



Non-Slotted



Slotted

*The First Acoustical Hardwood Molding
From The Acoustical Industry's Leading Innovator*

Absorptive fabric wrapped panels are the traditional treatment for flutter echoes which are caused by repetitive reflections between hard parallel walls. While absorption reduces flutter echoes, it also produces an acoustically "dead" space. The resulting lack of ambiance makes the room feel acoustically smaller and reduces the support of acoustic speech levels which makes conversation difficult. FlutterFree® is a handsome, furniture grade, acoustical hardwood molding that provides flutter echo control as well as bass absorption. Its application converts small rooms with flat parallel surfaces into functional spaces with good speech intelligibility, sound quality, and a natural, comfortable ambiance. It expands the designer's flutter control finish treatment options beyond fabric upholstered surfaces.

Problem and Solution

Problem

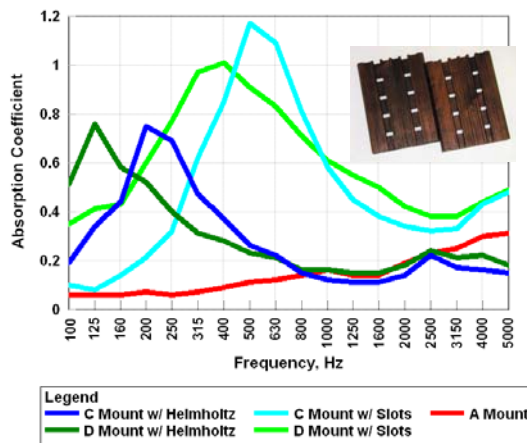
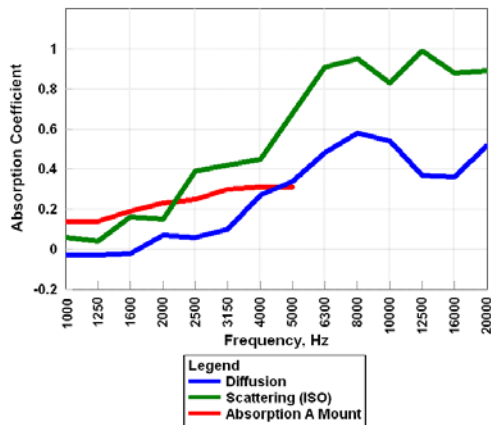
Repetitive reflections from hard parallel surfaces produce flutter echoes that are perceived as timbre coloration and degrade sound quality and speech intelligibility. Absorptive surfaces are often used to control this annoying problem, with the side effect of making the room too acoustically “dead”.

Solution



FlutterFree® is the first diffusive acoustical hardwood molding that controls flutter echo by diffusion, maintaining the natural ambience of the room. When adjacent panels are spaced and mounted with an air cavity, low frequency absorption can also be achieved.

Performance Specifications



Acoustical Data

The graph illustrates the random incidence ISO 354 A-Mount absorption coefficients (red), the ISO 17497-1 scattering coefficients (green) and the ISO 17497-2 diffusion coefficients (blue). The absorption data is presented to the standard frequency of 5,000 Hz, whereas the scattering and diffusion data extend to 20,000 Hz.

Supplemental Absorption Data

The absorption coefficients for slotted and non-slotted FlutterFree® are shown, along with the A Mount data (red) over the full frequency range. The non-slotted FlutterFree® planks are backed with 1" Fiberglass (FG) in a Helmholtz mounting 1/16" apart (C Mount blue), on the surface and with a 3.5" cavity (D Mount color). The slotted FlutterFree® planks (inset) are backed with 1" Fiberglass (FG) and mounted with no space between the planks, on the surface and with a 3.5" cavity.

Installation

FlutterFree® is molded on a 5 head wood molder from hardwood that is kiln dried to 6-8% moisture content. RPG® takes every precaution to minimize warping by stress relieving the rear surface and treating all exposed surfaces on prefinished orders. FlutterFree® can either be nailed or glued directly to a wall surface or mounted with a rear air cavity for low frequency absorption. In this Helmholtz mounting, a semi rigid fiberglass panel is mounted 1/4" behind the FlutterFree®. To standardize and maintain the proper spacing, lamello biscuits are included. When used as wall panels, a hardwood frame (not supplied) is suggested.

