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crafting acoustic envelopes

PRODUCT BROCHURE

MODULAR ACOUSTIC SYSTEMS

ENGINEERED SOLUTIONS FOR SOUND ABSORPTION, DIFFUSION AND REFLECTION

FABRIC PANEL ABSORBERS

LOW FREQUENCY ABSORBERS

HYBRID SLAT ABSORBER & BINARY DIFFUSERS

GEOMETRIC & SHROEDER DIFFUSERS

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MODULAR ACOUSTIC SYSTEMS

ENGINEERED SOLUTIONS FOR SOUND ABSORPTION, DIFFUSION AND REFLECTION

A wide range of modular acoustic panels, that include: Absorbers, QRD (Quadratic Residue Diffusers), PRD (Prime Root Diffusers), PRN (Pseudo Random Noise), MLS Binary Diffusion,Poly cylindrical Diffusors, Classic 2D Diffusors, Diaphragmatic Low-Frequency Absorbers, Hybrid Absorbers, and Slat diffuser/absorbers.

Each kind of panel has been designed to address the unique needs of both small-room and large room acoustics, where traditional methods often fall short. These panels allow users to take a customised approach to their studio's acoustic treatment, optimising sonic quality by managing frequency response, minimising unwanted reflections, and enhancing time response for a more natural and balanced sound.

CONTENT

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DISCLAIMER

PLEASE NOTE THAT THESE MODULAR ACOUSTIC PRODUCTS ARE DESIGNED FOR ACOUSTIC TREATMENT, FOCUSING ON SOUND ABSORPTION AND DIFFUSION TO ENHANCE A ROOM'S SONIC CHARACTER IN TERMS OF FREQUENCY AND TIME DOMAIN RESPONSE. THESE PRODUCTS ARE NOT INTENDED FOR SOUND ISOLATION OR SOUNDPROOFING. WE OFFER SEPARATE CONSULTING AND DESIGN SERVICES FOR SOUNDPROOFING WHICH IS ALSO NECESSARY. OUR PRIMARY GOAL IS TO ADDRESS ACOUSTIC TREATMENT HOLISTICALLY, CREATING AN OPTIMISED SOUND ENVIRONMENT THAT ELEVATES YOUR SPACE’S PERFORMANCE TO MEET PROFESSIONAL STANDARDS.

INTRODUCTION

01

Since the COVID pandemic, the surge in content creation, media consumption, home studio production, and private home cinemas has dramatically shifted the demand for acoustic solutions. As more individuals seek high-quality audio experiences in compact, multi-purpose spaces, they encounter a new range of acoustic challenges.

Good acoustic design goes beyond standard acoustic treatment. It involves an in-depth understanding of sound behaviour & room response, paired with the creativity to meet the aesthetic and functional demands of each space. Different audio environments require different treatments, depending on factors such as workflow, the acoustic accuracy needed, and the size and shape of the room.

Distinct from the tools used in traditional large-room architectural acoustics, small-room acoustics is a unique discipline, where precise control over reflected energy and room resonances is critical to achieving accurate, high-quality audio.

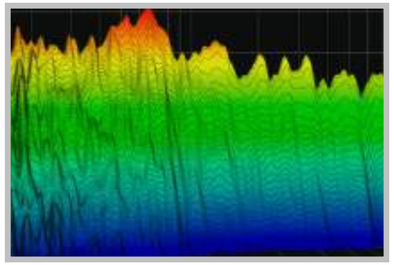
This understanding drives our innovation, which cater to diverse design needs while being adaptable to both permanent and temporary setups.

WHY CHOOSE US?

The Avesonus Difference . . .

- ***Acoustical Research***

At Avesonus, every product begins with a commitment to advancing acoustic science. Whether a surface is designed to absorb, diffuse, or balance both functions, our innovation is rooted in a deep understanding of the interaction between sound and materials.



- ***Acoustics and Sustainability***

Sustainability is at the heart of our approach. Avesonus sources materials responsibly, utilizing certified wood and eco-friendly or recycled components whenever possible. Our modular designs emphasize reusability and adaptability, reducing waste while meeting current demands without compromising future needs.

- ***Acoustical Manufacturing***

Avesonus produces its modular product lines in a dedicated facility equipped with advanced production systems and precision craftsmanship. From intricate woodwork to custom finishing, our facility ensures every component is crafted with meticulous attention to quality and detail, all under one roof.

WHY CHOOSE US?

Acoustical Design and Engineering

- ***Acoustical Design***

The design philosophy at Avesonus unites art and science, balancing form and function without sacrificing performance. Our modular solutions are guided by principles such as mathematical modeling, diffraction physics, fractal geometry, and shape optimization. These elements, enable us to create versatile and aesthetically pleasing acoustic products.

- ***Acoustical Engineering***

Each modular product is engineered to meet rigorous performance and quality standards. Avesonus pushes the boundaries of modular acoustical performance with adaptable systems that cater to a variety of spaces and applications.

- ***Acoustical Testing***

At Avesonus, performance validation is non-negotiable. We have tested all our hybrid and fabric absorption panels from ARAI Labs for absorption [NRC] (random and normal incidence). Our commitment to measurable outcomes ensures that designers, architects, and clients can trust the specifications and performance of our modular solutions, delivering reliability and transparency at every stage.

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PRODUCT USAGE GUIDELINES FOR AUDIO STUDIOS/CRITICAL LISTENING SPACES

This is only a guide to help choose our products and not a technical paper on acoustic design. If you are unsure about deciding the right acoustic treatment plan or picking the right products, please consult with us before making any purchases. We have however outlined a very basic overview of small room acoustics and its initial conditions before treatment and we can also assist in choosing the right products for your space. These guidelines focus on sound in small rooms that have interior volumes in the range from a few cubic meters to a few hundred cubic meters.

Know that there are many aspects that go into designing a high end audio production or reproduction facility such as:

- Sound isolation requirements and noise control
- Room design principles (RFZ, LEDE, Non Environment, ESS [Early Sound Scattering], George Massenburg Studio Design and more).
- Room ratios, room geometry, civil structural considerations, isolation levels, HVAC design
- Electroacoustic design (Stereo or Immersive sound)
- Use case scenarios such as audiophile listening rooms, home cinemas and more.

There are many common parameters in the acoustical design requirements in all above designs as there are differences in the intended treatment and usage of the space, and they all lean towards lowering decay times and managing reflections while retaining liveliness. These products can be carefully combined to achieve different use case scenarios.

PRODUCT USAGE GUIDELINES

- To begin with, as seen in the image below we can see that small rooms (cuboidal) usually exhibit maximum pressure zones, have room modes, a transition/diffusion frequency range that is four times the Schroeder's frequency and above that diffusion is usually suggested/recommended depending on the design principles followed. But 250 Hz and below must have maximum controlled absorption of any unwanted resonances. This also assumes the room has stiff dense walls, floor and ceiling surfaces. (either concrete or dry wall assembly or both) These modal resonances have to be absorbed using both diaphragmatic absorbers and broadband absorbers.

- Measure (if possible) existing reflection decay times of your room, modal resonances and determine Schroeder's frequency of your room. Or with the help of a few online tools and calculators you can calculate the Schroeder's frequency and analyse the modes. Set your target Reflection Decay Times based on the standard recommendations. These can usually range from 80 milliseconds to about 400 milliseconds depending on the room design concepts followed, published by bodies such as AES,ISO,ITU,SMPTE and EBU.

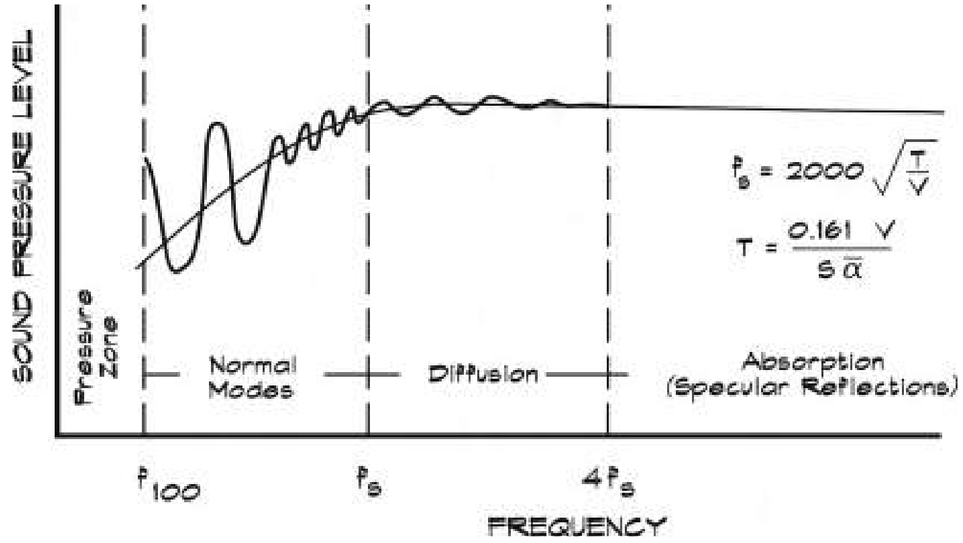
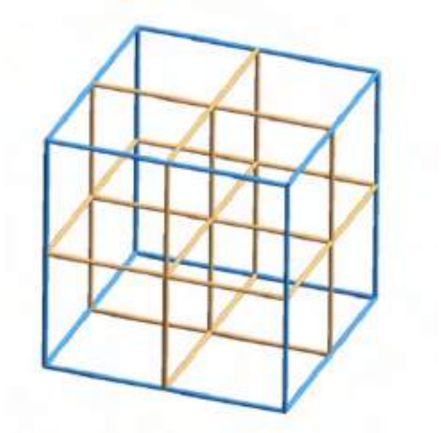


IMAGE COURTESY: ARCHITECTURAL ACOUSTICS BOOK
CONTROLLERS IN STEADY-STATE ROOM RESPONSE (DAVIS AND DAVIS, 1987)

PRODUCT USAGE GUIDELINES

- Modal Axial Frequencies below 100 Hz are usually in the maximum pressure zone areas and require diaphragmatic / tuned absorbers placed in those zones (usually corners and mid points of room boundaries as shown in the image below)



- Broadband absorbers as deep as 6 to 8 inches (or at least minimum 4 inches) can address normal room modes above 100 - 125 Hz upto the Schroeder's frequency placed at first order reflection points or specific pressure zone areas of those modal resonances in the room.

- For diffusion depending on the room design principles used diffusers can be selected. Also 30 - 50% surface area can have diffusion depending on intended usage. Suggested diffusion for mid frequencies generally above 1kHz or frequencies above four times the Schroeder's frequency of the room can use Schroeder's diffusers, Binary Slat Diffusers, Hybrid slat absorbers or Geometric 2D diffusers. The upper limit of diffusion range can range upto 8kHz or even 10kHz depending on room usage. Common diffusion frequency ranges are 750 Hz to 3kHz - 6kHz. Given the listener location or microphone in a room some diffusers have a minimal distance placement provided.

PRODUCT USAGE GUIDELINES

Please note that, sound isolation is an absolute necessity for an ideal acoustic environment and also accounts for initial conditions of the space, keeps the air borne and structure borne sounds out of your space, increases acoustical dynamic range and is not addressed here and can be offered as a separate design and build service.

If, you are an Architect, Consultant, Interior Designer, System integrator, Sound Engineer, Music Producer, Musician, Home Owner or a professional in this field and have not yet designed or built your media performance/production/reproduction space, we can assist you with providing the required optimum room ratios and other acoustical related recommendations.

In the next page are products classified based on their frequency spectrum usage to help pick the right products that can be used to design a holistic acoustic treatment plan for your intended space.

Feel free to contact us for any advice with this regard.

PRODUCT USAGE GUIDELINES

LOW FREQUENCY ABSORBERS

THESE DIAPHRAGMATIC AND CORNER ABSORBERS ARE DESIGNED TO ADDRESS THE LOW FREQUENCY RESONANCES AND REDUCE MODAL DENSITIY / EIGENTONES. BOTH BROADBAND AND TUNED TO TARGET FREQUENCIES AT PRESSURE ZONE AREAS

BROADBAND ABSORBERS

THESE BROADBAND ABSORBERS ARE DESIGNED TO BE PLACED AT STRATEGIC LOCATIONS TO ABSORB A BROAD BANDWIDTH OF FREQUENCIES, REDUCE REVERBERATION AND SPECULAR REFLECTIONS

HYBRID ABSORBERS & BINARY DIFFUSORS

THESE ARE HYBRID THAT ABSORB AND ADD SCATTERING AND AMPLITUDE GRATING DIFFUSION. CAN HELP AND RETAIN LIVELINESS IN SMALL ROOMS. LISTENER OR MICROPHONE CAN BE IN CLOSE PROXIMITY

GEOMETRIC REFLECTORS & SHROEDER DIFFUSORS

THESE ARE DESIGNED TO ACHIEVE BROADBAND FREQUENCY DIFFUSION IN LIVE ROOMS, LARGE AND SMALL SPACES, CONTROL ROOMS, AUDIOPHILE / CINEMA ROOMS PLACED AWAY FROM LISTENER OR MICROPHONE

FABRIC PANEL ABSORBERS

03

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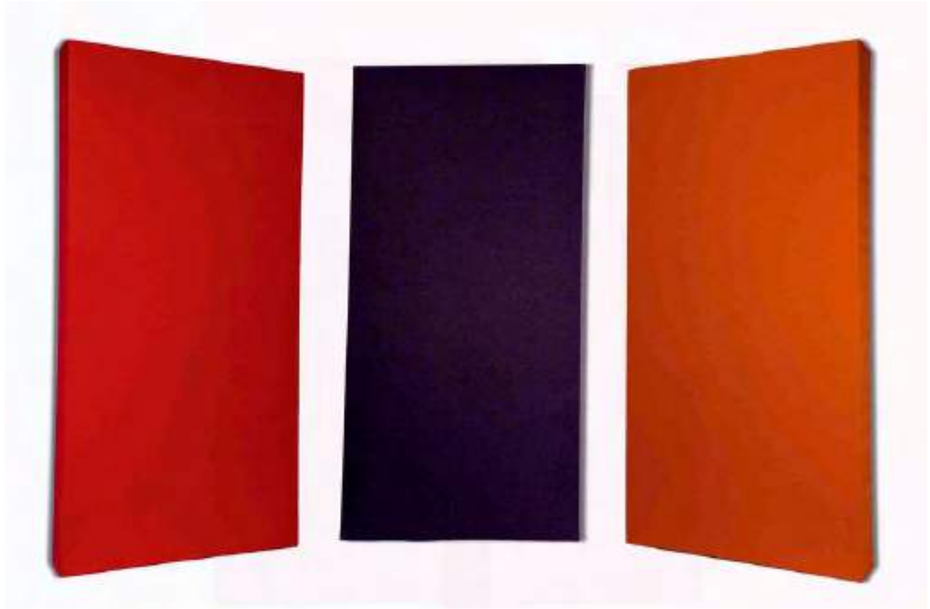
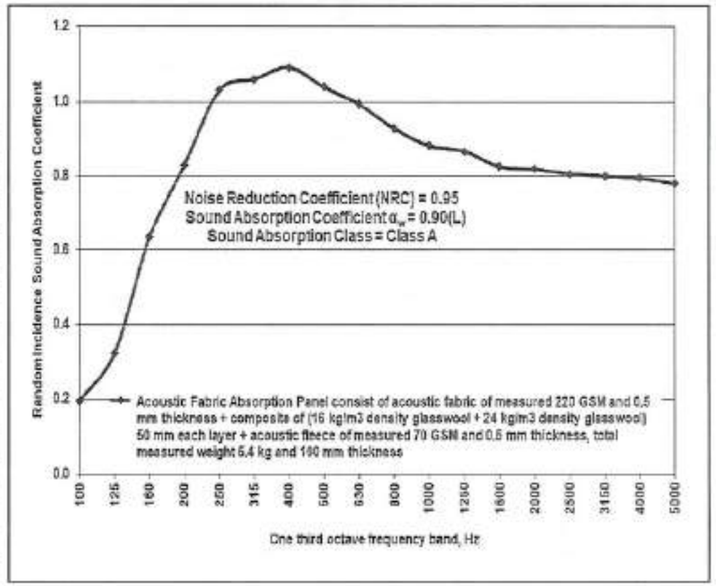
FABRIC PANEL ABSORBERS

- Fabric acoustic panel is one of the most popular sound absorption materials for acoustic room treatment. These panels work on the friction and velocity based sound absorption. Choices of fabric enhances the decoration of any room. It makes easy for designers to choose from a large variety of fashionable fabrics.
- **Size:** 1200mmx600mm, 600mm x 600mm
- **Thickness:** 50mm / 100mm / 150mm / 200mm
- **Installation:** Using Wall Mount / Ceiling mount accessories.
- **NRC** ranging from 0.8 to 1.0



