

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. Pyramidal wall or ceiling Diffuser with lip.
- B. Pyramidal wall or ceiling Diffuser with no lip.

1.3 RELATED SECTIONS

- A. Section 09 29 00 - Gypsum Board: Wall substrate construction.
- B. Section 09 51 13 - Acoustical Panel Ceilings: Ceiling grid to accept diffusers.

1.4 SUBMITTALS

- A. Product Data: Submit for each type of finish, plastic material, and anchoring device indicated.
- B. Shop Drawings: Submit for wall or 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.
- C. Samples: For each type of fabric or paint finish from panel manufacturer's full range.
 - 1. Fabric Finish: 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. Paint: Submit samples indicating manufacturer's currently available range of colors.
 - 3. Panel Edge: 12-inch long sample(s) showing each edge profile, corner, and finish.
 - 4. Core Material: 12-inch square sample at corner.
 - 5. Mounting Devices: Full-size samples.
 - 6. 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 wall 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 diffusers and reflectors 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. Pyramidal Fabric Finish or Fire Retardant Sprayed Diffusers with Lip: 0.20-inch thick high-impact styrene weighing approximately 1.5 lbs/sq ft; combined shape of pyramid with curved sides in order to more effectively disperse frequencies; engineer thickness and shape to work together to diaphragm low frequency.
 - 1. Fabric Facing: Selected from manufacturer’s standard fabric. Bond fabric to edges and return at edges to back of diffuser. Provide fabric-wrapped panels with flat, wrinkle-free surface and tailored corners.
 - a. Recycled Content: Provide fabric with post-consumer recycled content.
 - 2. Paint Finish: Selected from manufacturer’s standard paint colors.
 - 3. Size: [2 x 2] [4 x 4] feet.
 - 4. Acoustical Properties: NRC 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:

125 Hz	.40	1000 Hz	.07
250 Hz	.34	2000 Hz	.04
500 Hz	.10	4000 Hz	.02

- B. Pyramidal Fabric Finish or Fire Retardant Sprayed Diffusers with No Lip: 0.20-inch thick high-impact styrene weighing approximately 1.5 lbs/sq ft; combined shape of pyramid with curved sides in order to more effectively disperse frequencies; engineer thickness and shape to work together to diaphragm low frequency.
 - 1. Fabric Facing: Selected from manufacturer’s standard fabric. Bond fabric to edges and return at edges to back of diffuser. Provide fabric-wrapped panels with flat, wrinkle-free surface and tailored corners.
 - a. Recycled Content: Provide fabric with post-consumer recycled content.

- 2. Paint Finish: Selected from manufacturer’s standard paint colors.
- 3. Size: [2 x 2] [4 x 4] feet.
- 4. Acoustical Properties: NRC 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:

125 Hz	.40	1000 Hz	.07
250 Hz	.34	2000 Hz	.04
500 Hz	.10	4000 Hz	.02

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 diffusers and establish layout to balance border widths at opposite edges of each area. Avoid using less-than-half-width diffusers 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 mounted diffuser with wall attachment pieces and fasteners appropriate to the substrate. Mount diffusers level and square.
- C. Install each ceiling mounted diffuser in acoustical ceiling grid to lay flat and tight against grid or ang ceiling diffusers with 14-gage stainless steel wire to exposed structure.

3.4 CLEANING AND PROTECTION

- A. Clean exposed surfaces of flat panels in accordance with manufacturer’s recommendations.
- B. Protect installed products from damage or soiling until completion of project.

- C. Remove and replace flat panels that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION