rate for which the ventilation system is designed to meet the requirements of 14.4.7.1

(2) The solvent used in the calculation of the ventilation rate

14.4.5.3 Routing of Exhaust. Air exhausted from an inflatable finishing workstation shall meet the following conditions:

(1) Exhaust discharge shall be directed away from any air intakes.

(2)* The exhaust discharge point shall be at least 6096 mm (20 ft) from openings into the building or other inflatable finishing workstations.

(3) The exhaust shall not discharge in the direction of any combustible construction that is within 7625 mm (25 ft) of the exhaust duct discharge point.

(4) The exhaust shall not discharge in the direction of any unprotected opening in any noncombustible or limited-combustible construction that is within 7625 mm (25 ft) of the exhaust duct discharge point.

(5) The exhaust shall not discharge in the direction of any exit discharge or public way that is within 7625 mm (25 ft) of the exhaust duct discharge point.

A.14.4.5.3(2) Locating the exhaust discharge point away from intakes into other inflatable finishing workstations will prevent introducing contaminated air into adjacent inflatable finishing workstations.

14.4.5.4 Supply Air. Intakes for supply blowers used for introducing fresh air or for inflating the structure shall be located such that the process exhaust is not recirculated.

14.4.5.5 Air Recirculation. Recirculation of process exhaust air shall not be permitted.

14.4.6 Electrical and Other Sources of Ignition.

14.4.6.1 The area within the inflatable finishing workstation shall be Class I, Division 1 or Zone 1.

14.4.6.2 Areas within 1524 mm (5 ft) of the exhaust shall be Class I, Division 1 or Zone 1.

14.4.6.3 Areas between 1524 mm (5 ft) and 3048 mm (10 ft) of the exhaust shall be Class I, Division 2 or Zone 2.

14.4.6.4 The area within 915 mm (3 ft) of any opening shall be classified as Class I, Division 2; Zone 2; Class II, Division 2; or Zone 22, whichever is applicable (see Figure 14.4.6.4).

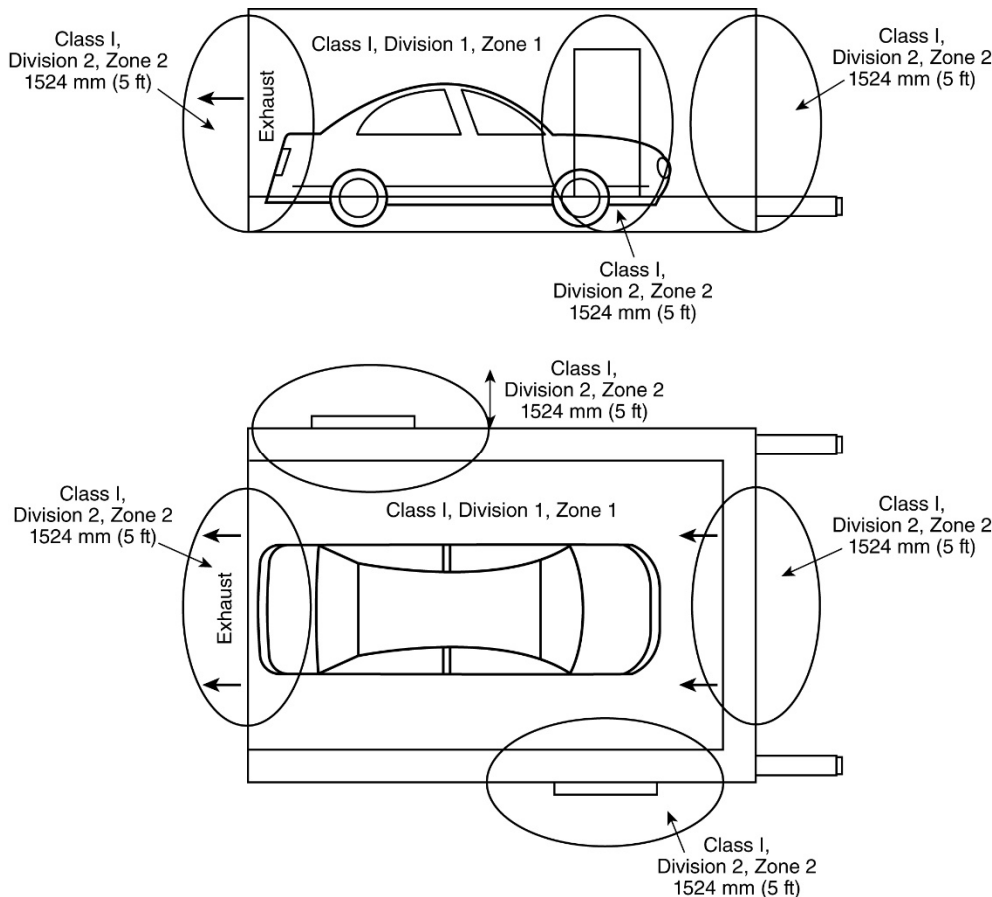


Figure 14.4.6.4 Electrical Classifications for Outdoor Inflatable Workstations.

14.4.6.5 Electrical wiring and electrical utilization equipment shall not be used within the enclosure.

14.4.6.6 Electrical wiring and electrical utilization equipment that is used adjacent to the inflatable finishing workstation shall comply with Chapter 6.

14.4.6.7* All electrically conductive objects in the spray area shall be electrically connected to ground in accordance with Section 6.7.

A.14.4.6.7 Electrically conductive objects include, but are not limited to, containers of coating material, wash cans, guards, hose connectors, brackets, and any personnel who enter the spray area.

14.4.7 Storage, Handling, and Distribution of Ignitable Liquids.

14.4.7.1 Ignitable (flammable and combustible) liquids within the inflatable finishing workstation shall not exceed a total of 3.8 L (1 gal) at any time.

14.4.7.2 Pressurized containers for paint delivery shall not be located within the inflatable finishing workstation.

14.4.8 Protection.

14.4.8.1 Portable Fire Extinguishers.

14.4.8.1.1 Portable fire extinguishers shall be installed, inspected, and maintained in accordance with NFPA 10.

14.4.8.1.2 Portable fire extinguishers shall be selected for extra-hazard locations.

14.4.8.1.3 At least one portable fire extinguisher shall be located within the inflatable finishing workstation at the air inlet side.

14.4.8.1.4 At least one portable fire extinguisher shall be located external to the inflatable finishing workstation near the exhaust side.

4. Add a new section E.1.2.2 and renumber subsequent sections to read as follows:

E.1.2.2 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D257, Standard Test Methods for DC Resistance or Conductance of Insulating Materials, 2014, reapproved 2021e1.

E.1.2.23 CENELEC Publications. ...

E.1.2.34 FEMA Publications. ...

E.1.2.45 FM Publications. ...

E.1.2.56 ISA Publications. ...

E.1.2.67 SAE International. ...

E.1.2.78 SMACNA Publications. ...

E.1.2.89 UL Publications. ...

E.1.2.910 US Government Publications. ...

Substantiation: The proposed TIA seeks to address a gap in the fire and life safety protection features associated with operations involving spray finishing within a variety of applications necessitating the ability to deliver spray finishing touch-up service in non-traditional locations. Using a portable enclosure that ensures against release of hazardous emissions, this approach has been used extensively for automobile used vehicle reconditioning. While that industry segment represents the largest current example of the operation involving the inflatable work stations, auto reconditioning is only one example, as the inflatable work stations have also been used within other transportation sectors, including rail and aircraft maintenance and repair.

While NFPA 33 currently provides requirements for powder coating and spray finishing in permanent spray booth arrangements, it is estimated that within the industry usually engaged in

vehicle reconditioning that over 65% are relying on alternative approaches and installations that are not presently addressed by the standard. The most common installation is an inflatable membrane structure, and the repair technicians within the “Small to Medium Area Repair Technique (SMART)” industry can perform touch-ups for bumper scratches, repair to alloy wheels, and repair of scratches in body panels. Every dealership or auto auction has a team of technicians that handles the reconditioning of their inventory.

Prior to 2011 the common method practiced by SMART technicians was to open air spray, spray under a car port, spray under a pop-up style tent or an inflatable shelter with no air circulation or control for the paint overspray and emissions. However, in January 2011, the EPA promulgated a new rule aimed at controlling the paint spray emissions of the volatile components common in the types of paints used in this industry. The “6HRule” as it is known within the industry, requires motor vehicle and mobile equipment surface coating operations to install and operate filter technology on all booths, stations and enclosures to ensure at least 98% capture efficiency. In addition, those booths or stations used to refinish complete motor vehicles or mobile equipment must be fully enclosed and ventilated to a defined negative pressure level.

Without specific fire and life safety requirements in the fire codes and standards, operators have not always conducted the reconditioning activities in compliance with the EPA standard or best practices for fire and life safety. NFPA 33 added requirements permitting the use of membrane enclosures to the 2015 standard; those requirements address specific features that could be applicable to the inflatable spray workstations that are used within the SMART operations. Specifically, membrane enclosures are required to be located outside, but are permitted indoors with additional safeguards. Separation distances are also included in the membrane enclosure provisions to ensure safe distances between the membrane structure and other exposure structures and to ensure safety distances are maintained for arrival of emergency apparatus. The NFPA requirements in Chapter 18 require that the membrane be constructed of material that meets the performance requirements for Test Method 2 of NFPA 701; establishes requirements for ventilation and filtration with limits on the concentration of the paint volatiles to reduce the potential for development of a flammable atmosphere; addresses ignition sources such as hot work, static, and electrical equipment, including defining electrical area classification for the inflatable workstation; and requires fire protection including portable fire extinguishers.

