Absorption Plus® Acoustic Panels
Wall, Ceiling/Deck, Cloud, High Impact/Tackable, Tack, Baffles and Diffusers
Absorption Plus Panels (Full Coverage or Accents)

- Wall Panel
- Ceiling/Deck (Alt. to tile & grid)
- Clouds
- Baffles
- Impact Resistant / Tack Panel
- Tack Panel
- Custom Shapes
- Diffusers (Pyramidal & Barrel)

“Imagine Panels”
What Absorption Plus Panels Do

- Absorb sound, reduce space reverberation time
- Quiet treated and adjacent spaces
- Enhance speech privacy / confidentiality
- Improve concentration, learning, productivity

Note: Also enhances space thermal insulation in direct wall & ceiling applications

Untreated Space
Sound bounces off acoustically “hard” surfaces

Treated Space
Sound energy is absorbed and/or diffused

A concert hall may require Absorbers and Diffusers to optimize the listening experience
Absorption Plus Panels

Selected by Specifiers and Installers due to:

- Typical lead time of 3-4 weeks vs. industry standard 6-8 weeks
- Made to order panels, virtually eliminate field modifications, saving labor
- Composite Class A fire rating for most panel types, VS component ratings
- Excellent Sound Absorption NRC ratings
- Orders ship in wood crates reducing damage/freight claims and job delays
- “Imagine” Panels offers unlimited imaging capability for unique visual designs
- Wide range of fabrics, patterns and color options from industry leading manufacturers
- Competitive price

SPECIALTY PRODUCTS & INSULATION

Absorption Plus®
Acoustical Panels

Wall, Ceiling/Deck, Cloud, Impact, Baffle, Tack, Diffusers and “Imagine” Panels
Absorption Plus® Industry Standard Acoustical Panel

- Absorption Plus panels consist of a 6-7 PCF Fiberglass core
- Fabric facings from a wide range of manufacturers.
- **Composite** panel is Class A fire rated
- Resin hardened edges.
- Edge details available include:
  - Square
  - Beveled / Chamfered
  - Mitered
  - Radius
- Panels are available in 5 different thicknesses up to 5’ wide and 10 feet long
  - ½”
  - 3/4”
  - 1”
  - 1-1/2”
  - 2”

Fabric bonded with full face adhesive. Prevents sagging, maintains fabric alignment.
Typical Fabrics Used (acoustically transparent)

- Guilford of Maine FR701, True Textile and Burch provide industry standard 100% polyester acoustic fabric used on ~80% of projects

- Examples of Designer Fabrics Used Include:
  - Maharam
  - Knoll
  - Momentum
  - Designtex
  - Filzfelt
  - And Others

Note: Designer fabrics require the Architect and project name for quoting
Imagine Acoustic Panel Example
(Newsprint poster on left, Imagine digital imaged panel on right)

Panel tinted to look like aged newsprint
Absorption Plus® **Standard** Panel Acoustic Performance

<table>
<thead>
<tr>
<th>Finish</th>
<th>Panel Thickness</th>
<th>Frequency (Hz)</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>NRC</th>
<th>SAA</th>
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<tbody>
<tr>
<td>* Fabric</td>
<td>1&quot; (25 mm)</td>
<td>0.05</td>
<td>0.30</td>
<td>0.72</td>
<td>1.01</td>
<td>1.09</td>
<td>1.02</td>
<td>0.80</td>
<td>0.77</td>
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<tr>
<td>* Fabric</td>
<td>1 1/2&quot; (38 mm)</td>
<td>0.14</td>
<td>0.52</td>
<td>1.04</td>
<td>1.14</td>
<td>1.06</td>
<td>1.02</td>
<td>0.95</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td>* Fabric</td>
<td>2&quot; (50 mm)</td>
<td>0.31</td>
<td>0.79</td>
<td>1.18</td>
<td>1.22</td>
<td>1.08</td>
<td>1.07</td>
<td>1.05</td>
<td>1.06</td>
<td></td>
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</tbody>
</table>

* Testing performed on panels finished with acoustically transparent fabric

NRC = Avg. of 250, 500, 1000 and 2000 Hz. values rounded to nearest .05
Typ. fiberglass acoustic panels perform well at mid to high frequencies
A higher NRC value equals a better overall absorber without specific frequency considerations

**Type A** Mounting provides no air gap behind the panel (worst case)
If the actual panel installation has a spaced air gap (i.e.3/4”)
sound absorption can improve as the backside can also absorb sound.
Custom Pleated Wall Panels (Award Winning Project)

Pleated fabric panels dispersed by linear light bars to create a unique visual
IMPORTANT

