

**SECTION 23 38 13
COMMERCIAL-KITCHEN HOODS**

PART 1 - GENERAL**1.1 DESCRIPTION**

This section specifies food service, grease-extracting, energy saving, exhaust ventilators.

1.2 DEFINITIONS

- A. Ventilator, kitchen hood, hood and canopy; for purposes of this specification section, these terms all have the same definition.
- B. UL Listed grease extractor: a slotted (not mesh) type grease extractor that has been tested and rated by Underwriters Laboratories.

1.3 RELATED WORK

- A. Section 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS: Seismic Restraint of Equipment.
- B. Section 22 11 00, FACILITY WATER DISTRIBUTION: Plumbing Connections.
- C. Section 21 13 13, WET-PIPE SPRINKLER SYSTEMS.
- D. Section 23 34 00, HVAC FANS: Up-blast kitchen hood exhaust fans.

1.4 QUALITY CONTROL

- A. Installer Qualifications: Experienced in food service equipment installation or supervised by an experienced food service equipment installer.
 - 1. Where required to complete equipment installation, electrician and plumber shall be licensed in jurisdiction where project is located.
- B. NSF Compliance: Equipment bears NSF Certification Mark or UL Classification Mark indicating compliance with applicable NSF standards, including NSF/ANSI 2, NSF 2-Supplement, and NSF/ANSI 4.
- C. UL Listing: Equipment has been evaluated according to UL 710, is listed in UL "Heating, Cooling, Ventilating and Cooking Equipment Directory," and is labeled for intended use.
- D. Fire-Protection Systems: Comply with NFPA 96 and NFPA 17A.
- E. Welding: Perform welding according to AWS D9.1M/D9.1.
- F. Seismic Restraint:
 - 1. Comply with requirements in Section 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS.
 - 2. Comply with applicable guidelines for seismic restraint of kitchen equipment contained in SMACNA's "Kitchen Ventilation Systems and Food Service Equipment Guidelines," Appendix A.

- G. In-Use Service: At least one factory-authorized service agency for equipment shall be located in the geographical area of the installation and shall have the ability to provide service within 24 hours after receiving a service call.

1.5 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
1. Include manufacturer's address and telephone number.
 2. Include catalog or model numbers, and illustrations and descriptions of ventilators, wet chemical fire suppression system, and accessories.
- C. Installation Drawings: Show dimensions; method of assembly; and details of installation, adjoining construction, coordination with service utilities, and other work required for a complete installation.
- D. Field Test Reports: Indicate dates and times of tests and certify test results.
- E. Operating Instructions: Include operating instructions covering operation of all components and maintenance procedures covering proper cleaning and necessary lubrication or adjustments to controls.

1.6 WARRANTY

- A. Warrant food service equipment to be free from defects in materials and workmanship in accordance with requirements of "Warranty of Construction" article in FAR clause 52.246-21.

1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Welding Society (AWS):
D9.1M/D9.1-2006.....Sheet Metal Welding Code
- C. ASTM International (ASTM):
A666-03.....Standard Specification for Annealed or Cold-
Worked Austenitic Stainless Steel Sheet, Strip,
Plate, and Flat Bar
- D. National Association of Architectural Metal Manufacturers (NAAMM):
AMP500-06.....Metal Finishes Manual for Architectural and
Metal Products, 2006
- E. NFPA International (NFPA):

#17A-2009.....Standard for Wet Chemical Extinguishing Systems
#96-2008.....Standard for Ventilation Control and Fire

Protection of Commercial Cooking Operations

F. NSF International/American National Standards Institute (NSF/ANSI):

Standard #2-2009.....Food Service Equipment

Standard #4-2009.....Commercial Cooking, Rethermalization, and
Powered Hot Food Holding and Transport
Equipment

G. Sheet Metal and Air Conditioning Contractors' National Association
(SMACNA):

1767-2001.....Kitchen Ventilation Systems and Food Service
Equipment Fabrication and Installation
Guidelines

