Air Master Systems
700 Series Fume Hood
Product Specifications

Version 1.0
December 15, 2025

Revision History

Revision - Date	Version	Revised By:	Description of / Reason for Revision:
12-15-25	1.0	AJM	Initial Draft of Specification

SECTION 11 53 13
Laboratory Ducted Fume Hoods

Part 1 GENERAL

SUMMARY:
This Specification identifies the minimum material and construction standards that are required to provide a safe work environment for the end user. Fume hoods shall be supplied and delivered in accordance to this specification. Hoods will function as a ventilated enclosed work space which is designed to capture any and all fumes, vapors, and particulates within the enclosure.

1.1 SECTION INCLUDES:

A. Laboratory fume hoods (AMS Eliminator 700 Series bench style Perchloric hood)

1.2 RELATED SECTIONS:

A. Division 09 Section 65 13, "Resilient Base and Accessories"

B. Division 12 Section 36 00, "Countertops"

C. Division 12 Section 35 53, "Manufactured Metal Casework"

D. Division 12 Section 32 00, "Manufactured Wood Casework"

E. Division 22 Section 40 00, "Plumbing Fixtures"

F. Division 23 Section 30 00, "HVAC Air Distribution"

G. Division 26 Section 05 00, "Common Work Results for Electrical"

H. Related Work To Be Performed By Others:

1. Final installation(connections) of all plumbing, electrical, and service fixtures attached to the fume hood or countertop excluding piping and wiring inside the fume hood

2. Final connection to service lines of all plumbing, electrical and service fixtures attached to laboratory casework or fume hoods.

1.3 REFERENCES

A. SEFA 1-2020: Laboratory Fume Hoods – Design, Materials, Use and Testing Guidelines
B. UL 1805: Underwriters Laboratory LLC

C. ADA (ATBCB ADAAG) Americans with Disabilities Act Accessories Guidelines

1.4 SUBMITTALS

A. **Shop Drawings**:
1. Indicate equipment locations, large-scale plans, elevations, cross sections, rough in and anchor placement dimensions and tolerances and all required clearances.

B. **Product Data**:
1. Submit manufacturer's data for each component and item of laboratory equipment specified. Include component dimensions, configurations, construction details, joint details, and attachments, utility and service requirements and locations.

C. **Selection Samples**:
1. Submit 3" x 3" inch samples of finish for fume hood, work surfaces and for other prefinished equipment and accessories for selection by Architect.

D. **Test Reports**:
1. Submit test reports verifying conformance to test performances specified.
2. Submit independent test results from a third-party testing agency showing NIH, EPA and ASHRAE 110 results.

E. **Quality Control:**
1. Test Reports: Manufacturer must send ASHRAE 110 AM, NIH and EPA testing results from a third party on third party's letterhead to the Designer to assure user safety is met. No exceptions.
2. UL 1805 Specification: Fume Hood must be Underwriters Laboratories 1805 classified. The 1805 standard covers electrical and mechanical hazards, investigates the flammability of materials and measures the effectiveness of airflow characteristics. Proper labeling must be affixed to each fume hood indicating classification to the UL 1805 standard for Fume Hoods. UL listing covering electrical components only or other listings that do not encompass all issues covered in UL 1805 is insufficient.
3. Manufacturer must manufacture and assemble fume hoods within the United States of America utilizing steel from the United States.
4. Manufacturers must have attended the last SEFA meeting.

1.5 QUALITY ASSURANCE

A. **SINGLE SOURCE RESPONSIBILITY**:

1. Fume hood casework, work surfaces, and other laboratory equipment and accessories shall be manufactured or furnished by a single laboratory furniture company.

B. **MANUFACTURERS' QUALIFICATIONS**:

1. Modern plant with proper tools, dies, fixtures and skilled workers to produce high quality laboratory casework and equipment, and shall meet the following minimum requirements:
   A. 20 years or more experience in manufacturing laboratory fume hoods
   B. 10 installations of equal or larger size and requirements
   C. Fume hood shall be manufactured in the USA with USA steel.
   D. Shall have a 5-year warranty or longer

C. **INSTALLERS' QUALIFICATIONS**:

1. Factory certified by the manufacturer

1.6 DELIVERY, STORAGE AND HANDLING

A. Schedule delivery of equipment so that spaces are sufficiently complete that equipment can be installed immediately following delivery.

B. Protect finished surfaces from soiling or damage during handling and installation. Keep covered with polyethylene film or other protective coating.

C. Protect all work surfaces throughout construction period with 1 / 4" corrugated cardboard completely covering the top and securely taped to edges. Mark cardboard in large lettering "No Standing"

1.7 PROJECT CONDITIONS

A. **DELIVERY**

1. Do not deliver or install equipment until windows and doors are installed and in the building and the building is weather tight. All plumbing, electrical, HVAC aside from final connections are installed above fume hoods.

2. All painting is completed and floor tile located below casework is installed.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer:

Air Master Systems, Corp.; 6480 Norton Center Dr. Muskegon, MI 49441.
Tel: (231) 798-1111. Fax: (231) 798-4000.
Email: sales@airmastersystems.com, www.airmastersystems.com

B. Substitutions:

Must have prior written approval and meet all requirements enclosed in specification including testing results from a third party for EPA, NIH testing.

2.2 FUME HOOD MATERIALS

A. Standard Materials

1. Exterior Panels, Posts, Upper Front Panel, Airfoil and Furring Panels: Cold rolled and levelled mild steel shall conform to ASTM A1008/A1008M.

2. Bypass Grilles: 18 Ga thick mild steel with upward directional louvers for CAV and no louvers for VAV

3. Upper Front Panel: 18 Ga thick mild steel without bypass.

4. Lower Foil: 16 Ga 316 Stainless Steel

5. Screws: Stainless Steel

6. Sash: Welded 16 Ga 316 Stainless steel tube frame with single weight counterbalance.
   a) Vertical rising only (standard)
   b) Vertical rising w/ Horizontal sliding glass (Combination Sash)

6.5 Safety glass:
   a) Laminated type ¼" (6mm)
   b) Other materials available upon request.

7. Sash Cable: 7 x 7 steel coated. 1/8" diameter coated to 5/32". (Military specification quality)

8. Sash Pull: 16 Ga 316 Stainless Steel with oval shaped louvers for bypass.

9. Electrical components: Must be UL and CSA approved commercial grade

B. Fume Hood Liner

1. 316 Stainless Steel: Shall be a #4 brushed finish, fully welded liner with integral countertop and radius corners.

C. Ceiling Enclosures (Furring Panels)

1. When specified, provide matching enclosure to fill space between the top of the fume hood and the ceiling. Designer to determine if below, at or above ceiling grid.

2. Enclosures shall be self-standing and reinforced where required. Secure panels with self-tapping stainless steel screws. Front shall be removable and not have mechanical fasteners.

2.3 FUME HOOD CONSTRUCTION

A. Rigid, self-supporting full frame shall be the interior structure which consists of an interior corrosion resistant liner and sheet steel outer shell. The double wall construction shall house the electrical and plumbing services.
Maximum thickness of double wall to be 5 inches. Hoods must be a true full frame construction. Hoods using metal brackets and spaces to hold the interior and exterior panels together are unacceptable. Hood shall be restricted bypass type for VAV HVAC systems.

B. Access to plumbing valves and other services concealed in the wall provided by exterior removable access panels, PVC gasket access panel from the interior or through removable front post.

C. Exterior panel members shall be fastened by means of concealed devices. Exposed screws and two piece “Velcro” designs are not acceptable.

D. Hood light fixture shall be LED fixture with sound rated ballast installed on the top panel. Must include lamps with fixtures. Provide switch with black acid resistant thermoplastic.

D. Fume hood sash is a fully framed sash. Sash shall travel in a PVC track. Bottom, top and side rails shall be rigid 316 Stainless Steel tubing (16 Ga Wall) welded to form an integral structure. For safety reasons, bottom rail (304 Stainless Steel) shall be a full width finger lift with bypass holes for bypass so the sash can be closed to 0.5 inches to the work surface. A single weight, ball bearing zinc plated steel pulley assembly with cable retaining device shall maintain sash at any position with creep. Sash

system is designed to prevent sash drop in the event of a cable failure. Sash shall open and close against rubber stops.
Chain and Sprocket available upon request.

F. Access opening chamber (posts) and airfoil shall be angled at 45 degrees to allow maximized clean sweeps of air into the hood. The airfoil (316 Stainless Steel) shall be flush mount to the work surface so accidental spilling does not occur when removing items from the hood. For ADA fume hoods, a secondary containment trough shall be provided.

G. To maximize bypass under the airfoil, the 316 Stainless Steel countertop must be cut at an angle to get a clean sweep without creating eddies in the airflow.

H. Hoods shall not have a remote-control baffle system. Hoods should be designed to allow low and high temperatures as well as all molecular weights of gases to be expelled in an efficient manner without the use of adjustable baffles. Adjustable baffle systems are not acceptable.

I. Electrical duplex outlets shown mounted on the face of the fume hoods shall be installed in the front posts and pre-wired to a junction box mounted on the top of the fume hood superstructure. Electrical devices shall be UL listed/classified.

J. The minimum sash height shall be 29" of opening with the full view of 30".

K. Attach corrosion resistant labels to units for basic fume hood safety/usage that include a QR code for easy access to manufacturer's safety video.

2.4 FUME HOOD ALARMS/CONTROLS

A. A face velocity monitor (AFA500) shall have a visual and audible alarm. An AFA1000 face velocity monitor also includes a digital readout of face velocity. Designer to choose which alarm to use in a Constant Volume System. If the project is a VAV system, the fume hood manufacturer shall provide a cutout on the hood for the HVAC Contractor to install the VAV monitor onto the hoods.

B. Any ducting product above the duct collar on the fume hood including blower, duct, dampers etc. to be provided by Contractor. All VAV controllers will be provided by Contractor. A cutout for the VAV controller will be done at fume hood manufacturing facility.

PART 3 - EXECUTION

3.1 INSTALLATION

A. In addition to requirements of Section 11 53 13, install fume hoods in positions shown, align and set level with levelling devices. All fume hoods shall be square upon installation.

B. Work in conjunction with allied trades installing ductwork, wiring and plumbing services for rough in dimensions which will be shown on all approved drawings by designer.

C. Apply small bead of sealant to junction the fume hood counter top and adjacent hood liner.

D. Turn over to Mechanical Trades for final connections to the fume hood.

END OF SECTION