

**GENERAL:**

The design and installation of exhaust systems (including hoods, ducts, air mover and discharge outlets) shall comply with the American National Standard Institute (ANSI) A0.2-1971 Fundamentals Governing the Design and Operation of Local Exhaust Systems, the Manual Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienist 1970, NFPS – 91, Blower and Exhaust Systems \, NFPA – 45, Laboratory Systems, and the latest American Society of Heating, Refrigerating and Air Conditioning Engineers' (ASHRAE) Handbooks. Airflow and Pressure Loss Data provided by the Manufacturer of any Air Cleaning Device shall be included in the Design Calculations.

Drawings shall show location and dimension of all fume hoods. Mechanical Drawing must indicate detail for exhausting units. Details shall be indicated in Roofing Section concerning roof mounted equipment. Equipment requirements.

Provide Laboratory fume hoods (for integration with Laboratory furniture, tops, sinks, and service fixtures, as required) manufactured or furnished by laboratory furniture company for single responsibility. Provide and install an anameter in the fume hood to monitor air flow velocity. Fume hood to be double sided and preferably backing up to a store room.

Design fume hoods so that they have separate exhaust system. Fume hoods will operate in a safe, efficient manner, within acceptable tolerances for face velocities specified. Dead air pockets and reverse air currents will not be permitted along surface of hood interiors.

Architect to require hood be tested. Testing facility, necessary instrumentation, apparatus and equipment will be supplied by Manufacturer at no cost to Owner. Test hoods to verify performance requirements, using smoke and air flow meters.

Architect to require Contractor to submit Shop Drawings for fume hoods showing Plans, Elevations, Ends, Cross-Sections, service run spaces, location and type of service fixtures with lines thereto; Details and location of anchorages and fitting to floors, walls, and base; layout of units with relation to surrounding walls, doors, windows, lighting and air-conditioning fixtures, and other building components; connection to hood exhaust system; location of access doors, cut-off valves, junction boxes. Require the Contractor to submit one full-size sample of finished fume hood unit complete with hardware, service fixtures and accessories for Owner's review or make arrangements for Owner to review pre-installed units off site.

**Fume Hoods to meet the following requirements:**

Base Cabinets: Either wood or metal matching laboratory cabinet materials. Provide Manufacturer's Standard tops, cups, and troughs to match similar adjacent units.

Exterior Metal: Manufacturer's Standard with acid and alkali resistant.

Interior Liner: Manufacturer's Standard acid and alkali resistant.

Stainless Steel: AISI Type 302/304 with No. 4 finish.

Safety Glass: Two sheets of double-strength "B" quality, clear sheet glass permanently laminated with a sheet of clear plasticized polyvinyl butyral.

Performance Requirements: Unit to operate with a face velocity of required lineal fpm with sash raised. As sash is lowered, volume of air exhausted shall not decrease and face velocity of air shall increase. With sash completely closed, unit shall maintain negative pressure to confine and exhaust fumes and gases.

Unit which functions automatically as sash is closed to limit air velocity increase and to maintain relatively constant exhaust volume through hood regardless of sash position. Provide unit designed to operate with air velocity of required lineal fpm through open face. Provide positive sash stop. Provide air deflector vane. Extend vane under sash so sash closes on top of vane.

**END OF SECTION 11610**