



SPRAY BOOTH REQUIREMENTS

Submittal Requirements:

4 sets of plans

2 sets of calculations

2 sets of manufacture specifications and/or cut sheets

- Plans shall be a minimum size of 11x17
- Calculations shall include anchorage and be wet stamped and signed by the Engineer of record.
- Indicate on cover sheet “Special Inspection required for anchorage”
- Cover sheet shall include all applicable California Codes Title 24
- Cover sheet Project Data shall include:
 - Construction Type, Occupancy Type, Stories, Sprinkler, Building Area sf., New Spray Booth Area sf.
- Cover sheet shall include Scope of Work, i.e. Install one pre-fab spray booth, dimensions of 14’Wx24’Lx9’H
- Cover sheet shall indicate any deferred submittals, i.e. Suppression systems

Plans will be routed and reviewed by Building, Planning, Fire and Water divisions simultaneously.

Upon return of comments/corrections from all divisions, the applicant will be contacted to pick up comments/corrections that will require a second resubmittal process.

Upon second resubmittal, all original plan sets that were returned to the applicant along with 4 revised sets shall be returned to the Building & Safety counter for resubmittal processing.

Definition:

A Spray booth is a power-ventilated structure provided to enclose or accommodate a spraying operation, to confine and limit the escape of spray, vapor and residue, and exhausting it safely. Spray booths are manufactured or constructed in a variety of forms to control the unique hazards associated with flammable sprays and vapors.

General Information:

This guideline is applicable to any spray booth in which spraying operations utilizing flammable or combustible liquids and combustible powders are conducted. (CFC Chapter 24)

General Information continued:

1. Smoking shall be prohibited in spray finishing areas and in the vicinity of dip tanks. NO SMOKING signs shall be conspicuously posted in such areas.
2. Conspicuous signs with the following warning shall be posted in the vicinity of spraying areas, dipping operations, and paint storage rooms.
 - No Welding: The use of welding or cutting equipment in or near this area is dangerous because of fire and explosion hazards. Welding and cutting shall be done only under the supervision of the person in charge.
3. Electrical wiring and equipment shall be in accordance with the CFC and the CEC.
4. The storage, use and handling of flammable and combustible liquids shall be in accordance with CFC Chapter 57.

Spray Booth Requirements:

1. Spray booths shall be substantially constructed of steel not less than 0.044 inch (18 gauge) in thickness or other approved noncombustible material. (CFC Chapter 24)
2. The aggregate area of spray booths in a building shall not exceed the lesser of 10 percent of the area of any floor of a building or the basic area allowed for a Group H, Division 2 occupancy without area increases, as set forth in CBC Table 5-B. The area of any individual spray booth in a building shall not exceed the lesser of the aggregate size limit or 1500 square feet. An allowable exception to these limitations is a single, individual booth not exceeding 500 square feet. (CFC Chapter 24)
3. Floors shall be of noncombustible material or shall be covered with a noncombustible, non-sparking material of such character to facilitate safe cleaning and removal of residue. (CFC Chapter 24)
4. If installed, baffle plates shall be of a noncombustible material readily removable or accessible to facilitate cleaning and designed to provide an even flow of air through the booth and to prevent the deposit of overspray before it enters the exhaust duct. Baffle plates shall not be installed in the exhaust ducts.
5. Open-air spray booths having a frontal area of more than 9 square feet and not equipped with doors shall have a metal deflector or fire curtain not less than 4 1/2 inches deep installed at the upper outer edge of the booth. (CFC Chapter 24)
6. Spray booths shall be separated from other operations by not less than 3 feet, by a wall or partition, or by a greater distance as required by the Chief when specific conditions are defined which warrant a greater distance. (CFC Chapter 24)
7. All portions of spray booths shall be readily available for cleaning and a clear space of not less than 3 feet shall be kept free of storage or combustible materials. (CFC Chapter 24)
8. When spray booths are illuminated, fixed lighting units which transmit light into the spray booth through heat-treated or hammered wire glass shall be used. (CFC Chapter 24)
9. Exit doors from paint spray booths shall not be less than 2 feet 6 inches wide by 6 feet 8 inches tall. (CFC Chapter 24)



Spray Booth Requirements continued:

10. Discarded filter pads shall be immediately placed in a noncombustible container with a tight fitting lid and disposed of in accordance with hazardous waste regulations.
11. Clean filters shall be noncombustible or of an approved type.
12. Electrical equipment in spraying areas that are located such that deposits of combustible residues could readily accumulate shall be specifically approved for locations containing deposits of readily ignitable residue and explosive vapors. (CFC Chapter 24)
13. Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area shall be of an explosion-proof type approved for use in a Class 1, Division 1 hazardous location in accordance with the National Electrical Code (NEC). Electrical wiring, motors and other equipment located outside of, but within 20 feet of a spraying area and not separated from the spraying by partitions, shall not produce sparks under normal operating conditions. Electric lamps shall be totally enclosed. Such areas shall be considered a Class 1 Division 2 hazardous location. (CFC Chapter 24)
14. Portable electric lamps shall not be used in spraying areas during a spraying operation. (CFC Chapter 24)
15. Spraying areas shall be provided with mechanical ventilation adequate to prevent the dangerous accumulation of vapors. Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and finishing material residue to be exhausted. Spraying equipment shall be interlocked with the ventilation of the spraying area such that spraying operations cannot be conducted unless the ventilation system is in operation. Recirculation ventilation systems shall have approved vapor detection systems. If the approved vapor concentration in the recirculated air stream exceeds 25 percent of the lower flammability limit, the system shall automatically shut down the spray operations and switch the ventilation system to 100 percent outdoor exhaust and sound an alarm. (CFC Chapter 24)
16. Each spray booth shall have an independent exhaust system discharging to the building exterior. (CFC Chapter 24)
17. Electric motors driving exhaust fans shall not be placed inside booths or ducts. Fan rotating elements shall be nonferrous or non-sparking or casings shall consist of or be lined with such material. Belts shall not enter ducts or booths unless belts and pulleys within a duct or booth are tightly enclosed. (CFC Chapter 24)



