

SECTION 09 77 23

SOUND-ABSORPTIVE PANELS

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. The General Conditions, Supplementary Conditions, and Division 01 – General Requirements apply.

1.2 SECTION INCLUDES

- A. Two (2) inch regular sewn edge fabric finish baffles.
- B. Two (2) inch regular tailored edge fabric finish baffles.
- C. Two (2) inch PVC hardened sewn edge fabric finish baffles.
- D. Two (2) inch PVC hardened tailored edge fabric finish baffles.

1.3 RELATED SECTIONS

- A. Section 09 51 13 - Acoustical Panel Ceilings: Ceiling grid to hang baffles.

1.4 SUBMITTALS

- A. Product Data: Submit for each type of fabric finish, panel edge, core material, and anchoring device indicated.
- B. LEED Submittals:
 - 1. Product Data for MR Credit 4.1 [and Credit 4.2]: Submit documentation indicating percentages of post-consumer and pre-consumer recycled content for products having recycled content including a statement of cost for each product having recycled content.
- C. Shop Drawings: Submit for ceiling panels. Indicate mounting devices and details; details at panel head, base, joints, and corners; and details at ceiling, floor base, and wall intersections. Indicate panel edge and core materials. Include elevations showing panel sizes and direction of fabric weave.
- D. Samples: For each type of fabric facing from ceiling panel manufacturer's full range.
 - 1. Fabric Facing: Submit full-width by approximately 12 inches long sample, but not smaller than required to show complete pattern repeat, from dye lot to be used for the Work, and with specified treatments applied. Mark top and face of fabric.
 - 2. Panel Edge: 12-inch long sample(s) showing each edge profile, corner, and finish.
 - 3. Core Material: 12-inch square sample at corner.
 - 4. Mounting Devices: Full-size samples.
 - 5. Assembled Panels: Approximately 12 by 12 inches, including joints and anchoring devices.
- E. Maintenance Data: Indicate fabric manufacturer's written cleaning and stain removal recommendations.
- F. Warranty: Submit sample indicating items covered and length of warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing fabric-wrapped panels with 10 years minimum experience.
- B. Source Limitations: Obtain panels through one (1) source from a single manufacturer.
- C. Fire-Test Response Characteristics: Provide mineral wool panel cores with the following fire-test response characteristics as determined by testing per ASTM E136:
 - 1. Flame-Spread Rating: 0.
 - 2. Smoke-Developed Index: 0.
- D. Mockups: Construct mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials, fabrication, and installation.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver panels in manufacturer's original, unopened and labeled packages.
- B. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- C. Protect from damage due to weather, excessive temperature, and construction operations.

1.7 WARRANTY

- A. Manufacturer's standard form in which manufacturer warrants against any defects in workmanship or breakdown of the core material for two (2) years from date of delivery.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: The design for fabric-wrapped panels is based on products manufactured by Perdue Acoustics, 4210 Hester Drive, Amarillo, TX 79124; telephone: 800.729.9402, fax 806.374.9450; email: info@perdueacoustics.com; Web Site: www.perdueacoustics.com.
- B. Substitutions are not permitted.

2.2 SOUND-ABSORPTIVE BAFFLES

- A. Two (2) Inch Regular Sewn Edge Fabric Finish Baffles: Mineral wool core with fiberglass mat front and back; square edges; two (2) inches thick.
 - 1. Core Properties: Flame spread of zero (0), smoke developed rating of zero (0); minimum tensile strength of 2631 lbs/sq ft breaking load, and compressive resistance of 480 lbs/sq ft at 10 percent compression, and horizontal sag of not more than 1/2-inch in four (4) ft.
 - 2. Fabric Facing: Selected from manufacturer's standard fabric. Fully wrap baffles and provide flap at top with grommets attached. Ensure flat, wrinkle-free surface and tailored corners.
 - a. Rating: Rating of fabric used determines rating of panel as a unit.
 - b. Recycled Content: Provide fabric with post-consumer recycled content.
 - 3. Acoustical Properties: NRC numbers in accordance with ASTM C423 for Type K mounting. Certifiable acoustical data must be provided by an NVLAP-approved, independent testing laboratory.

a. Sound Absorption Coefficients (Regular Sewn Edge Fabric Facing):

125 Hz	.88	1000 Hz	2.14
250 Hz	1.18	2000 Hz	1.94
500 Hz	1.98	4000 Hz	1.78
		NRC	1.80

B. Two (2) Inch Regular Tailored Edge Fabric Finish Baffles: Mineral wool core with fiberglass mat front and back; square edges; two (2) inches thick.

