



FIRE CONSTRUCTION PERMIT SUBMITTAL CHECKLIST

SERVING THE CITIES OF LAKE STEVENS, MILL CREEK, MONROE AND SULTAN

FLAMMABLE AND COMBUSTIBLE LIQUIDS

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

Washington State Fire and Building Code and as applicable -
Lake Stevens Municipal Code 14.84, Monroe Municipal code 15.04.110, Mill Creek
Municipal Code 15.04.120 and Sultan Municipal Code 15.05.

PERMITTING REQUIREMENTS

A Fire Construction Permit is required to install, repair, or modify a pipeline for the transportation of flammable or combustible liquids OR to install, construct, or alter tank vehicles, equipment, tanks, plants, terminals, wells, fuel dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used, OR to install, alter, remove, abandon or otherwise dispose of a flammable or combustible liquid tank required by Section 105.7.9 of the 2018 WSFC 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 "Flammable and Combustible Liquids submittal checklist" Check all applicable boxes
- Site plan and/or Floor Plans
- HMIS (Hazardous Materials Inventory Statement) and/or HMMP/SPCC (Hazardous Materials Management Plan) 2018 WSFC 5001.5.1 and 2

PLANS

The following is a list of information required on all plan submittals for review of a "Flammable and combustible liquids" 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:

- A site plan and floor plan of the building showing locations of tank, associated piping system components, and all other pertinent information.

Piping systems requirements:

- Piping system components shall be designed and fabricated with the applicable standard listed in table 5703.6.2 and Chapter 27 of NFPA 30
- Special materials – low melting point, materials that soften on fire exposure shall be installed in accordance with WSFC 5703.6.2.1
- Piping shall be tested in accordance with the applicable section of ASME B31.9, or be hydrostatically tested to 150 percent / pneumatically tested to 110 percent of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch gauge at the highest point of the system. The test shall be long enough to complete a visual inspection of joints and connections. For not less than 10 minutes, there shall be no leakage or permanent distortion. 2018 WSFC 5703.6.3
- Existing piping shall be tested where the fire code official has reasonable cause to believe that a leak exists. Piping that could contain flammable or combustible liquids shall not be pneumatically tested.
- Guard posts shall be provided to protect piping, valves, or fittings to protect from vehicular damage per Section 312.
- Valves, connections, piping supports, flexible joints, pipe joints and bends shall be installed in accordance with 2018 WSFC 5703.6.6 through 5703.6.11.

Tank general requirements:

- Tanks shall be installed in accordance with 2018 IFC Chapter 57 as applicable.
- Tanks or containers with an aggregate volume of 1320 gallons or more of oil that have the potential to discharge oil into or on the navigable waters of the US must complete a Spill Prevention Control and Countermeasure (SPCC) Plan according to 40 CFR Part 112. SPCC plan may be submitted instead of or to supplement the HMMP.
- HMMP or SPCC plan must show storm drain system and protective measures to be used to protect the storm system from spills or releases. Spill response materials and drain blockers must be maintained at the facility at all times.
- A detailed description, process flow, diagram and logic for all sensors and alarms shall be provided for all automated fuel transfer systems.
- Warning signs made of durable material shall be provided for flammable liquids. Signs shall have white lettering on a red background and shall read:

DANGER – FLAMMABLE LIQUIDS. Letters shall not be less than 3 inches in height and 0.5 inches in stroke (2018 WSFC 5703.5.1).
- Signs shall be posted in storage areas prohibiting open flames and smoking. Signs shall comply with 2018 WSFC 5703.5 (5704.2.3.1)

Tanks more than 100 gallons in capacity, which are permanently installed or mounted and used for the storage of Class I, II, or III liquids, shall bear a label and placarded identifying the material therein. Placards shall be in accordance with NFPA 704 (2018 WSFC 5704.2.3.2.).

