

## SECTION 09 77 23

## SOUND-DIFFUSIVE 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. Wedge™ Diffuser fabric finish wall or ceiling panels.
- B. Wedge™ Diffuser painted finish wall or ceiling panels.

## 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 and 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 plastic materials. Include elevations showing panel sizes and direction of fabric weave.
- C. Samples: For each type of fabric or vinyl facing from wall or ceiling panel manufacturer's full range.
  - 1. Fabric or Vinyl 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. Mounting Devices: Full-size samples.
- D. Maintenance Data: Indicate fabric or vinyl 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](mailto:info@perdueacoustics.com); Web Site: [www.perdueacoustics.com](http://www.perdueacoustics.com).
- B. Substitutions are not permitted.

2.2 SOUND-REFLECTIVE PANELS

- A. Wedge™ Diffuser Fabric Finish: 0.20-inch thick high-impact styrene weighing approximately 1-1/2 lbs/sq ft; square edges; two (2) ft width of diffuser slopes from 1-1/4-inch thick on one (1) side to 3-1/4-inch on other side. Panel consists of end-to-end series of complex chambers diffusing sound in all directions and at all frequencies from 400 Hz to 12,000 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 Facing: 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 fabric-wrapped panels with flat, wrinkle-free surface and tailored corners.
  - 2. 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	.28	500 Hz	.26
125 Hz	.32	1000 Hz	.23
250 Hz	.31	2000 Hz	.13
		<b>NRC</b>	<b>.25</b>

b. Sound Absorption Coefficients (Fabric Finish):

100 Hz	.34	500 Hz	.58
125 Hz	.33	1000 Hz	.57
250 Hz	.40	2000 Hz	.54
		<b>NRC</b>	<b>.50</b>

### 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 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. Manufacture ceiling Diffusers to lie flat and fit tightly in acoustical ceiling T-grid in place of one (1) 2' x 4' or two (2) 2' x 2' ceiling tiles.
- C. Manufacture wall Diffusers with built-in angle brackets for attachment to substrate.

### 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