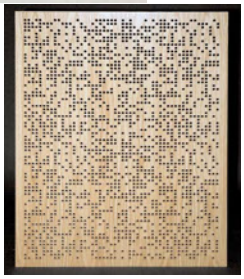
BAD™ Panel

2D Diffusion



The First Digital, Flat and Curved Sound Diffsorbor
From The Acoustical Industry s Leading Innovator

Well balanced acoustical designs contain an appropriate combination of absorption, reflection, and diffusion. In many applications, however, limited budget or physical depth preclude the use of diffusion. Absorptive, fabric wrapped panels are specified for lack of an alternative. Unfortunately, wide area application may lead to an acoustically dead environment without air or ambiance. To solve this problem, RPG®developed the Binary Amplitude Diffsorbor , the first flat, zero depth diffusing absorber. A BAD Panel simultaneously provides uniform sound diffusion at high frequencies and crosses over to pure absorption below the diffusive cutoff frequency. The energy that is not diffused is absorbed. The BAD panel allows complete tonal balance and increased speech intelligibility in gypsum board and concrete block rooms, where standard fabric wrapped panels remove the all important high frequency sound.

RPG®

The Sound of Innovation

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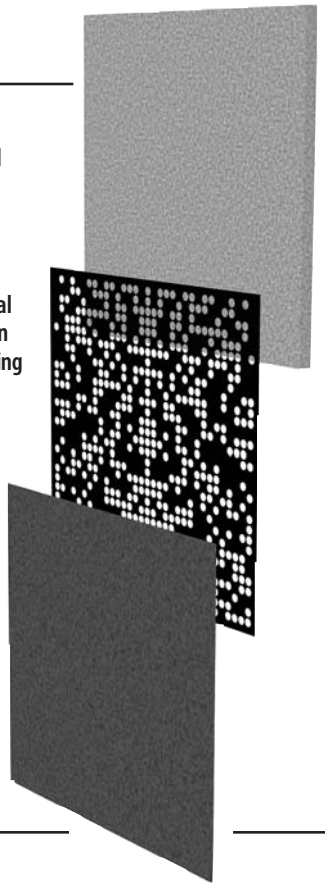
Problem and Solution

Problem

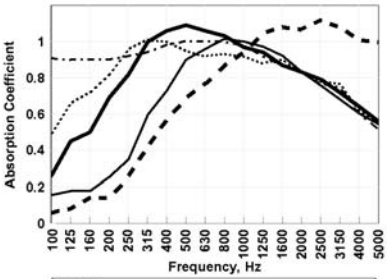
Traditional fabric wrapped panels offer a cost effective, low profile aesthetic approach to providing reflection and reverberation control. However, these panels offer little sound diffusion and large area application may lead to an acoustically dead space. Variable impedance arrays offer some help, but cannot provide diffusion at high frequencies.

Solution

RPG® developed an innovative variable impedance panel by fabric wrapping a resorptive binary template consisting of reflective areas and holes over a semi-rigid fiberglass panel. The resulting Binary Amplitude Diffsorbor *flat* or *curved* panel provides high frequency diffusion and mid frequency absorption.

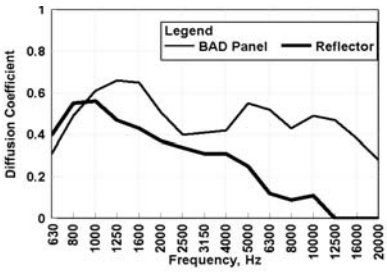


Performance Specifications



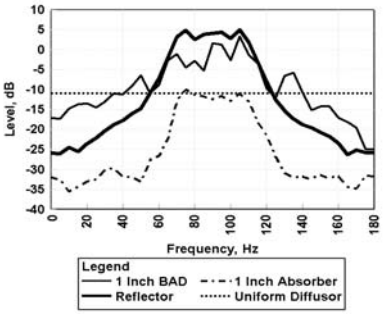
Absorption

The graph illustrates how the BAD Panel offers a modest increase in bass absorption over a standard upholstered 1" panel below 1000 Hz, and a significantly decreased absorption above this frequency. The binary template allows the sound above 1000 Hz to be uniformly diffused providing reflection control without destroying the room s ambiance or speech intelligibility.



Diffusion

The performance of a scattering surface is characterized by the diffusion coefficient, which is the standard deviation of the 1/3 octave **Angular Scattering Response**, shown below at 12.5 kHz. The **Diffusion** graph (to the left) illustrates how uniformly the BAD Panel (upper curve) scatters sound across the frequency spectrum, compared to a reflective panel (lower curve), for normal incidence.



Angular Scattering Response

For normally incident sound, the graph illustrates the angular response at 12.5 kHz. The flat reflector reflects sound primarily into the 90° specular direction. The wall mounted absorptive panel has similar response, only attenuated. The BAD Panel decreases specular scattering and more closely approaches the uniform ideal diffusion line.

Installation

Installation of the BAD Panel is quick and easy. Simply use construction adhesive, hook and loop fasteners, or supplied impaling clips to mount to walls. The BAD Panel can also be suspended or used in any T-bar or similar mounting system.

FEATURES

Simultaneous diffusive and absorptive sound control in a thin, decorative, cost effective panel
Optimal binary reflection amplitude grating containing resorptive elements
Acoustical functionality concealed with decorative upholstered fabrics or commercial stretch fabric systems
Excellent mid frequency absorption

BENEFITS

Provides sound diffusion in a shallow depth, flat panel
Simultaneously offers diffusion and absorption for an integrated design
Reflections can be diffsorptively attenuated without creating a dead space
Extends the performance of absorptive fabric wrapped panels and stretch fabric systems at competitive prices
Can be used to provide acoustic gain in conference rooms, classrooms, and auditoriums to improve speech intelligibility and reduce listener fatigue
Diffsorptive surfaces provide mid frequency absorption to balance the response in rooms with diaphragmatic gypsum board surfaces and excessive high frequency absorption
Suitable as stretch fabric core material

APPLICATIONS

Worship Spaces, Conference rooms, Classrooms, Teleconference and Distance Learning Centers, Recording and Broadcast Studios, A/V rooms, Cinemas and Home Theaters, Financial Exchanges, Music Rehearsal Rooms, and Auditoriums.

SPECIFICATIONS

Panel dimensions may be multiples of 2', e.g. 2' x 2', 2' x 4', etc. or custom sizes
Weight: 2' x 2' x 1" is 2.5 lbs
Thickness: 1", 2", and custom
Standard fabric: Guilford of Maine FR701 #298
Custom fabrics available
Edge conditions: