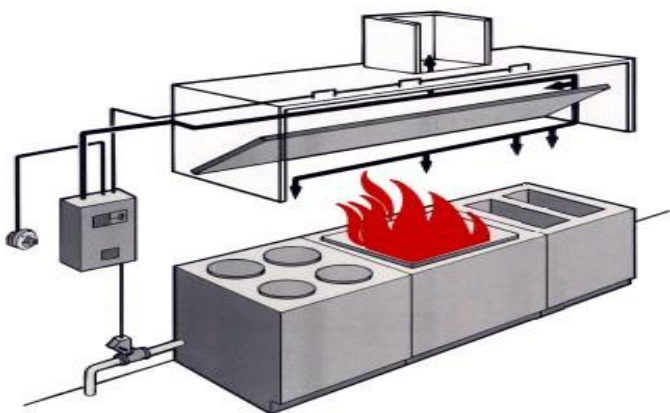




Fire Systems: Commercial Cooking Suppression Systems

This handout outlines the conditions under which appliances used in a commercial food service establishment for heating or cooking food and which produce grease-laden vapors, steam, fumes, smoke, or odors that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers; upright broilers; griddles; broilers; steam-jacketed kettles; hot-top ranges; under-fired broilers (char broilers); ovens; barbecues; rotisseries; and similar appliances. Information below is taken from the International Fire Code (IFC) 2021 edition as adopted by the state of Washington as well as the National Fire Protection Association (NFPA) 96, 2021 edition.

By definition, a food service establishment shall include any building, or a portion thereof used for the preparation and serving of food.



Commercial Kitchen Hood: An air-intake device used to capture by entrapment, impingement, adhesion or similar means, grease and similar contaminants before they enter a duct system.

Type I Hood: A kitchen hood for collecting and removing grease vapors and smoke.

Where Required: A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease-laden vapors.

Operations, Inspection, & Maintenance: Commercial cooking systems shall be installed, operated, inspected, and maintained in accordance with the IFC and Chapter 11 of NFPA 96.

Ventilation Systems: The ventilation system in connection with hoods shall be operated at the required rate of air movement. Classified grease filters shall be in place when equipment under a kitchen grease hood is used.

Cleaning and Inspection: Hoods, grease-removal devices, fans, ducts and other appurtenances shall be inspected and cleaned by qualified individuals at intervals specified in the table below:

TYPE OF COOKING OPERATION	FREQUENCY OF INSPECTION
High-volume cooking operations such as 24-hour cooking, charbroiling, or wok cooking	3 months
Low-volume cooking operations such as places of religious worship, seasonal businesses, or senior centers	12 months
Cooking operations utilizing solid fuel burning cooking appliances	1 month
All other cooking operations	6 months

Grease Accumulation: If during the inspection it is found that hoods, grease-removal devices, fans, ducts or other appurtenances have an accumulation of grease, such components shall be cleaned.

Obtaining an Alternative Fire Extinguishing Systems and Equipment Permit:

Go to [MyBuildingPermit.com](https://www.kingcounty.gov/permits) The permit type selections are:

Jurisdiction: King County

Application Type: Fire

Project Type: Non-Residential

Activity Type: (Choose one)

Scope of Work: Other Systems and Equipment

Apply On-Line at [MyBuildingPermit.com](https://www.kingcounty.gov/permits)

Select: King County | Fire | (Project Type) Non-Residential | (Activity Type) | Other Systems and Equipment



For questions or inquiries about alternatives, please email permitservices@kingcounty.gov

Submittal Requirements:

A Fire, Other System and Equipment application form permit submittal package must include:

- 1) Plan set cover sheet which should include the following information:
 - a. A statement of the scope of work that this permit is intended to cover.
 - b. Type and size of system(s)
 - c. Hood dimensions, exhaust duct and appliance dimensions, as well as the interface of the fire extinguishing system detectors.
 - d. Appliance(s) description
 - e. Piping schematic to include an isometric layout. Nozzle type and location.
 - f. Manual actuation device and related cable installation in the kitchen.
 - g. Location and temperature of all fusible links.
 - h. System flow point capability, system flow points used, and pipe length equivalency calculations.

- 2) Submit extinguishing equipment specifications.
- 3) All construction documents shall be reviewed by a NICET Level III in special hazard suppression systems **or** a licensed professional engineer (PE) in the state of Washington prior to being submitted for permitting. The reviewing professional shall submit a stamped, signed, and dated letter; or verification method approved by the fire code official indicating the system has been reviewed and meets or exceeds the design requirements of the state of Washington and the local jurisdiction. [*IFC §904.1.1.1 Design (Effective July 1, 2024)*]
- 4) All appliances shall be locked in place. If appliances must be moveable for cleaning, location markers shall be permanently installed to indicate the approved location of the appliance (e.g., wheel chocks designed to precisely relocate mobile cooking equipment under the exhaust hood, at the approved designed location, in accordance with NFPA 96 and NFPA 17A requirements).
- 5) Systems shall be provided with interlocks of all critical components and operations such that if any interlock components are interrupted the cooking appliance shall not be able to operate.

Extinguishing System Design Criteria:

- 1) Activation of fire extinguishing system shall cause the shut-off of fuel and/or power for all appliances under vent-hood.
- 2) Activation of fire extinguishing system shall cause the shut-off of makeup air supply to vent-hood.
- 3) Exhaust ventilation shall continue to operate upon activation of fire extinguishing system.
- 4) Activation of fire extinguishing system shall initiate activation of the fire alarm system, if one is present.
- 5) Extinguishing system's manual pull station shall be located along the path of egress. (Minimum of 10 feet and a maximum of 20 feet from protected kitchen exhaust system and at a maximum height of 48 inches and a minimum height of 42 inches)
- 6) Label multiple manual pull stations.
- 7) Mount a Class K rated fire extinguisher and approved signage within 30 feet from protected kitchen exhaust system.
- 8) All appliances shall be locked in place. If appliances must be moveable for cleaning, location markers shall be permanently installed to indicate the approved location of the appliance (e.g., Wheel chocks designed to precisely relocate mobile cooking equipment under the exhaust hood, at the approved designed location, in accordance with NFPA 96 and NFPA 17A requirements).

Additional Resources

King County [Department of Local Services, Permitting Division](#)

[Permit Fees](#)

[Fire, Other Systems and Equipment](#), Information and Application

[On-line Permit Status, Invoice Payment and Inspection Scheduling](#)

[Inspections scheduling](#)