



FIRE CONSTRUCTION PERMIT SUBMITTAL CHECKLIST

SERVING THE CITIES OF LAKE STEVENS, MONROE AND SULTAN

SPRAYING or DIPPING

PROJECT INFORMATION

Site address:	Associated Permits:
Project Name / Tenant:	Property Owner:

Electronic file standards

File naming standard: Electronic plans and documents shall be named as specified in bold type under "permitting requirements". For example, the seating plan must be named "Seating Plan".

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

Document Orientation: All plans must be uploaded in "Landscape" format in the horizontal position. All other documents can be in "Portrait" format.

CODE EDITIONS

2021 Washington State Fire and Building Code, and as applicable -
Lake Stevens Municipal Code 14.84, Monroe Municipal code,
and Sultan Municipal Code 15.05.

PERMITTING REQUIREMENTS

A Fire Construction Permit is required to install or modify a **Spraying room, dip tank or booth** required by Section 105.6.22 of the 2021 Washington State Fire Code and local code amendments. **The following information is required at time of application for the Fire Construction Permit.**

- Completed Fire Construction permit submittal application
- Completed "Spraying or dipping submittal checklist"
- Plans
- SDS of all flammable/combustible liquids, dip tank chemicals, other hazardous chemicals

PLANS

The following is a list of information required on all plan submittals for review of a "Spraying room, dip tank or booth" permit application. The plan shall be drawn to 1/8"=1'-0" minimum scale. The applicant is required to submit all of this information so an accurate and timely review may be done:

- Provide a site plan showing:
 - Building location, property lines
 - Location of exhaust discharge in relation to the edge of the building, lot line, openings into the building, any exterior walls and roofs, distance to adjacent walls, distance above grade and adjoining grade
- Provide a floor plan showing:
 - location of spraying room, dip tank, or spray booth
 - location and fire rating of interior walls adjacent to spray booth
 - fire rating of exterior walls adjacent to spray booth
 - Egress pathways, doors
 - Fire extinguisher locations
 - Signage in the vicinity of flammable vapor areas stating:

NO WELDING
 THE USE OF WELDING OR CUTTING
 EQUIPMENT IN OR NEAR THIS AREA
 IS DANGEROUS BECAUSE OF FIRE
 AND EXPLOSION HAZARDS. WELDING
 AND CUTTING SHALL BE DONE ONLY
 UNDER THE SUPERVISION OF THE PERSON IN CHARGE.

- Indicate the hazardous locations considered to be class I, Division 1 or class II, Division 1 hazardous locations in accordance with NFPA 70
- Electrical wiring and equipment located outside of, but within 3 feet of openings in a spray booth or room shall be approved for class I, Division 2 or class II, Division 2 hazardous locations
- Location of electrical wiring and equipment in the hazardous location and the listing information

- Indicate the fire classification of the product to be sprayed
- Indicate the dip tank chemicals, flammable liquids, etc
- Indicate method of storing staged product – flammable liquid storage rooms, hazardous materials cabinets, flammable liquid cabinets, hazardous materials storage rooms, etc.

SPRAY BOOTHS AND SPRAY ROOMS

SPRAY ROOM AND SPRAY BOOTH CONSTRUCTION REQUIREMENTS

- SPRAYING ROOM CONSTRUCTION REQUIREMENTS:
 - Spraying rooms shall be constructed with WSFC and IBC 416 requirements
 - Floor construction shall be noncombustible, non-sparking material
- SPRAY BOOTH CONSTRUCTION REQUIREMENTS:
 - Spray booths shall be constructed with non-combustible materials. Aluminum shall not be used. Sheet metal, single-skin assemblies shall not be thinner than 0.0478 inch. Double-skin assemblies shall not be thinner than 0.0359 inch. Seams shall be sealed with latex-based or similar caulk and sealants.
 - Interior surfaces shall be smooth, shall facilitate washing and cleaning, Aluminum shall not be used.
 - Floor construction shall be noncombustible, non-sparking material
 - Means of egress doors in pre-manufactured spray booths shall be at least 30" wide by 80" high.
 - There shall be a 3 foot clear space on all sides of the spray booth.
 - This dimension may be reduced to or directly against an interior partition, wall or floor/ceiling assembly that has a fire rating of not less than 1 hour, provided the booth can be adequately maintained and cleaned.
 - A spray booth can be closer than 3 feet to an exterior wall or a roof assembly, provided that the wall or roof is constructed of noncombustible material and the spray booth can be adequately cleaned.

FIRE-EXTINGUISHING SYSTEM REQUIREMENTS – SPRAY BOOTHS AND ROOMS

- An approved automatic fire-extinguishing system complying with chapter 9 shall protect the spray booth or spray room. The protection shall extend into the exhaust plenums, exhaust ducts and both sides of dry filters where such filters are used.
- A portable fire extinguisher shall be installed within 30 feet of the spray booth or in the spray room, with a rating of 40-B. Alternatively an extinguisher with a rating of 80-B shall be installed within 50 feet.

