



**1. Product Names**

- ESSI Absorber Panels
- ESSI Barrel-Shaped Diffuser Panels
- ESSI Pyramid-Shaped Diffuser Panels
- ESSI Radial Reflector Panel
- ESSI Flat Reflector Panel

**2. Manufacturer**

ESSI Acoustical Products Company  
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**3. Product Description**

To achieve critical listening, a music environment must have the proper combination of absorption, reflection and diffusion; when these three are installed in tandem appropriate to the space and usage, excessive loudness is controlled, subtle sounds are crisper and sound is distributed consistently throughout the listening area, which dramatically improves acoustics.

**Basic Use—ESSI Absorber Panels**

Used to tailor the reverberation and loudness in a room. Ideally suited for the widest range of environments.

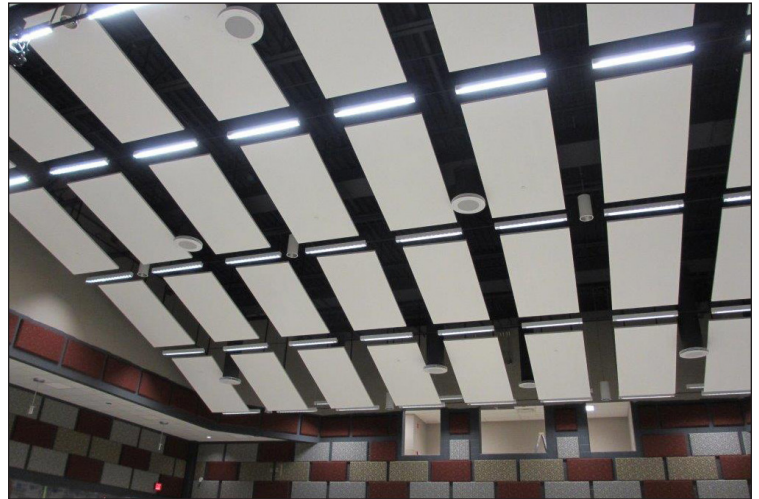
**Basic Use—ESSI Diffuser Panels**

Used on walls and ceilings, diffuser panels scatters and blends sounds. Polycylindrical in shape, diffuser panels eliminate echoes, flutters, hot spots and dead spots. The shaped surfaces used individually or in combination with other ESSI acoustical components disburse reflected sound evenly throughout the listening space.

**ESSI Pyramid-Shaped Diffuser Panels**

Used in any music facility requiring outstanding acoustical performance. The shaped surfaces used individually or in combination with other ESSI acoustical components disburse reflected sound evenly throughout the listening space.

Used in combination with ESSI Absorber Panels and ESSI Barrel-Shaped Diffuser Panels for finely tuning acoustical efficiency and sound quality. For wall and ceilings.



**ESSI Flat Reflector Panels used on ceiling**



**ESSI Barrel-Shaped Diffuser Panels inserted into existing hanging ceiling system**



**School Panel System**

### ***ESSI Barrel-Shaped Diffuser Panels***

Designed for band, choral and orchestral facilities requiring outstanding acoustical performance. The shaped surfaces used individually or in combination with other ESSI acoustical components disburse reflected sound evenly throughout the listening space.

Used in combination with ESSI Absorber Panels for finely tuning acoustical efficiency and sound quality. For wall and ceilings.

### **Basic Use—ESSI Flat and Radial Reflector Panels**

Designed for large spaces requiring improved sound, directivity, strength and timing of reflections from the ceiling area, flat and radial reflectors are ideal for auditoriums, lecture halls and performing arts centers. For ceilings.

### **Composition and Materials—ESSI Absorber Panels**

Fabricated with sound absorptive glass-fiber, these panels are engineered to absorb sound from across a broader frequency range.

### **Composition and Materials—ESSI Diffuser Panels**

These units are constructed of stable, rigid e-glass to enhance diffusion of all frequencies.

Optional internal absorber (IA) selectively absorbs low frequencies and optional internal liner (IL) increases reflectivity.

### ***ESSI Pyramid-Shaped Diffuser Panels***

Molded, rigid e-glass lined with glass fiber batting in an offset pyramid shape to address specific acoustical applications. Both optional fire-retardant K-cell™ internal liner (IL) and internal absorber (IA) are available.

### ***ESSI Barrel-Shaped Diffuser Panels***

Made of rigid fiberglass molded into a one-piece barrel shape



**ESSI Barrel-Shaped Diffuser Panels used on walls**

for high-impact strength and hardness—yet, lightweight for ease of installation.

