

SECTION 11610

FUME HOOD

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope

1. Furnish and install fume hood as indicated on the Drawings and specified herein
2. Coordinate, furnish and install all plumbing, mechanical and electrical connections, components and accessories for complete operating fume hood system
3. Assure coordination and compatibility with HVAC provisions in laboratory space to accommodate exhaust function

B. Additional Requirements Specified Elsewhere

1. Section 01010: Summary of Work
2. Section 01340: Shop Drawings, Product Data and Samples
3. Section 01400: Quality Control
4. Section 01600: Materials and Equipment
5. Section 01730: Operating and Maintenance Data

C. Related Requirements Specified Elsewhere

1. Section 12345: Laboratory Casework
2. Division 15: Plumbing Rough-In and Connection
3. Division 15: Mechanical Rough-In and Connection
4. Division 16: Electrical Rough-In and Connection

1.2 SUBMITTALS

A. In accordance with Section 01340

B. Shop Drawings

1. Submit shop drawings for fume hood
2. Immediately after award of Contract, provide separate rough-in drawings indicating exact locations of mechanical and electrical rough-in penetrations through the floor and walls
3. Review and comment on electrical and mechanical rough-in shown on Contract Drawings

C. Product Data

1. Catalog cuts on equipment and accessories specified or otherwise required to provide a complete functional fume hood

D. Operating and Maintenance Data

1. Parts lists

2. Operating instructions
3. Maintenance recommendations

E. Samples

1. Complete set of color samples for Engineer's and Owner's color selection

1.3 DELIVERY, STORAGE AND HANDLING

- A. Protect equipment from damage during delivery, storage, installation and subsequent building operations. Refer to Section 01600 for requirements

1.4 JOB CONDITIONS

A. Sequencing and Scheduling

1. Fume hood must interface closely with casework which may be installed by another subcontractor
2. General Contractor to coordinate and schedule subcontractors' work to assure that casework and fume hood are installed in an expeditious manner, fit together properly and precisely fit in the space provided. Coordinate all interrelated electrical, plumbing and ventilating work

PART 2 - PRODUCTS

2.1 FUME HOOD

A. Size: 5 foot nominal width

B. Auxiliary-air bench hood, vertical sash type with separate duct and blower system capable of supplying up to 70 percent of exhausted air from outside source

1. Exhaust blower
 - a. Self contained, acid resistant construction, vertical upblast, belt driven
 - b. Capable of providing an open hood face velocity of 80 feet per minute, approximate air flow required 840 ICFM @ 0.20" W.C.
 - c. Provide with 120 V, 60 Hz, TEFC
 - d. Ship loose
 - e. Contractor to coordinate fume hood ductwork, electrical and control requirements with electrical and HVAC work
2. Supply Blower
 - a. As indicated on mechanical drawings, approximate air flow 600 ICFM

C. Assembly to consist of superstructure with strut supports, auxiliary air chamber, and cabinet supporting structure with doors

1. Superstructure exterior and cabinet fabricated of cold-rolled steel, phosphate coated and finished with baked chemical resistant enamel in color to match or harmonize with laboratory casework
2. Superstructure with chemical resistant FRP based lining, removable baffle with adjustable top and bottom exhaust slots

D. Modified epoxy resin working surface

1. 1-inch thick
 2. Raised drip edge to retain spillage
 3. Fitted with 6" by 3" epoxy resin oval cup sink with integral tail piece and polyethylene trap
- E. Vertical sliding sash suspended on stainless steel cables operating on ball bearing sheaves and counter-balanced by weights and sash cable system to prevent tilting of sash during operation
1. Sash frame provided with plastic guides operating in stainless steel sash guides to insure proper operation and prevent metal-to-metal contact
 2. Sash with ¼" thick, tempered, safety glass sealed into a cold-rolled steel frame with chemical rubber or vinyl channels. Internal glass retaining strips, rigid vinyl extrusions or stainless steel strips
- F. Factory Installed Service Accessories
1. One cold water service fixture for control of gooseneck faucet at cup sink
 2. Two 110 volt AC and one 208 volt, single-phase, AC electrical outlets
 - a. Coordinate receptacle configuration with muffle furnace, see Section 11600
 3. Two-tube fluorescent light fixture shielded from hood interior by tempered glass panel sealed into hood body including wiring to switch
 4. One toggle switch for hood light
 5. One toggle switch with warning light for blowers
- G. All electrical wiring to be factory pre-wired to junction box(es) located on top of fume hood
- H. Fume Hood Faucet
1. Deck mounted chrome or powder coat finish gooseneck type with panel mounted handle and identifier button
 2. Removable serrated hose connector
 3. Removable strainer
- I. Design basis
1. Kewaunee Scientific, Supreme Air Fume Hood Model H05 with auxiliary air hood
 2. Fisher Hamilton, Thermo Scientific SafeAire® Auxiliary Air Model, No. 54L630
 3. St. Charles, Aerostream 70% Auxiliary Air Bench Hood-Vertical Sash
 4. Equivalent products of other manufacturers may be accepted subject to compliance with design, function, materials and performance of the specified items and acceptance by the Engineer and Owner

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify location of all mechanical and electrical rough-ins to assure proper match with installed equipment. Report any unsatisfactory conditions immediately to General Contractor

3.2 INSTALLATION

- A. Deliver, uncrate, place in proper location, assemble and protect fume hood, equipment and accessories covered by this Section
- B. Set fume hood accurately in place, level, scribe and secure to base and walls
- C. Provide connecting and attaching devices, closures and trim members as required
- D. Install items complete and adjust moving parts to operate smoothly
- E. Assemble and install service fixtures and attachments

3.3 MECHANICAL AND ELECTRICAL

A. Mechanical

- 1. Provide and install traps, valves and piping for sink and faucet and make all final connections
- 2. Provide system testing in accordance with Division 15 and applicable code
- 3. Provide all auxiliary air intake and exhaust ductwork and make final connections to fume hood and air supply/exhaust fans as required

B. Electrical

- 1. Provide and install any required disconnects, over-current protection devices and wiring for final connections
- 2. Provide all wiring and conduit from service and electrical service fittings

3.4 BASE

- A. Install rubber base in toe space of all fume hood base cabinets

3.5 ADJUSTMENT AND CLEANING

- A. After completion of mechanical and electrical connections, remove all protective coatings and thoroughly clean all finished surfaces to remove marking, labels and fingerprints
 - 1. Protect until final acceptance by Owner
- B. Place all material and equipment into operation and adjust for proper working conditions

3.6 STARTUP AND OPERATION DEMONSTRATION

- A. At a date and time acceptable to the Engineer and Owner, the fume hood equipment supplier or his designated representative shall demonstrate the use and maintenance of equipment to the Owner's operating personnel

END OF SECTION

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