MECHANICAL VENTILATION, INTERLOCKS, TIMERS, THERMOCOUPLES – SPRAY BOOTHS AND ROOMS

- Mechanical ventilation and interlocks with the spraying operation shall be installed to:
 - Prevent operation of the spraying apparatus with ventilation turned off
 - Purge spray vapors from spray booth or room for a minimum of 4 air exchanges or 3 minutes, whichever is greater, prior to providing electrical power to drying apparatus
 - Remove power from drying apparatus in the event of ventilation system failure
 - Shut down drying apparatus if the air temperature within the booth exceeds 200 degrees F.
 - Verify all portable infrared drying apparatus and electrical wiring complies with NFPA 70. Electrical equipment located within 18 inches of floor level is required to be approved for Class I, Division 2 hazardous locations

ILLUMINATION IN SPRAY BOOTHS AND ROOMS

- Where illumination through glass panels or other transparent materials is used, only fixed luminaires shall be utilized for light.
- Glass panels used for luminaires or for observation
 - Shall be heat treated glass, wired glass or hammered wire glass
 - Shall be sealed to confine vapors, mists, residues, dusts and deposits in the flammable vapor area
 - Shall be separated from the luminaire to prevent the surface temperature of the panel exceeding 200 degrees F

- Exterior luminaires**
 - Luminaires attached to the walls or ceilings of a flammable vapor area, but outside of any classified area and separated from the flammable vapor areas by vapor-tight glass panels shall be suitable for use in ordinary hazard locations. Luminaires shall be serviced from outside the flammable vapor area
- Interior luminaires**
 - Luminaires that are integral part of the walls or ceiling of a flammable vapor area are allowed to be separated from the flammable vapor area by glass panels that are an integral part of the luminaire. Such luminaires shall be listed for use in a Class I, Division 2 or Class II, Division 2 locations, and be allowed to be serviced from inside of the spray booth.

VENTILATION OF SPRAY BOOTHS AND ROOMS

- Mechanical ventilation shall be designed and installed to maintain concentrations in the exhaust airflow below 25 percent of the contaminant's lower flammable limit.
- Open-face or open-front spray booth
 - Mechanical ventilation shall be provided to maintain the average air velocity into the spray booth through all openings of not less than 100 feet per minute
- Enclosed spray booth or spray room with openings for product conveyance
 - Mechanical ventilation shall be provided to maintain the average air velocity into the spray booth through openings of not less than 100 feet per minute
- Each spray booth and spray room shall have an independent exhaust duct system discharging to the outside and located per the following:
 - 30 feet from lot line
 - 10 feet from openings into building
 - 6 feet from exterior walls and roofs
 - 30 feet from combustible walls or openings in the building that are in the direction of exhaust discharge
 - 10 feet above adjoining grade
- Fan motors and belts
 - Electric motors shall not be located inside of booths or ducts
 - Fan rotating elements shall be nonferrous or non-sparking, or the casing shall be made of, or be lined with, such material
 - Belts shall not enter the duct or booth unless they are tightly enclosed within the duct
- Air intake filters shall be listed as Class I or II in accordance with UL 900

A manometer is required to be installed to indicate the air velocity is maintained

AUTOMATED SPRAY APPLICATION OPERATIONS

- The automatic fire-extinguishing system protecting the automated spraying operations shall be equipped with an approved interlock that will automatically stop the spraying operations and work piece conveyors into and out of the flammable vapor areas. Air makeup and flammable vapor exhaust systems shall not be interlocked with the fire alarm, and shall remain in operation during a fire alarm condition.
- A manual fire alarm and emergency shutdown station shall be installed to serve each flammable vapor area. A fire alarm modification permit is required to be submitted.
 - The manual fire alarm and emergency shutdown station shall be located to provide ready access for operating personnel. If access to this station is likely to involve exposure to danger, an additional station shall be located adjacent to an exit from the area.

DIPPING OPERATIONS

- Dip-tanks shall be constructed of noncombustible material and their supports shall be of heavy metal, reinforced concrete or masonry
- Dip tanks greater than 150 gallons in capacity or 10 square feet in liquid surface area shall be equipped with a trapped overflow pipe leading to an approved location outside the building. The bottom of the overflow shall be not less than 6 inches below the top of the tank
- Dip tanks greater than 500 gallons shall be equipped with bottom drains that are arranged to automatically drain and manually drain the tank quickly in the event of a fire.
 - Access to manual operation shall be from a safe location
 - If gravity flow is not practical, automatic pumps shall be provided
 - Drains shall be trapped and drain to a closed, vented salvage tank
- Dipping liquid temperature control shall be provided
- Dip tank covers shall be capable of manual operation and shall be automatic closing by devices designed to automatically operate in the event of fire

- Dip tank covers shall be made of non-combustible material

DIP TANK FIRE PROTECTION

- An approved automatic fire-extinguishing system or dip tank cover shall be provided for:
 - Tanks less than 150 gallons or 10 square feet surface area
 - Tanks with a liquid flash point below 110 degrees F, used in a manner that the liquid temperature could equal or be greater than its flash point and having a capacity of greater than 10 gallons and a surface area more than 4 square feet.
- An approved automatic fire-extinguishing system designed in accordance with NFPA 34 shall be provided for dip tanks with a 150 gallon or more capacity or more than 10 square feet surface area
- Fire extinguishers shall be provided in area of dip tanks having a rating of 40-B within 30' of tank, or 80-B within 50' of tank