### **Composition and Materials—ESSI Flat and Radial Reflector Panels**

A flat pan-shaped or radial-shaped e-glass lined with K-cell foam core stiffener with suspension trapezes embedded into to the panel back.

Optional internal absorber (IA) selectively absorbs low frequencies and optional internal liner (IL) increases reflectivity.

### **Finishes and Fabric Coverings**

- Standard white gel coat
- Optional paintable gel coat; paintable with oil-based and acrylic paints
- Optional fabric coverings—Guilford FR 701® Style 2100 (Terratex®) or custom fabric coverings—panels may be covered with virtually any upholstery-weight fabric or vinyl; added customizing may be applied to wallcoverings for decor and signage. Consult with manufacturer for details concerning factory-applied digital imaging custom graphics or for additional information

### **Sizes and Thickness**

See Table 1.

## **4. Technical Data**

### **Applicable Standards**

#### **American Society for Testing and Materials (ASTM)**

- ASTM C423—Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
- ASTM E84—Standard Test Method for Surface Burning

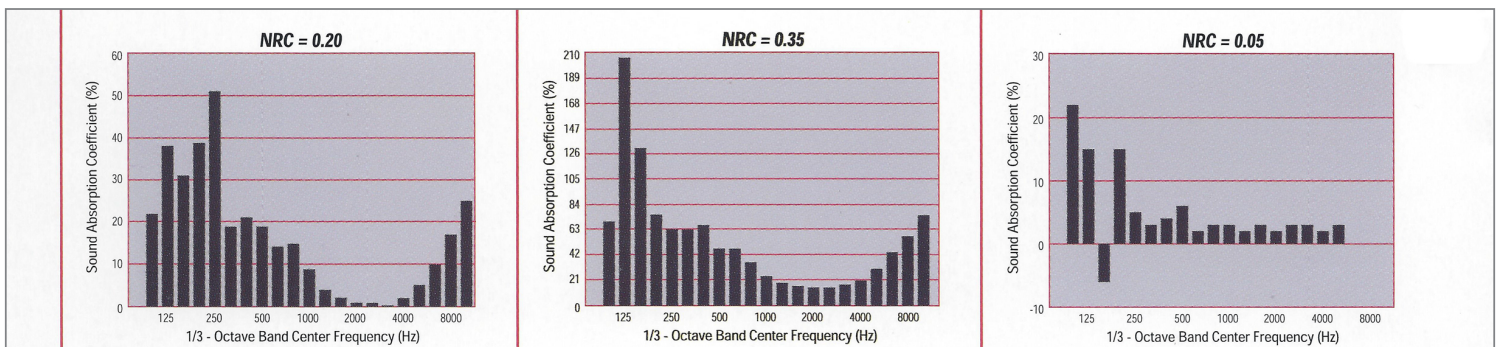
**Table 1—Sizes, Thicknesses and Applications**

