

SECTION 09 77 23

SOUND-REFLECTIVE 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. 180 Degree Diffuser fabric finish wall panels.
- B. 180 Degree Diffuser painted finish wall panels.

1.3 RELATED SECTIONS

- A. Section 09 29 00 - Gypsum Board: Wall substrate construction.

1.4 SUBMITTALS

- A. Product Data: Submit for each type of fabric finish, panel edge, core material, and anchoring device indicated.
- B. Shop Drawings: Submit for wall 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.
- C. Samples: For each type of fabric facing from wall 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.
- D. Maintenance Data: Indicate fabric manufacturer's written cleaning and stain removal recommendations.
- E. 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. 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-REFLECTIVE PANELS

- A. 28-Inch 180 Degree Fabric Finish or Fire Retardant Sprayed Diffusers: 0.20-inch thick high-impact styrene weighing approximately 1-1/2 lbs/sq ft; square edges; curve 28-inch width of diffuser in perfect half circle 14 inches at thickest point. Panel consists of end-to-end series of complex chambers diffusing sound in all directions and at all frequencies from 100 Hz to 18,000 Hz, as proven by testing in both time domain and frequency domain. Diffusion chambers are based on manufacturer’s patent using formulas on non-incident mathematics and cannot be used without permission.
 - 1. Fabric Finish: Selected from manufacturer’s standard fabric. Bond fabric to face and edges and return at edges a minimum of two (2) inches on back of panels. Provide panels with 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.
 - 2. Paint Finish: Selected from manufacturer’s standard paint colors. Ensure complete paint coverage over entire unit.
 - 3. Acoustical Properties: Absorption numbers in accordance with ASTM C423 for Type A mounting. Certifiable acoustical data must be provided by an NVLAP-approved, independent testing laboratory.

a. Sound Absorption Coefficients:

100 Hz	.32	500 Hz	.23
125 Hz	.31	1000 Hz	.13
250 Hz	.26	2000 Hz	.09

b. Sound Absorption Coefficients (Fabric Finish):

100 Hz	.34	500 Hz	.58
125 Hz	.33	1000 Hz	.57
250 Hz	.40	2000 Hz	.54

2.3 ACCESSORIES

- A. Fastening Devices: Manufacturer's standard Z-clips. Provide in the following quantities:
 - 1. 28-Inch 180 Degree Diffuser: Two (2) per unit

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 panels and establish layout to balance border widths at opposite edges of each area. Avoid using less-than-half-width panels 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 reflector panel "L-bracket" on the wall, with attachment screws appropriate to the substrate.
- C. Do not field alter the Diffuser panels.

3.4 CLEANING AND PROTECTION

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

END OF SECTION