

**North Carolina Department of Labor
Occupational Safety and Health Division**

Raleigh, North Carolina

Field Information System

Standards Notice 19B

Subject: Class I and Class II, Division 2 hazardous locations for spray finishing

A. Purpose.

The purpose of this standards notice is to clarify Class I or Class II, Division 2 hazardous locations surrounding spray finishing operations.

B Standards.

1. **29 CFR 1910.107(c)(2). *Minimum separation.*** There shall be no open flame or spark producing equipment in any spraying area nor within 20 feet thereof, unless separated by a partition.
2. **29 CFR 1910.107(c)(6). *Wiring type approved.*** Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area as herein defined shall be of explosion-proof type approved for Class I, group D locations and shall otherwise conform to the provision of subpart S of this part, for Class I, Division 1 Hazardous Locations. Electrical wiring, motors, and other equipment outside of but within twenty (20) feet of any spraying area, and not separated therefrom by partitions, shall not produce sparks under normal operating conditions and shall otherwise conform to the provisions of subpart S of this part for Class I, Division 2 Hazardous Locations.
3. **NFPA 70 (NEC) Article 516.3(C) – 2011**, states: The following spaces shall be considered Class I, Division 2, or Class I, Zone 2, or Class II, Division 2 as applicable.
 - (1) **Open Spraying.** For open spraying, all space outside of but within 6 m (20 ft) horizontally and 3 m (10 ft) vertically of the Class I, Division 1 or Class I, Zone 1 location as defined in Section 516.3(A), and not separated from it by partitions. See Figures 516.3(C)(1).
 - (2) **Closed-Top, Open-Face, and Open-Front Spraying.** If spray application operations are conducted within a closed-top, open-face, or open-front booth or room, any electrical wiring or utilization equipment located outside of the booth or room but within the boundaries designated as Division 2 or Zone 2 in Figure 516.3(C)(2) shall be suitable for Class I, Division 2, Class I, Zone 2, or Class II, Division 2 locations, whichever is applicable. The Class I, Division 2, Class I, Zone 2, or Class II, Division 2

locations shown in Figure 516.3(C)(2) shall extend from the edges of the open face or open front of the booth or room in accordance with the following:

- a. If the exhaust ventilation system is interlocked with the spray application equipment, then the Division 2 or Zone 2 location shall extend 1.5 m (5 ft) horizontally and 900 mm (3 ft) vertically from the open face or open front of the booth or room, as shown in Figure 516.3(C)(2) top.
 - b. If the exhaust ventilation system is not interlocked with the spray application equipment, then the Division 2 or Zone 2 location shall extend 3 m (10 ft) horizontally and 900 mm (3 ft) vertically from the open face or open front of the booth or room, as shown in Figure 516.3(C)(2) bottom.
4. **NFPA 33 – 2008.** Distances specified are identical to those found in NEC 516.3(C). [Note: NFPA 33-2011 specifies a 3 ft horizontal distance for an open face spray booth or spray room and is, therefore, considered less protective and inconsistent with NFPA 70-2011.]

C. **Discussion.**

29 CFR 1910.107 was originally adopted from NFPA 33-1969. The 20 foot distance specified in 29 CFR 1910.107(c)(2) and (c)(6) does not provide a direction.

The 2011 National Electrical Code (NFPA 70) and NFPA 33-2008 specify both vertical **and** horizontal distances, 10 ft and 20 ft, respectively, measured from the open spraying operation or spray area. For a spray booth or spray room, which are to be considered as Class I or Class II, Division 2 hazardous locations, the corresponding distances, as measured from the front of the spray booth or spray room, are reduced to 3 ft and 10 ft, respectively. When the spray application equipment is interlocked with the exhaust ventilation system, the **horizontal** distance for spray booths is reduced from 10 ft to 5 ft. See NFPA 33 (2008) or NEC (2011) for corresponding figures.

D. **Interpretations.**

1. The 20 foot distance referenced in 29 CFR 1910.107(c)(2) and (c)(6) is interpreted to mean 20 feet horizontally.
2. If an employer is in compliance with the 20 foot horizontal distance, but is not meeting the 10 foot vertical distance specified in either NFPA 33-2008 or NEC Article 516-2011, a general duty clause citation should be considered. If a general duty citation is not issued, the employer will be notified of and encouraged to meet the vertical distances.

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3. With regards to spray booths, an employer who is complying with the requirements of NFPA 33-2008 or NEC Article 516-2011 is considered to be in compliance with 29 CFR 1910.107.

E. **Effective Date.**

SN 19A is canceled. This standards notice will be effective on the date of signature. It will remain in effective until revised or canceled by the director.

Signed on Original
J. Edgar Geddie, Ph.D.
Health Standards Officer

Signed on Original
Allen McNeely
Director

11/01/2011
Date of Signature