FEATURES

- Furniture grade, hardwood, sound diffusing acoustical molding
- Low frequency absorption mounting option
- FlutterFree® works on the 1D QRD® reflection phase grating principle
- Modular extruded diffusive strips

BENEFITS

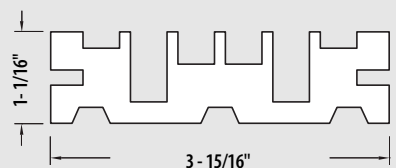
- Handsome furniture grade hardwood finish offers specifiers a new approach to flutter echo control that does not rely on the use of fabric upholstered fiberglass panels
- Offers an almost unlimited variety of lacquered, stained, or painted finishes and hardwood options
- Diffusive flutter control minimizes flutter echoes without making the space acoustically “dead”
- Diffusive flutter control provides an ambient environment to support speech in conference rooms for less fatigue, greater coverage, and high speech intelligibility
- Mounting FlutterFree® over an air cavity provides low frequency absorption to minimize boominess and lack of definition in small rooms

APPLICATIONS

Conference and teleconference rooms, Lecture Halls, Distance Learning Rooms, Public spaces, Listening rooms, Recording and broadcast studios, Post production studios, Home theaters, Rehearsal rooms, Auditoriums, Performance spaces

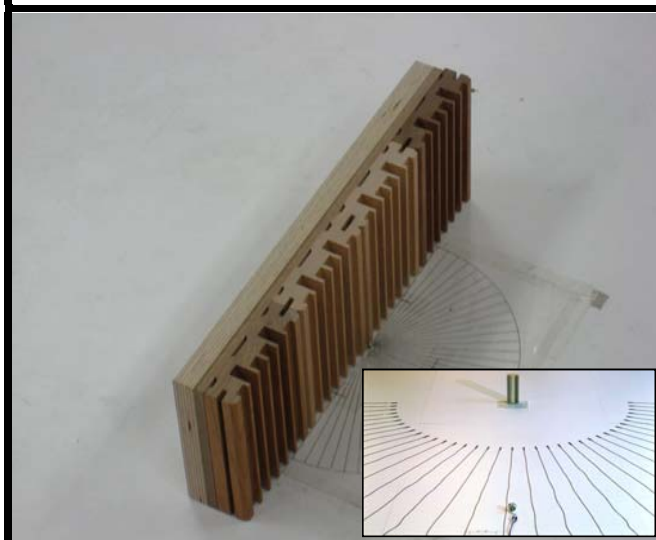
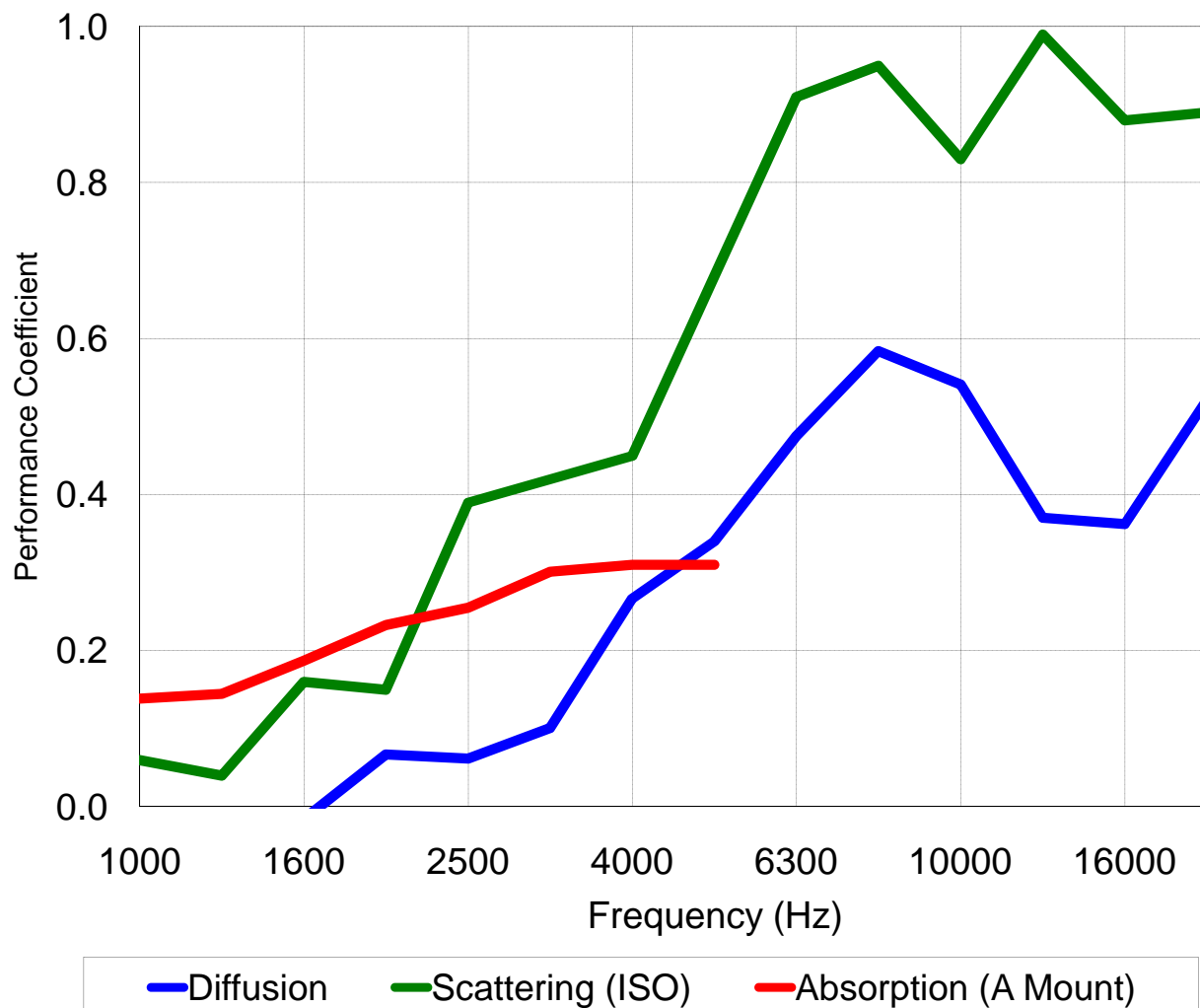
SPECIFICATIONS

- Size: 96" (L) x 3-15/16" (W) x 1-1/16" (D)
- Custom lengths are available up to 8'; call for longer lengths.
- Weight: 1 lb/ft
- Finishing: FlutterFree® can be supplied unfinished, clear lacquered, stained and lacquered, and painted
- When field finishing, all exposed surfaces, including the cut end surfaces, should be treated to minimize warping





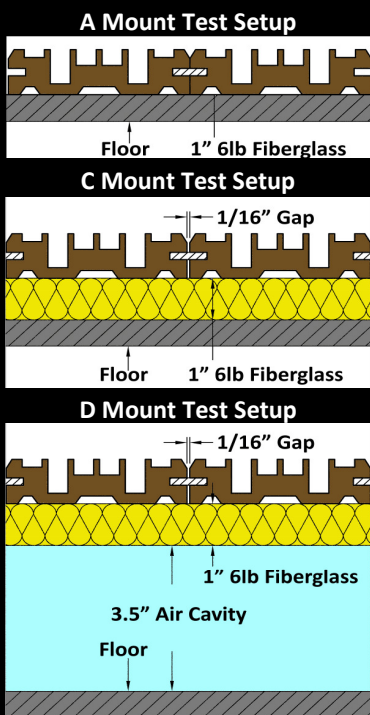
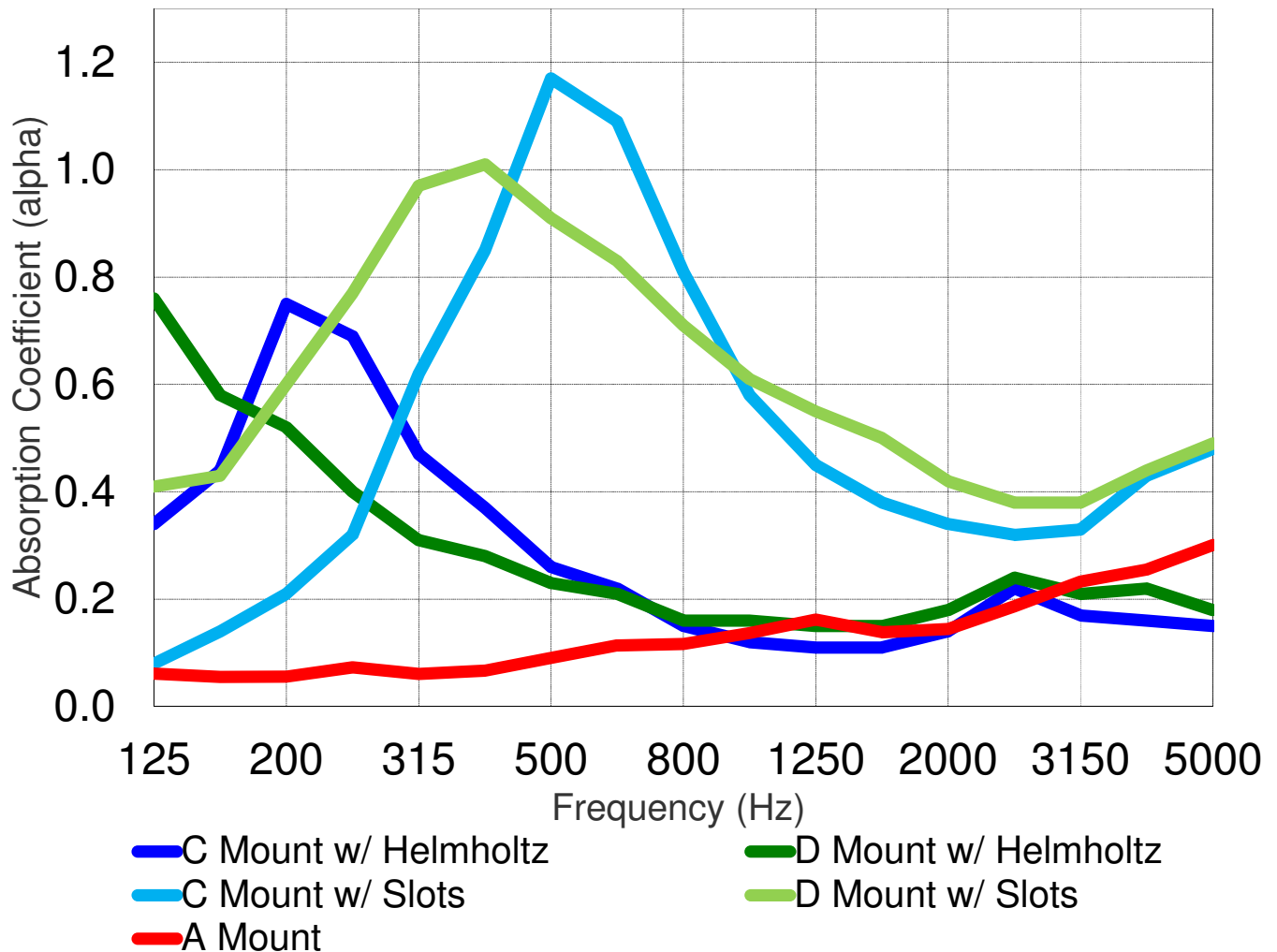
FlutterFree Random Incidence Performance Data



Freq (Hz)	Diffusion	Scattering (ISO)	Absorption (A Mount)
1000	-0.03	0.06	0.14
1250	-0.03	0.04	0.14
1600	-0.02	0.16	0.19
2000	0.07	0.15	0.23
2500	0.06	0.39	0.25
3150	0.10	0.42	0.30
4000	0.27	0.45	0.31
5000	0.34	0.68	0.31
6300	0.48	0.91	
