Range Hood Fire Suppression System Requirements

Permit/Design Standards: Section 105.7.1 of the Washington State Fire Code (WSFC) requires a Construction Permit to install or modify an automatic fire-extinguishing system. Pursuant to 904.2.2 of the International Building Code (IBC), these systems are required to protect any Type I hood and are in addition to the provisions of chapters 506 & 507 of the International Mechanical Code (IMC). Section 904.12 of the WSFC requires any work performed under said permit to be in accordance with UL Standard 300, NFPA 17A, the manufacturer's instructions and be listed and labeled for the intended application. The purpose of this document is to provide the reader with a summary of the information required in a submittal package to this office for Range Hood Systems and the acceptance test requirements. *Failure to include any/all information identified here may result in delays if the plans are rejected and require resubmittal.*

Designer Certification Requirements: Section 904.1.1 of the WSFC requires personnel who perform design, installation, inspection, testing or maintenance on kitchen suppression systems to possess an ICC/ National Fire Equipment Distributors (NAFED) certification specific to the system they are working on (I.E. Pre-engineered, Engineered or Pre-engineered Industrial). In addition, technicians shall be certified within the last three years by the manufacturer of the system they are working on. Copies of both these certificates shall be provided with the plan submittal (see *Documentation* section below)

Submitting Plans: The preferred method for submitting plans is through the County SMARTGOV portal however, plans may also be submitted in person. If so, one paper copy and one flash drive of all documents shall be provided. Each system served by a tank or manifolded tanks shall be considered a single system and constitute one submittal.

Electronic Submittal File Standards

Acceptable File Types: Plans, calculations, specifications and supporting documents shall be uploaded or submitted as a PDF file.

Document Orientation: All plans must be uploaded in a "Landscape" format (horizontal position). All other documents can be in the "Portrait" format. Plans size shall be large enough to accommodate an 18"=1'0" scale isometric drawing along with the other information identified in the *Plans* section below.

Documentation

The following documents are required at the time the application is submitted for the construction permit:

- A completed *Mason County Fire Protection System Permit Application* form (found on the Fire Marshal web page under the *Fire Marshal Standards* header).
- An electronic copy of the ICC/NAFED certificate for a Pre-Engineered Kitchen Fire Extinguishing Systems issued to the designer of the system.
- An electronic copy of the manufacture's certificate of training issued to the system installer within the last 3 years.
- An electronic copy (or link) to the manufacturer's design and installation manual.

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- Manufacturer's technical data sheets.
- Technical data sheets for the appliances being protected.
- Documentation that demonstrates the applicable permits for the hood and ventilation system have been secured from the local Building Dept. and State L & I.

Plans

Shall be minimum. 1/8"=1'0 scaled drawing and/or be large enough to be allow the inclusion of the following information:

- Name and location of protected premises, owner, and occupant (where applicable)
- Name and contact information of installer or contractor
- The system location in the building
- Cooking appliance locations and dimensions (in inches)
- Type of nozzles
- Nozzle location and height over appliances (in inches)
- Calculated flow point chart
- A piping diagram to include the pipe type, size, length and fittings
- Extinguishing agent tank(s)
- Fusible link locations
- Exhaust duct size
- Plenum dimensions and filter bank type (I.E. V-Bank or Single Bank)
- Manual pull station location (> 10' but < 20') from exhaust system and in egress pathway
- Class K fire extinguisher location
- If new construction and a fire alarm is being installed in the building, a note indicating whether the fire alarm will be a deferred submittal
- A note on the plan indicating the system shall be designed, installed, serviced and maintained in accordance with NFPA 17A, NFPA 96 and the manufacturer's instructions.
- Sequence of operation including fuel/electricity/exhaust/make-up air interlocks/fire alarm integration.

A copy of this plan with approval stamps is required to be laminated and posted on the exhaust hood or system cabinet.

Acceptance Test Procedure: To be finaled, every range hood system shall be subject to an acceptance test which includes the following:

- Verification the system components match those on the approved plans
- Verification of the type and size of appliances
- Verification of the nozzle types, distances from appliances and locations in the plenum and duct
- Demonstrating that activation of the system dislodges the nozzle caps

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- Performing and successfully passing an “Air” test incorporating a valve to isolate the system (once the ballons inflate) and conduct a 30 second hydrostatic test of the pipe and fittings.
- Demonstrating activating the manual pull station sets off the system
- Verifying the power (gas or electric) is secured upon system activation.
- Verifying system activation shuts down the make-up air.
- Verifying system activation also activates the fire alarm (if applicable)
- Having a serviced Class “K” extinguisher mounted at the location identified on the plans
- Having a set of the approved plans laminated and permanently affixed to the exhaust hood or cabinet.
- If 450- or 500-degree links are installed, a heat test (using heat tape to verify the ambient operating temperature of the system) shall be performed to validate the link’s rating is appropriate for the system. Because this will involve returning to the site a week after the tape is applied, installers should budget for another trip to the site.

NOTE: Prior to conducting an acceptance test, a *Wet Chemical System Acceptance Test Report* as found in the Appendix of NFPA 17A *may* be required to be submitted to this office.