Some manufacturers report NRC results based on a ¾” - 1” air gap behind the panel. This mounting method does not reflect the most common installation condition where panels have little if any air gap with the mounting surface.
Absorption Plus Impact / Tack Panel

- Impact / Tack panels are comprised of 6-7 pcf fiberglass core laminated with a 1/8” high density molded fiberglass panel (provides a tack-able surface)
- **Composite** panel is Class A fire rated
- Panels available with optional resin hardened edges
- Edge details available with this panel include:
  - Square
  - Beveled / Mitered
  - Chamfered
  - Radius

- A wide range of fabric finishes are available.
- Panels are available in 4 different thicknesses up to 10 feet in length
  - 7/8”
  - 1-1/8”
  - 1-5/8”
  - 2-1/8”

Edge Details: Square, Round, Bevel and Chamfer
Absorption Plus High Impact / Tack Panel Acoustic Performance

Testing at an Accredited Lab is required for reliable results.

<table>
<thead>
<tr>
<th>Finish</th>
<th>Panel Thickness</th>
<th>Frequency (Hz)</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>NRC</th>
<th>SAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabric</td>
<td>1 1/8&quot; (28 mm)</td>
<td></td>
<td>0.19</td>
<td>0.58</td>
<td>0.87</td>
<td>0.98</td>
<td>0.94</td>
<td>0.83</td>
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<tr>
<td>Fabric</td>
<td>2 1/8&quot; (53 mm)</td>
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<td>0.53</td>
<td>0.88</td>
<td>1.04</td>
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<td>0.86</td>
<td>0.82</td>
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<td>0.93</td>
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</table>

* Testing performed on panels finished with acoustically transparent fabric.
Absorption Plus Ceiling Baffle

- Baffles are available 2” thick and made from 6-7 pcf laminated fiberglass board.

- **Composite** panel is Class A fire rated

- Panels are suspended from mechanical hangers embedded in panels for strength.

- Baffles are available with optional resin hardened edges.

- Baffles are also available with optional edge details on three edges.
Absorption Plus Baffle Acoustic Performance

Note: Some Baffle manufacturers don’t test or report Type J Mounting results. Therefore reported acoustic data may not be representative of the application.

2’ x 4’ panels suspended from a metal frame above the chamber floor at specified distances.

Acoustical Data (ASTM C423-09a, Type J Mounting per ASTM E 795-05)

<table>
<thead>
<tr>
<th>Finish</th>
<th>Panel Thickness (in)</th>
<th>Frequency (Hz)</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>NRC</th>
<th>SAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Fabric</td>
<td>2&quot; (50 mm)</td>
<td>0.18</td>
<td>0.57</td>
<td>1.16</td>
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<td>1.33</td>
<td>1.31</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

* Testing performed on panels finished with acoustically transparent fabric.

Number of Units: 8, Frequency Absorption data in Square Meters per Unit
Why Manufacturer Acoustic Data Can Vary
Tack Panels

- Tack Panels are made from high density mineral fiber board treated to resist warping
- Panels can be wrapped with a range of fabrics to match or compliment sound absorbing panels
- Limited sound absorption with optional perforated substrate
- Panels are available with three types of edge detail
  - Square
  - Radius
  - Beveled
- Resin hardening not available due to panel density
- Available in 2 different thicknesses in lengths up to 8’ long
  - 1/2”
  - 3/4”

_Tack Panels are typically installed in limited coverage areas_
The Importance of Class A, Fire Rated Products

Nightclub installed Non Class A acoustic material to control noise

Packed House at The Station Night Club, Rhode Island
100 Died, 200+ injured
Feb 20, 2003
CODE States Minimum Requirements
Related CODE Requirements

- IBC 2012 – Chapter 7, Fire And Smoke Protection Features
  - Section 720 - Thermal and Sound Insulating Materials
  - Section 720.3, Exposed Insulation – Insulating materials, where exposed as installed in buildings of any type of construction, shall have a flame spread index on not more than 25 and a smoke development index of not more than 450 (Class A Rating)

*Note: CODE language describes required material performance per ASTM E84. It does not address product component performance.*
Absorption Plus **Composite** Fire Tests (For Code Compliance)

- ASTM E84 (Provides Flame Spread / Smoke Development Ratings)
- **Class A**, Std. Absorption Plus Wall Panel test results 15/40, Maximum Allowable 25/450
- Absorption Plus Wall, Deck, Cloud, Baffle and High Impact / Tack Composite Panels also achieved a Class A Rating
- Many manufacturers only report panel material component ratings. This is not an accurate indicator of the assembled panel fire performance.
Please Review Our Educational Fire Risk Presentation

