	Presidio Trust **Fire Marshal's Office** *1750 Lincoln Blvd. San Francisco, California 94129*	**Date**: August 8, 2023 **Revision**: Sept 28, 2026 **Standard**: ***FES-002***
Title: **Fire Extinguishing Systems for Commercial Cooking Operations Standard**		**Approved By**: *Randy Amores*

SCOPE

This standard applies to any facility where commercial cooking operations produce grease-laden vapors. This standard defines protection for cooking surfaces, deep fat fryers, griddles, upright broilers, char broilers, range tops and grills, open faced ovens, salamanders, cheese melters, woks, open faced pizza ovens, and other similar cooking appliances.

Commercial cooking operations in Presidio Trust, Area B, shall have a permit from the Presidio Trust Permitting Office and be compliant with the following regulations:

- California Fire Code
- National Fire Protection Association, NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
- National Fire Protection Association, NFPA 17A, Standard for Wet Chemical Extinguishing Systems
- National Fire Protection Association NFPA 13, Standard for the Installation of Sprinkler Systems
- National Fire Protection Association, NFPA 10, Standard for Portable Fire Extinguishers
- International Mechanical Code (IMC)

1. COOKING AND EXTINGUISHING SYSTEMS

1.1 Cooking appliances producing grease-laden vapors shall be equipped with an exhaust system with the following components: hood, grease removal devices, duct system, and fire extinguishing equipment.

1.2 Protection shall also be provided for the enclosed plenum space within the hood, above the filters, and in the exhaust, ducts serving the hood.

1.3 Cooking equipment that produces grease-laden vapors shall be equipped with a fire-extinguishing system for the protection of grease removal devices, hood exhaust plenums, and exhaust duct systems. Automatic fire-extinguishing systems shall comply with UL 300 Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment, NFPA 17A, and NFPA 96, Sections 11.1.2 and 11.2.2.

1.4 Automatic fire extinguishing systems shall be serviced after activation and at least every six months. Inspections shall be conducted by individuals certified by the California Office of the State Fire Marshal, and a certificate of inspection shall be forwarded to the Presidio Trust Fire Marshal's Office upon completion. Each system will have a tag placed on the system's pull station, showing the licensed service company, the seal of the California Office of the State Fire Marshal and the month and date of service (NFPA 96, Section 11.6.2).

1.5 Fire extinguishers with a Class K rating shall be provided for hazards with potential for fires involving combustible cooking media (vegetable or animal oils and fats).

1.5.1. A placard shall be conspicuously placed near the Class K extinguisher that states the fire protection system shall be activated prior to using the fire extinguisher (NFPA 96, Sections 11.2.1 and 11.7.2).

1.6 Portable fire extinguishers shall be provided for other hazards in kitchen areas and shall be selected and installed in accordance with NFPA 10, Standard for Portable Fire Extinguishers (NFPA 96, Section 11.7.4).

1.7 Upon actuation of any fire-extinguishing system for cooking operations, all sources of fuel and electric power that produce heat to all equipment protected by the system shall automatically shut off.

1.7.1. Shut-off devices shall require manual resetting prior to fuel or power being restored (NFPA 96, Sections 11.3.1 and 11.3.3).

1.8 Commercial cooking equipment that produces grease-laden vapors shall be provided with a Type I Hood (a kitchen hood for collecting and removing grease and smoke), in accordance with the International Mechanical Code (IMC), and an automatic fire-extinguishing system that is listed and labeled for its intended use as follows:

1.9 Wet chemical extinguishing system, (NFPA 17A, Standard for Wet Chemical Extinguishing Systems), complying with UL 300, International Mechanical Code for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment (IMC, Section 507.2).

2. SUBMITTAL REQUIREMENTS

2.1. General Requirements:

2.1.1 Contact the Presidio Trust Permitting Office to complete the required application.

2.1.2 Submit appropriate fees in accordance with the Presidio Trust Permitting Office Fee Schedule.

2.1.3 Submit plans in 100 percent construction documents (CDs) in PDF format and current and complete technical data sheets/manufacturer's specifications to the Presidio Trust Permitting Office.

