



COLTON FIRE DEPARTMENT

303 East E Street, Colton, CA 92324
909.370.5553

Fire Extinguishing Systems for Commercial Cooking Operations Guideline

PURPOSE

This guideline has been prepared to assist those responsible for the design, installation, testing, and inspection of wet chemical fire extinguishing systems used to protect commercial cooking appliances to comply with 2009 NFPA 17A; 2016 California Fire Code (CFC) Chapter 9, Section 904.11; and the 2016 California Mechanical Code (CMC) Chapter 5. The information contained in this document is intended to promote compliance and to ensure that commercial type food heating and processing operations are adequately protected in the event of a grease fire.

SCOPE

This guideline applies to any facility where commercial cooking operations produce grease laden vapors. 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. This guideline defines protection for cooking surfaces, deep fat fryers, griddles, upright broilers, charbroilers, range tops and grills, open face ovens, salamanders, cheese melters, woks, open face pizza ovens, and other similar cooking appliances. Protection shall also be provided for the enclosed plenum space within the hood, above filters, and in exhaust ducts serving the hood.

DEFINITIONS

General- The definitions contained in this Guideline shall apply to the terms used in this standard. Where terms are not defined in this Guideline, they shall be defined using their ordinarily accepted meanings within the context in which they are used.

Approved - Acceptable to the authority having jurisdiction

AHJ – Authority Having Jurisdiction

Branch Duct- The duct work that contains the exhaust air from a single hood or hazard area.

Certified- A formally stated recognition and approval of an acceptable level of competency, acceptable to the AHP

Common Duct- The duct work containing the exhaust air from two or more branch ducts.

Indicator- A mechanical or electrical device shall be provided that shows when an extinguishing system or critical component of it is ready to operate, or if it has already operated. NFPA 17A - 5.2.1.8

Maintenance- Work performed to ensure that equipment operates as directed by the manufacturer.

Owner's Manual- A pamphlet containing the manufacturer's recommendations for the proper inspection and operation of the extinguishing system.

Trained-One who has undergone the instructions necessary to safely design, install, and reliably perform the maintenance and recharge service in accordance with the manufacturer's listed manual.

SUBMITTAL REQUIREMENTS

Submit three (3) sets of legible, scaled plans with ONE (1) set of current and complete technical data sheets/manufacturer's specifications shall be submitted to the Colton Fire Department (CFD). These plans shall contain the following information and items:

1. Scope of work for the project.
2. Complete address of the project.
3. Only persons properly trained shall be considered competent to design, install, and service pre-engineered wet chemical systems. Proof of proper training for the designer and installer shall be provided upon plan submittal. CMC 513.10/NFPA 17A – 6.2
4. Applicable codes and standards used for the system design (e.g., 2016 CFC, 2016 CBC, etc.).
5. Sectional view of cooking appliances with the dimensions of each piece of cooking equipment specified.
6. Specify the size and location of the back shelf, if any.
7. If applicable to the appliances on site, specify the following:
 - Whether or not the fryer has a drip board
 - Type of charbroiler
 - The depth of wok
8. A scaled floor plan layout that includes the location of the cooking equipment, exit doors, manual pull, and other non-protected appliances indicated.
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.
10. Hood, plenum, and duct dimensions.
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 nozzle placement over each piece of cooking equipment.
12. An equipment legend for each supply tank (multiple cylinders supplying the same nozzles shall be combined on legend). The legend shall include the type of nozzles that are connected to that tank, the tip number and/or identifier, the total number of flow point used, and the number of flow points allowed for that size tank.
13. Detection schematic that includes the location of each fusible link for each protected equipment, the location of the manual pull, and the length of the detection system.
14. Any equipment, listed or otherwise, that provides secondary filtration or air pollution control and that is installed in the path of travel of exhaust products shall be provided with an approved automatic fire-extinguishing system for the protection of the component sections of the equipment

and shall include protection of the ductwork downstream of the equipment, whether or not the equipment is provided with a damper. If the equipment can be a source of ignition, it shall be provided with appropriate detection to operate the fire-extinguishing system. CMC 512.3.2

15. Where a cooking exhaust system employs an air pollution control device that re-circulates air into the building, the provisions of CMC 516.0 and the manufacturing instruction manual shall apply. CMC 512.3.3

NOTE: If the chemical fire extinguishing system is not designed to fully protect the duct then the duct will also require fire sprinklers to be installed as per 2016 NFPA 13, Section 7.10.

Provide the following notes on the plan, verbatim, under the heading "CITY OF COLTON NOTES":

1. This system is designed in accordance with ANSI/UL 300, 2009 NFPA 17A; 2008 NFPA 96, 2016 CFC, 2016 CMC, and the most recent Manufacturer's Manual.
2. Please schedule all inspections at least 72 hours in advance. Call CFD 909-370-5553 to schedule inspection.
3. Where a building fire alarm or monitoring system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm or monitoring system in accordance with NFPA 72. CFC 904.3.5.
4. The approved system shall be pre-tested prior to the CFD scheduled inspection of the required acceptance test.
5. Piping shall be rigidly supported to prevent movement.
6. Movable cooking equipment shall be provided with a means to ensure that it is correctly positioned in relation to the appliance discharge nozzle during cooking operations. NFPA 17A 5.6.4
7. Manual pull stations shall be located no higher than four (4) feet above finished floor and shall be readily accessible for use.
8. All gas fueled, electrically powered, and heat producing equipment located under the hood shall shut down upon activation of the extinguishing system.
9. All discharge nozzles shall be provided with caps, covers, or other suitable protective devices.
10. All discharge nozzles shall be located and installed in relation to the protected appliance as shown in the manufacturer's listed installation manual.
11. Hood and duct construction and installation shall be in accordance with the CMC and nationally recognized standards. These assemblies are subject to approval and inspection by the Building Official and are not part of the CFD plan review process except as it relates to the installation of the hood extinguishing system.
12. Where multiple manual actuators are installed for protection of separate extinguishing systems, they shall be identified as to which extinguishing system each will activate.
13. A placard shall be conspicuously placed near each extinguisher that states:
"Fire Protection System Shall Be Activated Prior To Using The Fire Extinguisher." NFPA 17A
14. 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.
15. 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 the hood and the cooking surface shall not exceed four (4) feet unless the manufacturer's specifications state otherwise.

Testing

The system shall be pre-tested prior to CFD inspection to determine that the system is properly installed and functions in accordance with the approved plans, the manufacturer's installation and maintenance manual. Testing during the CFD inspection shall include: a manual and automatic activation via fusible link, a shutdown of all electrical and gas cooking equipment, verification of nozzle type and height, and orientation relative to placement of cooking appliances will also be verified during the inspection.