The new requirements for membrane structures were developed by the Committee with extensive study and input from the affected stakeholders. The Committee is once again addressing this new application by working with those stakeholders engaged in SMART and similar operations. New requirements for NFPA 33 that would be applicable to inflatable spray workstations were discussed during the prior revision cycle (F2020) as part of both first draft and second draft. However, a number of technical questions were raised by the Committee, so no changes were included for this technology as part of the 2021 edition of NFPA 33. The Committee formed a Task Group at the direction of the Chair, and that task group was charged with continuing to discuss and refine proposed requirements for future inclusion in the standard. The Task Group was given instruction to develop possible TIA language as the next revision cycle (F2023) was over three years away and this type of installation is in regular operation throughout the country with no established provisions to safeguard the facilities or the community. For those communities with AHJ awareness of the operations, the AHJ currently has no set of

requirements to point to, leaving them to prohibit or to create an equivalency application based on NFPA 33 or similar protective measures.

The Task Group, comprised of a broad cross-section of the committee members (insurance, research/testing, users, manufacturers, enforcers, installer/maintainers), began its work in late 2020 and has developed the proposed technical language in this TIA, mindful of the feedback from the full committee during the previous discussions in March 2020. The TIA contains provisions that follow a similar model to the requirements applicable to the membrane enclosures. Specifically, the proposed TIA requires inflatable workstations to be only used outdoors with separation distances of 20 ft from any permanent or temporary structure and from any public way. The workstation shall be constructed of materials that are noncombustible, limited combustible, or that meet the performance of Method 2 of NFPA 701 as defined for other materials by NFPA 33 (and consistent with the definition used throughout NFPA codes and standards). The proposed TIA also establishes means of egress requirements based on NFPA 101, using High Hazard Contents as the basis. The proposed language focuses on controlling the fuel (paint spray vapors) and ignition sources (hot work, electrical equipment, static), so fire protection is addressed with the requirement for portable extinguishers, based on the requirements in NFPA 10 for Extra-Hazard locations. The ventilation requirements for these workstations must limit the concentration of the paint volatiles to no greater than 10% LFL. As part of the ventilation system design, exhaust from the enclosure must be directed away from buildings or other structures, away from openings or vents, and away from public ways.

The TIA addresses a practice that is ongoing, but which has no established source of protection for fire and life safety. The operation uses the same liquids in an identical application form as that which is currently covered by NFPA 33 for permanent spray booths and spray rooms and for membrane enclosures, but that operation is not currently covered by the standard. The operation has been created to meet an industry need without thought for the hazards to fire and life safety. The TIA seeks to act before an incident results from this unregulated operation and to provide the AHJ with the basis for properly evaluating operations in their jurisdictions. Through this TIA, safeguards can be put in place sooner than waiting for the completion of the next revision cycle, which would be the end of 2023.

Emergency Nature: The proposed TIA intends to correct a previously unknown existing hazard. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

Throughout the United States, refinishing and touch-up of automobiles occurs daily, and only a small fraction of that refinishing takes place in permanent spray booth installations. The proposed TIA seeks to address a gap in the fire and life safety protection features associated with operations involving spray finishing within automobile used vehicle reconditioning. While NFPA 33 currently provides requirements for powder coating and spray finishing in permanent spray booth arrangements, it is estimated that within the industry usually engaged in vehicle reconditioning that over 65% are relying on alternative approaches and installations that are not presently addressed by the standard. The TIA addresses a practice that is ongoing, but which has no source of protection for fire and life safety. The operation uses the same materials in an identical application form as that which is currently covered by NFPA 33 for permanent spray

booths and spray rooms and for membrane enclosures, but is not currently covered by the standard. The operation has been created to meet an industry need without thought for the hazards to fire and life safety. The TIA seeks to act before an incident results from this unregulated operation and to provide AHJ with the basis for properly evaluating operations in their jurisdictions. Through this TIA, safeguards can be put in place sooner than waiting for the completion of the next revision cycle, which would be the end of 2023.

TENTATIVE INTERIM AMENDMENT BALLOT
EMERGENCY NATURE SELECTION OF RESPONSES

- A.** The standard contains an error or an omission that was overlooked during the regular revision process.
- B.** The NFPA Standard contains a conflict within the NFPA Standard or with another NFPA Standard.
- C.** The proposed TIA intends to correct a previously unknown existing hazard.
- D.** The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.
- E.** The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public.
- F.** The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.