

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 Construction/Operational Permit Application – Industrial Ovens (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

- Listing documents for all proposed equipment to be used.
- Design information for all fire extinguishing systems
- Maintenance and training plans in accordance with manufacture instructions
- Narrative explaining system interlocks and valves.

Plan Details

The following is a list of information required on all plan submittals for review of a Spray Finishing 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 done:

- 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, points of assembly/accountability for evacuees, electrical room, gas meters, sprinkler riser, fire alarm control panel, Knox Box, roof access (if provided), and any outdoor hazardous storage.
- Interior plans showing all access points, hazardous materials storage rooms and/or cabinets, hazardous equipment or operations areas, proposed locations for industrial oven, fuel-gas piping, and shutdown valves.
- Fire-resistance rated wall locations.
- Fire extinguishing systems
- Portable fire extinguisher types and locations complying with WSFC Section 906 (located not closer than 15 feet or not more than 50 feet) or in accordance with NFPA 10 for oven and related equipment.
- Areas of open flames and sparks, hot surfaces, or other ignition sources.
- Locations of furnace system information signs and nameplates.

Permit Conditions

Industrial Oven Classes (check all that apply):

- Furnace Class A: An oven or furnace that has heat utilization equipment operating at approximately atmospheric pressure wherein there is a potential explosion or fire hazard that could be occasioned by the presence of flammable volatiles or combustible materials processed or heated in the furnace. Potentially flammable materials, such as quench oil, water-borne finishes, cooling oil or cooking oils, that present a hazard are ventilated according to Class A standards.

Note: Such flammable volatiles or combustible materials can, for instance, originate from the following:

1. Paints, powders, inks, and adhesives from finishing processes, such as dipped, coated, sprayed and impregnated materials.
 2. The substrate material.
 3. Wood, paper and plastic pallets, spacers, or packaging materials.
 4. Polymerization or other molecular rearrangements.
- Furnace Class B: An oven or furnace that has heat utilization equipment operating at approximately atmospheric pressure wherein there are no flammable volatiles or combustible materials being heated.
 - Furnace Class C: An oven or furnace that has a potential hazard due to a flammable or other special atmosphere being used for treatment of material in process. This type of furnace can use any type of heating system and includes a special atmosphere supply system. Also included in the Class C classification are integral quench furnaces and molten salt bath furnaces.
 - Furnace Class D: An oven or furnace that operates at temperatures from above ambient to over 5,000°F (2760°C) and at pressures normally below atmospheric using any type of heating system. These furnaces can include the use of special processing atmospheres.

Fire Protection:

- Class A and B ovens that contain, or are utilized for the processing of, combustible materials shall be protected by an approved automatic fire-extinguishing system complying with WSFC Chapter 9.

Exceptions:

1. Small tabletop ovens used in laboratory facilities.
 2. Non walk-in-ovens that are less than 4 feet (1219 mm) in length and width.
- Fixed fire-extinguishing systems shall be provided for Class C or D ovens to protect against such hazards as overheating, spillage of molten salts or metals, quench tanks, ignition of hydraulic oil and escape of fuel.

Explosion Relief:

- The work chamber for Class A ovens that require safety ventilation shall be equipped with unobstructed explosion relief for freely relieving internal explosion pressures, unless exempted by NFPA 86 Section 5.3.1. Explosion relief shall meet the requirements of NFPA 86.
- Explosion relief shall be based on one of the following:
 1. The amount of explosion relief area shall be at least 1 ft² (0.093 m²) of relief area for each 15 ft³ (0.424 m³) of furnace volume.
 2. The amount of explosion relief shall be based on the requirements of NFPA 68
- Explosion relief vents shall be arranged so that, when open, the full vent opening provides an effective relief area. Warning signs shall be posted on the vents to ensure their full capacity is not obstructed.

Interlocks:

- Interlocks shall be provided for Class A ovens so that conveyors or sources of flammable or combustible materials shall shut down if either the exhaust or recirculation air supply fails.

Operation and Maintenance:

- An approved, clearly worded, and prominently displayed safety design data form or manufacturer's nameplate shall be provided stating the safe operating condition for which the furnace system was designed, built, altered, or extended.
- Safety data for Class A solvent atmosphere ovens shall be furnished on the manufacturer's nameplate. The nameplate shall provide the following design data:
 1. The solvent used.
 2. The number of gallons (L) used per batch or per hour of solvent entering the oven.
 3. The required purge time.
 4. The oven operating temperature.
 5. The exhaust blower rating for the number of gallons (L) of solvent per hour or batch at the maximum operating temperature.

Exception: For low-oxygen ovens, the maximum allowable oxygen concentration shall be included in place of the exhaust blower ratings

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: _____