



Paint Spray Booth

Plans Review

Plans are required for all paint-spray booths and shall be complete in floor layout and include the paint-spray booth, all ventilation equipment, electrical criteria, i.e. amps, watts, phase, hazard-classification and single-line drawing. Exterior booths shall be provided with engineering for both structural and lateral loads as required by the Building Code.

- ____ 1. Paint-spray booths shall not exceed 1500 sq. ft. nor 10% of the basic allowable area permitted for the major use of the building per the (CFC 1504.3.2.6.)
- ____ 2. Paint-spray booths shall be constructed of No. 18 gage steel. (CFC 1504.2.1)
- ____ 3. Interior surfaces shall be smooth and continuous without edges, designed to prevent pocketing of residue and permit the free passage of air from all parts. (CFC 1504.3.2.2)
- ____ 4. Paint-spray booths shall be protected by an approved automatic fire-extinguishing system. (CFC 1504.4)
- ____ 5. Spaces within the booth on the downstream and upstream side of the filters shall be protected with approved automatic sprinklers. (CFC 1504.4)
- ____ 6. The floor of the booth shall be of noncombustible material. (CFC 1504.3.2.3)
- ____ 7. Spray booths shall be separated from other operations by not less than three feet, by a wall or partition, or by greater distance as required by the A.H.J. (CFC 1504.3.2.5)
- ____ 8. Clear space. All portions of spray booths shall be readily available for cleaning and a clear space of not less than three feet shall be kept free of storage of combustible materials. (CFC 1504.3.2.5)
- ____ 9. Illumination of booths shall be through heat-treated or hammered wire glass. (CFC 1504.6.2)
- ____ 10. Exit doors from pre-manufactured spray booths shall not be less than two feet six inches by six feet eight inches. (CFC 1504.3.2.4 Exception)

- ____ 11. Clearly specify on the plans the Hazard-classification of wiring and equipment: (CFC 1503.2.1)
- ____ Wiring in the booth shall be explosion-proof: Class 1 Division 1.
 - ____ Wiring in the booth shall not produce sparks and shall be in rigid conduit or boxes and fittings containing no taps or splices.
 - ____ All metal parts of spray-booths, exhaust ducts and piping shall be electrically grounded.
- ____ 12. Clearly provide detail to show that the electrical equipment is interlocked with the ventilation system so that equipment cannot be operated unless the ventilation system is in operation. (CFC 1504.6.1.2.1)
- ____ 13. Spray booths shall have mechanical ventilation adequate to prevent the dangerous accumulation of vapors. (CFC 1504.7)
- ____ 14. The average air velocity through the booth cross-section shall not be less than 100 lineal fpm. (CFC 1504.7.5)
- ____ 15. Each booth shall have an independent exhaust system discharging to the exterior. (CFC 1504.7.2)
- ____ 16. The termination point for exhaust ducts discharging to the atmosphere shall not be less than the following: (CFC 1504.7.6)
- 1. Ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet (9144 mm) from property line; 10 feet (3048 mm) from openings into the building; 6 feet (1829 mm) from exterior walls or roofs; 30 feet (9144 mm) from combustible walls or openings into the building which are in the direction of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.
 - 2. Other product-conveying outlets: 10 feet (3048 mm) from property line; 3 feet (914 mm) from exterior wall or roof; 10 feet (3048 mm) from openings into the building; 10 feet (3048 mm) above adjoining grade.
 - 3. Environmental air duct exhaust: 3 feet (914 mm) from property line; 3 feet (914 mm) from openings into the building.
- ____ 17. Electrical motors for exhaust fans shall not be inside booths or ducts and rotating elements shall be non-ferrous or non-sparking. (CFC 1504.7.7)

- ____ 18. Exhaust ducts shall be of the following U.S. Std. Gage:

<u>Diameter</u>	<u>Gage</u>
8" or less	No. 24
over 8" to 18"	No. 22
over 18" to 30"	No. 20
over 30"	No. 18

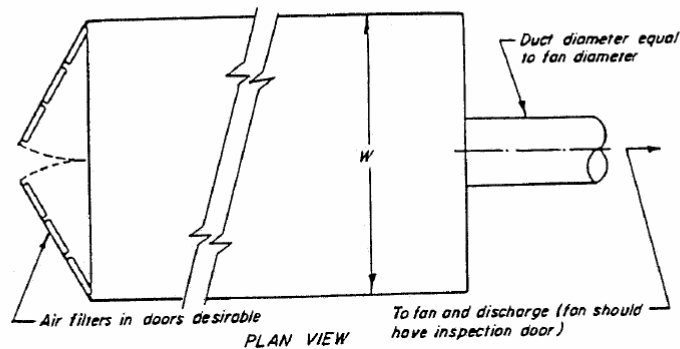
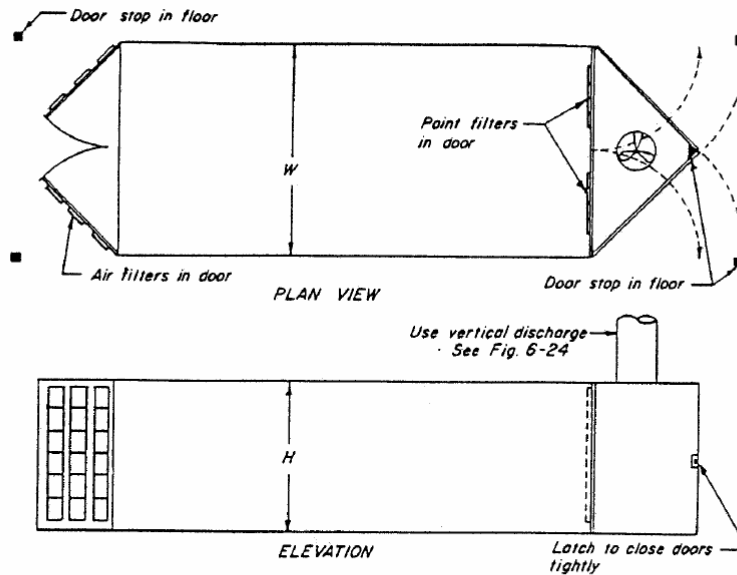
- ____ 19. Exhaust ducts shall have eighteen (18) inches clearance to unprotected combustible construction. (CMC 610.7)

- ____ 20. Protection of combustible construction may be accomplished to the following reductions:

<u>Diameter</u>	<u>Reduced Clearance</u>
____ No. 28 gage metal on 1/4" insulating millboard	12"
____ No. 28 gage metal on 1/8" insulating millboard Spaced out 1" on noncombustible spacers	9"
____ No. 22 gage metal on 1" rock-wool with batts reinforced with wire-mesh	3"

- ____ 21. Exhaust ducts shall not be installed at an angle exceeding forty-five (45) degrees. (CMC 610.3)

- ____ 22. Clean-out opening shall be provided with tight-fitting sliding or hinged doors equal to or greater in thickness than the duct. (CMC 508.3)



$Q = 100 \text{ cfm/sq ft of cross-sectional area}^*$
 (When $W \times H$ is greater than 150 sq ft, $Q = 50 \text{ cfm/sq ft}$)
 Entry loss = 0.50 VP plus resistance of each filter bank when dirty
 Duct velocity = 1000 - 3000 fpm
 Air filters to be sized for 275 cfm/sq ft of filter
 Paint filters: combustibility Class 2 or better; consult mfr for size and number

