



## WOODSIDE FIRE PROTECTION DISTRICT

### *Fixed Extinguishing System Design and Installation Standard*

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**PURPOSE.** All commercial-type cooking equipment must be protected by a fire extinguishing system. All new extinguishing equipment must conform to 2005 UL Standard 300. 2022 CFC Section 904.13 requires all existing dry-chemical and wet chemical extinguishing systems comply with UL 300-2005 requirements. Systems that do not meet the UL 300 Standard are not in compliance and shall be upgraded immediately.

**SCOPE.** This standard and guideline applies to the design and installation of fixed extinguishing system. This guideline is to be used in conjunction with NFPA 13 and NFPA 17A 2022 edition, 2022 California Fire Code, The Woodside Fire Protection District Ordinance No. 13, and other applicable national standards including manufacturer recommendations.

#### **SYSTEM DESIGN AND INSTALLATION**

Plans for a fixed extinguishing system shall be designed by a State of California C-16 licensed contractor or by a registered professional engineer (civil, mechanical, or fire protection), licensed by the State of California, Board of Professional Engineers. All copies of the plans shall be stamped and signed by the licensed individuals. A C-16 licensed contractor shall only design systems that the firm has a contract to install.

#### **GENERAL REQUIREMENTS**

1. The system shall be serviced at least every 6 (six) months and after system activation. Records shall be maintained per the 2022 CFC Section 606.3.3.1.
2. Comply with section 606 of the 2022 CFC for cleaning and maintaining Type I Commercial Kitchen Hoods. **NOTE: Cleaning intervals have increased for systems that have a high volume of use and systems using solid fuels.**
3. Fusible links and sprinkler heads must be replaced as required by Section 904.13.5.3 of the 2022 CFC .

#### **SUBMITTAL REQUIREMENTS**

1. Working plans shall be drawn to an indicated scale (not smaller than 1/8" = 1'), on sheets of uniform size (11" x 17" minimum), including a kitchen floor plan showing exits. Two sets are needed with the designers' wet signature on each page. All fonts throughout the plans shall not be smaller than 1/8" font size. The following items must be included in the plans:

- a) Names of owner and occupant
- b) Address of the building
- c) Contractor's name, address, telephone number, and license number
- d) Point of compass
- e) Symbol list
- f) Drawing showing kitchen layout, including exits, pantry and access to dining area; This should include hood, duct, plenum, and appliance dimensions; Indicate the actual surface dimension being protected as well as the size of the unit (e.g. 36" griddle with 30" x 24" cooking surface); All appliances must be locked in place; If the appliance is moveable for cleaning, permanent markers shall be installed to ensure that the appliance is returned to its proper design location.
- g) Location of all parts of the system: panels, piping (size and length), nozzles (type and distance to the appliance), mechanical fuel shut-off devices, agent storage container (type and size), manual pull station and related cable (show installation height above floor), detection devices and related cables, Type K portable fire extinguisher.
- h) Attach to the plans the manufacturers' specification sheets for all the above. Highlight all proposed parts (Use the same terminology on the plans as is in the design manual; i.e. range not stove or burner); all parts must be installed according to the manufacturer's specifications; all listed systems must be UL Standard 300.
- i) Pipe length calculations (both actual and equivalency). Indicate actual maximum and minimum lengths of pipe and equivalent lengths. Show the actual and maximum vertical rise. Show branch line limitations.
- j) Flow point calculations
- k) When the building has a fire alarm system, the hood suppression system shall be connected to the system (any activation shall be indicated by alarm status at the FACP).
- l) Alarm or indicator that shows system has activated.

## **INSPECTION AND TESTING PROCEDURE**

1. C-16 contractor shall be on site during the acceptance test with the following: copy of approved plans, permit required by the AHJ, service manual for system reference.
2. Gas to be **ON** as well as electrical supply to hood area. If building is equipped with an alarm system, the fixed extinguishing system shall be monitored by this system and activate notification devices throughout and transmit alarm to the off-site monitoring company. The alarm company representative should be present to reset alarm system after testing.
3. C-16 contractor shall be prepared to facilitate test. (i.e. balloons, test cartridge, test link, etc.)
4. Test both **manual** and **mechanical** means for activation of fixed extinguishing system. (1<sup>st</sup> pull station activation. 2<sup>nd</sup> cut test link at furthest detection point)
5. When system is fired, verify:
  - a) All balloons filled. Check the sizes that the balloons expand verifying each nozzle flow point.
  - b) Verify gas valve closure. Have an appliance turned **ON** to view gas closure and pilot light for burners.
  - c) Check electrical appliances that they are deenergized.
  - d) Check the plenum chamber and duct shaft(s) balloons to ensure that they have

expanded with inert gas.

e) Check that the exhaust duct fan is on and the make-up air is off.

6. Check all penetrations through the hood. These must be welded or have UL approved grease seals at all penetrations.
7. Check that all pipe threads are sealed using Teflon tape. This is referenced in the service manual.
8. Verify all pipe ends are reamed and clean of any obstruction per service manual.
9. Verify installed nozzle flow points match approved plans and calculations.
10. Verify all cooling appliances are protected by nozzles and that the nozzles are correctly positioned.