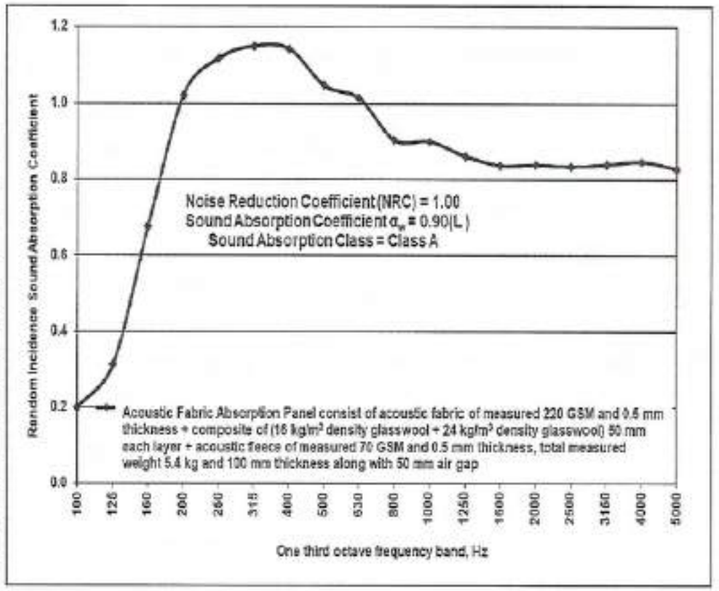
FABRIC PANEL ABSORBERS : SPECIFICATIONS

One third octave frequency, Hz	Random Incidence Sound Absorption Coefficient	Standard Deviation
100	0.20	0.03
125	0.32	0.03
160	0.63	0.02
200	0.83	0.02
250	1.03	0.02
315	1.06	0.03
400	1.09	0.03
500	1.04	0.04
630	0.99	0.03
800	0.93	0.03
1000	0.88	0.01
1250	0.87	0.02
1600	0.83	0.01
2000	0.82	0.01
2500	0.81	0.01
3150	0.80	0.00
4000	0.79	0.01
5000	0.78	0.02



NRC 0.95
DEPTH 100mm

One third octave frequency, Hz	Random Incidence Sound Absorption Coefficient	Standard Deviation
100	0.20	0.02
125	0.31	0.02
160	0.68	0.04
200	1.02	0.01
250	1.12	0.02
315	1.15	0.02
400	1.14	0.01
500	1.05	0.03
630	1.01	0.02
800	0.90	0.01
1000	0.90	0.02
1250	0.86	0.02
1600	0.84	0.02
2000	0.84	0.01
2500	0.83	0.02
3150	0.84	0.03
4000	0.85	0.02
5000	0.83	0.02



NRC 1.0
DEPTH 100mm+E50
or
150mm Depth

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DIMENSIONS: H 1200x W 600x D 100mm

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FABRIC COLOR CHOICES

TECHNICAL SPECIFICATIONS

- **Composition** : 100% Polyester
- **Weight** : 330 Grams per linear meter
- **Color matching:** Batch to batch variations in shade may occur within commercial tolerances

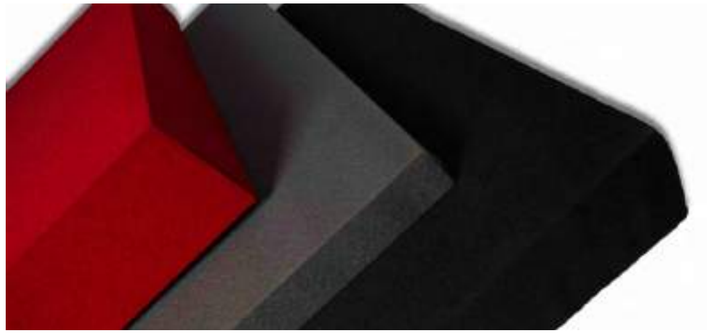
FABRIC COLOR CHOICES & PRINTS

TECHNICAL SPECIFICATIONS

- **Composition** : 100% Polyester
- **Weight** : 330 Grams per linear meter
- **Color matching:** Batch to batch variations in shade may occur within commercial tolerances

PRINTED FABRIC

- **Composition** : 100% Polyester
- **Weight** : 360 Grams per linear meter
- **Artwork to be provided:** 300 DPI image quality
- **Fabric finish:** Matte



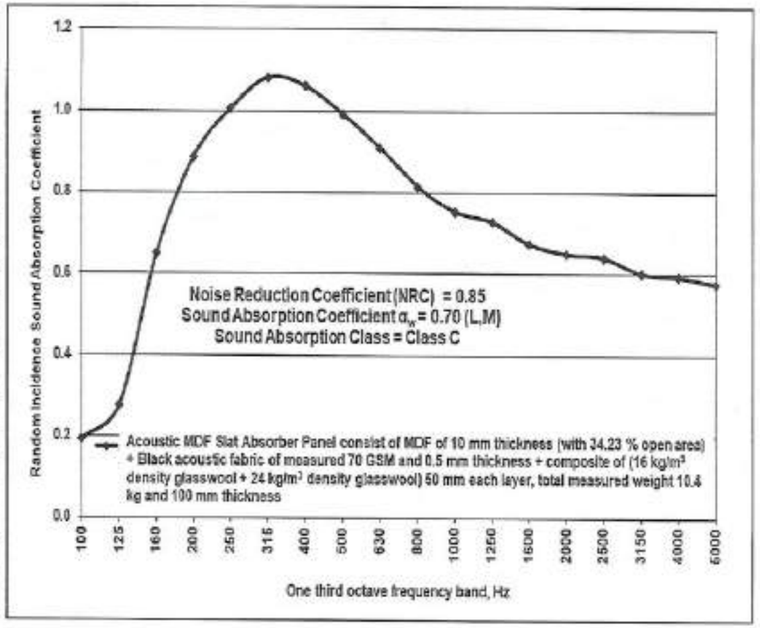
HYBRID SLAT ABSORBERS

HYBRID SLAT ABSORBERS

- Hybrid Slat absorbers are hybrid when it comes to performance as these can both absorb and scatter/diffuse sound energy while retaining some liveliness within a room. They may not offer spectacular diffusion like the QRD or PRD diffusers but can offer some diffusion and can reflect back highs and high - mid frequency ranges.
- **Size:** 1200mmx600mm, 600mm x 600mm
- **Thickness:** 50mm / 100mm / 150mm / 200mm
- **Installation:** Using Wall Mount / Ceiling mount accessories.
- **NRC** ranging from 0.7 to 1.0

HYBRID SLAT ABSORBERS : SPECIFICATION

One third octave frequency, Hz	Random Incidence Sound Absorption Coefficient	Standard Deviation
100	0.19	0.01
125	0.28	0.02
160	0.65	0.03
200	0.89	0.03
250	1.01	0.02
315	1.08	0.03
400	1.06	0.03
500	0.99	0.02
630	0.91	0.02
800	0.82	0.01
1000	0.75	0.02
1250	0.73	0.02
1600	0.67	0.02
2000	0.65	0.01
2500	0.64	0.00
3150	0.60	0.01
4000	0.59	0.02
5000	0.58	0.03



NRC 0.85
DEPTH 100mm

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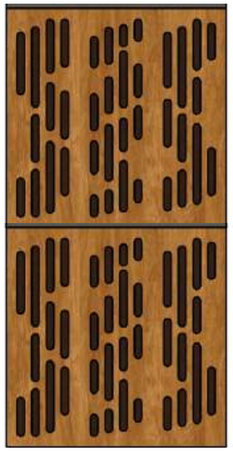
DIMENSIONS: H 1200x W 600x D 100mm

• 1



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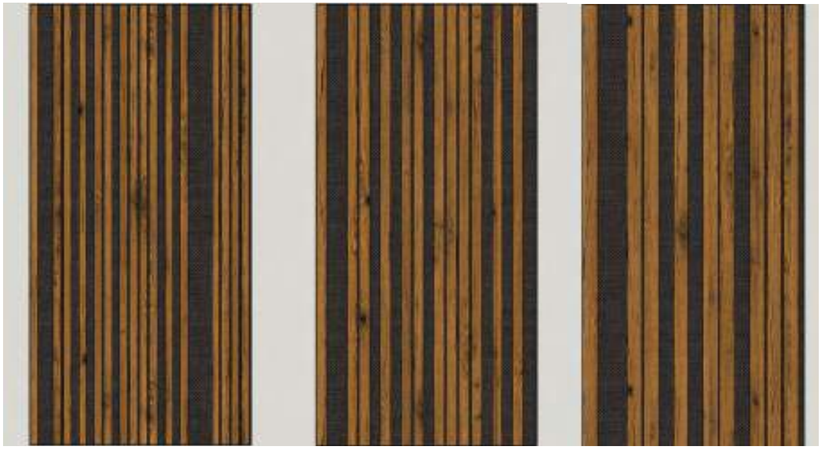


M L S Binary AMPLITUDE DIFFUSER - NEW

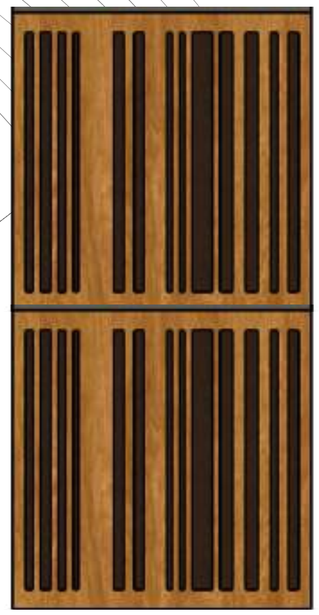
MAKE IN INDIA

SLAT OPTION AND FINISHES

- Slat options : First 3 Slat Designs to choose from having similar perforated percentage areas and offer NRC of 0.85 at 100mm thick panels.
- Option 4 has lesser perforation area and can offer slightly more scattering in bringing dead room back adding some live-end. Made from birch-plywood.

