

**Paint Booth, Electrostatic, and Powder Coating
Plan Review or Inspection Checklist**
2014 OFC Chapter 24, 2014 OMSC and
2011 NFPA 33

Date of Review: _____ Permit Number: _____
Business/Building Name: _____ Address of Project: _____
Designer Name: _____ Designer's Phone: _____

The numbers that follow checklist statements represent a OFC code section unless otherwise stated.

Checklist Legend: ✓ or OK = acceptable N = need to provide, NA = not applicable

1. _____ Three sets of drawings are provided for the plan review process.
2. _____ Specification and installation data sheets for premanufactured booths.

The following information shall be detailed on the plans or accompany the plans :

General and Flammable/Combustible Liquids:

3. _____ Noted on the plans are the verbiage and conspicuous locations for the "No Smoking" signs, 2403.2.6.
4. _____ Noted on the plans are the verbiage and conspicuous locations for the "No Welding" signs, 2403.2.7.
5. _____ The liquid container sizes (closed type or provided with covers) that supply spray nozzles and do not exceed 10 gallons each, 2403.3.1.
6. _____ Detailed are the location of the container or piping shutoff valves to which a hose or flexible connection is attached, 2403.3.2.
7. _____ Detailed are the location of any listed cleaning machines using Class I liquids for spray equipment and it is not located in areas open to the public or within 3 ft. of an ignition source, 2403.3.5.1.

Booth Construction:

8. _____ Spray room operations located in A, E, I, or R occupancies are located in a spray room protected with an approved sprinkler system and separated from other areas by construction specified in the OSSC, 2404.2.
9. _____ Floors for spray room or booth are noncombustible or covered with a nonsparking material, 2404.3.1.1, 2404.3.2.3.
10. _____ The booth is constructed of steel not less than .0478-inch (18 gauge) and for two-layer metal assemblies each sheet is not less than .0359-inch (20 gage), 2404.3.2.1.
11. _____ Interior surfaces are smooth, 2404.3.2.2.
12. _____ Premanufactured spray booth exit doors are at least 30 in. in width and 80 in. in height, 2404.3.2.4. Spray room exits comply with IBC Chapter 10.
13. _____ The booth is separated at least 3 ft. from other operations and construction unless the booth is adjacent to a 1-hour fire-resistive wall or a noncombustible exterior wall, 2404.3.2.5.
14. _____ The aggregate square footage for multiple booths does not exceed 10 percent of the floor area or the basic area allowed for an H-2 occupancy and a single booth does not exceed 1,500 sq. ft., 2404.3.2.6.

Electrical:

15. _____ Spray spaces and vapor areas have wiring and equipment designed for hazardous (classified) locations. Such locations are Class I, Division 1 or Class II, Division I locations, 2403.2.1.1.
16. _____ Electrical wiring and equipment outside of but within 5 ft. horizontally and 3 ft. vertically of openings in a spray booth or a spray room shall be approved for Class I, Division 1 or Class II, Division I locations, 2403.2.1.3.

Ventilation

17. _____ Spray area ventilation is designed to be on at all times during spraying and for a period of time after spraying, 2404.7 and OMSC 502.7.
18. _____ Spray equipment is interlocked with ventilation such that spraying can not occur unless ventilation is operating, 2404.7.1 and OMSC 510.
19. _____ Air exhausted from the spray area is not recirculated unless the spraying operation in a unmanned spray area, solid particulates are removed, vapors are less than 25 percent of LEL, equipment monitors the vapor concentration and transmits an alarm that shuts down operations when exceeding 25 percent of LEL, 2404.7.2 and OMSC 502.7. In occupied booths recirculation is permitted when all of the requirements of 2404.7.2 are satisfied and documents are prepared to show that the installation does not pose a life hazard to personnel inside of the spraying booth, room, or area.

20. ____ Ventilation design shows at least an average airflow over the open face of the booth of 100 linear FPM, 2404.7.3 and OMSC 502.7.
21. ____ Each booth and spray room have an independent exhaust duct system discharging outside unless multiple booths with a combined frontal area does not exceed 18 sq. ft. and if more than 1 fan serves one booth, fans are interconnected to operate simultaneously, 2404.7.5 and OMSC 502.7.
22. ____ Ducts conveying flammable vapors are terminated 30 ft. from the property line, 10 ft. from openings, 6 ft. from walls and roofs, 30 ft. from combustible walls or openings into buildings which are in the direction of the exhaust discharge, and 10 ft. above grade, 2404.7.6 and OMSC 502.7.
23. ____ Details of exhaust duct doors, panels, or other means that permit inspection, maintenance, cleaning or access to fire protection devices are provided. NFPA 33: 7.9
24. ____ Other product conveying outlets terminate 10 ft. from the property line, 10 ft. from openings, 3 ft. from walls and roofs, and 10 ft. above grade, 2404.7.6 and OMSC 502.7.
25. ____ Fan motor locations are detailed and verify the motors are not inside the booth or duct and spec sheets are provided verifying fans are nonferrous or nonsparking, 2404.7.7 and OMSC 502.7.
26. ____ Air intake filters that are part of a wall or ceiling assembly are listed as Class I or II per UL 900, spec sheets are provided, 2404.7.8.
27. ____ Filter supports are of noncombustible materials, 2404.7.8.1.
28. ____ Gauges and alarm locations for ensuring air velocity are maintained, and detailed, 2404.7.8.3.
29. ____ Booths using automatic dry filter rolls shall advance the filter when the air velocity becomes less than 100 lineal feet or it shall cause the spray operation to shutdown, 2404.7.8.4.
30. ____ The lighting through glass panels or other transparent materials is fixed and protected by heat treated or wired glass, and any integral fixtures are listed for Class I, Division 2 or Class II, Division 2 locations, 2404.6.2.
31. ____ Booths, exhaust ducts, and both sides of dry filters are protected by a fire-extinguishing system, 2404.4.

Fire Protection and Interlocks:

32. ____ Sprinklers are protected from residue, means of protection is noted on the plans, 2404.5.2.
33. ____ Fire protection systems protecting automated spray operations are interlocked to stop spray operations and workpiece conveyors in flammable vapor areas and if provided will activate a fire alarm system, 2404.8.1.
34. ____ Automated spray operation is equipped with a manual fire alarm and emergency shutdown station for each spray area that functions like item 33 above, 2404.8.1.1.
35. ____ Air makeup and spraying area exhaust systems are not interlocked with the fire alarm system and remain operational during a fire alarm condition, 2404.8.2.
36. ____ Spraying equipment, drying apparatus, and ventilating system are equipped with interlocks to: (2404.6.1.2.1)
 - ____ a) prevent spraying while drying
 - ____ b) purge spray vapors 3 minutes before drying
 - ____ c) cause drying shutdown on ventilation failure
 - ____ d) cause drying shutdown when booth exceeds 200⁰
37. ____ Fire extinguisher type, size, and location is detailed for extra hazard occupancy, 2404.4.1, 906.3.

Powder Coating

38. ____ Powder coating is performed in a ventilated enclosed room made of noncombustible materials or in a spray booth designed in accordance with 2404.3.2, 2406.2 and 2406.3.
39. ____ Sprinkler or automatic fire-extinguisher systems is provided per Chapter 9, 2406.4.
40. ____ For automated powder application equipment provide a supervised flame detection device (submit plans and spec sheets for the system) that reacts to flame within 0.5 second and will do all the following: 1) shut down electrical and compressed air to conveyor, ventilation, powder equipment, 2) close segregation dampers in ductwork, 3) initiate audible alarm in room or booth, 2406.4.1.
41. ____ Ventilation is designed to ensure the environment remains 50 percent below the minimum explosive concentration for the material being used, material data sheets are provided along with the ventilation design data, 2406.7.
42. ____ Detailed are the locations of the "No Smoking" signs, 2403.2.7.
43. ____ The fixed powered coating equipment complies with requirements in 2407, 2406.1.
44. ____ Fire extinguisher type, size, and location is detailed for extra hazard occupancy, 2406.4.2, 906.3.

Electrostatic Spray Equipment

45. ____ The transformers, power packs, and control apparatus are located outside of the spraying or vapor areas or comply with the hazardous (classified) location requirements in 2403.2.1, 2407.6.
46. ____ Electrodes and electrostatic atomizing heads are insulated from ground, 2407.3.

47. _____ The plans detail the location and verbiage of what the sparking distance is and is to be twice as far between the product being sprayed and the electrodes, 2407.2.
48. _____ Provided is info that states the electrostatic equipment is equipped with automatic shutdown without time delay to disconnect the power supply to the high-voltage transformer and signal the operator when ventilation stops, or when conveyor carrying articles stops, or when an occurrence of a ground or imminent ground at any point of the high-voltage system, or when the required clearance stated in item 38 is reduced, 2407.8.
49. _____ Hand electrostatic equipment is interlocked with the ventilation system so the equipment will not operate unless ventilation is on, 2407.9.
50. _____ Flammable vapor area is ventilated in accordance with items A-L below, 2407.7.
- _____ a) Spray area ventilation is designed to be on at all times during spraying and for a period of time after spraying, 2404.7 and OMSC 502.7.
- _____ b) Spray equipment is interlocked with ventilation such that spraying can not occur unless ventilation is operating, 2404.7.1 and OMSC 502.7.
- _____ c) Air exhausted from the spray area is not recirculated unless the spraying operation in a unmanned spray area, solid particulates are removed, vapors are less than 25 percent of LEL, equipment monitors the vapor concentration and transmits an alarm that shuts down operations when exceeding 25 percent of LEL, 2404.7.2 and OMSC 502.7. In occupied booths recirculation is permitted when all of the requirements of 2404.7.2 are satisfied and documents are prepared to show that the installation does not pose a life hazard to personnel inside of the spraying booth, room, or area.
- _____ d) Ventilation design shows at least an average airflow over the open face of the booth of 100 linear FPM, 2404.7.3 and OMSC 502.7.
- _____ e) Each booth and spray room have an independent exhaust duct system discharging outside unless multiple booths with a combined frontal area does not exceed 18 sq. ft. and if more than 1 fan serves one booth, fans are interconnected to operate simultaneously, 2404.7.5 and OMSC 502.7.
- _____ f) Ducts conveying flammable vapors are terminated 30 ft. from the property line, 10 ft. from openings, 6 ft. from walls and roofs, 30 ft. from combustible walls or openings into buildings which are in the direction of the exhaust discharge, and 10 ft. above grade, 2404.7.6 and OMSC 502.7.
- _____ g) Other product conveying outlets terminate 10 ft. from the property line, 10 ft. from openings, 3 ft. from walls and roofs, and 10 ft. above grade, 2404.7.6 and OMSC 502.7.
- _____ h) Fan motor locations are detailed and verify the motors are not inside the booth or duct and spec sheets are provided verifying fans are nonferrous or nonsparking, 2404.7.7 and OMSC 502.7.
- _____ i) Air intake filters that are part of a wall or ceiling assembly are listed as Class I or II per UL 900, spec sheets are provided, 2404.7.8.
- _____ j) Filter supports are of noncombustible materials, 2404.7.8.1.
- _____ k) Gauges and alarm locations for ensuring air velocity are maintained, and detailed, 2404.7.8.3.
- _____ l) Booths using automatic dry filter rolls shall advance the filter when the air velocity becomes less than 100 lineal feet or it shall cause the spray operation to shutdown, 2404.7.8.4.
51. _____ For automated liquid electrostatic spraying provide a supervised flame detection system (submit plans and spec sheets for the system) that with the event of ignition reacts to flame within 0.5 second and will: 1) activate a local alarm, 2) shut down coating material delivery system, 3) terminate spray operations, 4) stop conveyors into and out of the spray area, 5) disconnect power to high-voltage elements in the spray area and power to the system, 2407.4.1.
52. _____ Detailed are the locations of the signs to; 1) designate the process zone as dangerous, 2) identify grounding requirements for all electrically conductive objects in the spray area, including persons, 3) restrict access to qualified persons only, 2407.5.2.
53. _____ Ventilation is provided per checklist items 17 - 24, 2407.7.
54. _____ The spray area is provided with an extinguishing system (plans and manufacturer design info is provided), 2407.4.

Other

55. _____ Is a paint mixing room provided, if so, provide detailed plans for spill control, etc.
56. _____ Where is the paint storage area? Provide construction details for hazardous material storage.
57. _____ Hazardous Material Inventory Statement in accordance with 5001.6.2. is provided.

Additional Comments:

