

GUIDELINE MASTER ACOUSTICAL PANEL/PLENUM SPECIFICATIONS

A. GENERAL

- 1. Related Documents:** Comply with the general Conditions and all applicable Contract Documents.
- 2. Work Included:** Each Enclosure and Plenum shall be a complete assembly with support steel, sealant, assembly hardware (bolts, screws etc.), access doors.
- 3. Enclosures or Plenums:** Physical dimensions must be maintained as shown on the contract drawings. If dimensions are different from that shown, the owner and engineer must be advised at the time of bid review.
- 4. Acceptable Manufacturers:** Vibro-Acoustics.

B. QUALITY ASSURANCE

- 1. Manufacturer's Responsibility:** Enclosure or plenum manufacturer shall have sole source responsibility for the design, factory fabrication and supply of all components and equipment as noted below. Provide enclosure/plenums that are a product of an equipment manufacturer regularly engaged in the production of such product. Unit components and equipment fabricated and supplied by the contractor will not be permitted.
- 2. Contractor's Responsibility:** The Contractor shall be responsible for the field assembly of the enclosure/plenum per the instructions and submittal documents supplied by the manufacturer. The Contractor shall be responsible for providing and installing equipment safing. The Contractor shall provide the manufacturer with all field dimensions, mounting locations and duct openings as required to coordinate the design and fabrication of the enclosure or plenum.
- 3. Delivery, Storage and Handling**
 - 3.1 Delivery:** Deliver components on factory shipping skids. Pack small components in factory-fabricated protective containers.

- 3.2 Unloading:** Comply with manufacturer's rigging and installation instructions for unloading and moving them to final location.
- 3.3 Handling:** Handle components carefully to avoid damage to components, enclosures, and finishes. Do not install damaged components; replace and return damaged components to product manufacturer.
- 3.4 Storage:** Store components in a clean dry place and protect from weather and construction traffic.

C. MATERIALS AND CONSTRUCTION

- 1. Wall and Roof Panels:** Panels shall be 4" tongue and groove type. The exterior sheet shall be a minimum of 18 ga. G90 galvanized steel. The interior sheet shall be a minimum of 22 ga. G90 galvanized steel. The interior sheet shall be perforated with 3/32" diameter holes on 3/16" centers in all areas, except downstream of cooling coils and humidifiers. In these areas the interior sheet shall be solid 22 ga. G90 galvanized steel for a distance of 42". Panels shall be insulated with 4" MoldBlock Media™. In all exhaust air areas the interior sheet shall be 16 ga 304 solid stainless steel.
- 2. Removable Panels:** Bolted panels of the Internal Flange Butt Connection type shall be provided for equipment removal. Panels shall be 4" with construction as noted above.
- 3. Safing And Single Wall Panels:** All safing and single wall panels shall be 16 ga. galvanized steel, except for areas with moisture, these items shall be 16 ga. 304 stainless steel. Safing and single wall panels shall be field measured and supplied by the contractor.
- 4. Structural Support Steel:** Structural steel shall be provided by the enclosure or plenum manufacturer so the maximum deflection of the assembled panels is L/180. Structural to structural steel connections shall be fully welded.
- 5. Media:** Media shall be MoldBlock Media™ containing 100% natural cotton fibers individually treated with an

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EPA registered, non-toxic borate solution, “flash dried” to actively inhibit the growth of mold, mildew, bacteria and fungi. Media shall not contain any formaldehydes, phenolic resins or Volatile Organic Compounds (VOC’s) that can off-gas and/or cause health concerns. Media shall be 100% recyclable. Media shall comply with UL181 and NFPA 90A. MoldBlock Media™ shall be packed with a minimum of 15% compression during panel assembly. Media shall not cause or accelerate corrosion of aluminum or steel. Glass fiber, mineral wool and rockwool are not acceptable alternates.

- 6. Access Doors:** Doors shall be provided for each component section. Doors shall be 4” x 24” wide x 72” high with the same construction as the acoustic panels, except that the interior sheet shall be solid. Doors shall be mounted in a 10 ga. galvanized steel angle frame with a single “P” gasket. Hardware shall include 2 cam-type Ventlok 310 latches and 2 butt hinges. Doors shall be supplied with 12” x 12” inspection windows, double-glazed with wire reinforced glass mounted in a neoprene U-gasket.

- 4. Thermal Performance:** The overall thermal conductance of the assembled structure shall not exceed 0.15 BTU/hr/sq. ft./F at 50 degrees F mean temperature.

- 5. Combustion Ratings:** Provide MoldBlock Media™ internal insulation complying with National Fire Protection Association (NFPA) 90A, “Standard for the Installation of Air Condition and Ventilating Systems”. The panel design shall have maximum combustion ratings as noted below when tested in accordance with ASTM E84, NFPA 255 or UL 723.

Panel materials including MoldBlock Media™:
Flamespread Classification: 10
Smoke Development Rating: 50

Panel materials including MoldBlock Media™, film liner and acoustical spacer:
Flamespread Classification: 20
Smoke Development: 45

- 6 Codes and Standards:** Provide enclosures and plenums conforming to the Sheet Metal and Air Conditioning Contractors’ National Association, Inc. (SMACNA) standards including “HVAC Duct Construction Standards - Metal and Flexible”.

D. PERFORMANCE

- 1. Enclosures or Plenums:** Design enclosure/plenum to be suitable for the maximum, total static pressure under design conditions.
- 2. Leakage:** The assembled enclosure or plenum shall have a leakage rate as specified by SMACNA and ASHRAE based on a specified leakage classification of CL6.
- 3. Acoustical Performance:** The acoustical performance of the panels shall be equal to or greater than the following

Octave Band (Hz)	63	125	250	500	1k	2k	4k	8k
Transmission Loss (dB)	18	21	27	37	48	54	54	54
Absorption Coefficients		.70	.90	.99	.99	.90	.90	

E. SUBMITTALS

- 1. Product Data:** Submit manufacturer’s technical product data for enclosure or plenum showing dimensional, weights, capacities, ratings, finishes of materials, and installation instructions.
- 2. Shop Drawings:** Submit shop drawings showing unit dimensions, weight loading, required clearances, field connection details and methods of support. Draw to a scale of 3/8” to one foot, using same sheet size as Contract Drawings, including dampers and duct connections.