Fire Permit Submittal Checklist

Smoke Control System

Planning & Community Development
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This checklist covers all the requirements to submit a smoke control system installation regulated by the 2021 International Fire Code, International Building Code, NFPA 92, NFPA 72, NFPA 101, UL/UUKL and Shoreline Fire Municipal Code. One fire permit is required for each separate smoke control system.

Name _____ City Staff _____

Date _____ Zone District _____

Address(es) or Tax Parcel ID(s) _____

Project Description _____

The following information is needed to submit an application for review. Read each item carefully and provide all applicable information. Submittal items may vary based on your scope of work and property characteristics.

To access this checklist online visit **shorelinewa.gov/checklists**

Please review Shoreline Municipal Code (SMC) 15.05.050 to learn more about the City's amendments to the International Fire Code (IFC). If you have questions about the City's fire code or submittal requirements, please email the **Fire Marshal's Office** at fmo@shorelinefire.com; their staff can walk you through the requirements.

Incomplete submittals and documents not meeting the standards listed below will not be accepted for review.

Submittal Standards

Applications for this type of permit must be submitted electronically. Please review the City's Electronic Permitting handout to find out how to set up an account, submit applications, submit revisions, check on your permit status and more.

All forms and plans must be in Portable Document Format (PDF). PDFs shall be printed or plotted to PDF, not scans of an image. All PDF plans shall be plotted to scale and include a graphic scale bar. PDFs shall be flattened and unlocked to allow for document mark-up. A 2-inch tall by 3-inch-wide space must be left blank on the cover sheet of all plans to allow for City stamps.

Drawings must be clear, and information must be legible. Documents must be named in accordance with the City's naming conventions. Each document listed below must be uploaded as its own PDF file and may not be combined with other documents.

NOTE: Sprinkler system plans, calculations, and contractors' materials and test certificates submitted to the City shall be stamped pursuant to WAC 212-80-083 including stamps for NFPA 13D, 13R, and 13.

Required Documents

- ☑ Permit Application and Critical Area Worksheet
- ☑ Submittal Fee
  - Please reference the City's fee schedule for current application fees.
- ☑ Construction Documents
  - Please review the City's Construction Documents handout, though some requirements may not apply.

- Completed smoke control system submittal checklist
- Copy of conceptual design report
- Smoke control system plans

Additional Documents

After approval and submittal of the conceptual design report to the Shoreline Fire Department, the detailed design report and construction drawings shall be submitted

- ☑ Smoke Control Plan
  - Required for smoke control work.
  - Must include conceptual analysis matching the building permit.
  - Must show panel design and placement.
  - Must include the name and qualifications of the fire protection engineer preparing the plans.
- ☑ Other documents as required by current adopted IFC and IBC, Section 909
  - Detailed design report and construction drawings shall be submitted for review and approval prior to installation. The approved Building permit plan set shall be used for the submittal of the detailed design report for the system. Because of the complexity of smoke control systems, it is important that the detailed design documents clearly identify the expected performance of the system. These documents must also clearly identify the expected performance of each component in the smoke control system. Components include all passive and active elements that work together to provide smoke control in accordance with current adoptedIFC/IBC Section 909.
  - The detailed design report, based on the conceptual design report, including the smoke control system rational analysis, must be prepared by a professional engineer competent in the design of smoke control systems. This rational analysis must be stamped by the professional engineer. The detailed design report shall be a bound document, independent of design plans, and minimally include the following:
    - A general narrative description of the building. This description will include identification of building uses and occupancies as well as passive and active fire protection features that will work together with the smoke control system
    - A narrative description of each passive and active smoke zone. Every space in a building requiring smoke control must be identified as an active or passive smoke zone, with measurable performance criteria identified.
    - A description of which methods will be used for each active smoke control zone and supporting rational analysis in accordance with IFC Section 909.4. This description will include such items as minimum required fan size, expected fire loads, ceiling heights, computer modeling, calculations, and locations of operable windows and/or doors.
    - Specific discussion of how smoke control will be initiated in each zone and the associated system responses. A simple and clear event matrix shall be provided.
    - Calculations associated with the smoke control system design and fan capacities
    - Identification of anticipated system performance, especially with regard to pressurized stairwells/hoist ways, during stack effect conditions. Provide calculations demonstrating minimum and maximum pressure differentials to be observed during and in the absence of any stack effect.
    - A description of smoke dampers and fire/smoke dampers, including which dampers will be supervised for damper position, the position of unsupervised dampers when the smoke control system is active, damper positions upon loss of power, actuation temperature of fire and fire/smoke dampers.
    - Identification of coordinated zones for sprinkler and fire alarm systems with regard to smoke control zones.

        - Identification of where variable frequency drives are to be used for smoke control equipment and the method of control.
        - The piston effect of elevators.
        - A description of fire modeling or other performance-based analysis utilized in the design of the smoke control system. Purpose of the analysis, as well as associated assumptions and conclusions must be clearly identified.
        - Any related material that supports the design of the smoke control system.
        - The signature and stamp of the professional engineer responsible for the rational analysis.
        - Provide a detailed event matrix that includes every fire alarm and smoke control initiating device by address down one column and every fire alarm notification device (by zone), every smoke control device (e.g. fans, dampers), and every other event that must occur in order for proper operation of the smoke control system (e.g. HVAC shutdown) across the top. With prior approval, some devices may be combined. This matrix may be divided into one matrix for smoke control devices and one matrix for non-smoke control devices.
    - The following drawings must be included with the smoke control submittal:
        - Smoke control zone drawings
        - Drawings depicting the fire rating of associated smoke barriers
        - Drawings demonstrating pressurization control and power wiring routing and protection
        - Drawings demonstrating fire alarm wiring routing and protection
        - Smoke control mechanical equipment and ductwork drawings
    - The submittal for each associated permit, including architectural, mechanical, electrical, fire alarm, and fire sprinkler plans, are not required to be submitted with the smoke control plan. However, each of these associated permits shall include the following:
        - Clear identification where passive zones and active zones are provided
        - Smoke zone boundaries shall be identified; these boundaries are required to be constructed as smoke barriers and shall be appropriately identified in the architectural plan set.
        - A concise narrative description of the smoke control system for the building and any special requirements of the design.
        - A letter prepared by each designer stating that their design satisfies the requirements of the smoke control system.

Other Documents as required:

☐ _____

☐ _____

Additional Permits

These are additional permits that may be required to accompany your Binding Site Plan project application depending on your scope of work.

- ☐ Fire Alarm Permit
    - For the installation of or modifications to fire alarm systems.
- ☐ Fire Sprinkler Permit
    - For the installation of or modifications to fire sprinkler systems.
- ☐ Electrical Permit
    - Modifications to or installation of electrical circuits and fixtures.

- Permits are through Washington State Labor & Industries (L&I), not through the City of Shoreline.

☐ Mechanical Permit
- For the installation of or modifications to Mechanical systems

Inspections

Smoke Control Systems require a third-party special test for acceptance. For additional details and inspection requirements, please refer to the conditions attached to your approved permit.

☑ Upon completion, the Smoke Control Special Test Report will be required to be sent to the Shoreline Fire Marshal's Office representative and uploaded to The Compliance Engine at: www.thecomplianceengine.com within 24 hours.