- Fire Risk and Code Compliance
  For Fabric Wrapped Acoustic Panels
Typical Applications
Banquet Center
Performance Space, Cloud Application with Axiom Edge Trim
Performance Space Coffer Application
Mechanical and Manufacturing Space Applications

Cloud Panels In Mechanical Room

Baffles in Manufacturing Space
**Sound Diffusers**

- **Pyramidal & Barrel Panels**
  - Diffuse sound to create a better listening experience
- **Wall and Ceiling Applications**

**Absorption Plus® Pyramidal and Barrel Diffusers**

**Description**
Absorption Plus® diffusers are typically used in performance areas, auditoriums, and other spaces to enhance acoustic performance. Diffuser panels scatter and blend sound across a broad frequency spectrum for an improved listening experience. Pyramidal and barrel diffusers are available in a variety of sizes to suit virtually any wall or ceiling application requirement. The durable panels are supplied complete with hardware appropriate for wall or ceiling applications. Diffusers are composed of 1/8” thermostimated fire resistant plastic, molded to a special offset pyramidal or one piece barrel shape. The white lightly-weathered surface provides a pleasing finished appearance. Diffusers are also available fabric wrapped to suit virtually any project requirement. Diffusers can also be supplied with a 1/2” fiberglass batt insert to enhance sound absorption.

**Features / Benefits**
- Diffusers reflect, blend and scatter sound providing an improved listening environment.
- Optional fabric wrapped panels with full finished edges and tailored corners provide enhanced visual impact.
- Standard diffusers are in stock for quick shipment to meet compressed construction schedules.

**Availability**

**Pyramidal Diffuser Sizes:**
- 2' x 2'
- 2' x 4' x 8” height
- 3' x 3'
- 3' x 6'
- 4' x 4', 4' x 3' and 4' x 4'

**Barrel Diffuser Sizes:**
- (standard height 7”)
- 2' x 2'
- 2' x 4'
- 3' x 3'
- 3' x 6'
- 4' x 4', 4' x 3' and 4' x 4'

**Call for special shapes and sizes.**

Absorption Plus® acoustical panels are available through a network of SPI locations across North America.

Additional product information at [www.flan-spi.com](http://www.flan-spi.com)

**Performance Data**

- **Standard Diffuser** - 1/8” thick thermostimated fire resistant plastic, molded to a special offset pyramidal or one piece barrel shape.

**Components tested per ASTM E84 - Class A rating**

- **Sound Absorption Coefficients**, per ASTM C423 Type D5 mounting (4” x 4” airspace):
  - 4” x 4” Pyramidal diffuser (standard texture finish), NRC = .10
  - 4” x 4” Barrel diffuser (standard texture finish), NRC = .10

  (Additional data available for fabric wrapped and Insulation lined diffusers)

**Optional Facings** include 100% polyester fabric such as Guilford of Maine FR/A1, and other leading manufacturers.
**Diffuser Wall Mount**

**INSTALLATION INSTRUCTIONS**

1. Using the 8" L-CLIPS as a template, drill 1/8" POP-Rivet holes in the front top edge of the diffuser. Holes should be drilled from the finished side and located so the clip face is flush with the diffuser edge.

2. Drill 1/8" POP-Rivet holes for hook & loop bracket in similar manner (diagrams indicate locations).

3. Install L-clips at top of diffuser and hook & loop brackets at the of diffuser bottom with 1/8" head pop-rivets. Install pop-rivet from finish side.

4. Mount 6" wall bar to wall structure using appropriate fasteners. Top of wall bar should be located 1/8" below desired height of diffuser. Allow a 1" minimum clearance above top of wall bar to engage L-clip on wall bar.

5. Peel off release backing of hook & loop to expose adhesive and insert L-clips onto wall brackets. With 1/8" head pop-rivet, attach position pads to bottom of diffuser to wall to adhere hook & loop bracket.

**WALL MOUNTED BARREL AND PYRAMIDAL DIFFUSERS**

**DIFFUSER PARTS LIST (UP TO 48" X 48")**

- 2 - 8" WALL BARS
- 2 - 8" L-CLIPS
- 1 - 8" HOOK & LOOP BRACKET

Locate and install as shown.