8000	0.58	0.95	
10000	0.54	0.83	
12500	0.37	0.99	
16000	0.36	0.88	
20000	0.52	0.89	



FlutterFree® Supplemental Random Incidence Absorption Data



FREQ	A Mount	C Mount w/ Helmholtz	C Mount w/ Slots	D Mount w/ Helmholtz	D Mount w/ Slots
125	0.06	0.34	0.08	0.76	0.41
160	0.06	0.44	0.14	0.58	0.43
200	0.06	0.75	0.21	0.52	0.60
250	0.07	0.69	0.32	0.40	0.77
315	0.06	0.47	0.62	0.31	0.97
400	0.07	0.37	0.85	0.28	1.01
500	0.09	0.26	1.17	0.23	0.91
630	0.11	0.22	1.09	0.21	0.83
800	0.12	0.15	0.81	0.16	0.71
1000	0.14	0.12	0.58	0.16	0.61
1250	0.16	0.11	0.45	0.15	0.55
1600	0.14	0.11	0.38	0.15	0.50
2000	0.14	0.14	0.34	0.18	0.42
2500	0.19	0.22	0.32	0.24	0.38
3150	0.23	0.17	0.33	0.21	0.38
4000	0.25	0.16	0.43	0.22	0.44
5000	0.30	0.15	0.48	0.18	0.49