- Finishes: Solid colors and various stains in ‘Water based preservative stains’ that protects against any fungi and mould growth on wood.

- 1



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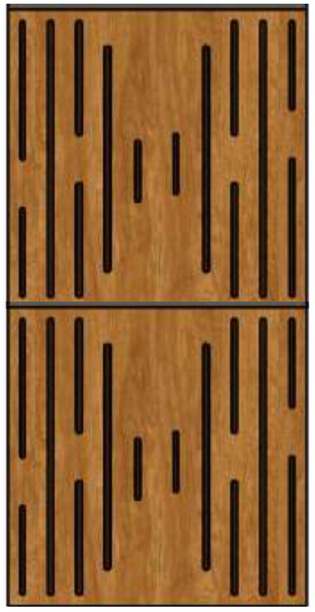
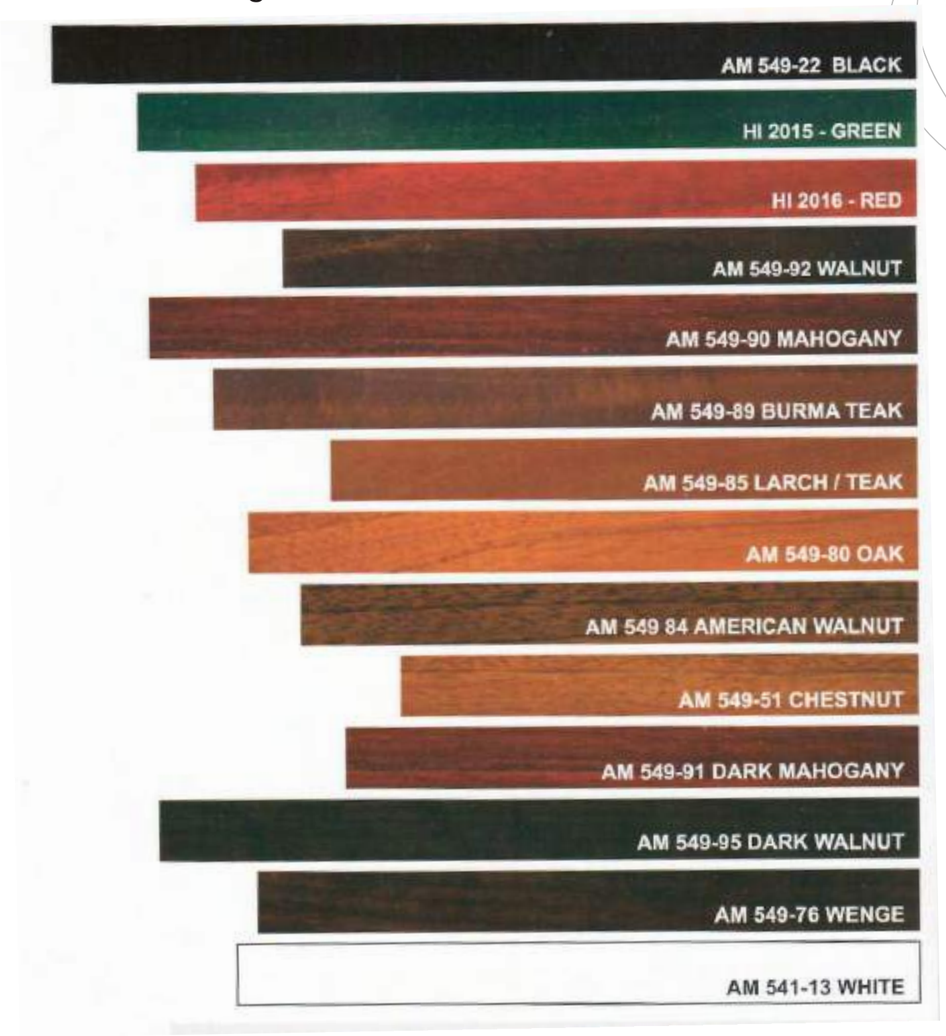
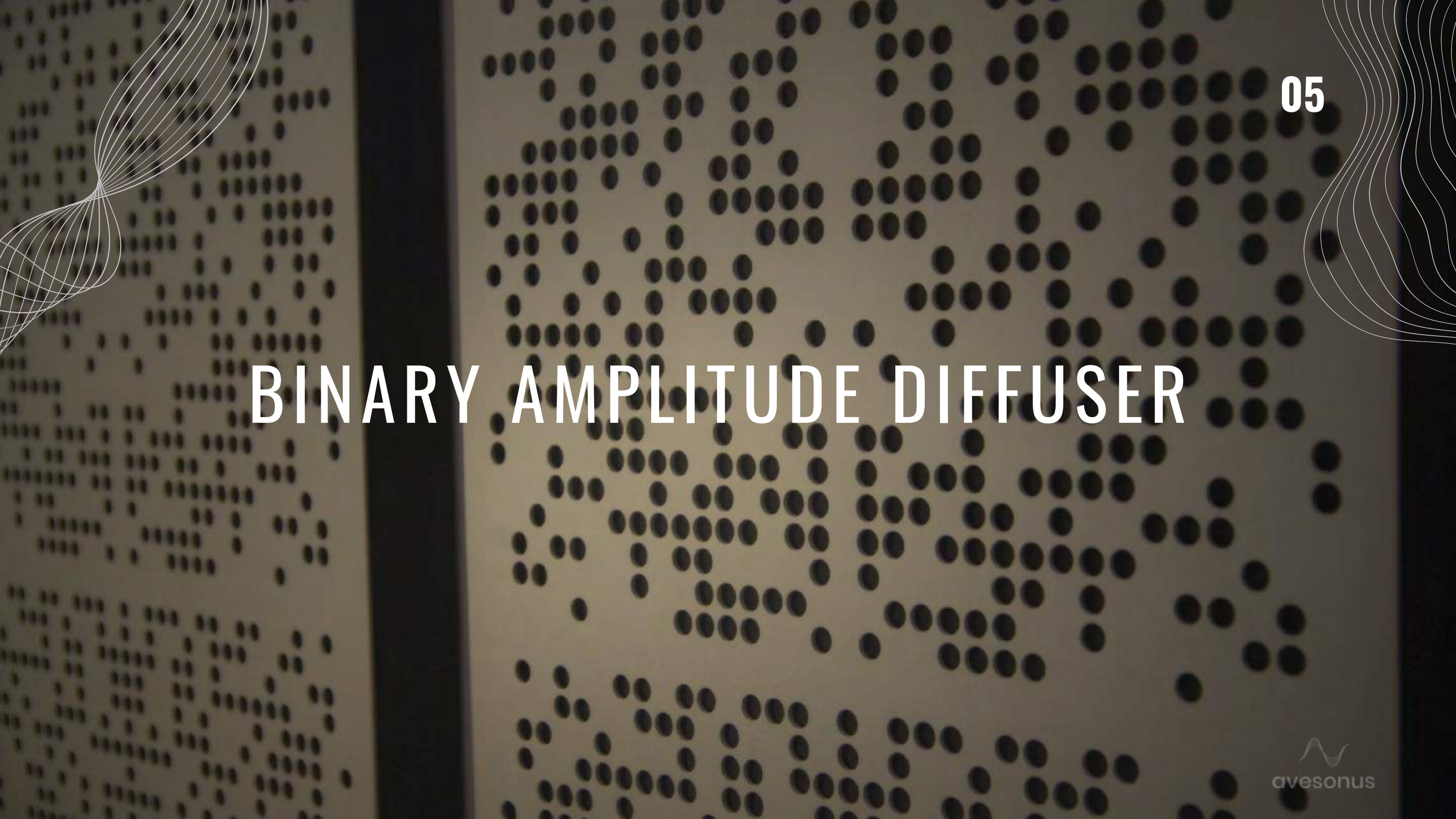


SLAT COLOR STAINS

- Finishes: Water based preservative wood stains that protects against any fungi and mould growth.
- High resistance to water, UV rays. Prevents fading and rotting.
- Includes iron oxide pigments with light fastness, ensuring ultimate protection from sunlight.
- 100% eco-friendly with minimum adverse affects to environment.