1. Core Properties: Flame spread of zero (0), smoke developed rating of zero (0); minimum tensile strength of 2631 lbs/sq ft breaking load, and compressive resistance of 480 lbs/sq ft at 10 percent compression, and horizontal sag of not more than 1/2-inch in four (4) ft.
2. Fabric Facing: Selected from manufacturer's standard fabric. Fully wrap baffles and provide flap at top with grommets attached. Ensure flat, wrinkle-free surface and tailored corners.
 - a. Rating: Rating of fabric used determines rating of panel as a unit.
 - b. Recycled Content: Provide fabric with post-consumer recycled content.
3. Acoustical Properties: NRC numbers in accordance with ASTM C423 for Type K mounting. Certifiable acoustical data must be provided by an NVLAP-approved, independent testing laboratory.

a. Sound Absorption Coefficients (Regular Tailored Edge Fabric Facing):

125 Hz	.88	1000 Hz	2.14
250 Hz	1.18	2000 Hz	1.94
500 Hz	1.98	4000 Hz	1.78
		NRC	1.80

C. Two (2) Inch PVC Hardened Sewn Edge Fabric Finish Baffles: Mineral wool core with fiberglass mat front and back; hardened square edges; two (2) inches thick.

1. Core Properties: Flame spread of zero (0), smoke developed rating of zero (0); minimum tensile strength of 2631 lbs/sq ft breaking load, and compressive resistance of 480 lbs/sq ft at 10 percent compression, and horizontal sag of not more than 1/2-inch in four (4) ft.
2. Core Edges: Reinforce with PVC, non-flame supportive plastic in edge detail specified. Resin, wood, aluminum, or steel hardened edges are not acceptable.
3. Fabric Facing: Selected from manufacturer's standard fabric. Fully wrap baffles and provide flap at top with grommets attached. Ensure flat, wrinkle-free surface and tailored corners.
 - a. Recycled Content: Provide fabric with post-consumer recycled content.
4. Flame Spread Rating of Unit: ASTM E84; not more than 20.
5. Smoke Developed Rating of Unit: ASTM E84; not to exceed 115.
6. Acoustical Properties: NRC numbers in accordance with ASTM C423 for Type K mounting. Certifiable acoustical data must be provided by an NVLAP-approved, independent testing laboratory.

a. Sound Absorption Coefficients (PVC Hardened Sewn Edge Fabric Finish):

125 Hz	.88	1000 Hz	2.14
250 Hz	1.18	2000 Hz	1.94
500 Hz	1.98	4000 Hz	1.78
		NRC	1.80

- D. Two (2) Inch PVC Hardened Tailored Edge Fabric Finish Baffles: Mineral wool core with fiberglass mat front and back; hardened square edges; two (2) inches thick.
 - 1. Core Properties: Flame spread of zero (0), smoke developed rating of zero (0); minimum tensile strength of 2631 lbs/sq ft breaking load, and compressive resistance of 480 lbs/sq ft at 10 percent compression, and horizontal sag of not more than 1/2-inch in four (4) ft.
 - 2. Core Edges: Reinforce with PVC, non-flame supportive plastic in edge detail specified. Resin, wood, aluminum, or steel hardened edges are not acceptable.
 - 3. Fabric Facing: Selected from manufacturer's standard fabric. Fully wrap baffles and provide flap at top with grommets attached. Ensure flat, wrinkle-free surface and tailored corners.
 - a. Recycled Content: Provide fabric with post-consumer recycled content.
 - 4. Flame Spread Rating of Unit: ASTM E84; not more than 20.
 - 5. Smoke Developed Rating of Unit: ASTM E84; not to exceed 115.
 - 6. Acoustical Properties: NRC numbers in accordance with ASTM C423 for Type K mounting. Certifiable acoustical data must be provided by an NVLAP-approved, independent testing laboratory.
 - a. Sound Absorption Coefficients (PVC Hardened Tailored Edge Fabric Finish):

125 Hz	.88	1000 Hz	2.14
250 Hz	1.18	2000 Hz	1.94
500 Hz	1.98	4000 Hz	1.78
		NRC	1.80

2.3 ACCESSORIES

- A. Ceiling Hangers: 14-gage stainless steel wire.
- B. Wall Fasteners: Minimum No. 10 screw or bolt and washer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with requirements that affect installation and with requirements for installation tolerances. Notify the Architect in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure wall areas to receive baffles and establish layout to balance border widths at opposite edges of each area. Avoid using less-than-half-width baffles at borders, and comply with layout shown on wall elevations.
- B. Coordinate work that penetrates the walls. Provide cutouts for wall-mounted items and penetrations accurately and cleanly.

3.3 INSTALLATION

- A. Install in strict accordance with manufacturer's written installation instructions and recommendations and approved shop drawings. Coordinate installation with adjacent work to ensure proper clearances.

- B. Install each wall-attached baffle by placing a 3/4-inch wood spacer against wall. Use screws or bolts tapped through a washer, through the grommets, through the wood, and into the wall at top and bottom of baffle, using attachment method appropriate for wall construction type.
- C. Hang ceiling baffles from grommets with 14-gage stainless steel wire to exposed structure or acoustical ceiling grid above.

3.4 CLEANING AND PROTECTION

- A. Clean exposed surfaces of baffles in accordance with manufacturer's recommendations.
- B. Protect installed baffles from damage or soiling until completion of project.
- C. Remove and replace baffles that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION