

Seattle Fire Department

Permit Conditions

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Spray Finishing

NOTICE

This permit shall be kept on the premises designated herein at all times and shall be readily available for inspection by the fire code official. (SFC 105.3.5)

GENERAL

1. Spray finishing operations conducted in buildings used for Group A, E, I or R Occupancies shall be located in a spray room protected with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and separated vertically and horizontally from other areas in accordance with the Seattle Building Code. (SFC 2404.2)
2. In occupancies other than A, E, I or R Occupancies, spray finishing operations shall be conducted in a spray room, spray booth or spraying space approved for such use.
Exceptions:
 1. Automobile undercoating spray operations and spray-on automotive lining operations in areas with *approved* natural or mechanical ventilation where utilizing Class IIIA or IIIB combustible liquids.
 2. When spraying is conducted in an *approved* limited spraying space in accordance with Section 2404.9
 3. Resin application areas used for manufacturing of reinforced plastics shall comply with section 2409 and shall not be required to be located in a spray room, spray booth or spraying space. (SFC 2404.2)
3. Spray-finishing operations are allowed in basements only if confined to either an *approved* spray booth or an *approved* spray room protected by an *approved* automatic fire sprinkler system and if such basement is protected throughout by an *approved* automatic sprinkler system in accordance with Chapter 9. (SFC 2404.2)

OPERATIONS AND MAINTENANCE

4. Flammable vapor areas, exhaust fan blades and exhaust ducts shall be kept free from the accumulation of deposits of combustible residues. (SFC 2403.4)
5. Scrapers, spuds and other tools used for cleaning purposes shall be constructed of non-sparking materials. (SFC 2403.4.1)
6. Residues removed during cleaning and debris contaminated with residue shall be immediately removed from the premises and properly disposed of. (SFC 2403.4.2)
7. Approved metal waste cans with self-closing lids shall be provided wherever rags or waste are impregnated with finishing material. Such rags and waste shall be deposited therein immediately after being utilized. The contents of waste cans shall be properly disposed of at least once daily and at the end of each shift. (SFC 2403.4.3)
8. Portable fire extinguishers having a minimum rating of 40-B shall be provided and located so that the maximum travel distance to an extinguisher does not exceed 30 feet. (SFC 906, 2404.4.1)

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9. Spray booths and spray rooms shall not be alternately used for the purpose of drying unless the drying operations and equipment fully comply with Seattle Fire Code Section 2404.6.1.1 and 2404.6.1.2. (SFC 2404.6.1)

VENTILATION

10. Mechanical ventilation of flammable vapor areas shall be provided in accordance with Section 502.7 of the Seattle Mechanical Code. (SFC 2404.7)
11. 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. (SFC 2404.7.1)
12. 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. (SFC 2404.7.1)
13. Electric motors driving exhaust fans shall not be placed inside booths or ducts. (SFC 2404.7.7)
14. Articles being sprayed shall be positioned in a manner that does not obstruct collection of overspray. (SFC 2404.7.4)
15. Visible gauges, audible alarms or pressure-activated devices shall be installed to indicate or ensure that the required air velocity is maintained. (SFC 2404.7.8.3)

FILTERS

16. Discarded filter pads shall be immediately placed in a noncombustible container with a tight-fitting lid and disposed of in accordance with local and state hazardous waste regulations. (SFC 2404.7.8.5)
17. Spray booths using dry filters shall not be used for spraying materials that are highly susceptible to spontaneous heating and ignition. Filters shall be changed prior to spraying materials that could react with other materials previously collected. (SFC 2404.7.8.6)

ILLUMINATION

18. Where spraying areas, spray rooms or spray booths are illuminated through glass panels or other transparent materials, only fixed luminaires shall be used as a source of illumination. (SFC 2404.6.2)
19. Panels for luminaires shall be of heat-treated glass, wired-glass or hammered-wire glass and shall be sealed to confine vapors, mists residues, dusts and deposits to the spraying area. (SFC 2404.6.2.1)
20. Luminaires that are an integral part of the walls or ceiling of a spraying area are allowed to be separated from the spraying area by glass panels that are an integral part of the fixture. Such fixtures shall be listed for Class I, Division 2 or Class II, Division 2 hazardous locations whichever is applicable and also shall be suitable for accumulations of deposits of combustible residue. (SFC 2404.6.2.3)
21. Portable electric lamps shall not be used in spraying areas during spraying operations. Portable electric lamps, if used during cleaning or repair operations, shall be of a type approved for hazardous locations. (SFC 2404.6.2.4)

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SOURCES OF IGNITION

22. There shall be no open flame or spark-producing equipment in any flammable vapor area or within 20 feet of such areas unless separated by a permanent partition. (SFC 2403.2.2)
23. Electrical wiring and equipment located outside of, but within 3 feet of openings in a spray booth or a spray room, shall be *approved* for Class I Division 2 or Class II, Division 2 hazardous locations, whichever is applicable. (SFC 2403.2.1.3)
24. Unless specifically approved for such locations, there shall be no electrical equipment in any spraying area whereon deposits of combustible residues may readily accumulate.
Exception: Wiring in a rigid conduit or boxes or fitting containing no taps, splices or terminal connections, and equipment allowed by Sections 2404, 2407 and Chapter 30 of the SFC. (SFC 2403.2.1.4)
25. Electrical wiring and equipment in flammable vapor areas shall be of an explosion-proof type approved for such use. These areas shall be considered to be Class I, Division 1 or Class II, Division 1 hazardous locations in accordance with NFPA 70. (SFC 2403.2.1.1)
26. Equipment that is capable of producing sparks or particles of hot metal that would fall into a spray area or vapor area shall be totally enclosed. (SFC 2403.2.4)
27. Metal parts of spray booths, exhaust ducts and piping systems conveying Class I or II liquids shall be electrically grounded in accordance with NFPA 70. (SFC 2403.2.5)
28. Smoking shall be prohibited in flammable vapor areas. "NO SMOKING" signs shall be of a durable material with lettering on a contrasting background. Letters shall be not less than 3 inches in height and 1/2 inch in stroke. (SFC 2403.2.6)
29. Conspicuous signs prohibiting welding, cutting and similar spark-producing operations shall be posted in a vicinity of spraying areas and paint storage rooms. (SFC 2403.2.7)
30. Space heaters shall not be located in flammable vapor areas or other locations subject to accumulation of deposits or combustible residue. (SFC 2403.2.3)

STORAGE, USE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS

31. Containers supplying spray nozzles shall be of a closed type or provided with metal covers which are kept closed. (SFC 2403.3.1)
32. Containers not resting on floors shall be on noncombustible supports or suspended by wire cables. (SFC 2403.3.1)
33. Containers supplying spray nozzles by gravity flow shall not exceed 10 gallons. (SFC 2403.3.1)
34. Containers and piping to which a hose or flexible connection is attached shall be provided with a shut-off valve at the connection. Such valves shall be kept shut when hoses are not in use. (SFC 2403.3.2)

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35. Where flammable or combustible liquids are supplied to spray nozzles by positive displacement pumps, pump discharge lines shall be provided with an approved relief valve discharging to pump suction or a safe detached location. (SFC 2403.3.3)
36. Where a flammable mixture is transferred from one portable container to another, a bond shall be provided between the two containers. At least one container shall be grounded. Piping systems for Class I and Class II liquids shall be permanently grounded. (SFC 2403.3.4)
37. Class I liquids used as cleaning solvents shall be used in spray gun and equipment cleaning machines which are listed and approved for such purpose or shall be used within approved spray booths or spray rooms. (SFC 2403.3.5)
38. Cleaning machines for spray guns and equipment shall not be located in areas open to the public and shall be separated from ignition sources in accordance with their listing or by a distance of 3 feet, whichever is greater. (SFC 2403.3.5.1)
39. Solvents used outside of spray booths, spray rooms or listed and approved spray gun and equipment cleaning machines shall be restricted to Class II and Class III liquids. (SFC 2403.3.6)
40. Flammable and combustible liquids stored and used on site in conjunction with the spraying activity shall be limited to the quantities established by this permit and shall not exceed the following quantities unless stored in a liquid storage room in accordance with the Seattle Building Code for a Group H-2 or H-3 Occupancy as applicable.

(SFC Table 5003.1.1(I)):

Class of Liquid	Maximum Quantity Allowed		
	In Storage (gallons)	In Closed Use ^c (gallons)	In Open Use ^c (gallons)
Class IA	30 ^{a,b}	30 ^a	10 ^a
Class IB and IC	120 ^{a,b}	120 ^a	30 ^a
Class II	120 ^{a,b}	120 ^a	30 ^a
Class III-A	330 ^{a,b}	330 ^a	80 ^a

- a. Maximum allowable quantities may be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system. Where footnote b also applies the increase for both notes shall be applied accumulatively.
- b. Maximum allowable quantities may be increased 100 percent when stored in approved storage cabinets, exhausted enclosures or safety cans. Where footnote a also applies the increase for both notes shall be applied accumulatively.
- c. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

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41. Ventilating equipment shall be operating when solvents are used for cleaning spray nozzles and auxiliary equipment in spray booths and spray rooms. (SFC 2403.3.5.2)
42. Solvent distillation equipment used to recycle and clean dirty solvent shall comply with Section 5705.4 of the Seattle Fire Code. (SFC 2403.4.4)

SPRAY BOOTHS

43. The design and construction of spray booths shall be in accordance with the Seattle Fire Code, Seattle Building Code and NFPA 33. (SFC 2404.3.3)
44. The interior surfaces of spray booths shall be smooth to facilitate washing and cleaning. Aluminum shall not be used. (SFC 2404.3.3.2)
45. Combustible floor construction in spray booths shall be covered by approved, noncombustible, non-sparking material, except where combustible coverings, such as thin paper or plastic and strippable coatings are utilized over noncombustible materials to facilitate cleaning operations in spray booths. (SFC 2404.3.3.3)
46. All portions of a spray booth shall be readily available for cleaning and a clear space of not less than 3 feet shall be maintained on all sides and kept free of any storage or combustible construction.
Exceptions:
 1. This requirement shall not prohibit locating a spray booth closer than 3 feet to or directly against an interior partition, wall or floor/ceiling assembly that has a fire-resistance rating of not less than 1 hour provided the spray booth can be adequately maintained and cleaned.
 2. This requirement shall not prohibit locating a spray booth closer than 3 feet to an exterior wall or a roof assembly provided the wall or roof assembly is constructed of noncombustible material and provided the spray booth can be adequately maintained and cleaned. (SFC 2404.3.3.5)
47. The average air velocity over the open face of the booth, or booth cross sectional in the direction of airflow during spraying operations shall not be less than 100 feet per minute. (SFC 2404.7.3.1)
48. Spray booths shall be protected by an approved automatic fire-extinguishing system complying with Chapter 9 of the SFC and which shall also protect exhaust plenums, exhaust ducts and both sides of dry filters when such filters are used. (SFC 2404.4)
49. If sprinkler heads are subject to paint over-spray, polyethylene or cellophane bags having a thickness of .003 (.076 mm) or less, or thin paper shall be used. (SFC 2404.5.2)
50. Automatic sprinklers contaminated by overspray particles shall be replaced with new automatic sprinklers. (SFC 2404.5.2)