



# Construction/Operational Permit Application



## Organic Coating Manufacturing

[www.cityofvancouver.us/departments/fire-department](http://www.cityofvancouver.us/departments/fire-department)

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

### Permitting Requirements

The manufacturing of organic coatings involves converting a liquid mixture of binders such as alkyd, nitrocellulose, acrylic or oil, and flammable and combustible solvents such as hydrocarbon, ester, ketone or alcohol into a durable and protective finish to be used for various methods like spraying, dipping, etc.

An **operational permit** is required for any organic coating manufacturing operation producing more than 1 gallon of an organic coating in one day. A separate permit is required for spraying and/or dipping operations, see *Spraying or Dipping* permit application for more information.

### 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
Application type:	<input type="checkbox"/> Installation <input type="checkbox"/> Operational <input type="checkbox"/> Both Installation and Operational		
Installation by:	<input type="checkbox"/> Contractor <input type="checkbox"/> Owner <input type="checkbox"/> Tenant		
Related Permits:	RES _____	CMI _____	DEF _____
			MPE _____

### Description of Work


## Electronic Plan Standards

### File Naming Standards:

Electronic plans and documents shall be named as specified in the City of Vancouver [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 – Organic Coating Manufacturing (this document) Check all *Permit Conditions* checkboxes that are applicable to your project
- Completed Materials Management Plan (HMMP) documents and supplemental documents (*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

- Completed Facility Information Forms, Hazardous Materials Inventory Statement (HMIS), Site Map, Storage Plan, and required supplemental forms (see HMMP Guide linked above for direction on these forms)
- Material safety data sheets and equipment specifications
- Pollution control plan for mechanical exhaust

## Plan Details

The following is a list of information required on all plan submittals for review of an organic coatings 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(s), standpipes, fire pumps, fire alarm control panel, Knox Box, and roof access (if provided).
- Manual fire alarm system details.
- Site map identifying all buildings, hazardous materials storage areas, and storage configurations.
- Drawing plan showing location of any mills, mixers, kettles, and tanks involved in the coating process.
- Identification and volume of mechanical ventilation.
- Location and detailed explanation of the specific measures used to filter exhaust air. This should include the termination height above the roof and distance to openings.

- Portable fire extinguisher locations per WSFC 906.
- Identification of classified electrical areas.
- Documentation of the method of electrical grounding as required by NFPA 70 both for equipment and Class I and II liquid containers.
- Liquid transfer details.
- Indicate non-sparking tools and their listings, and approved metal waste cans with self-closing lids.

## Permit Conditions

The following is a list of Chapter 29 WSFC requirements related to organic coating operations. Use this form to confirm that all applicable requirements are met. Non-applicable requirements can be left blank.

### General:

- A manual fire alarm system that activates the occupant notification system shall be provided in accordance with WSFC 907.5 (WSFC 907.2.5).
- Organic coating manufacturing processes shall comply with WSFC Chapter 29 except for processes manufacturing nonflammable or water-thinned coatings or to operations applying coating materials (WSFC 2901.1).
- Structures and their service equipment shall be maintained in accordance with NFPA 35 (WSFC 2901.3).
- Manufacturing of organic coatings shall be done only in buildings that do not have pits or basements (WSFC 2903.1).
- Organic coating manufacturing operations and operations incidental to or connected with organic coating manufacturing shall not be located in buildings having other occupancies (WSFC 2903.2).
- The fire department shall be able to access the organic coating manufacturing operations from not less than one side for the purpose of fire control. Aisles shall be maintained for the unobstructed movement of personnel and fire suppression equipment (WSFC 2903.3).
- Fire protection systems shall be installed, maintained, periodically inspected and tested in accordance with WSFC Chapter 9. Not less than one portable fire extinguisher complying with WSFC 906 for extra hazard shall be provided in organic coating areas (WSFC 2903.4 and 2904.5).
- Open flames and direct-fired heating devices shall be prohibited in areas where flammable vapor-air mixtures exist (WSFC 2903.6).
- Smoking shall be prohibited in accordance with WSFC 310 (WSFC 2903.7).
- Power-operated equipment and industrial trucks shall be of a type permitted for the location (WSFC 2903.8).
- 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 (WSFC 2903.9).
  - Where necessary to make repairs involving hot work, the work shall be authorized by the responsible individual before the work begins (WSFC 2903.9.1).
  - 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 (WSFC 2903.9.2).
- Drainage facilities shall be provided to direct flammable and combustible liquid leakage and fire protection water to a permitted location away from the building, any other structure, storage area or adjoining premises (WSFC 2903.10).
- Finished products that are flammable or combustible liquids shall be stored outside of structures, in a separate structure, or in a room separated from the processing area in accordance with the International Building Code. The storage of finished products shall be in tanks or closed containers in accordance with WSFC Chapter 57 (WSFC 2909.6).

### Electrical Equipment and Protection:

- Electrical wiring and equipment shall comply with this chapter and shall be installed in accordance with NFPA 70 (WSFC 2904.1).