Spray Booth Requirements continued:

- 18. Exhaust ducts shall be constructed of steel having a thickness in accordance with CFC Chapter 24. The point of discharge for exhaust ducts shall not be less than 6 feet from adjoining combustible construction and not less than 25 feet from adjoining exterior wall openings.
 (Exception: Point of discharge for water spray booths is not regulated) (CFC Chapter 24)

Exhaust Duct Requirements

<u>Diameter of Duct (inches)</u>	<u>Minimum Sheet Thickness</u>
8 or less	0.021 (24 gauge) Over
8 to 18	0.027 (22 gauge) Over 18
to 30	0.033 (20 gauge) Over 30
	0.044 (18 gauge)

- 19. Exhaust ducts shall have a clearance from combustible construction or material of not less than 18 inches. (CFC Chapter 24)
- 20. When combustible construction is provided with the following protection features applied to all surfaces within 18 inches of the exhaust duct, clearances shall not be less than those indicated below: (CFC Chapter 24)
- 21. The mechanical ventilation system shall have air intake ducts extended to pick up flammable vapor within 6 inches of the floor. (CFC Chapter 24)
- 22. Exhaust ducts shall not include individual bends exceeding 45 degrees measured from the centerline of the duct. Bends, turns, and elbows in ducts and pipes shall be constructed in a manner that does not reduce the cross sectional area of the duct or pipe. (CFC Chapter 24)
- 23. Clean-out openings shall be provided at intervals that allow thorough cleaning of ducts. Clean-out openings in ducts and pipes shall be equipped with tight fitting sliding or hinged doors constructed of metal which is equal to or greater than the thickness of the duct or pipe. Such doors shall be equipped with a substantial latch to hold the door tightly closed. (CFC Chapter 24)

Fire Protection Equipment:

- Spray booths and spraying rooms shall be protected by approved automatic fire extinguishing systems. Such systems shall be extended to protect exhaust plenums, exhaust ducts, and both sides of dry filters when filters are used. A spray booth located inside a building that is otherwise provided with a fire sprinkler system shall be protected by the fire sprinkler system through extension into the spray booth, duct, and plenum. (CFC Chapter 24)
- Portable fire extinguishers shall be provided for spraying areas in accordance with the requirements for an extra (high) hazard occupancy. See CFC Standard 10-1. (e.g., 4-A:40BC within 30 feet of the booth) (CFC Chapter 24)

Fire Protection Equipment continued:

- Should the sprinkler system be equipped to monitor water flow to a central monitoring station, the sprinkler system required for the spray booth shall also be monitored for water flow.

Drying Apparatus:

- Spray booths and spraying rooms shall not be alternately used for the purpose of drying arrangements which would cause a material to increase the surface temperature of the spray booth or room unless used for automobile refinishing in accordance with CFC Chapter 24.
- Drying apparatus used in spraying rooms shall be of the portable infrared type. Drying apparatus shall be listed and approved for use with flammable vapors and combustible residues and shall be equipped with explosion control. (CFC Chapter 24)
- The spraying procedure shall use low-volume spray application. (CFC Chapter 24)
- The interior of the spray booth or spraying room shall be kept free of overspray deposits. (CFC Chapter 24)
- The spraying apparatus, drying equipment and ventilating system for the spray booth or spraying room shall be equipped with suitable interlocks. (CFC Chapter 24)

Interlocks:

Plans for the extinguishing system required in the booth shall be submitted by the licensed fire protection contractor (C-16) responsible for the work. The booth may not be permitted until both plans reviews have been reviewed and approved. Following the plan review process, contact the Garden Grove Fire Department to request an inspection verifying compliance with the approved plans, codes and standards and witness testing of any chemical based fire extinguishing system. All required CFC permits will be issued upon successful completion of required inspections.

- Prevent the operation of spraying apparatus while drying operations are in progress,
- Purge spray vapors from the spray booth or spraying room for a period of not less than 3 minutes before drying apparatus can be operated,
- Have the ventilating system maintain a safe atmosphere within the spray booth or spraying room during the drying process and automatically shut off drying apparatus in the event of a failure of the ventilating system, and
- Automatically shut off the drying apparatus if the air temperature within the booth exceeds 160 degrees F, when other than portable infrared drying apparatus is used.