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**WALL MOUNTED BARREL AND PYRAMIDAL DIFFUSERS INSTALLATION INSTRUCTIONS**

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<tr>
<th>SIZE</th>
<th>DWG. NO.</th>
<th>REV</th>
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<td>A</td>
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**APR. 3, 2015**

SCALE: NTS

DRAWN BY: ZCH

SHEET 1 OF 2
CEILING GRID BARREL AND PYRAMIDAL DIFFUSERS

INSTALLATION INSTRUCTIONS
1. DIFFUSERS ARE AVAILABLE WITH OPTIONAL FLANGE FOR CEILING 15/16" T-BAR GRID LAY-IN INSTALLATION.
2. DIFFUSER DIMENSIONS ARE SLIGHTLY REDUCED TO FIT INSIDE STANDARD 15/16" GRID DIMENSION.
3. TO ENSURE PROPER LOCATION AND ORIENTATION FOLLOW REFLECTED CEILING PLANS.

WHITE FINISH TEXTURE OR OPTIONAL FABRIC WRAPPED.

15/16" T-BAR CEILING GRID

FLANGE

DETAIL C
Detailed Installation Drawings
(Standard Z Clip layout, see web files for additional dwg. details)
Typical Projects For Absorption Plus

- Performance Spaces: Auditoriums, Theaters, etc.
- Lecture Halls: Universities, Churches, Classrooms
- Cafeterias, Restaurants and Nightclubs
- Gymnasiums
- Music Rooms
- Office Space, Conference Rooms
- Shopping Malls
- Manufacturing Plants, Mechanical Rooms
- Home Theaters
Typical Customers

- Drywall & Acoustical Contractors
- Finish Contractors
- Acoustic & Audio Specialty Companies
- GC’s that self perform
- Facility Maintenance Depts. (Colleges, Schools, Medical Facilities, Office Space, Performance Centers, Retirement Homes, Churches, etc.)
- Owners (Restaurants, Mall, Casino, Nightclub, Stores, etc.)
- Manufacturing Facilities
Complete all applicable fields for an accurate and timely quote.

Incomplete information can delay or yield an inaccurate quote.

Ref. web page Order Form.
New Product!
Absorption Plus High NRC

Absorption Plus® High NRC Panels

Description
Absorption Plus High NRC Panels are made of environmentally sustainable mineral and wood cellulite materials. The resulting non-combustible insulation provides exceptional acoustical and thermal insulation properties. The lightweight insulation board is water repellent and impervious to moisture. Panels offer enhanced fire resistance up to 16.4 at 4” thick. The durable black mat facing provides an interior finish product that is suitable for both walls and ceilings and exposed deck applications where structural elements are exposed.

Uses
Absorption Plus High NRC Panels are ideal for use in residential, commercial, industrial, and institutional applications where superior sound absorption, energy efficiency, and thermal insulation are needed.

Advantages
• Sound Absorption: Excellent sound absorption performance
• Thermal Efficiency: Stable R Value: +1.0 per inch
• Fire Resistance: Rated panels achieve a Class A fire rating
• LEED®: Can earn LEED points across four key categories toward sustainable development
• Finished Appearance: Attractive, smooth appearance
• Ease of Application: Rigid panels install quickly and easily.
• Availability: Typically 2-4 weeks ARO

Performance Compliance Data
Absorption Plus High NRC Panels are produced with Rockwood® stone wool insulation and a high quality black mat facing under a quality controlled fabrication process that is under certified laboratory follow-up service.

Standard Panel Dimensions
2.25, 3.5, 5, 6, 7, and 8” thick. 24” x 48” panel standard (Custom cut to size panels available)

SPL - Specialty Products & Insulation
3/7/2019

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Typical Applications for Absorption Plus High NRC

- Multiplex Theaters
- Restaurants
- Nightclubs
- Performance Centers
- Sports Centers
- Office Space
- Recording Studios
- TV & Radio Studios
- Manufacturing Environments
### Products including Insulation for Thermal, Acoustic and Fire Protection

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<th>ABATEMENT PRODUCTS</th>
<th>METAL BUILDING INSULATION (MBI)</th>
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<tr>
<td><em>Absorption Plus</em> (Acoustic Panels)</td>
<td>MINERAL FIBER</td>
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<tr>
<td>ACOUSTICAL PRODUCTS</td>
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<td>ANTI-VIBRATION PADS</td>
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<td>ATTACHMENTS (RIVTS, STUDS, STAPLES, ETC)</td>
<td>PANELS (ALL TYPES)</td>
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<tr>
<td>BANDING &amp; WING SEALS</td>
<td>PHENOLIC FOAM</td>
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<td>BATT INSULATION</td>
<td>PIN WELDER REPAIRS, RENTAL &amp; SALES</td>
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<td>BUILDING INSULATION</td>
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<td>- FLANGES (ALL TYPES)</td>
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QUESTIONS?
Call 855 519 4044 or
Fabteam@spi-co.com