- The design, fabrication, and construction of tanks shall comply with NFPA 30 and bear a permanent nameplate or marking indicating the standard used as the basis of design. 2018 WSFC 5704.2.7
- A 10-B fire extinguisher shall be installed within 30 feet of the fuel tank (2018 WSFC 5703.2.1; Table 906.3(2)).
- Aboveground flammable/combustible fuel storage tanks and associated piping that exceeds the maximum allowable per control area shall be provided with secondary containment (2018 WSFC 5703.4).
- Tank vents for **normal** venting: 2018 WSFC 5704.2.7.3
 - Vent line flame arresters and pressure-vacuum vents that remain closed unless venting shall be installed in normal vent lines on tanks containing class 1A or 1B liquids.
 - Vent pipe outlets shall be located so the vapors are released at a safe point outside of buildings, where vapors will not be trapped by eaves or other obstructions, not less than 12 feet above the finished ground level, and not less than 5 feet from building openings or lot lines of adjacent properties.

- Stationary, above ground tanks shall be equipped with additional venting that will relieve excessive pressure caused by exposure to fires, not discharge inside building. 2018 WSFC 5704.2.7.4
- Filling, emptying, and vapor recovery connections to tanks containing Class I, II, IIIA liquids shall be located outside of buildings, at a location free from sources of ignition, and not less than 5 feet away from building openings or lot lines. Openings shall be properly identified and provided with a liquid tight cap. 2018 WSFC 5704.2.7.5.2

Filling and emptying connections to indoor tanks containing Class IIIB liquids and connected to fuel-burning equipment shall be located at a finished ground level location outside of buildings. Such openings shall be provided with a liquid-tight cap. A sign in accordance with Section 5003.6 that displays the following warning shall be permanently attached at the filling location (2018 WSFC 5704.2.7.5.2):

TRANSFERRING FUEL OTHER THAN
 CLASS IIIB COMBUSTIBLE LIQUID TO
 THIS TANK CONNECTION IS A VIOLATION
 OF THE FIRE CODE AND IS STRICTLY
 PROHIBITED

Above-ground tanks:

- Supports, foundations, and anchorages shall be designed and constructed in accordance with NFPA 30 and the 2018 WSBC.
- Above-ground tanks **inside** of buildings shall be equipped with a device or other means to prevent overflow into the building. 2018 WSFC 5704.2.9.5.1
- The design, fabrication, and construction of tanks shall comply with NFPA 30 and bear a permanent nameplate or marking indicating the standard used as the basis of design. 2018 WSFC 5704.2.7
- Normal and emergency venting shall be provided:
 - Tank vents for normal venting: 2018 WSFC 5704.2.7.3
 - Vent line flame arresters and pressure-vacuum vents that remain closed unless venting shall be installed in normal vent lines on tanks containing class 1A or 1B liquids.
 - Vent pipe outlets shall be located so the vapors are released at a safe point outside of buildings, where vapors will not be trapped by eaves or other obstructions, not less than 12 feet above the finished ground level, and not less than 5 feet from building openings or lot lines of adjacent properties.

- Vent pipes shall be installed so they will drain toward the tank without sags or traps in which fluid can collect (2018 WSFC 5704.2.7.3.4)

