

SPECIFICATIONS FOR RESTAURANT FIRE SUPPRESSION SYSTEM

**Model: PIRANHA® Water-Assisted, Wet Chemical, Fire Suppression System
Manufacturer: Ansul Incorporated – Marinette, Wisconsin**

PART I: GENERAL

1.01 GENERAL CONDITIONS AND SPECIAL CONDITIONS

General and special conditions from the architectural, mechanical, and other specification sections shall apply to the work under this specification section.

1.02 SCOPE OF WORK

Work shall be provided by the fire protection contractor and/or hood fabricator under this specification section.

- A. Provide a complete PIRANHA® automatic, water-assisted, wet chemical, fire suppression system as specified herewithin and as shown on the design drawings. The design drawings are for design purposes only and may not show all the required nozzle locations and fire protection requirements. The fire protection contractor is responsible to provide 100% protection as required by codes, standards, national, state, and local requirements.
- B. Install a UL Standard 300/ ULC Standard ORD-C1254.6 Listed PIRANHA water-assisted wet chemical suppression system(s) for protection of the exhaust duct(s), plenum(s), and all grease-producing cooking surfaces (appliances) located under canopy/non-canopy hood(s).
- C. The fire protection contractor and/or hood fabricator's designer shall visit the site to determine the existing conditions and extent of all fire protection work.
- D. Provide a manual pull station to be located in a path of egress.
- E. Provide fusible links in each exhaust duct and above each appliance or groups of appliances protected by a single nozzle.
- F. Provide the appropriate sized (1", 1¼", 1½", or 2") lockable ball valve for connection to the domestic water supply.
- G. Provide [black iron] [chrome-plated (chrome sleeved)] [stainless steel] pipe drops to the discharge nozzles.

- H. Install the PIRANHA system per Ansul's installation requirements.
- I. The fire protection contractor shall be responsible for all final connections and operation of automatic shut-off devices such as the gas valve, and shutoff to all electrical appliances and electrical wall outlets that are located under the hood.
- J. The fire protection contractor shall provide connection to the building fire alarm system, when required.
- K. The system, including all of its components, shall be UL Standard 300/ ULC Standard ORD-C1254.6 Listed.
- L. The wet chemical shall be PRX® Liquid Fire Suppressant.
- M. The system shall be capable of manual and automatic actuation. The remote manual release shall be located in the path of exit and shall be clearly labeled. Automatic actuation shall be initiated by separation of fusible links.
- N. The ANSUL AUTOMAN® release shall be an integral part of the system and shall include a means of manual release and provisions for fuel shutoff.
- O. The installation shall be based on actual field conditions and dimensions.
- P. All penetration into hoods, ducts, and related equipment shall be sealed with approved devices and material.
- Q. The fire protection contractor shall coordinate the fire protection work with all other trades.
- R. Complete shop drawings including wiring diagrams, piping layouts, and operating instructions shall be provided.
- S. Cutting, patching, and painting shall be provided.
- T. Access panels in the floors, ceilings, and walls shall be provided where necessary.
- U. An Ansul wet chemical fire extinguisher shall be provided.

1.03 MATERIALS TO BE FURNISHED BUT INSTALLED IN OTHER SECTIONS

- A. Mechanical or solenoid-operated gas shut-off valve(s) shall be furnished to owner's representative.
- B. The Ansul lockable ball valve and related water piping shall be installed by the

plumbing contractor. **The foodservice consultant/architect shall also put this information in the plumbing specification.**

- C. Suppression system(s) dry contacts to fire alarm panel (when provided). The alarm contractor shall install the alarm device. **The foodservice consultant/architect shall also put this information in the electrical specification.**

1.04 RELATED WORK TO BE PROVIDED BY OTHERS

- A. Cutting, patching, and painting.
- B. 24 volt, 1 phase, 60 HZ electric power supply and wiring from the alarm system to the wet chemical system controls.
- C. Fire extinguishers per NFPA 10 requirements (if not provided as part of fire protection contractor's package).
- D. The building owner shall provide a minimum 40 °F (4 °C) temperature throughout all areas of the building at all times.
- E. Plumber - Provide connection (1", 1¼", 1½", or 2") to the **domestic** water supply with the Ansul supplied lockable ball valve. **The foodservice consultant/architect shall also put this information in the plumbing specification.**
- F. Electrician - Electrical connection to the PIRANHA alarm device and the building fire alarm panel if provided. **The foodservice consultant/architect shall also put this information in the electrical specification.**
- G. Contacts:
 - 1. Contact the plumber: _____
 - 2. Contact the electrician: _____

1.05 DEFINITIONS

- A. The Contractor: The fire protection contractor and any of his subcontractors, vendors, suppliers, fabricator, or personal.
- B. Provide: Furnish and install.
- C. Furnish: Supply materials, equipment or assemblies to be installed by other trades or owner.

