

SECTION 09 80 00 - Acoustic Treatment
SECTION 09 81 00 - Acoustic Insulation

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes ceiling and/or wall mounted Composite Panels for engineered vibration dampening, sound isolating and sound absorbing systems.
- B. Furnish and install all ceiling and wall products and associated installation accessories as shown on the drawings, and specified herein, or as required to complete the work.
- C. Related Documents: This section applies to drawings and general provisions of the subcontract. Review these documents for coordination with additional requirements and information that apply to work under this Section. Cross-reference approved supplementary manufacturers' Composite Panels and required installation accessories including, but not limited to construction-grade adhesive, pressure sensitive ("peel and stick") adhesive or mechanical fasteners by others as applicable.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM) International:
 - 1. ASTM C 423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
 - 2. ASTM E 90-09a Standard Test Method for Lab Measurement of Airborne Sound Transmission Loss of Building Elements.
 - 3. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 4. ASTM E 795 Standard Practices for Mounting Test Specimens During Sound Absorption Tests.
 - 5. ASTM E 336 Standard Test Method for Measurement of Airborne Sound Insulation in Buildings.
 - 6. International Building Code.
 - 7. L.E.E.D. - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings.

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements
 - 1. Provide melamine foam designed and tested to provide a Class A flame spread rating when tested in accordance with ASTM E 84, unless otherwise specified.
 - a. Flamespread: 25 maximum.
 - b. Smoke Developed: 50 maximum.
 - 2. Provide mass-loaded vinyl barrier product manufactured to meet Federal Motor Vehicle Safety Standard No. 302 (FMVSS 302) specifications for fire safety.



3. Provide wall and/or ceiling Composite Panel system in a layout designed by an engineer or qualified acoustic consultant, which has been manufactured, fabricated and installed to provide Noise Reduction Coefficient (NRC) rating based on Sabine and Fitzroy formulas to comply with ASTM C 423, and a Sound Transmission Class (STC) rating to comply with ASTM E 90.
 - i. Noise Reduction Coefficient (NRC) = 0.75 or greater
 - ii. Sound Transmission Class (STC) = 25 or greater

1.4 SUBMITTALS

- A. Product Data: Manufacturer's technical data for Composite Panels including fire-resistive characteristics, finishes, details of installation, and the following:
 1. Manufacturer's installation instructions.
 2. Manufacturer's SDS Sheets.
 3. Certified laboratory test reports indicating compliance with Performance Requirements specified herein.
 4. Qualification data: For firms specified in "Quality Assurance" Article to demonstrate their capabilities and experience.
- B. Samples: One (1) 12" inch by 12" inch (305mm x 305mm) sample of desired thickness of the following specified units for color selection or verification.
- C. Shop Drawings: Layout and details of Composite Panels provided by qualified engineer or consultant, based on performance of proposed products. Show locations of items which are to be coordinated with, or supported by the structural ceiling and walls, if applicable.
- D. Closeout Submittals:
 1. Operating and Maintenance Manual, including cleaning and maintenance instructions.
 2. Extra Material for Owner's stock.
 3. Manufacturer's Safety Data Sheets (SDS).

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: ACOUSTICAL SOLUTIONS to provide Composite Panels (only).
- B. Installer Qualifications: Acceptable to the manufacturer of the Composite Panels being installed. Utilize an installer having demonstrated 5 years minimum experience on projects of similar size and acoustical complexity.
- C. Mock-Up: Provide a mock-up for evaluation of installed appearance.
 1. Install panels in areas designated by proper authority.
 2. Do not proceed with remaining work until proper authority approves workmanship and appearance.
 3. Approved mock-up may remain as part of the work.
- D. SURFACE BURNING CHARACTERISTICS



1. Melamine foam tested in accordance to ASTM E84 - Fire rating Class A:
 - a. Flame Spread Index <25
 - b. Smoke Developed Index <50
2. Mass loaded vinyl tested in accordance to meet Federal Motor Vehicle Safety Standard No. 302 (FMVSS 302) specifications for fire safety.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver material in the manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Provide labels indicating Acoustical Solutions division brand name, style, size and thickness.
- C. Storage and Protection: Comply with manufacturer's recommendations. Store acoustical product indoors and protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Wear handling gloves at all times when handling melamine foam-based products.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations
 1. Install Composite Panels only in conditions that are within the manufacturer's published limits for temperature and humidity.
 2. Maintain the following conditions in areas where acoustical materials are to be installed 24 hours before, during and after installation:
 - a. Relative Humidity: 65 - 75%.
 - b. Uniform Temperature: 55 - 70 degrees F (13 - 21 degrees C).
 3. Areas receiving panels should be free of construction debris and dust.
 4. Mechanical, sprinkler and electrical trades shall have completed their work above the ceiling structure and within structural walls prior to commencement of product installation.

