



Operational Permit Application

Aerosol Products



www.cityofvancouver.us/departments/fire-department

International Fire Code as adopted by VMC 16.04 (Washington State Fire Code)

Permitting Requirements

An **aerosol product** is defined as a combination of a container, a propellant and a material that is dispensed. Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, Level 2 or Level 3 as defined below:

- Level 1 aerosol products are those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb).
- Level 2 aerosol products are those with a total chemical heat of combustion that is greater than 8,600 Btu/lb, but less than or equal to 13,000 Btu/lb.
- Level 3 aerosol products are those with a total chemical heat of combustion that is greater than 13,000 Btu/lb.

An **operational permit** is required to manufacture, store or handle an aggregate quantity of Level 2 or Level 3 aerosol products, aerosol cooking spray products or plastic aerosol 3 products more than 500 pounds net weight.

Project Information

Site Address		Owner Name	
Other			

Applicant Information

Company Name		Address	
Contact Name			
Office Phone		Cellular	Email

Contractor

Company Name		Address	
Contact Name			
Office Phone		Cellular	Email

Description of Work

Electronic Plan Standards

File Naming Standards:

Electronic plans and documents shall be named as specified in the City of Vancouver [ePLANS](https://www.cityofvancouver.us/business/permits-licenses-and-inspections/eplans/) system:
<https://www.cityofvancouver.us/business/permits-licenses-and-inspections/eplans/>



Acceptable File Types:

Plans, calculations, specifications and supporting documents shall be uploaded as a PDF file.

Plan Sheet Standards:

All plans shall be drawn to scale, as identified in the checklist, and each sheet shall state the scale and show a measurable scale on the page for measurement calibrations.

Document Orientation:

All plans must be uploaded in "Landscape" format in the horizontal position with a north indicator. All other documents can be in "Portrait" format.

Stamped:

Where documentation contains a code analysis or engineering calculations, such documents shall be stamped by the design professional.

Minimum Submittal Checklist for Upload to ePLANS

- Completed Fire Installation Permit Application – Aerosol (this document) Check all *Permit Conditions* checkboxes that are applicable to your project
- Supporting documents listed below (See *Document Details* below)
- Site plans and floor plans (see *Plan Details* below)

Document Details

HMMP Guide: <https://www.cityofvancouver.us/wp-content/uploads/2023/10/Hazardous-Materials-Management-Plan.pdf>
See *Vancouver Fire Department HMMP Guide* for direction on completing required HMMP and/or supplemental forms

With your permit application, provide the following documents:

- Narrative describing the nature and scope of this project.
Completed Aerosol Supplemental Form as contained in the HMMP document (see HMMP Guide linked above for direction on these forms)

Plan Details

The following is a list of information required on all plan submittals for review of an aerosol products permit. The plan shall be drawn to 1/8"= 1'-0" minimum scale. The applicant is required to submit all applicable information so an accurate and timely review may be completed:

General:

- Site plan to include a north arrow, a measurable scale for calibration purposes, fire hydrants, emergency access lanes and doors, vehicle gates, fire department connection, facility evacuation meeting point locations, sprinkler riser, fire alarm control panel, Knox Box, and roof access (if provided).
- Interior plans showing all access points, hazardous materials storage rooms and/or cabinets, hazardous equipment, or operations areas.
- Distances between buildings used for the manufacture or storage of aerosol products and adjacent buildings or property lines that are or can be built upon.
- Areas in which flammable liquids and flammable gases are handled or stored.
- Portable fire extinguisher locations per WSFC 906
- Areas of open flames and sparks, hot surfaces, or other ignition sources

Document Details

The following is a list of WSFC requirements related to aerosol storage and use. Use this form to confirm that all applicable requirements are met. Non-applicable requirements can be left blank.

General:

- Safety Data Sheet (SDS) information for aerosol products displayed shall be kept on the premises at an approved location (WSFC 5101.3).
- Metal aerosol containers shall be limited to a maximum size of 33.8 fluid ounces (WSFC 5101.4).
- Plastic aerosol containers shall be limited to a maximum of 4 fluid ounces except as provided in WSFC Sections 5104.1.1 and 5104.1.2 (see Inside Storage of Aerosol Products).
- Glass aerosol containers shall be limited to a maximum of 4 fluid ounces.
- Manufacturing facilities shall be in accordance with NFPA 30B.