- D. Install: Locate & position, secure and hook up materials, equipment or assemblies furnished by fire protection contractor, other trades, or owner.
- E. Concealed: Where used in connection with the installation of piping and accessories, shall mean hidden from sight as in chases, furred spaces, pipe shafts, or suspended ceilings. "Exposed" shall mean not "concealed."
- F. Foodservice Consultant: _____
- G. Fire Protection Consultant: _____
- H. Architect/Engineer: _____
- I. Owner: _____
- J. UL: Underwriters Laboratories, Inc.
- K. ULC: Underwriters Laboratory of Canada
- L. ISO: Insurance Services Office
- M. AHJ: Authority Having Jurisdiction. This is usually a municipal representative such as the building code official or the fire marshal.

1.06 APPLICABLE CODES AND STANDARDS

- A. Local: Village, City of _____ standards, codes, and amendments.
- B. State of _____ standards, codes, and amendments.
- C. National Fire Protection Association Standards (NFPA):
 - 1. NFPA 17A – *Standard for Wet Chemical Extinguishing Systems* (1994, 1998 edition)
 - 2. NFPA 96 – *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations* (1994, 1998 edition)
 - 3. NFPA 10 – *Standard for Portable Fire Extinguishers* (1994, 1998 edition)
 - 4. NFPA 72 - *National Fire Alarm Code* (1996 edition)
- D. BOCA (1996 edition)

- E. ICBO Uniform Fire Code (1997 edition)
- F. SBCCI Standard Fire Prevention Code (1994 edition)
- G. CSA (current edition)
- H. Others: Codes and Standards: _____
- I. PIRANHA Design, Installation and Maintenance Manual (to the latest revision published by Ansul)

1.07 BASE BID AND ALTERNATES

- A. The base bid shall be in accordance with drawings and specifications.
- B. The contractor shall indicate the size of the wet chemical system, the number of nozzles, and the number of fusible links in the base bid.
- C. Contractor shall state in his proposal any contractor proposed substitution of materials or methods of installation from that specified. These alternates shall be listed on the proposal as contractor alternates.

1.08 GENERAL DESIGN

- A. The system shall be a pre-engineered design. The contractor shall submit nozzle types and quantity with the shop drawings. System size and calculations shall be performed in accordance with the requirements of manufacturer's listing.

1.09 SHOP DRAWINGS

- A. Submit ___ reproducible print and ____ copies of each complete shop drawing, and ___ copies of the manufacturer's design, installation, and maintenance manual to **the Architect**, _____

_____ for approvals prior to fabrication of materials. Contractor shall submit complete packages. Partial submittals should be avoided. **Architect, Owner** will return **blueline and reproducible sepia** prints to the _____ who shall then submit required prints to the **Architect, Owner** for final review and approval.

- B. The contractor shall submit sets of ___ prints to the Local water authority, building department, and/or the Fire Prevention Bureau for approval prior to fabrication.

- C. Shop drawings shall be prepared at a minimum scale of $\frac{1}{8}'' = 1'-0''$ for plans, and details. Show all waterline and agent distribution piping, conduit, nozzles, detectors, cylinder locations, appliances, hoods and exhaust ducts in each area, including ceiling heights.
 - 1. Provide a plan view including the hazard zone(s), including a side view elevation, and a front view elevation.
 - 2. Show all dimensions from appliances to nozzles and spacing between nozzles.
- D. The installation shall be based on an actual survey and all of the latest architectural, structural, mechanical, plumbing and electrical drawings, Owner's equipment, and fixture drawings.

1.10 MANUFACTURER'S EQUIPMENT DATA SUBMITTALS

- A. The manufacturer shall provide data and catalog cuts on the following devices including installation, maintenance, testing procedures, dimensions, wiring diagrams, etc. Where any devices which are provided or furnished involves work by another contractor, the contractor shall submit additional data copies directly to that contractor.
 - 1. Water-Assisted Wet Chemical Fire Suppression System Releasing Device and Agent Tank Assembly (ies)
 - 2. Discharge Nozzles
 - 3. Piping
 - 4. Detection, Remote Pull Station(s), and Mechanical Gas Valve (or electric) and their Corresponding Conduit Runs.

1.11 AS-BUILT DRAWINGS

- A. Maintain at the site an up-to-date marked set of as-built drawings, which shall be corrected and delivered to the Foodservice Consultant and Architect upon completion of the work.
- B. At the completion of the project, furnish the Owner with one reproducible sepia print of each approved shop drawings, revised to show the "as-built" conditions.

1.12 CHANGES

- A. Make no changes in the installation from the layout as shown on the drawings or as specified unless the changes are specifically approved by the Foodservice Consultant, Architect, and/or Building Owner. This does not include minor revisions for the purpose of coordination.
- B. Any changes made other than as stated above shall be at the contractor's own expense and responsibility.

1.13 DAMAGE

- A. The fire protection contractor shall be responsible during the installation and testing periods of the wet chemical system for any damage to the work of others, to the building, and its contents. The contractor shall pay for the necessary replacements or repairs to the work of others that is damaged.