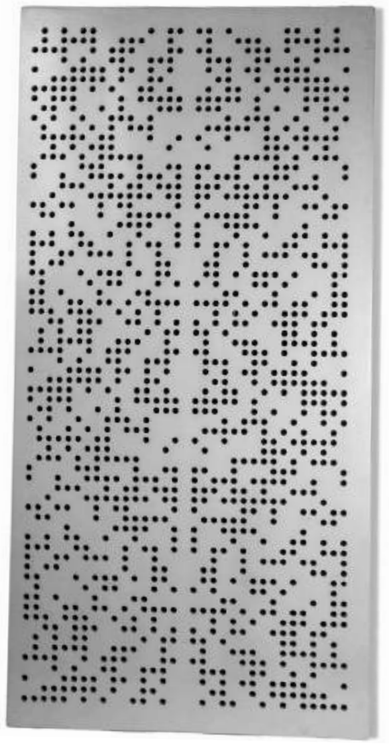


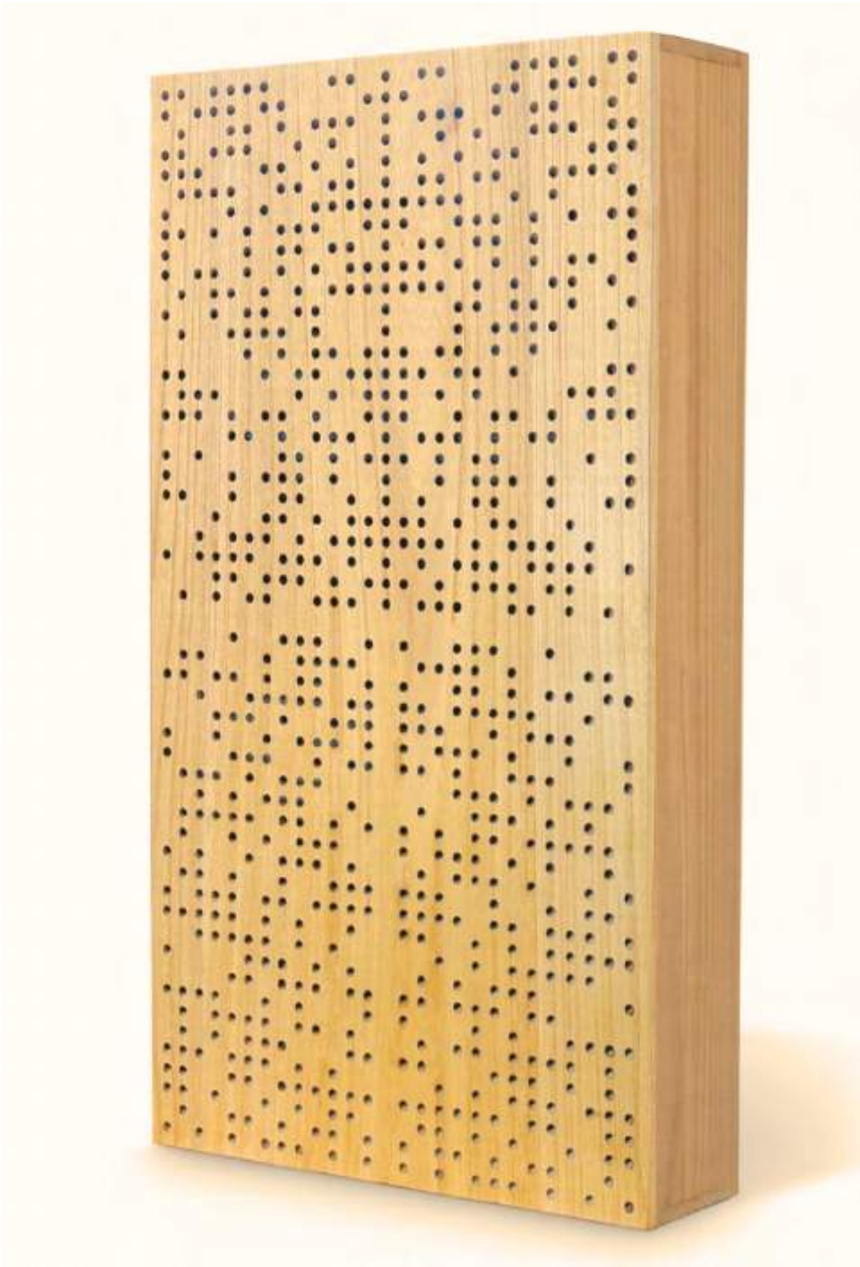
BINARY AMPLITUDE DIFFUSER



BINARY 2D SLAT ABSORBERS

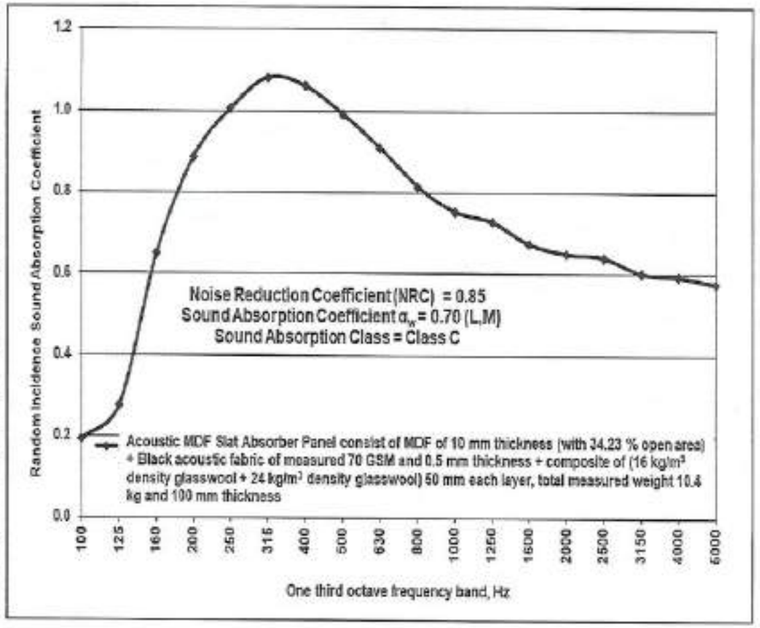
- A hybrid acoustic panel combining a broadband absorber and a binary amplitude diffuser is designed to evenly scatter sound waves throughout a room. This innovative acoustic treatment effectively absorbs low frequency energy while enhancing mid to high frequencies, resulting in a well-balanced acoustic environment.
- **Colors: Solid RAL colors or Wood Stains**
- **Size:** 1200mmx600mm, 600mm x 600mm
- **Thickness:** 50mm / 100mm / 150mm / 200mm
- **Installation:** Using Wall Mount / Ceiling mount accessories.
- **NRC** ranging from 0.7 to 1.0





HYBRID SLAT ABSORBERS : SPECIFICATION

One third octave frequency, Hz	Random Incidence Sound Absorption Coefficient	Standard Deviation
100	0.19	0.01
125	0.28	0.02
160	0.65	0.03
200	0.89	0.03
250	1.01	0.02
315	1.08	0.03
400	1.06	0.03
500	0.99	0.02
630	0.91	0.02
800	0.82	0.01
1000	0.75	0.02
1250	0.73	0.02
1600	0.67	0.02
2000	0.65	0.01
2500	0.64	0.00
3150	0.60	0.01
4000	0.59	0.02
5000	0.58	0.03



NRC 0.85
DEPTH 100mm

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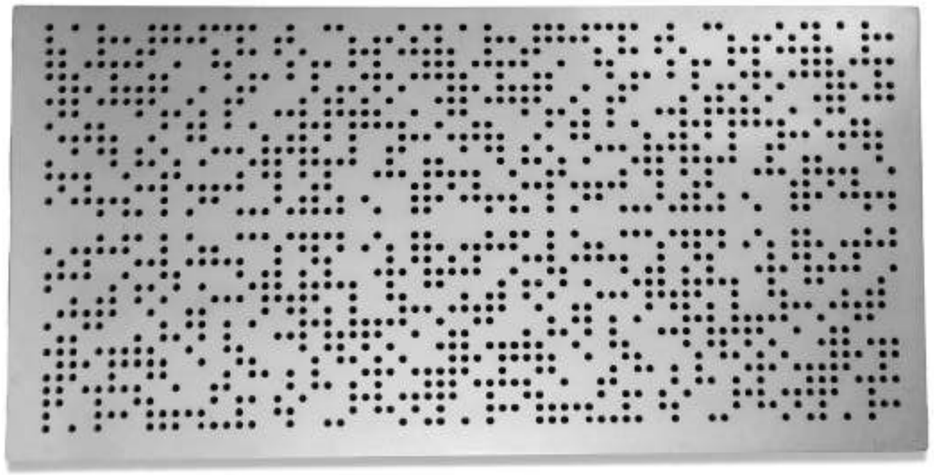
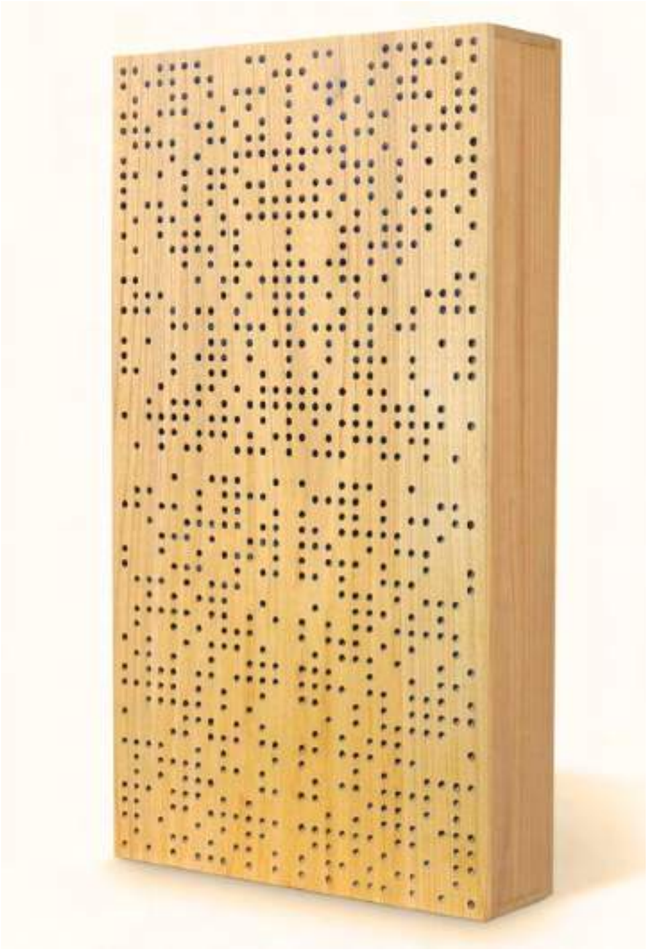


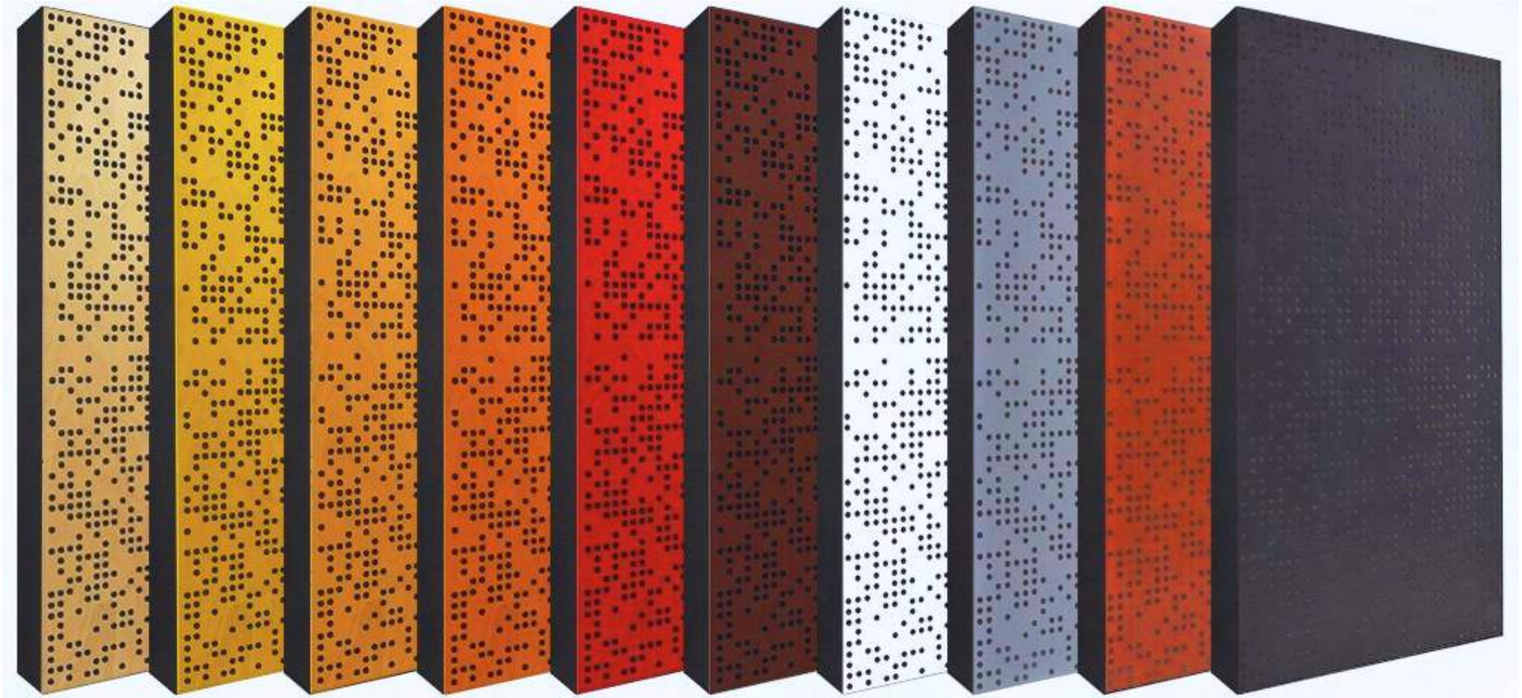


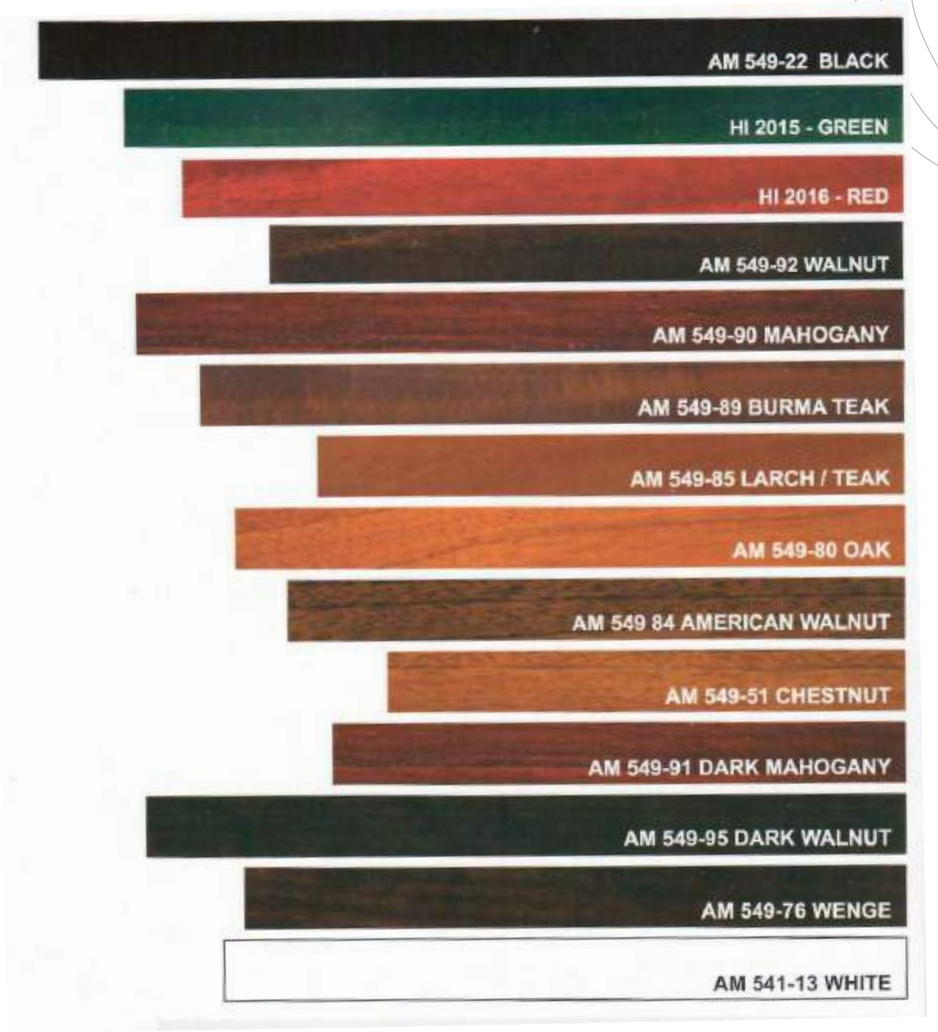
DIMENSIONS: H 1200x W 600x D 100mm

MAKE IN INDIA

BINARY AMPLITUDE DIFFUSER STAINS & COLORS

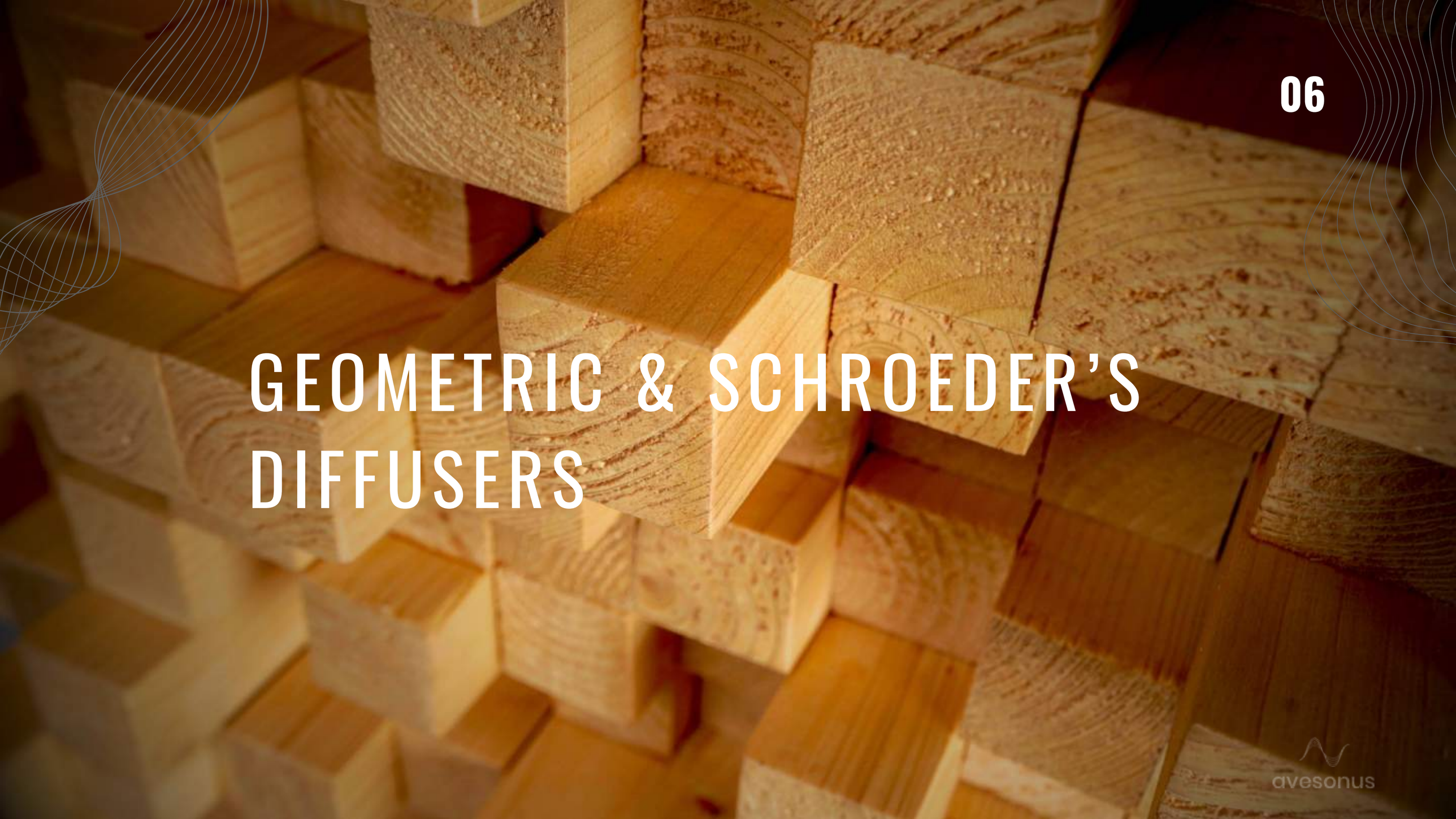
- Finishes: Water based preservative wood stains that protects against any fungi and mould growth.
- High resistance to water, UV rays. Prevents fading and rotting.
- Includes iron oxide pigments with light fastness, ensuring ultimate protection from sunlight.
- 100% eco-friendly with minimum adverse affects to environment.
- RAL Colors not shown here. Standard RAL colors can be provided.





06

GEOMETRIC & SCHROEDER'S DIFFUSERS



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GEOMETRIC & SCHROEDER'S DIFFUSERS

GEOMETRIC 2D DIFFUSERS [BI DIRECTIONAL]