Identification:

- Cartons or outer packaging shall be identified on not fewer than one exterior side with the classification level of the aerosol products contained within the carton (WSFC 5103.2).
- Outer packaging shall be labeled according to the specified contents and packaging material outlined below:
 1. Cartons or outer packaging containing aerosol products in metal containers or glass and plastic containers 4 fluid ounces or less shall be clearly marked as follows (WSFC 5103.2.1):

LEVEL ____ AEROSOLS
 2. Cartons or outer packaging containing aerosol cooking spray products in metal containers shall be clearly marked as follows (WSFC 5103.2.2):

AEROSOL COOKING SPRAY
 3. Cartons or outer packaging containing aerosol products in plastic containers greater than 4 fluid ounces shall be clearly marked as follows (WSFC 5103.2.3):

PLASTIC AEROSOL 1, 3 or X

Inside Storage of Aerosol Products:

- The inside storage of Level 2 and 3 aerosol products shall comply with Sections 5104.2 through 5104.8 and NFPA 30B. Level 1 aerosol products and those aerosol products covered by Section 5104.1.1 shall be equivalent to a Class III commodity and shall comply with the requirements for palletized or rack storage in NFPA 13 (WSFC 5104.1).
- Aerosol products in plastic containers larger than 4 fluid ounces, but not to exceed 33.8 fluid ounces, shall be allowed only where in accordance with this section. The commodity classification shall be Class III commodities, as defined in NFPA 13 where any of the following conditions are met (WSFC 5104.1.1):
 1. Base product does not have a fire point where tested in accordance with ASTM D92, and nonflammable propellant.
 2. Base product does not sustain combustion as tested in accordance with DOTn 49 CFR Part 173, Appendix H, and nonflammable propellant.
 3. Base product contains up to 20 percent by volume (15.8 percent by weight) of ethanol, isopropyl alcohol or a combination thereof in an aqueous mix, and nonflammable propellant.
 4. Base product contains 4 percent by weight or less of an emulsified flammable liquefied gas propellant within an aqueous base. The propellant shall remain emulsified for the life of the product. Where such propellant is not permanently emulsified, the propellant shall be nonflammable.
- Plastic aerosol 3 products shall be defined as those that meet one of the following criteria (WSFC 5104.1.2):
 1. Base product does not have a fire point where tested in accordance with ASTM D92, and there is not more than 10 percent by weight flammable propellant.
 2. Base product does not sustain combustion as tested in accordance with DOTn 49 CFR 173, Appendix H, and there is not more than 10 percent by weight flammable propellant.

3. Base product contains 50 percent by volume or less of flammable or combustible water-miscible alcohols in an aqueous mix, and there is not more than 10 percent by weight of flammable propellant.
- Plastic aerosol X products are those products, in containers larger than 4 fluid ounces, that do not meet the criteria provided in WSFC Section 5104.1.1 or 5104.1.2 (WSFC 5104.1.3).
 1. The storage, use or handling of plastic aerosol X products shall be prohibited.

Storage in Groups A, B, E, F, I and R

- Storage of Level 2 and 3 aerosol products in occupancies in Groups A, B, E, F, I and R shall be limited to the following maximum quantities (WSFC 5104.2):
 1. A net weight of 1,000 pounds of Level 2 aerosol products.
 2. A net weight of 500 pounds (227 kg) of Level 3 aerosol products.
 3. A combined net weight of 1,000 pounds (454 kg) of Level 2 and 3 aerosol products.

Note: The maximum quantity shall be increased 100 percent where the excess quantity is stored in storage cabinets in accordance with Section 5704.3.2.

- Storage of quantities exceeding the maximum quantities indicated in Section 5104.2 shall be stored in separate inside flammable liquid storage rooms in accordance with Section 5104.5 (WSFC 5104.2.1).
- Storage of aerosol cooking spray products in Group A, B, E, F, I and R occupancies shall not be more than 1,000 pounds net weight (WSFC 5104.2.2).

Storage in General Purpose Warehouses:

- Storage consisting of solid pile, palletized or rack storage of Level 2 and 3 aerosol products not segregated into areas utilized exclusively for the storage of aerosol products shall comply with the following table (WSFC 5104.3.1):

NONSEGREGATED STORAGE OF LEVEL 2 AND 3 AEROSOL PRODUCTS IN GENERAL PURPOSE WAREHOUSES^b

AEROSOL LEVEL	MAXIMUM NET WEIGHT PER FLOOR (pounds) ^b			
	Palletized or solid-pile storage		Rack storage	
	Unprotected	Protected ^a	Unprotected	Protected ^a
2	2,500	12,000	2,500	24,000
3	1,000	12,000	1,000	24,000
Combination 2 and 3	2,500	12,000	2,500	24,000

For SI: 1 foot = 304.8 mm, 1 pound = 0.454 kg, 1 square foot = 0.0929 m².

a. Approved automatic sprinkler system protection and storage arrangements shall comply with NFPA 30B. Sprinkler system protection shall extend 20 feet beyond the storage area containing the aerosol products.

b. Storage quantities indicated are the maximum permitted in any 50,000-square-foot area.

- Storage of Level 2 and 3 aerosol products segregated into areas utilized exclusively for the storage of aerosol products shall comply with the following table (WSFC 5104.3.2):

SEGREGATED STORAGE OF LEVEL 2 AND 3 AEROSOL PRODUCTS AND PLASTIC AEROSOL 3 PRODUCTS IN GENERAL PURPOSE WAREHOUSES

STORAGE SEPARATION	MAXIMUM SEGREGATED STORAGE AREA ^a		SPRINKLER REQUIREMENTS
	Percentage of building area (percent)	Area limitation (square feet)	
Separation area ^{e, f}	15	20,000	Notes b, c
Chain-link fence enclosure ^d	20	20,000	Notes b, c
1-hour fire-resistance-rated interior walls	20	30,000	Note b
2-hour fire-resistance-rated interior walls	25	40,000	Note b
3-hour fire-resistance-rated interior walls	30	50,000	Note b

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

- a. The maximum segregated storage area shall be limited to the smaller of the two areas resulting from the percentage of building area limitation and the area limitation.
- b. Automatic sprinkler system protection in aerosol product storage areas shall comply with NFPA 30B and be approved. Building areas not containing aerosol product storage shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
- c. Automatic sprinkler system protection in aerosol product storage areas shall comply with NFPA 30B and be approved. Sprinkler system protection shall extend a minimum 20 feet beyond the aerosol storage area.
- d. Chain-link fence enclosures shall comply with Section 5104.3.2.1.
- e. A separation area shall be defined as an area extending outward from the periphery of the segregated aerosol product storage area as follows:
 - 1. The limits of the aerosol product storage shall be clearly marked on the floor.
 - 2. The separation distance shall be not less than 25 feet and maintained clear of all materials with a commodity classification greater than Class III in accordance with Section 903.3.1.1.
- f. Separation areas shall only be permitted where approved.
 - 1. Chain-link fence enclosures required by Table 5104.3.2 shall comply with the following (5104.3.2.1):
 - 1. The fence shall be not less than No. 9 gage steel wire, woven into a maximum 2-inch diamond mesh.
 - 2. The fence shall be installed from the floor to the underside of the roof or ceiling above.
 - 3. Class IV and high-hazard commodities shall be stored outside of the aerosol storage area and not less than 8 feet from the fence.
 - 4. Access openings in the fence shall be provided with either self- or automatic-closing devices or a labyrinth opening arrangement preventing aerosol containers from rocketing through the access openings.

5. Not less than two means of egress shall be provided from the fenced enclosure.
2. The minimum aisle requirements for segregated storage in general purpose warehouses shall comply with the following table (WSFC 5104.3.2.2):

SEGREGATED STORAGE AISLE WIDTHS AND DISTANCE TO AISLES IN GENERAL PURPOSE WAREHOUSES

STORAGE CONDITION	MINIMUM AISLE WIDTH (feet)	MAXIMUM DISTANCE FROM STORAGE TO AISLE (feet)
Solid pile or palletized ^a	4 feet between piles	25
Racks with ESFR sprinklers ^a	4 feet between racks and adjacent Level 2 and 3 aerosol product storage	25
Racks without ESFR sprinklers ^a	8 feet between racks and adjacent Level 2 and 3 aerosol product storage	25

For SI: 1 foot = 304.8 mm.

a. Sprinklers shall comply with NFPA 30B.

- Solid pile, palletized or rack storage of aerosol cooking spray products in a general-purpose warehouse shall not be more than 2,500 pounds net weight, unless protected in accordance with NFPA 30B (WSFC 5104.3.3).

Storage in Aerosol Product Warehouses:

- The total quantity of Level 2 and 3 aerosol products in a warehouse utilized for the storage, shipping and receiving of aerosol products shall not be restricted in structures complying with the following requirements (WSFC 5104.4):
 1. Aerosol product warehouses shall be protected by an approved wet-pipe automatic sprinkler system in accordance with NFPA 30B. Sprinkler protection shall be designed based on the highest classification level of aerosol product present (WSFC 5104.4.1).
 2. Solid pile and palletized storage shall be arranged so the maximum travel distance to an aisle is 25 feet. Aisles shall have a minimum width of 4 feet (WSFC 5104.4.2).
 3. Rack storage shall be arranged with a minimum aisle width of 8 feet between rows of racks and 8 feet between racks and adjacent solid pile or palletized storage. Where early suppression fast-response (ESFR) sprinklers provide automatic sprinkler protection, the minimum aisle width shall be 4 feet (WSFC 5104.4.3).
 4. Combustible commodities other than flammable and combustible liquids shall be permitted to be stored in an aerosol product warehouse (WSFC 5104.4.4).
 - i. Exception: Flammable and combustible liquids in 1-quart metal containers and smaller shall be permitted to be stored in an aerosol product warehouse.

Storage in Inside Flammable Liquid Storage Rooms:

- The storage of aerosol products in flammable liquid storage rooms less than or equal to 500 square feet in area shall not exceed the following quantities (WSFC 5104.5.1):
 1. A net weight of 1,000 pounds of Level 2 aerosol products.
 2. A net weight of 500 pounds of Level 3 aerosol products.
 3. A combined net weight of 1,000 pounds of Level 2 and 3 aerosol products.
- The storage of aerosol products in flammable liquid storage rooms greater than 500 square feet in area shall not exceed the following quantities (WSFC 5104.5.2):
 1. A net weight of 2,500 pounds of Level 2 aerosol products.
 2. A net weight of 1,000 pounds of Level 3 aerosol products.
 3. A combined net weight of 2,500 pounds of Level 2 and 3 aerosol products.

Note: The maximum aggregate storage quantity of Level 2 and 3 aerosol products permitted in separate inside storage rooms protected by an approved automatic sprinkler system in accordance with NFPA 30B shall be 5,000 pounds.

Storage in Liquid Warehouses:

- Spill control or drainage shall be provided to prevent the flow of liquid to within 8 feet of the segregated storage area (WSFC 5104.6.1).
- Sprinkler protection shall be designed based on the highest level of aerosol product present (WSFC 5104.6.2).
- Fire doors or gates opening into the segregated storage area shall either be self-closing or provided with automatic-closing devices activated by sprinkler water flow or an approved fire detection system (WSFC 5104.6.3).

Storage in Group M Occupancies:

- Storage of Level 2 and 3 aerosol products, aerosol cooking spray products and plastic aerosol 3 products in occupancies in Group M shall comply with following table (WSFC 5104.7):

MAXIMUM QUANTITIES OF LEVEL 2 AND 3 AEROSOL PRODUCTS, AEROSOL COOKING SPRAY PRODUCTS AND PLASTIC AEROSOL 3 PRODUCTS IN RETAIL STORAGE AREAS

MAXIMUM NET WEIGHT PER FLOOR (pounds)			
Floor	Nonsegregated storage ^{a, b}	Segregated storage	
		Storage cabinets ^b	Separated from retail area ^c
Basement	Not Permitted	Not Permitted	Not Permitted
Ground	2,500	5,000	Note d
Upper	500	1,000	Note d

For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m².

- a. The total aggregate quantity on display and in storage shall not exceed the maximum retail display quantity indicated in Section 5106.3.
- b. Storage quantities indicated are the maximum permitted in any 50,000-square-foot area.
- c. The storage area shall be separated from the retail area with a 1-hour fire-resistance-rated assembly.
- d. See Table 5104.3.2.

Storage of Aerosol Cooking Spray:

- Aerosol cooking spray products shall be permitted to be stored in a general-purpose warehouse (WSFC 5104.8).
- Where aerosol cooking spray products are mixed with other higher-hazard aerosol products, the provided isolation, storage height restrictions and protection shall be based on the highest-hazard aerosol product present (WSFC 5104.8.1).
- The storage and handling of aerosol cooking spray products shall comply with this chapter and NFPA 30B (WSFC 5104.8.2).

Outside Storage:

- The outside storage of Level 2 and 3 aerosol products and plastic aerosol 3 products, including storage in temporary storage trailers, shall be separated from exposures in accordance with the following table (5105.1).

DISTANCE TO EXPOSURES FOR OUTSIDE STORAGE OF LEVEL 2 AND 3 AEROSOL PRODUCTS AND PLASTIC AEROSOL 3 PRODUCTS

EXPOSURE	MINIMUM DISTANCE FROM AEROSOL STORAGE (feet) ^a
Buildings	50
Exit discharge to a public way	50
Lot lines	20
Other outside storage	50
Public alleys, public ways, public streets	20

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. The minimum separation distance indicated is not required where exterior walls having a 2-hour fire-resistance rating without penetrations separate the storage from the exposure. The walls shall extend not less than 30 inches above and to the sides of Level 2 and 3 aerosol products and plastic aerosol 3 products.

Retail Display:

Note: This section shall apply to the retail display of 500 pounds or more of Level 2 and 3 aerosol products, aerosol cooking spray products and plastic aerosol 3 products.

- Aerosol display and normal merchandising not exceeding 8 feet in height shall be in accordance with the following requirements:
 1. Aerosol products, aerosol cooking spray products and plastic aerosol 3 products in retail display areas shall not exceed quantities needed for display and normal merchandising and shall not exceed the quantities in following table (5106.2.1):

MAXIMUM QUANTITIES OF LEVEL 2 AND 3 AEROSOL PRODUCTS, AEROSOL COOKING SPRAY PRODUCTS AND PLASTIC AEROSOL 3 PRODUCTS IN RETAIL DISPLAY AREAS

MAXIMUM NET WEIGHT PER FLOOR (pounds) ^b			
Floor	Unprotected ^a	Protected in accordance with Section 5106.2 ^{a, c}	Protected in accordance with Section 5106.3 ^c
Basement	Not Allowed	500	500
Ground	2,500	10,000	10,000
Upper	500	2,000	Not Allowed

For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m².

- a. The total quantity shall not exceed 1,000 pounds net weight in any one 100-square-foot retail display area.
- b. Per 25,000-square-foot retail display area.
- c. Minimum Ordinary Hazard Group 2 wet-pipe automatic sprinkler system throughout the retail sales occupancy.
2. The storage and handling of aerosol cooking spray products and plastic aerosol 3 products shall comply with this chapter and NFPA 30B.
 3. Level 2 and 3 aerosol products shall not be stacked more than 6 feet high from the base of the aerosol product array to the top of the aerosol product array unless the aerosol products are placed on fixed shelving or

otherwise secured in an approved manner. Where storage or retail display is on shelves, the height of such storage or retail display to the top of aerosol products shall not exceed 8 feet (WSFC 5106.2.3).

4. Aerosol products located in retail display areas shall be removed from combustible cartons (WSFC 5106.2.4).

Exceptions:

1. Display areas that use a portion of combustible cartons that consist of only the bottom panel and not more than 2 inches of the side panel are allowed.
2. Where the display area is protected in accordance with Tables 6.4.2.7(a) through 6.4.2.7(1) of NFPA 30B, storage of aerosol products in combustible cartons is allowed.

- Aerosol product display and merchandising exceeding 8 feet in height shall be in accordance with the following requirements (WSFC 5106.3):

1. Aerosol products in retail display areas shall not exceed quantities needed for display and normal merchandising and shall not exceed the quantities in WSFC Table 5106.2.1 (see above), with fire protection in accordance with WSFC 5106.3.2 below (WSFC 5106.3.1).
2. Aerosol product and plastic aerosol 3 product display and merchandising areas shall be protected by an automatic sprinkler system based on the requirements set forth in Tables 6.4.2.7(a) through 6.4.2.7(1) of NFPA 30B and the following (WSFC 5106.3.2):
 1. Protection shall be based on the highest level of aerosol product in the array and the packaging method of the storage located more than 6 feet above the finished floor.
 2. Where using the cartoned aerosol products tables of NFPA 30B, uncartoned or display-cut Level 2 and 3 aerosol products and plastic aerosol 3 products shall not be permitted more than 6 feet above the finished floor.
 3. The design area for Level 2 and 3 aerosol products and plastic aerosol 3 products shall extend not less than 20 feet beyond the Level 2 and 3 aerosol product and plastic aerosol 3 product display and merchandising areas.
 4. Where ordinary and high-temperature ceiling sprinkler systems are adjacent to each other, noncombustible draft curtains shall be installed at the interface.
3. Separation of Level 2 and 3 aerosol product areas or plastic aerosol 3 product areas shall comply with the following (WSFC 5106.3.3):
 1. Level 2 and 3 aerosol product or plastic aerosol 3 product display and merchandising areas shall be separated from each other by not less than 25 feet. See Table 5106.2.1.
 2. Level 2 and 3 aerosol product or plastic aerosol 3 product display and merchandising areas shall be separated from flammable and combustible liquids storage and display areas by one or a combination of the following:
 - i. Segregating areas from each other by horizontal distance of not less than 25 feet.
 - ii. Isolating areas from each other by a noncombustible partition extending not less than 18 inches above the merchandise.
 - iii. In accordance with WSFC Section 5106.5 (See Special Protection Design for Level 2 and 3 Aerosol Products Adjacent to Flammable and Combustible Liquids in Double-Row Racks).
 3. Where Item ii. is used to separate Level 2 or 3 aerosol products or plastic aerosol 3 products from flammable or combustible liquids, and the aerosol products are located within 25 feet of flammable or combustible liquids, the area below the noncombustible partition shall be liquid tight at the floor to prevent spilled liquids from flowing beneath the aerosol products.

Maximum Quantities in Storage Areas:

- Aerosol products in storage areas adjacent to retail display areas shall not exceed the quantities in the following table (WSFC 5106.4):

MAXIMUM STORAGE QUANTITIES FOR STORAGE AREAS ADJACENT TO RETAIL DISPLAY OF LEVEL 2 AND 3 AEROSOL PRODUCTS AND PLASTIC AEROSOL 3 PRODUCTS

MAXIMUM NET WEIGHT PER FLOOR (pounds)			
Floor	Unseparated ^{a, b}	Separated	
		Storage cabinets ^b	1-hour occupancy separation
Basement	Not Allowed	Not Allowed	Not Allowed
Ground	2,500	5,000	In accordance with Sections 6.4.4.3 and 6.4.4.4 of NFPA 30B
Upper	500	1,000	In accordance with Sections 6.4.4.3 and 6.4.4.4 of NFPA 30B

For SI: 1 pound = 0.454 kg, 1 square foot = 0.0929 m².

a. The aggregate quantity in storage and retail display shall not exceed the quantity limits for retail display.

b. In any 50,000-square-foot area.

Special Protection Design for Level 2 and 3 Aerosol Products Adjacent to Flammable and Combustible Liquids in Double-Row Racks:

- The display and merchandising of Level 2 and 3 aerosol products adjacent to flammable and combustible liquids in double-row racks shall be in accordance with WSFC Section 5106.3.3 or the following (WSFC 5106.5):
 1. Fire protection for the display and merchandising of Level 2 and 3 aerosols in double-row racks shall be in accordance with Table 7.5.1 and Figure 7.5.1 of NFPA 30B (WSFC 5106.5.1).
 2. Level 2 and 3 aerosol products displayed or merchandised more than 8 feet above the finished floor shall be in cartons (WSFC 5106.5.2).
 3. Shelving in racks shall be limited to wire mesh shelving having uniform openings not more than 6 inches apart, with the openings comprising not less than 50 percent of the overall shelf area (WSFC 5106.3).
 4. Racks shall be arranged so that aisles not less than 7 1/2 feet wide are maintained between rows of racks and adjacent solid-piled or palletized merchandise (WSFC 5106.5.4).
 5. Flue spaces in racks shall comply with the following (WSFC 5106.5.5):
 1. Transverse flue spaces—Nominal 3-inch transverse flue spaces shall be maintained between merchandise and rack uprights.
 2. Longitudinal flue spaces—Nominal 6-inch longitudinal flue spaces shall be maintained.
 6. Horizontal barriers constructed of minimum 3/8-inch-thick plywood or minimum 0.034-inch (No. 22 gage) sheet metal shall be provided and located in accordance with Table 7.5.1 and Figure 7.5.1 of NFPA 30B where in-rack sprinklers are installed (WSFC 5106.5.6).
 7. Class I, II, III A and III B liquids shall be allowed to be located adjacent to Level 2 and 3 aerosol products where both of the following conditions are met (WSFC 5106.5.8):
 1. Class I, II, IIIA and IIIB liquid containers: Containers for Class I, II, IIIA and IIIB liquids shall be limited to 1.06-gallon metal-relieving and non-relieving style containers and 5.3-gallon metal-relieving style containers.
 2. Fire protection for Class I, II, IIIA and IIIB Liquids: Automatic sprinkler protection for Class I, II, IIIA and IIIB liquids shall be in accordance with WSFC Chapter 57.

Permit Conditions

The owner/operator shall be responsible for understanding and adhering to all applicable Federal, State, and local regulations and fire-life safety standards including but not limited to International Fire Code and referenced NFPA standards.

The following conditions shall always be adhered to for the permit to be valid.

1. Manufacturing of organic coatings shall be done only in buildings that do not have pits or basements.
2. Organic coating manufacturing operations and operations incidental to or connected with organic coating manufacturing shall not be located in buildings having other occupancies.
3. Fire-fighting access: Organic coating manufacturing operations shall be accessible from not less than one side for the purpose of fire control. Approved aisles shall be maintained for the unobstructed movement of personnel and fire suppression equipment.
4. Fire protection systems shall be installed, maintained, periodically inspected, and tested in accordance with the International Fire Code.
5. Portable fire extinguishers.: Not less than one portable fire extinguisher complying with Section 906 for extra hazard shall be provided in organic coating areas.
6. Open flames: Open flames and direct-fired heating devices shall be prohibited in areas where flammable vapor-air mixtures exist.
7. Smoking shall be prohibited and "No Smoking" signs shall be posted throughout.
8. Power-operated equipment and industrial trucks shall be of a type approved for the location
9. Tank maintenance: The cleaning of tanks and vessels that have contained flammable or combustible liquids shall be performed under the supervision of persons knowledgeable of the fire and explosion potential.
 - Where necessary to make repairs involving "hot work," the work shall be authorized by the responsible individual before the work begins.
 - Empty flammable or combustible liquid containers shall be removed to a detached, outside location and, if not cleaned on the premises, the empty containers shall be removed from the plant as soon as practical.
10. Drainage facilities shall be provided to direct flammable and combustible liquid leakage and fire protection water to an approved location away from the building, any other structure, storage area or adjoining premises.
11. Alarm system: An approved fire alarm system shall be provided in accordance with the International Fire Code.
12. Wiring and equipment: Electrical wiring and equipment shall comply with this chapter and shall be installed in accordance with NFPA 70.
13. Hazardous locations: Where Class I liquids are exposed to the air, the design of equipment and ventilation of structures shall be such as to limit the Class I, Division 1, locations to the following:
 - Piping trenches.
 - The interior of equipment.
 - The immediate vicinity of pumps or equipment locations, such as dispensing stations, open centrifuges, plate, and frame filters, opened vacuum filters, change cans and the surfaces of open equipment. The immediate vicinity shall include a zone extending from the vapor liberation point 5 feet (1524 mm) horizontally in all directions and vertically from the floor to a level 3 feet (914 mm) above the highest point of vapor liberation.
14. Ordinary electrical equipment, including switchgear, shall be prohibited, except where installed in a room maintained under positive pressure with respect to the hazardous area. The air or other media utilized for pressurization shall be obtained from a source that will not cause any amount or type of flammable vapor to be introduced into the room.
15. Bonding: Equipment including, but not limited to, tanks, machinery and piping shall be bonded and connected to a ground where an ignitable mixture is capable of being present.
 - Electrically isolated sections of metallic piping or equipment shall be grounded or bonded to the other grounded portions of the system.
 - Tank vehicles loaded or unloaded through open connections shall be grounded and bonded to the receiving system.
 - Where a flammable mixture is transferred from one portable container to another, a bond shall be provided between the two containers, and one shall be grounded.
16. Metal framing of buildings shall be grounded with resistance of not more than 5 ohms.
17. Fire apparatus access: Fire apparatus access complying with the IFC shall be provided for the purpose of fire control to not less than one side of organic coating manufacturing operations.
18. Explosion control shall be provided in areas subject to potential deflagration hazards as indicated in NFPA 35. Explosion control shall be provided in accordance with the IFC.