Panel	Model	Sizes (Width × Length × Depth)	Application
<b>ESSI Radial Reflector Panel†</b> (All ESSI Radial Reflector Panels have a 10' radius; actual depth is determined by the length of the panel.)	R3.44	40" × 48" (1016 mm × 1219 mm)	Ceilings
	R44	48" × 48" (1219 mm × 1219 mm)	
	R4.94	57" × 48" (1447.8 mm × 1219 mm)	
	R64	72" × 48" (1828.8 mm × 1219 mm)	
	R74	84" × 48" (2133.6 mm × 1219 mm)	
	R84	96" × 48" (2438.4 mm × 1219 mm)	
	R104	120" × 48" (3048 mm × 1219 mm)	
	R63	72" × 36" (1828.8 mm × 914.4 mm)	
	R73	84" × 36" (2133.6 mm × 914.4 mm)	
<b>ESSI Flat Reflector Panel †</b>	RF44	48" × 48" × 1.5" (1219 mm × 1219 mm × 39.6 mm)	Ceilings
	RF84	96" × 48" × 1.5" (2438.4 mm × 1219 mm × 39.6 mm)	
<b>ESSI Absorber Panels</b> Available in 1", 2", 3" and 4" thicknesses (add 1/4" to thickness for tackable panels).	W106	Available up to 48" × 120" (1219 mm × 3048 mm)	Wall and ceilings
<b>ESSI Barrel-Shaped Diffuser Panels †</b> Radius on short dimension.	D12×22	12" × 22" × 7" (304.8 mm × 558.8 mm × 177.8 mm)	Wall and ceilings
	D1.49	16" × 108" × 7" (406.4 mm × 2743.2 mm × 177.8 mm)	
	*D22	23" × 23" × 7" (584.2 mm × 584.2 mm × 177.8 mm)	
	*D24	23" × 47" × 7" (584.2 mm × 1193.8 mm × 177.8 mm)	
	D26	23" × 71" × 7" (584.2 mm × 1803.4 mm × 177.8 mm)	
	D33	35" × 35" × 7" (889 mm × 889 mm × 177.8 mm)	
	D34	35" × 47" × 7" (889 mm × 1193.8 mm × 177.8 mm)	
	D35	35" × 59" × 7" (889 mm × 1498.6 mm × 177.8 mm)	
	D36	35" × 71" × 7" (889 mm × 1803.4 mm × 177.8 mm)	
	*D44	47" × 47" × 7" (1193.8 mm × 1193.8 mm × 177.8 mm)	
	D45	47" × 59" × 7" (1193.8 mm × 1498.6 mm × 177.8 mm)	
	D46	47" × 71" × 7" (1193.8 mm × 1803.4 mm × 177.8 mm)	
	D48	47" × 95" × 7" (1193.8 mm × 2413 mm × 177.8 mm)	
	<b>ESSI Barrel-Shaped Diffuser Panels †</b> Radius on long dimension.	*D42	
D43		47" × 35" × 7" (1193.8 mm × 889 mm × 177.8 mm)	
D53		59" × 35" × 7" (1498.6 mm × 889 mm × 177.8 mm)	
D62		71" × 23" × 7" (1803.4 mm × 584.2 mm × 177.8 mm)	
D63		71" × 35" × 7" (1803.4 mm × 889 mm × 177.8 mm)	
D64		71" × 47" × 7" (1803.4 mm × 1193.8 mm × 177.8 mm)	
D84		95" × 47" × 7" (2413 mm × 1193.8 mm × 177.8 mm)	
<b>ESSI Pyramid-Shaped Diffuser Panels †</b>	*P22	23.75" × 23.75" × 8" (603.3 mm × 603.3 mm × 203 mm)	Walls and ceilings
	*P24	23.75" × 47.75" × 12.5" (603.3 mm × 1212.9 mm × 317.5 mm)	
	*P44	47.75" × 47.75" × 12.5" (1212.9 mm × 1212.9 mm × 317.5 mm)	

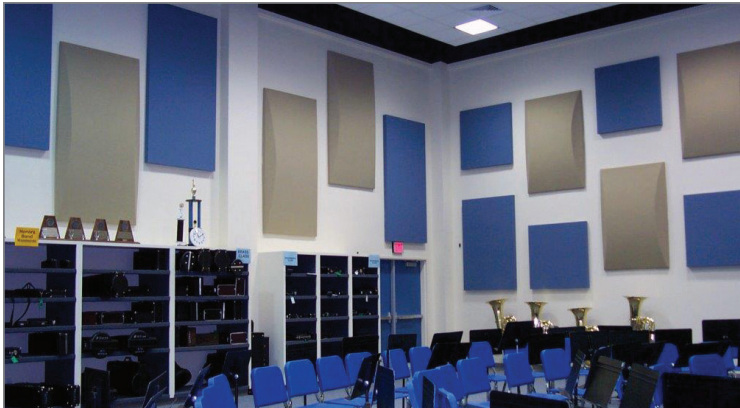
\* Available for lay-in application into 5/16" wide standard ceiling grid system  
 † Optional IA or IL available

**Illustration 1—**

Left: standard diffuser or reflector; Center: diffuser or reflector with internal absorber (IA); Right: diffuser or reflector with internal liner (IL)



ESSI Acoustical Products Company



Interactive Panel System

### Fire Performance

All products are Class A Flame-rated:

- Surface burning characteristics (ASTM E84), fabric covered panel—Flamespread 25, smoke developed 105
- Surface burning characteristics (ASTM E84), vinyl covered panel—Flamespread 25, smoke developed 40

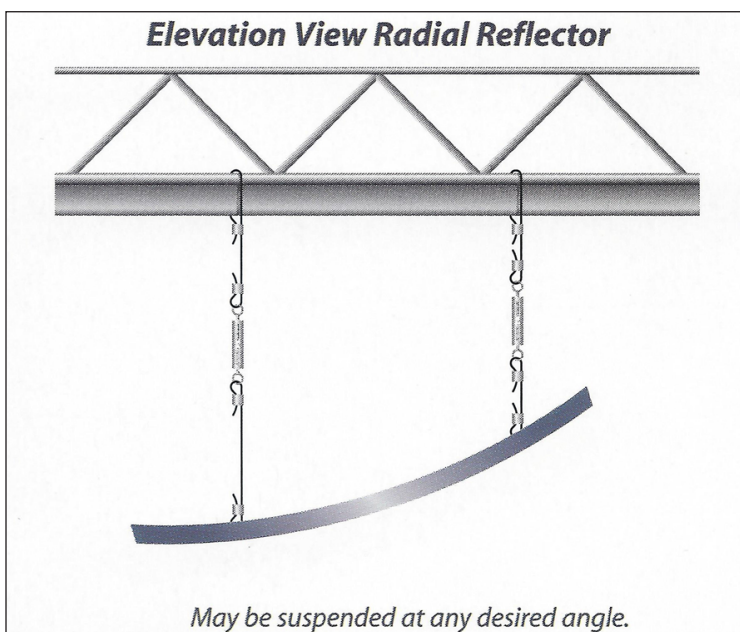
### Environmental Considerations

- Guilford of Maine panel fabrics are made from 100 percent recycled polyester or renewable materials (as are many other manufacturers' panel fabrics) and can be recycled or composted at the end of their service life

### ESSI Absorber Panels

- The fiberglass core component material of ESSI Absorber Panels incorporates a proprietary binder based on

Illustration 2



rapidly renewable bio-based materials, contains no phenol, formaldehyde, acrylics or artificial colors

- Fiberglass components are 40 percent recycled
- ESSI Absorber Panels may meet eligibility requirements for LEED® 2009 MR Credit 4: Recycled Content or MR Credit 6: Rapidly Renewable Materials

## 5. Installation

### Preparatory Work

Materials should be delivered in original, unopened cartons and stored in an enclosed shelter providing protection from damage and exposure to the elements. Before installation, panels should be stored in immediate installation area for sufficient time to stabilize temperature and humidity conditions during installation and anticipated occupancy.

Do not begin installation of wall panels until all wet work such as concrete, plastering and terrazzo is completely and thoroughly dried out.

Do not proceed with installation of wall panels until building is closed in and the HVAC system is capable of maintaining a temperature of 60–85 degrees F (16–29 C) at not more than 70 percent relative humidity.

Handle and store products according to ESSI Acoustical Products Company recommendations.

### Methods

- Mechanical clips—two-part panel Z-clips, with one part attached to back of panel and the other part to wall, included
- Impaling plates—metal impaling plates mechanically attached to wall, included
- Velcro® fasteners—two-part Velcro fasteners adhesively attached to wall and to back of panels, included
- Magnetic hangers—two-part magnetic tape system with magnetic tape adhesively attached to wall and to back of panel, included
- Adhesive—glue-up method using a manufacturer recommended contact adhesive applied to back of panels, included
- ESSI Pyramid-Shaped Diffuser Panels have color-coordinated screw fasteners, included
- Some ceiling panels insert into existing hanging ceiling systems, no fastening needed
- ESSI Radial Reflector Panels used in ceilings have manufacturer custom attachment system, included—see Illustration 2

Follow manufacturer's instructions. A leveling angle should always be used at the bottom edge of panels to ensure a true, level lineup of panel edges.

## 6. Availability and Cost

### Availability

Contact ESSI Acoustical Products Company for information on product availability.

### Cost

Budget installed cost information may be obtained through the manufacturer. Contact ESSI Acoustical Products Company for more information.

## 7. Warranty

For a period of two (2) years from the date of delivery, ESSI Acoustical Products (EAP) warrants the products to be free from defects in material and workmanship. Buyer's sole and exclusive remedy against EAP shall be for the repair or replacement of defective products. Buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property or any other incidental or consequential loss) shall be available. Buyer expressly waives all other warranties, expressed or implied, including, but not limited to, the implied warranties of fitness for a particular purpose or merchantability; EAP specifically disclaims any such warranties. Failure to give EAP immediate written notice of any allowable claim regarding the product shall operate to relieve EAP of liability of such claim. Buyer acknowledges and agrees that there are no warranties regarding the products or EAP that extend beyond the face hereof.

## 8. Maintenance

Cleaning instructions vary depending on panel fabrics and service conditions. Contact manufacturer for more information.

## 9. Technical Services

A staff of factory trained personnel offers design assistance and technical support. For technical assistance, contact ESSI Acoustical Products Company.

## 10. Filing Systems

- CMD
- ManuSpec®
- Additional product information is available from the manufacturer upon request



ESSI Barrel-Shaped Diffuser Panels used on walls



School Panel System