- Stationary, above ground tanks shall be equipped with additional venting that will relieve excessive pressure caused by exposure to fires, not discharge inside building. 2018 WSFC 5704.2.7.4
- Secondary containment, drainage control or diking shall be provided for above-ground tanks in accordance with Section 2018 WSFC 5004.2.9.7.3
- Filling connections for tanks shall be located outside the building at a location free from sources of ignition and not less than 5 feet from building openings or lot lines. Such openings shall be provided with a liquid-tight cap (2018 WSFC 5704.2.7.5.2).
- Fill pipes for top-loaded tanks shall be designed and installed to minimize the generation of static electricity by terminating the pipe within 6 inches of the bottom of the tank (2018 WSFC 5704.2.7.5.5).
- Vehicle impact protection shall be provided for above-ground tanks, piping, electrical conduit or dispensers that are subject to vehicle impact per Section 312. (2018 WSFC 5704.2.9.7.4)
- An approved means or method in accordance with Section 2018 WSFC 5704.2.9.7.5 shall be provided to prevent the overfill of Class I, II, and IIIA liquid storage tanks by one of the following methods:
 - Provide an independent means of notifying the person filling the tank that the fluid level has reached 90 percent of tank capacity by providing an audible or visual alarm signal providing a tank level gauge marked at 90 percent of tank capacity, or approved means; and
 - Automatically shut off the flow of fuel to the tank when the quantity of liquid in the tank reaches 95 percent of tank capacity. For rigid hose fuel-delivery systems, an approved means shall be provided to empty the fill hose into the tank after the automatic shutoff device is activated.
 - The system shall reduce the flow rate to not more than 15 gpm so that at the reduced flow rate, the tank will not overfill for 30 minutes, and automatically shut off flow into the tank so that none of the fittings on the top of the tank are exposed to product because of overfilling
 - **Exception:** Outside above-ground tanks with a capacity of 1320 gallons or less. (WSFC 5704.2.7.5.8) of Class IIIB liquid connected to fuel-burning equipment inside building
- A permanent sign documenting the filling procedure and the tank calibration chart shall be provided at the fill point for the tank. 2018 WSFC 5704.2.9.7.5.1

- The fill pipe shall be provided with a means of making a direct connection to the tank vehicle's fuel delivery hose so that the delivery of fuel is not exposed to the open air during the filling operation (2018 WSFC 5704.2.9.7.6).
- A spill container having a capacity of not less than 5 gallons shall be provided for each fill connection. For tanks with a top fill connection, spill containers shall be noncombustible and shall be fixed to the tank and equipped with a manual drain valve that drains into the primary tank (2018 WSFC 5704.2.9.7.7)

Additional Requirements for above-ground Interior Tanks:

- Emergency vents shall not discharge inside buildings (2018 WSFC 5704.2.7.4).
Tanks storing Class I, II, and IIIA liquids inside buildings shall be equipped with a device or other means to prevent overflow into the building including but not limited to: a float valve; preset meter on the fill line; a valve actuated by the weight of the tanks contents; a low head pump which is incapable of producing overflow; or a liquid-tight overflow pipe at least one pipe size larger than the fill pipe and discharging by gravity back to the outside source of liquid or to an approved location (2018 WSFC 5704.2.9.5.1).
- Tanks containing Class IIIB liquids and connected to fuel-burning equipment shall be provided with a means to prevent over-flow into buildings in accordance with Section 5704.2.7.5.8.
- Filling, emptying and vapor recovery connections to tanks containing Class I, II, and IIIA liquids shall be located outside of building at a location free from sources of ignition and not less than 5 feet from building openings or lot lines. Such openings shall be properly identified and provided with a liquid-tight cap (2018 WSFC 5704.2.7.5.2.).

Underground tanks:

- Location, either outside or under buildings shall be in accordance with the following: (2018 WSFC 5704.2.11.1)
 - Tanks shall be located so the loads carried by foundations and supports cannot be transmitted to the tank
 - The tank shall be at least 3 feet from the nearest wall of a basement, pit, cellar or lot line.
 - A minimum distance of 1 foot, shell to shell, shall be maintained between underground tanks.
- Underground tanks shall be set on firm foundations and surrounded with at least 6 inches of noncorrosive inert material, such as clean sand. 2018 WSFC 5704.2.11.2

Fill pipes shall be equipped with a spill container and an overfill prevention system in accordance with NFPA 30. 2018 WSFC 5704.2.11.3

- Underground tanks shall be provided with an approved method of leak detection designed and installed in accordance with NFPA 30. 2018 WSFC 5704.2.11.4.2
- Tank testing shall be accomplished in accordance with Section 21.5 of NFPA 30 prior to being placed into service. 2018 WSFC 5704.2.12.1
- Tanks and piping connected to underground tanks shall be tested for tightness in the ***presence of the fire code official*** prior to being covered or placed into service. 2018 WSFC 5704.2.12.2
- Piping shall be tested in accordance with 5703.6.3:
 - Piping, before being covered, enclosed or placed in use shall be tested for 10 minutes to not less than 5 pounds per square inch at the highest point of the system or:
 - Hydrostatically tested to 150 percent of the max pressure of the system, or
 - Pneumatically to 110 percent of the max pressure of the system
 - There shall be no leakage or permanent distortion.
 - Tanks shall be independently tested from piping.
 - Existing piping shall be tested where there is reasonable cause to believe that a leak exists.

Abandonment/re-installation of tanks and tanks taken out of service:

- UNDERGROUND** Tanks taken out of service: 2018 WSFC 5704.2.13 through 5704.2.13.1.5
 - Underground tanks taken **temporarily** out of service shall have the fill line, gauge opening, vapor return and pump connection secure against tampering. Vent lines shall remain open and maintained.
 - Underground tanks taken out of service **for 90 days** shall be removed or safeguarded with the following:
 - Flammable or combustible liquids removed from the tank
 - All piping, including fill line, gauge opening, vapor return and pump connection shall be capped or plugged and secured from tampering
 - Vent lines shall remain open and be maintained
 - Underground tanks taken out of service **for 1 year** shall be removed from the ground in accordance with Section 5704.2.14 (see section below) or abandoned in place.
 - Tanks abandoned in place shall comply with the following:

- Flammable and combustible liquids shall be removed from the tank and piping
- The suction, inlet, gauge vapor return and vapor lines shall be disconnected
- The tank shall be filled completely with an approved inert solid material
- Remaining underground piping shall be capped or plugged
- A record of tank size, location, and date of abandonment shall be retained
- All exterior above-grade fill piping shall be permanently removed
- oil tank decommissioning certificate is required to be provided to the fire district at time of final inspection.

- Re-installation of tanks for flammable and combustible liquid service shall be in accordance with this chapter, ASME Boiler and Pressure Vessel Code (Section VIII), API 12-P, API 1615, UL 58 and UL 1316.

□ **ABOVEGROUND** Tanks taken out of service: 2018 WSFC 5704.2.13.2 through 5704.2.13.2.3

- **Aboveground** tanks **temporarily** taken out of service shall have all connecting lines isolated for the tank and be secured against tampering
- **Aboveground** tanks taken out of service **for 90 days** shall be removed or safeguarded with the following:
 - Flammable or combustible liquids removed from the tank
 - All piping, including fill line, gauge opening, vapor return and pump connection shall be capped or plugged and secured from tampering
 - Vent lines shall remain open and be maintained
- Aboveground tanks taken out of service for 1 year shall be removed in accordance with the following:
 - Flammable and combustible liquids shall be removed from the tank and piping
 - The suction, inlet, gauge vapor return and vapor lines shall be disconnected
 - The tank shall be filled completely with an approved inert solid material
 - Remaining underground piping shall be capped or plugged
 - A record of tank size, location, and date of abandonment shall be retained
 - All exterior above-grade fill piping shall be permanently removed

□ **REMOVAL AND DISPOSAL OF TANKS REQUIREMENTS** 2018 WSFC 5704.2.14

- Flammable and combustible liquids shall be removed from the tank and connected piping

- Piping at tank openings that is not to be used further shall be disconnected
- Piping shall be removed from the ground (unless it is not practical and is capped and safeguarded)
- Tank openings shall be capped or plugged leaving a 1/8 to ¼ inch diameter opening for pressure equalization
- Tanks shall be purged of vapor and vent piping shall be permanently removed
- Tanks shall be disposed in accordance with federal, state and local regulations
- An oil tank decommissioning certificate is required to be provided to the fire district at time of final inspection.