H. Underwriters Laboratories Inc. (UL):

#710-06.....Exhaust Hoods for Commercial Cooking Equipment

PART 2 - PRODUCTS

2.1 EXHAUST HOODS

A. Listing requirements: UL 710.

B. Performance testing: ASTM 1704-05 standard test.

C. Construction: Kitchen hood inner liner shall be constructed from 18 gauge stainless steel where exposed. The kitchen hoods shall be supplied complete with outer casings / main body, inner liner, exhaust duct, pressure measurement T.A.B. ports. Outer casings panels shall be constructed of type 300 stainless steel with a brushed #4 satin finish. Each joint shall be welded and liquid tight, avoiding harmful dripping of condensation. All exposed welds are ground and polished to the original finish of metal. Canopy ends shall be double sided wall construction (no single wall hoods permitted). Sound levels not to exceed NC rating of 55.

D. Hood shall include UL listed and NSF certified grease extractor type, high efficiency cartridge style baffle filters of adequate number and sizes to ensure optimum performance in accordance with manufacturer's published information. The filter housing shall terminate in a pitched, full length grease trough, which shall drain into a removable grease container. Hood shall be provided with one (1) filter removal tool. The hood shall be equipped with stainless steel grease extractors. The filters shall be NSF and UL classified. The particulate extraction efficiency is 70% on particles with a diameter of 5 microns

and 98% on particles with diameter of 15 microns, per ASTM F2519. The pressure loss over the extractor shall not exceed 0.70 inches W.C. at flow rates approved by UL for heavy load cooking. Sound levels shall not exceed an NC rating of 55. Baffle or slot type extractors shall not be used.

- E. Vapor proof, UL Listed, LED light fixtures shall be prewired to a junction box situated at the top of the hood for field connection. Wiring shall conform to the requirements of the National Electrical Code (NEC #70).
- F. Fire Suppression System for Kitchen Hood:
 - 1. Provide fully engineered automatic extinguishing wet chemical system in accordance with NFPA 17A, 96, and ANSI/UL300 requirements.
 - 2. Manufacturers: Ansul, Pyro-chem, Range Guard, or approved equal.
 - 3. Design and installation of systems shall be performed only by persons properly trained and qualified to design and/or install the specific system being provided. The installer shall provide certification to the VA that the installation complies with the terms of the listing and the manufacturer's instructions and/or approved design.
 - 4. System shall be interlocked with shunt trip breaker and gas solenoid valve so that upon system activation, power and gas is shut-off to cooking appliances below the hood.
 - 5. Tie fire suppression system into the existing building fire alarm system. Both an audible and visual notification is required at the fire alarm panel. Also provide a manual pull station located in the kitchen area.
 - 6. See plumbing drawings for additional information. Contractor shall include all system components and accessories, wiring, conduit, power supply, testing and approvals

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install ventilators level and plumb with access clearances required for operation, maintenance and cleaning and in accordance with the manufacturer's published documentation.
- B. Provide ventilators with overhead supports per manufacturer's installation instructions.
- C. Interconnect ventilators to service utilities.
- D. Install seismic restraints for equipment.

3.2 FIELD TESTING

- A. Field Testing, General: Following installation, test ventilators for compliance with specified requirements and those of authorities having jurisdiction. Perform testing after air-handling systems have been balanced and adjusted.
- B. Smoke Test:
 - 1. Test Conditions:
 - a. Perform tests with cooking equipment served by ventilator turned off.
 - b. Perform tests with supply and exhaust fans serving the food service kitchen area turned on.
 - 2. Test Procedure: Move a smoke bomb around the perimeter of cooking equipment at the top surface.
 - 3. Test-Performance Requirements: No visible smoke shall escape from the ventilator canopy into the room.
- C. Wet Fire Extinguishing System: Test system to verify that equipment operation complies with NFPA 96 and NFPA 17A.

3.3 CLEAN-UP

- A. At completion of the installation, clean and adjust equipment as required to produce ready-for-use condition.
- B. Where stainless-steel surfaces are damaged during installation procedures, repair finishes to match adjoining undamaged surfaces.

3.4 INSTRUCTIONS

Instruct personnel and transmit operating instructions in accordance with requirements.

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