

## SECTION 23 35 00

### SPECIAL EXHAUST SYSTEMS

#### PART 1 GENERAL

##### 1.01 SUBMITTALS

- A. Product Data:
  - 1. Component and accessories list for fume hoods, exhaust fans, dust collectors, ductwork, flammable liquid and chemical storage cabinets.
  - 2. Ratings and nameplate information.
  - 3. Finishes and colors.
- B. Quality Assurance Data:
  - 1. All fume hoods, chemical storage cabinets, etc. shall comply with NFPA 30 Flammable and Combustible Liquids Code and NFPA 45 Standard for Fire Protection for Laboratories Using Chemicals. Room requirements shall be in accordance with NFPA 101 Life Safety Code.
- C. Project Record Documents:
  - 1. Shop Drawings:
    - a) Hazardous exhaust duct routing and discharge from the building.
    - b) Elevation and outline drawings with dimensions.
    - c) Plan view drawings with dimensions.
- D. Operation and Maintenance Data:
  - 1. Operating and maintenance procedures.
  - 2. Complete set of manufacturer's drawings.
  - 3. Complete documentation of inspections and tests performed, including any logs, curves, and certificates. Documentation shall note any replacement of equipment or components that failed during testing.
  - 4. Spare parts lists.
  - 5. Data sheets updated to reflect field installation conditions.

#### PART 2 PRODUCTS

##### 2.01 HAZARDOUS EXHAUST FANS

- A. Single-width, single-inlet type arranged for indicated service and constructed for duty at indicated system design pressure and temperature not to exceed 150 degrees
- B. Continuously welded Type 304L stainless steel scroll with required reinforcement and epoxy coating, flanged inlet and outlet connections, inlet bolted to scroll side sheet, threaded and plugged scroll drain, quickbolted access door with gasket; Carbon steel shaft, fitted with heat slinger grease lubricated stuffing box; continuously welded Type 304L stainless steel impeller assembly.
  - 1. Epoxy Coating: Conform to MIL-P-23236, Type I, Class 1 or MIL-P-24441 system, Formula 150 green primer 3 mils, Formula 151 haze gray 3 mils, and Formula 152 white 3 mils.
- C. Mount complete assembly including motor, power transmission components, and guards on a common vibration isolation base with spring mountings.

##### 2.02 DUST COLLECTION SYSTEMS

- A. Acceptable Manufacturers:
  - 1. Torit
  - 2. Koger

3. Dustex Corp.
- B. Provide a complete continuous duty cyclone dust collection system.
- C. Unit shall be factory assembled and shipped in components. Components shall be welded and bolted, suitable for 20-inch w.c. pressure. The bottom cone section shall be removable. Motor and fan assembly shall be by the same manufacturer as the collector. The fan and motor may be shipped separately and assembled on site.
- D. Provide flanged inlet connection to collector unit.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install in accordance to NFPA 91, and SMACNA Rectangle Duct Const, and SMACNA Rnd Duct Const. Provide mounting and supports for equipment, ductwork, and accessories, including structural supports, hangers, vibration isolators, stands, clamps and brackets, access doors, blast gates, and dampers. Construct positive pressure duct inside buildings airtight.
- B. Special installation requirements for ductwork for corrosive fume and vapor exhaust:
  1. Slope horizontal ducts one inch in 40 feet in the direction of air flow or one inch in 10 feet in the direction opposite to airflow. Where necessary, slope duct to common drainage point.
  2. Provide drains at low points, at internal duct restrictions, at base of risers and where indicated.
  3. Provide drain connections of one inch pipe size corrosion resistant steel couplings welded to duct and provided with polytetrafluoroethylene paste lubricated PVC plug where drainage piping is not indicated.
  4. Provide drain lines with a trap of one inch greater depth than the positive or negative pressure in the duct but not less than 2 inches.
  5. Provide duct support system to include additional weight due to collection or condensate deflected surface and other areas.
  6. Provide duct supports and building structure attachments in accordance with SMACNA Rectangle Duct Const and SMACNA Rnd Duct Const.

**END OF SECTION 23 35 00**