19. Enclosed structures in which Class I liquids are processed or handled shall be ventilated at a rate of not less than 1 cubic foot per minute per square foot [0.00508 m³/(s · m²)] of solid floor area. Ventilation shall be accomplished by exhaust fans that take suction at floor levels and discharge to a safe location outside the structure.
20. Heating provided in hazardous areas shall be by indirect means. Ignition sources such as open flames or electrical heating elements, shall not be permitted within the structure.
21. Mills, operating with close clearances, which process flammable and heat-sensitive materials, such as nitrocellulose, shall be located in a detached building or in a noncombustible structure without other occupancies. The amount of nitrocellulose or other flammable material brought into the area shall not be more than the amount required for a batch.
22. Mixers shall be of the enclosed type or, where of the open type, shall be provided with properly fitted covers. Where flow is by gravity, a shutoff valve shall be installed as close as practical to the mixer, and a control valve shall be provided near the end of the fill pipe.
23. Open kettles shall be located in an outside area provided with a protective roof; in a separate structure of noncombustible construction; or separated from other areas by a noncombustible wall having a fire-resistance rating of not less than 2 hours.
24. Contact-heated kettles containing solvents shall be equipped with safety devices that, in case of a fire, will turn off the process heat, turn on the cooling medium and inject inert gas into the kettle.
- The vaporizer section of heat-transfer systems that heat closed kettles containing solvents shall be remotely located.
25. Piping, valves and fittings shall be designed for the working pressures and structural stresses to which the piping, valves and fittings will be subjected, and shall be of steel or other material approved for the service intended.
26. Valves shall be of an indicating type. Terminal valves on remote pumping systems shall be of the dead-man type, shutting off both the pump and the flow of solvent.
27. Piping systems shall be supported adequately and protected against physical damage. Piping shall be pitched to avoid unintentional trapping of liquids, or approved drains shall be provided.
28. Approved flexible connectors shall be installed where vibration exists, or frequent movement is necessary. Hose at dispensing stations shall be of an approved type.
29. Before being placed in service, all piping shall be free of leaks when tested for not less than 30 minutes at not less than 1.5 times the working pressure or a minimum of 5 pounds per square inch gauge (psig) (35 kPa) at the highest point in the system.
30. The amount of nitrocellulose brought into the operating area shall not exceed the amount required for a work shift. Nitrocellulose spillage shall be promptly swept up and disposed of properly.
31. Organic peroxides brought into the operating area shall be in the original shipping container. When in the operating area, the organic peroxide shall not be placed in locations exposed to ignition sources, heat, or mechanical shocks.

NOTE: THIS PERMIT IS SUBJECT TO AN ONSITE INSPECTION TO VERIFY COMPLIANCE PRIOR TO COMMENCEMENT OF WORK.

NOTE: This is not intended to be an all-inclusive list. The WSFC requirements listed are intended to ensure that we have adequate information to begin a review of the application. Additional information may be required.

I understand that all applicable codes apply and that other regulatory codes may also apply. Errors and/or omissions on the plans and corrections from field inspections are the responsibility of the owner/contractor. All work is subject to compliance with City of Vancouver ordinances and laws of the State of Washington.

APPLICANT NAME: _____ APPLICATION DATE: _____

APPLICANT SIGNATURE: _____