2.2. The plans submitted shall include the following information:

2.2.1 Scope of work for the project.

2.2.2 Complete address of the project.

2.2.3 Only people who are properly trained shall be considered competent to design, install, and service pre-engineered wet chemical systems.

2.2.3.1. Proof of proper training for the designer and installer shall be provided upon plan submittal.

2.2.4 Applicable codes and standards used for the system design.

2.2.5 Sectional view of cooking appliances with the dimensions of each piece of cooking equipment specified.

2.2.6 The size and location of the back shelf, if one exists.

2.2.7 If applicable to the appliances on site, specify the following:

2.2.7.1. Whether or not the fryer has a drip board;

2.2.7.2. The type of char broiler; and

2.2.7.3. The depth of the wok.

2.2.8 Floor plan layout that indicates the location of the cooking equipment, exit doors, manual pull, and other non-protected appliances.

2.2.9 Fire extinguishing protection is required for open pizza ovens. If the pizza oven is closed, and no protection is provided, this must be specified on the plan.

2.2.10 Hood, plenum, and duct dimensions.

2.2.11 Piping schematic that includes the equivalent pipe length calculation (if applicable); the number and type of nozzles; and the location, height, and direction of the nozzles' placement over each piece of cooking equipment.

2.2.12 An equipment legend for each supply tank (multiple cylinders supplying the same nozzles shall be combined on the legend).

2.2.13 The legend shall include the type of nozzles that are connected to that tank, the tip number/identifier, the total number of flow points used, and the number of flow points allowed for that size tank.

2.2.14 Detection schematic that includes the location of each fusible link for each protected piece of equipment, the location of the manual pull, and the length of the detection system.

2.2.15 **NOTE:** If the chemical fire extinguishing system is not designed to fully protect the duct, the duct will also require fire sprinklers to be installed as per NFPA 13.

3. TESTING

3.1 The system shall be pretested prior to the Presidio Trust Fire Marshal's Office inspection to determine that the system is properly installed and functions in accordance with the approved plans and the manufacturer's installation and maintenance manual.

3.1.1 Testing during the Presidio Trust Fire Marshal's Office inspection shall include a manual and automatic activation via fusible link.

3.1.2 A shutdown of all electrical and gas cooking equipment shall also be demonstrated.

3.1.3 Nozzle type, height, and orientation relative to the placement of cooking appliances will also be verified during the inspection.

4. OPERATIONS/MAINTENANCE

4.1 The extinguishing system shall be maintained in accordance with the manufacturer's requirements and with the following:

4.1.1 Extinguishing systems shall be serviced at least every six months or after activation of the system. Maintenance shall be conducted in accordance with the manufacturer's listed installation and maintenance manual.

4.1.2 The hood ventilation system shall be operated at the required rate of air movement, and approved grease filters shall be in place when cooking equipment is operated under a kitchen grease hood.

4.1.3 When grease extractors are installed, they shall be operated with commercial cooking equipment.

4.1.4 Hoods, grease removal devices, fans, ducts, and other appurtenances shall be periodically cleaned to prevent grease accumulation. Cleanings shall be recorded, and records shall state the extent, time, and date of the cleaning. Such records shall be maintained on the premises for a period of two (2) years.

5. SCHEDULING INSPECTIONS

5.1 Only the installation contractor can make inspection appointments.

5.2 Call **415-745-0319** or **415-314-5101** to schedule an inspection.

5.3 It is the responsibility of the installation contractor or a representative to be on the job site during the inspection with a set of approved plans. Failure to do so will result in the cancellation of the inspection and the assessment of a reinspection fee.

5.4 All inspection requests must be submitted using the Presidio Trust's Inspection Form, which must be filled out completely with the correct inspection title and nomenclature. The requests must be specific and identify both the nature and location of the inspection.

5.5 The inspection request must be submitted a minimum of 48 hours in advance of the requested inspection date.

5.6 To request a form for an inspection, contact Catherine Su (csu@presidiotrust.gov) of the Presidio Trust Permitting Office.

6. PRESIDIO TRUST FIRE MARSHAL'S OFFICE NOTES

6.1 Provide the following on the plan, *verbatim*, under the heading "PRESIDIO TRUST FIRE MARSHAL'S NOTES:"

6.1.1 This system is designed in accordance with California Fire Code; NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations; NFPA 17A, Standard for Wet Chemical Extinguishing Systems; International Mechanical Code; ANSI/UL 300; and the most recent manufacturer's manual.

6.1.2 When a fire alarm system is provided in the building, it shall be interconnected so the activation of the hood extinguishing system will sound the fire alarm and transmit a signal to the central station.

6.1.2.1. The hood extinguishing system does not need to be interconnected if the building is only equipped with a fire sprinkler monitoring system.

6.1.3 The approved system shall be pretested prior to the Presidio Trust Fire Marshal's Office's scheduled inspection and required acceptance test.

6.1.4 Piping shall be rigidly supported to prevent movement. Swivel nozzles shall be rotated to a pre-determined aiming point and then tightened to hold that angle. Careful attention shall be given when designing the system, as nozzles cannot be moved "out of the way" once approved in the field.

6.1.4.1. Any movement of pipes or nozzles shall require an approved contractor to evaluate the layout.

6.1.5 Movable cooking equipment shall be provided with a means to ensure it is correctly positioned in relation to the appliance discharge nozzle during cooking operations.

6.1.6 Manual pull stations shall be located no higher than four (4) feet above the finished floor and shall be readily accessible for use at or near a means of egress from the cooking area a minimum of ten (10) feet and maximum of 20 feet from the kitchen exhaust system.

6.1.7 All gas fueled, electrically powered, and heat-producing equipment located under the hood shall shut down upon activation of the extinguishing system.

6.1.8 All discharge nozzles shall be provided with caps, covers, or other suitable protective devices.

6.1.9 All discharge nozzles shall be located and installed in relation to the protected appliance as shown in the manufacturer's installation manual.

6.1.10 Hood and duct construction and installation shall be conducted in accordance with IMC, and nationally recognized standards. These assemblies are subject to approval and inspection by the Presidio Trust Permitting Office and are not part of the Presidio Trust Fire Marshal's Office's plan review process except as it relates to the installation of the hood extinguishing system.

6.1.11 Where multiple manual actuators are installed to protect separate extinguishing systems, which extinguishing system each will activate shall be identified.

6.1.12 Hood exhaust fans shall continue to operate after the extinguishing system has been activated unless fan shutdown is required by a listed component of the ventilation system or by the design of the extinguishing system.

6.1.13 The inside edge of the hood shall overhang a horizontal distance of not less than six (6) inches beyond the edge of the cooking surface on all open sides, and the vertical distance between the lip of hood and the cooking surface shall not exceed four (4) feet unless noted in manufacturer specifications.

6.1.14 Fryers shall be separated from surface flame appliances by 16 inches, or an eight-inch steel or tempered glass baffle plate shall be provided between fryers and surface flames.

6.1.15. A Class K-rated extinguisher shall be provided within a maximum of 30 feet of cooking equipment.

6.1.15.1. Additional extinguishers may be required based on travel distance for solid fueled equipment or multiple fryers portable fire extinguishers shall be maintained in accordance with NFPA 10.

6.1.15.2. Portable fire extinguishers shall be conspicuously located along normal paths of travel where they will be readily accessible.

DEFINITIONS

Class K Fire – Class K fires are fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats).

Fire Extinguishment System – The complete suppression of a fire until there are no burning combustibles.

Fusible Link – A form of fixed temperature heat-detecting device sometimes employed to restrain the operation of an electrical or mechanical control until its designed temperature is reached.

Plenum – A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.

RESOURCES

American National Standards Institute (ANSI). https://www.ansi.org/

UL 300: Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment. (2022). https://www.shopulstandards.com/ProductDetail.aspx?UniqueKey=43069