- 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 (WSFC 2904.2):
  1. Piping trenches.
  2. The interior of equipment.
  3. 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 horizontally in all directions and vertically from the floor to a level 3 feet above the highest point of vapor liberation.
- Locations within the confines of the manufacturing room where Class I liquids are handled shall be Class I, Division 2, except locations indicated in WSFC 2904.2 (WSFC 2904.2.1).
- 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 (WSFC 2904.2.2).
- 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 (WSFC 2904.3).
  - Electrically isolated sections of metallic piping or equipment shall be grounded or bonded to the other grounded portions of the system (WSFC 2904.3.1).
  - Tank vehicles loaded or unloaded through open connections shall be grounded and bonded to the receiving system (WSFC 2904.3.2).
  - 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 (WSFC 2904.3.3).
- Metal framing of buildings shall be grounded with resistance of not more than 5 ohms (WSFC 2904.4)

**Process Structures:**

- Fire apparatus access complying with WSFC 503 shall be provided for the purpose of fire control to not less than one side of organic coating manufacturing operations (WSFC 2905.2).
- Drainage facilities shall be provided in accordance with WSFC 2903.10 where topographical conditions are such that flammable and combustible liquids are capable of flowing from the organic coating manufacturing operation so as to constitute a fire hazard to other premises (WSFC 2905.3).
- 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 WSFC 911 (WSFC 2905.4).
- 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 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. Noncontaminated intake air shall be introduced in such a manner that all portions of solid floor areas are provided with continuous uniformly distributed air movement (WSFC 2905.5).
- Heating provided in hazardous areas shall be by indirect means. Ignition sources such as open flames or electrical heating elements, except as provided for in WSFC 2904, shall not be permitted within the structure (WSFC 2905.6).

**Process Mills and Kettles:**

- 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 (WSFC 2906.1).
- 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 (WSFC 2906.2).

- 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 (WSFC 2906.3).
- 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 (WSFC 2906.4).
- The kettle and thin-down tank shall be instrumented, controlled and interlocked so that any failure of the controls will result in a safe condition. The kettle shall be provided with a pressure-rupture disc in addition to the primary vent. The vent piping from the rupture disc shall be of minimum length and shall discharge to an approved location. The thin-down tank shall be adequately vented. Thinning operations shall be provided with an adequate vapor removal system (WSFC 2906.5).

**Process Piping:**

- 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 permitted material for the service intended (WSFC 2907.1).
- 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 (WSFC 2907.2).
- 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 (WSFC 2907.3).
- Approved flexible connectors shall be installed where vibration exists, or frequent movement is necessary. Hose at dispensing stations shall be of an approved type. (WSFC 2907.4).
- 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 not less than 5 pounds per square inch gauge at the highest point in the system (WSFC 2907.5).

**Raw Materials:**

- 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 (WSFC 2908.1).
- 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 (WSFC 2908.2).
- The storage, handling, and use of flammable and combustible liquids in process areas shall be in accordance with WSFC Chapter 57 (WSFC 2909.1).
- Tank storage for flammable and combustible liquids located inside of structures shall be limited to storage areas at or above grade that are separated from the processing area in accordance with the IBC. Processing equipment containing flammable and combustible liquids and storage in quantities essential to the continuity of the operations shall not be prohibited in the processing area (WSFC 2909.2).
- Tank car and tank vehicle loading and unloading areas for Class I liquids shall be separated from the processing area, other plant structures, nearest lot line of property that can be built on or public thoroughfare by a minimum clear distance of 25 feet (WSFC 2909.3).
  - Loading and unloading structures and platforms for flammable and combustible liquids shall be designed and installed in accordance with WSFC Chapter 57 (WSFC 2909.3.1).
  - Tank cars for flammable liquids shall be unloaded such that the safety to persons and property is ensured. Tank vehicles for flammable and combustible liquids shall be loaded and unloaded in accordance with WSFC Chapter 57 (WSFC 2909.3.2).
- Nitrocellulose storage shall be located on a detached pad or in a separate structure or a room enclosed in accordance with the IBC. The nitrocellulose storage area shall not be utilized for any other purpose. Electrical wiring and equipment installed in storage areas adjacent to process areas shall comply with WSFC 2904.2 (WSFC 2909.4).

- Nitrocellulose shall be stored in closed containers. Barrels shall be stored on end and not more than two tiers high. Barrels or other containers of nitrocellulose shall not be opened in the main storage structure but at the point of use or other location intended for that purpose (WSFC 2909.4.1).
- Spilled nitrocellulose shall be promptly wetted with water and disposed of by use or burning in the open at an approved detached location (WSFC 2909.4.2).
- The storage of organic peroxides shall be in accordance with WSFC Chapter 62 (WSFC 2909.5).
  - The size of the package containing organic peroxide shall be selected so that, as nearly as practical, full packages are utilized at one time. Spilled peroxide shall be promptly cleaned up and disposed of as specified by the supplier (WSFC 2909.5.1).

**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: \_\_\_\_\_