1.14 MATERIAL FREIGHT AND HAULING

- A. Deliver the wet chemical fire protection system materials to job site. Unload and store the materials in a location determined by the Owner's Representative and/or the General Contractor.

1.15 UNIT PRICES

- A. State the price in the bid for more water supply piping than shown on the drawing. Price shall be based on one-foot piping, hangers, and installation labor.

1.16 CLEAN-UP

- A. Maintain the premises free from accumulation of waste materials or rubbish caused by this work.
- B. At the completion of the work, remove all surplus materials, tools, etc. and leave the premises clean.

1.17 SAFETY

- A. All work shall be performed in compliance with the Occupational Safety and Health Act and all State, and Local Requirements.

1.18 PERMITS, FEES, AND CHARGES

- A. All permits, fees, system tests, and charges required for the fire protection system work shall be paid.

1.19 GUARANTEES

- A. At the completion of this work, the Owner shall be furnished with a written guarantee stating that all the fire protection equipment, materials, and work performed are in full accordance with the approved shop, design drawings, and specifications. The guarantee shall also state that the work and all subsequent Change Orders are fully guaranteed for a minimum of one year from the date of final acceptance, and any equipment, materials, or workmanship which may prove defective within that time will be replaced at no cost to the building Owner.

PART II: FIRE PROTECTION MATERIALS AND EQUIPMENT

2.01 GENERAL REQUIREMENTS

- A. The naming of manufacturers in the specifications shall not be construed as eliminating the materials, products or services of other qualified manufacturers and suppliers having approved equivalent items.
- B. The substitutions of materials or products other than those named in the specifications shall be subject to proper approval(s) of the Owner, Foodservice Consultant, Architect or the Fire Protection Consultant granted in writing.
- C. "Approved" shall refer to approval by the Owner, Foodservice Consultant, Architect, Fire Protection Consultant and/or the Authority Having Jurisdiction.
- D. "Listed" shall refer to materials or equipment included in a list published by a nationally recognized testing laboratory (UL or ULC) that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

2.02 NOZZLES AND FUSIBLE LINKS

- A. Discharge nozzles for the proposed installation shall be listed for use with the system.
- B. Install fusible links of the proper degree temperature rating wherever necessary to meet the requirements of NFPA 17A and the manufacturer's installation manual.

2.03 SUPPLY PIPING

- A. All overhead piping and fittings shall be approved and in accordance with the manufacturer's UL/ULC listed design, installation, and maintenance manual.

2.04 HANGERS

- A. All hangers and components shall be approved and in accordance with the manufacturer's UL listed design, installation, and maintenance manual.
- B. Provide all hangers and pipe hold down devices so that piping and/or discharge

nozzle(s), conduit, or components connected to conduit runs cannot be moved out of their proper installed alignment.

2.05 SHUT-OFF DEVICES

- A. All shut-off valves and devices, etc. shall be approved in accordance with the manufacturer's UL/ULC listed design, installation, and maintenance manual.

2.06 FIRE PROTECTION SYSTEM SIGNS

- A. Provide standard metal signs in accordance with BOCA, ICBO, and SBCCI code; and local requirements.
- B. Provide a discharge warning sign at each hood. The sign shall read:

CAUTION
This area is protected by a
wet chemical extinguishing system.

In case of fire, pull remote pull station for the
wet chemical suppression system, and call the
local fire department. Leave area immediately after.

2.07 FIRE EXTINGUISHER

- A. Provide a minimum 6-liter (1.6 gal.) K-Guard™ wet chemical, hand portable, fire extinguisher within 10' (3 m) of the kitchen hood being protected.
- B. Refer to NFPA 10 for the exact size and placement of the fire extinguisher.

PART III: INSTALLATION AND TESTING

3.01 OVERHEAD SYSTEM PIPING

- A. Install piping in exposed areas as high as possible using necessary fittings to maintain maximum room clearance.

3.02 TESTING

- A. *Provide a complete system discharge test with wet chemical.
- B. *Provide a complete discharge test with water.
- C. *Provide a puff test with nitrogen or carbon dioxide.
- D. Provide a manual pull station test.
- E. Provide a fusible link test.
- F. Provide a water flow pressure test using the Ansul water pressure-testing assembly.

(*Note: select appropriate method based on local AHJ requirements.)

3.03 CEILING AND WALL PLATES

- A. Install chrome finished ceiling and wall plates wherever exposed piping passes through ceilings and walls.

3.04 SLEEVES

- A. Set sleeves in place for all pipes passing through floor and wall openings. Space between sleeve and pipe shall be filled with noncombustible packing. Provide standard finish wall plates on each side of the wall. Sleeves through floors shall be watertight.
- B. All openings shall be sealed with material listed for such use. Seal opening per code and standard requirements.

3.05 SEALS

- A. Use "Quick-Seal" adapters, compression seal adaptors, and/or hood seal adaptors to seal around both distribution piping and detection conduit at the hoods and ducts.

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