1.8 MAINTENANCE

- A. Extra Materials: Provide a minimum of 1/2 box or 2%, whichever is larger, of additional materials if required for use by owner or the building maintenance and repair.
- B. Provide new unopened cartons of extra materials, packaged with protective covering for storage and identified with appropriate labels.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Acoustical Solution
2420 Grenoble Road, Richmond, VA 2329 | PH: 800-782-5742 | AcousticalSolutions.com



2.2 MATERIALS

- A. Acoustical Solutions AlphaSorb® Composite Foam. Composite Panels are manufactured from 100% open-cell melamine foam and mass-loaded vinyl with the following characteristics:
1. Melamine Foam Fire Resistance: ASTM E84, Class A
 2. Mass loaded vinyl Fire Resistance: Complies with Federal Motor Vehicle Safety Standard No. 302 (FMVSS 302) specifications
 3. Acoustical Solutions Composite Panels with Natural Light Grey Melamine Foam:
 - a. NRC 0.75 per ASTM C 423 Type A mounting
 4. ACOUSTICAL SOLUTIONS Natural Light Grey Composite Panels should achieve the following total absorption:

Sound Absorption Coefficient [Sabins / ft²]										
Finish	Thickness [in]	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	SAA	NRC	Mounting Type
Light Grey	1.375	0.08	0.25	0.85	0.86	1.00	1.08	0.74	0.75	A

5. ACOUSTICAL SOLUTIONS Composite Panels with Natural Light Grey Melamine Foam:
 - b. STC 25 per ASTM E 90
6. ACOUSTICAL SOLUTIONS Natural Light Grey Composite Panels should achieve the following total transmission loss:

Transmission Loss [dB]									
Finish	Thickness [in]	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	STC	
Light Grey	1.375	14.00	16.00	20.00	27.00	33.00	39.00	25.00	

7. Foam Density: Natural Light Grey 0.56 lbs./ft³ +/- 0.09 lbs./ft³
Natural White 0.47lbs./ft³ +/- 0.13lbs./ft³
 8. Mass Loaded Vinyl Weight Density: 1lb/ft²
 9. Melamine Foam Service Temperature: -40 ° F to 350 ° F
 10. Mass Loaded Vinyl Service Temperature: -20 ° F to 180 ° F
 11. Size: Nominal: 24 inches x 48 inches (305 mm x 610 mm)
 12. Panel Thickness: Nominal 1-3/8 inches thick. Other thicknesses available upon request.
 13. Manufacturers Standard Textiles/Colors: Available upon request.
- B. Product Substitutions: 2lb/ft² mass-loaded vinyl in lieu of 1lb/ft² for increased acoustical performance.

2.3 ACCESSORIES

- A. Composite Ceiling and Wall Panels

1. Instant grab, high strength construction adhesive such as Power Grab by Loctite.



2. Other mechanical fasteners provided by others.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine Composite Panel installation, with installer present, for compliance with requirements specified in this and other applicable Sections affecting product installation and with requirements for installation tolerances and other conditions affecting performance of the selected ACOUSTICAL SOLUTIONS product.

3.2 INSTALLATION

- A. Do not begin installation until materials sufficient to complete an entire room are received and prepared for installation.
- B. Symmetrically locate product layout, as desired, in each space. Coordinate work with other trades so that lighting fixtures, HVAC and other ceiling and/or wall mounted fixtures work with Composite Panel layout.
- C. Install materials in accordance with manufacturer's printed instructions and to comply with governing regulations, fire resistance rating requirements as indicated and industry standards applicable to the work.
- D. Take care not to damage or mark the product; wear clean cotton or canvas gloves and avoid the use of latex gloves.

3.2 CLEANING

- A. Clean exposed surfaces of acoustical product and any installation accessories to comply with manufacturer's instructions for cleaning.
- B. Touch up any minor finish damage.
- C. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

3.3 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION

