

WET CHEMICAL KITCHEN FIRE SUPPRESSION SYSTEM ENGINEERING SPECIFICATIONS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. Design and installation of a Pre- engineered, Wet Chemical Kitchen Fire Suppression System as manufactured by Ansul Fire Protection, Marinette, Wisconsin, or approved equal.

1.02 REFERENCES

- A. National Fire Protection Association (NFPA):
 - a. NFPA 17 – Standard on Wet Chemical Extinguishing Systems.
 - b. NFPA 96 – Standard for the Installation of Equipment for the Removal of Smoke and Grease Laden Vapors from Commercial Cooking Equipment
- B. Underwriters Laboratories, Inc. (UL) – Fire Protection Equipment Directory.
 - 1.1.A.1 – UL Standard 12154
 - 1.1.A.2 – UL Standard 300
- C. Requirements of the Authority Having Jurisdiction (AHJ)

1.04 GENERAL:

- A. Furnish all materials for a complete wet Chemical Kitchen Fire Suppression System including agent storage cylinders, nozzles, control devices, detectors, fuel shut off device(s) and all other equipment necessary for a complete operational system.
- B. Major system components shall be produced by Ansul Fire Protection (no alternatives) and shall be installed by Interstate Fire Protection of North Conway, NH and Augusta, ME an authorized Ansul distributor certified for the design and installation and service of Wet Chemical Kitchen Fire Suppression Systems.
- C. Contractor shall, as a minimum, provide 24-hour emergency service, 7 days a week and shall be able to respond to an emergency situation within 2 hours of receiving an emergency trouble call. In addition, contractor shall maintain no less than \$2 million liability insurance.

1.05 SUBMITTAL:

- A. The following shall be submitted for approval within 21 days of award and prior to delivery of materials:
 - a. Material and equipment information shall include manufacturer's catalog cut sheet and technical data for each component or device used in the system. This shall include, but not be limited to, the following:
 - 1. Detectors
 - 2. Manual discharge switches
 - 3. System Agent
 - 4. Release devices
 - 5. Shutoff Devices
 - 6. Agent storage cylinders
 - 7. Mounting brackets
 - 8. Discharge Nozzles
- B. Provide information outlining the warranty of each component or device used in the system.
- C. Provide information outlining the operation and maintenance procedures that will be required of the owner.
- D. Drawings shall indicate locations of all equipment associated with the Kitchen Fire Suppression System. Floor plans shall be provided showing equipment locations, piping, point-to-point wiring and other details as required.
- E. Provide manufacturer's installation, maintenance and recharge manual.
- F. Provide owner's manual.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Ansul Fire Protection, One Stanton Street, Marinette, WI 54143-2542.

2.02 SYSTEM

- A. Ansul R-102 Wet Chemical Restaurant Fire Suppression System.

2.03 SYSTEM DESCRIPTION AND OPERATION:

- A. Design Requirements:

1. The system shall be pre-engineered.
2. The system shall be cartridge operated.
3. The system shall be regulated pressure type, with a fixed nozzle agent distribution network.
4. The system shall be UL Listed.
5. The system shall be capable of automatic actuation by a fusible link detection system and remote manual actuation by a mechanical pull station.
6. Additional equipment shall be available for electrical gas line shut-off applications.

B. Performance Requirements:

1. The system shall have fire suppression capabilities for the following restaurant hazard areas:
 - a. Ventilating structures including hoods, ducts, plenums and filters.
 - b. Deep fat fryers.
 - c. Griddles and range tops.
 - d. Upright, natural charcoal, or chain- type broilers.
 - e. Electrical, lava rock, mesquite, or gas radiant charbroilers.

2.04

COMPONENTS

- A. Wet Chemical Agent: The extinguishing agent shall be a potassium carbonate, potassium acetate-base formulation designed for flame knockdown and securement of grease-related fires. The agent shall be available in plastic container, labeled with handling and usage instructions.
- B. Agent Tank: The agent tank shall be installed in a stainless steel enclosure (wall bracket for additional tanks). The tank shall be constructed of deep drawn carbon steel, finished in red enamel, 1.5 gallon or 3 gallon capacity in size. Tanks shall have 100- psi working pressure, 300-psi test pressure, and 600-psi minimum burst pressure.
- C. Tank Adapter: Tank adapter assembly shall be chrome-plated steel with a ¼ in. NPT female inlet and a 3/8 in NPT male outlet.
- D. Regulated Release Mechanism: Spring-loaded, mechanical/pneumatic type capable of providing expellant gas supply to a maximum of two (2) agent tanks. It shall contain a factory installed regulator dead-set at 100-psi.

- E. Discharge Nozzles: Tested and listed for a specific application, each shall be stamped with flow designation and tip part number. Each nozzle shall be equipped with a protective cap to keep the nozzle tip orifice free of cooking grease build-up.
- F. Detectors: The detectors shall be the fusible link style designed to separate at a specific temperature.

2.05 PIPING REQUIREMENTS

- A. Agent Distribution Pipe and Fittings: Schedule 40 black iron, chrome-plated, or stainless steel. **Hot dipped galvanized is not allowed.**
 - 1. The minimum length of Schedule 40, 3/8 in. pipe from the tank outlet to any nozzle protecting a range, fryer, or wok must be 6 ft.
 - 2. The agent distribution piping and fitting connections, located in the protected area, must be sealed with pipe tape.

2.06 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: The manufacturer of the system components shall have a minimum of 10 years experience in the manufacture and design of Kitchen fire suppression systems and related fire detection and control equipment.
 - 2. Installer: The installer shall be authorized and trained by manufacturer to design, install, and maintain kitchen fire suppression systems.
- B. Regulatory Requirements:
 - 1. Conform to [Applicable]building code for requirements specified herein.
 - 2. Codes and Permits: Conform to the local code requirements applicable to this section. Obtain and pay any necessary permits prior to beginning work involved in this section.
 - 3. All system components must be UL listed as part of the manufacturer's total system.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that hood and duct system meets the requirements of NFPA 96.

3.02 INSTALLATION

- A. Install system in accordance with manufacturer's Design, Installation, Recharge and Maintenance Manual.

3.03 FIELD TESTING

- A. If field testing is required by the local authority having jurisdiction, it shall be performed by personnel authorized and trained by Ansul Fire Protection.

3.04 DEMONSTRATION

- A. Instruct owner's personnel in the operation of the Kitchen Fire Suppression Systems.

END OF SECTION