- CLASSIC PYRAMID DIFFUSER
- POLYCYLINDRICAL DIFFUSER

  POLYCYLINDRICAL SLAT DIFFUSER

SCHROEDER'S QRD [1D] & PRD [2D] DIFFUSERS

- SKYLINE DIFFUSER – OMNI DIRECTIONAL
- QRD N7 – HEMIDISC / BI DIRECTIONAL
- QRD N17 – HEMIDISC / BI DIRECTIONAL
- QRD N7 – OMNI DIRECTIONAL

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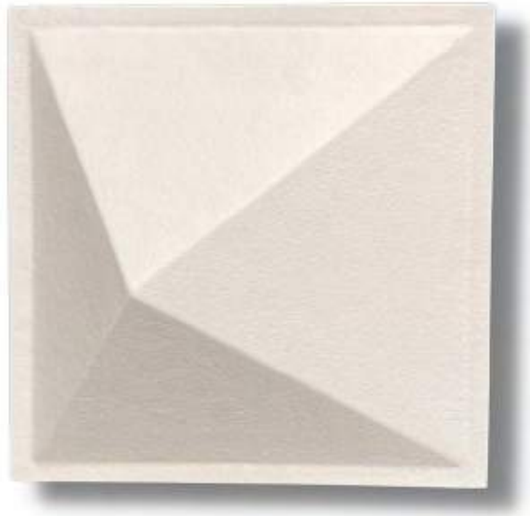
CLASSIC PYRAMID DIFFUSER - BIDIRECTIONAL

- Pyramid-shaped sound diffusers for walls and ceilings are a highly effective solution for dispersing and redirecting sound waves, eliminating “dead spots,” and ensuring even sound distribution across a listening environment. The pyramid profile provides uniform dimensional dispersion in both horizontal and vertical planes.

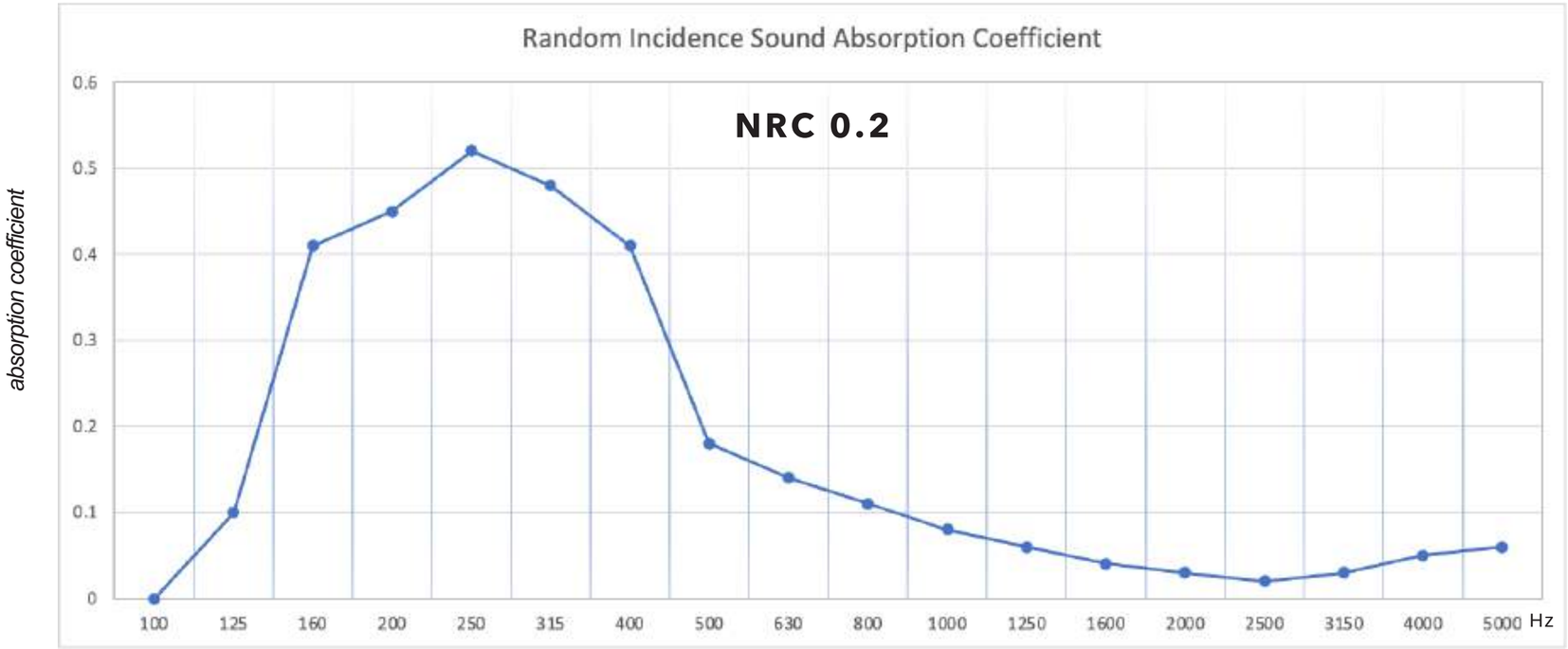
Specifications and Benefits:

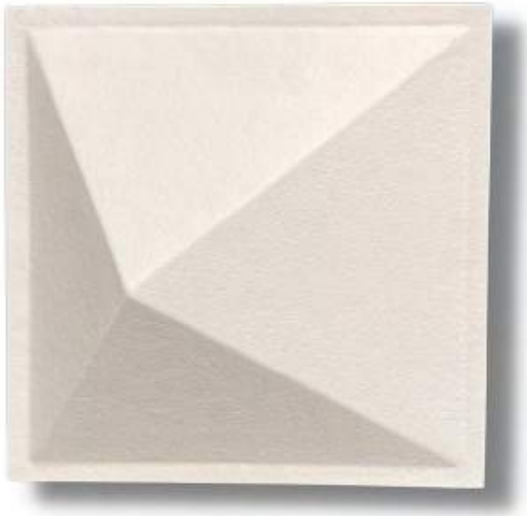
- Frequency Range: Operates effectively above 650 Hz - 20,000 Hz , a broad frequency spectrum, enhancing clarity and reducing echoes.
- Material Properties: Made of fire-resistant, non-toxic Flexiply .
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Paintability: Can be customised with standard paints to match or enhance the room's aesthetics.
- T-Grid Ceiling compatible 600x600mmx100mm; 600x600mmx100mm [HxWxD]
- Finishes: Fabric, PU Paint
- Installation: Using Wall Mount / Ceiling mount accessories.



DIMENSIONS: 600x600x100mm

CLASSIC PYRAMID DIFFUSER : SPECIFICATIONS





DIMENSIONS: 600x600x100mm

POLYCYLINDRICAL DIFFUSER / POLYCYLINDRICAL SLAT DIFFUSER - BIDRECTIONAL

- Polycylindrical diffuser offers spectacular diffusion with an adjustable depth between 3” and 4” for achieving randomisation without frequency lobing or for precise tuning. Provides a minimum uniform dispersion of 150° for horizontal or vertical scattering, surpassing other diffuser types in width.

Specifications and Benefits:

- Frequency Range: Operates effectively from approximately 630 Hz and higher, covering a broad frequency range with no upper frequency limit.
- Has no upper frequency limit, even at off-axis angles, ensuring it never shadows itself. Performs effectively at angles as extreme as 90 degrees off-axis.
- Does not require a specific listening distance. Maintains phase coherence.
- While primarily a pure diffuser, its sides are filled with insulation to add absorption capabilities.
- Material Properties: Made of Moisture-resistant, non-toxic Birch-ply .
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: 600x600mm; 1200x600mm [Depth 75mm / 100mm]
- Finishes: Fabric, PU Paint, Water based preservative wood stains.
- Installation: Using Wall Mount / Ceiling mount accessories.

DIMENSIONS: 600x600x110mm

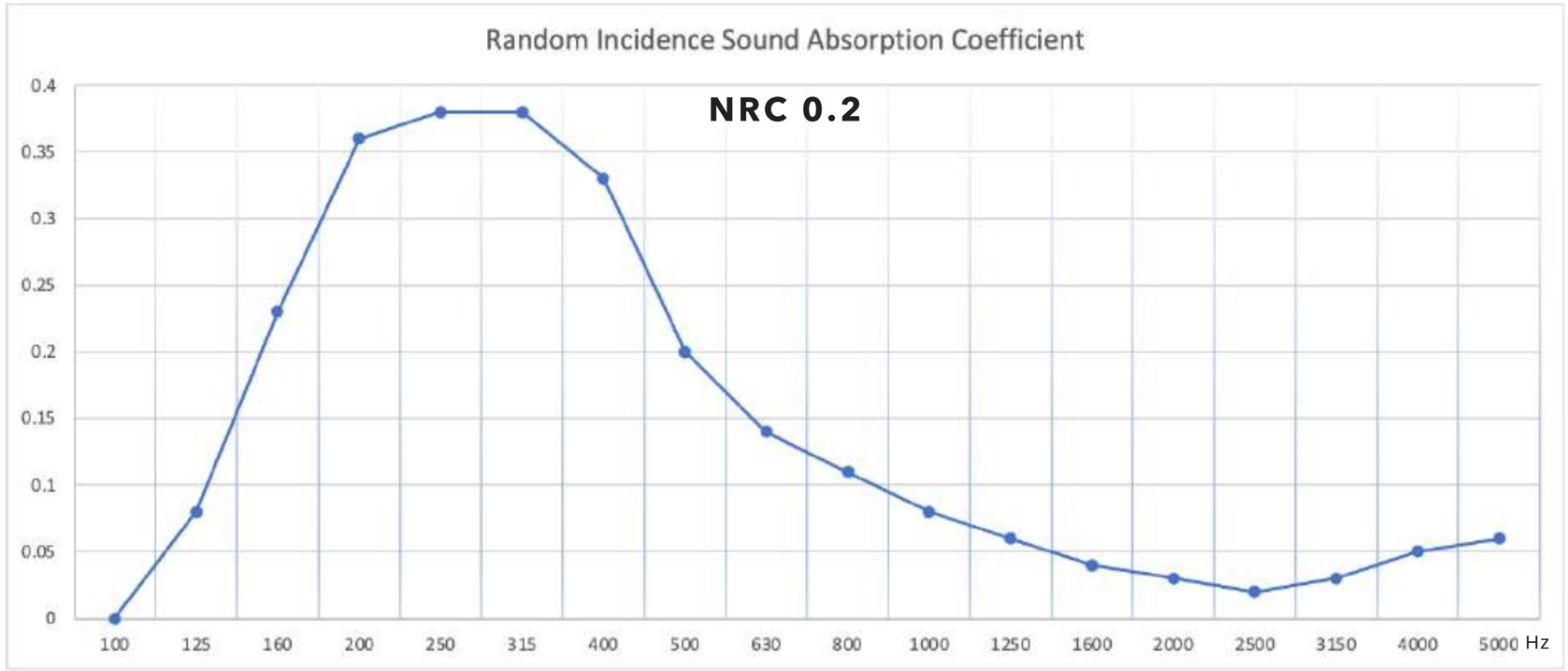
CARB PHASE 2 COMPLIANT

E1 GRADE COMPLIANT

Indian Green Building Council

MAKE IN INDIA

POLYCYLINDRICAL DIFFUSER / POLYCYLINDRICAL SLAT DIFFUSER - BIDIRECTIONAL : SPECIFICATIONS



POLYCYLINDRICAL DIFFUSER fmin 620 Hz – fmax 20,000 Hz [Operating Frequency range]

NO MINIMUM DISTANCE FROM LISTENER/MICROPHONE - MAINTAINS PHASE COHERENCE

DIMENSIONS: 600x600x100mm

SCHROEDER'S DIFFUSERS : QRD / PRD

- ACOUSTIC DIFFUSION, THE SCATTERING OF SOUND, PLAYS A VITAL ROLE IN ARCHITECTURAL SPACES REQUIRING OPTIMAL SOUND DISTRIBUTION AND SPECTRAL BALANCE. THESE INCLUDE CONCERT HALLS, REHEARSAL ROOMS, RECORDING STUDIOS, AND CRITICAL LISTENING ENVIRONMENTS.

- HISTORICALLY, OLDER BUILDINGS ACHIEVED SOUND DIFFUSION THROUGH DESIGN ELEMENTS SUCH AS COFFERS, ORNAMENTATION, AND SCULPTED COLUMNS, WHICH CREATED SURFACE IRREGULARITIES OF VARYING SHAPES AND SIZES. IN CONTRAST, MODERN ARCHITECTURAL STYLES, WITH THEIR EMPHASIS ON STREAMLINED AND LINEAR GEOMETRIES, OFTEN RESULT IN SPACES LACKING SUFFICIENT SOUND DIFFUSION. TO ADDRESS THIS, CONTEMPORARY DESIGNS INCORPORATE FEATURES SUCH AS SPLAYS, ZIGZAGS, AND CURVED SURFACES TO ACHIEVE EFFECTIVE DIFFUSION WHILE ALIGNING WITH MODERN AESTHETIC TRENDS.

- A SIGNIFICANT CHALLENGE IN MODERN ACOUSTICS IS PROVIDING ADEQUATE SOUND DIFFUSION WITHIN THE CONSTRAINTS OF THESE ARCHITECTURAL STYLES. PRIMITIVE ROOT DIFFUSER (1995) AND QUADRATIC RESIDUE DIFFUSERS (QRDS), RPG INTRODUCED IN THE 1970S, HAVE BECOME KEY SOLUTIONS. WIDELY USED IN RECORDING STUDIOS, REHEARSAL SPACES, AND PERFORMANCE HALLS, THESE TOOLS HAVE SPARKED INTEREST IN THEIR EFFECTIVENESS, HISTORICAL BACKGROUND, AND THEORETICAL UNDERPINNINGS.

- ADDITIONALLY, MANY INDIVIDUALS ARE CURIOUS ABOUT THE DESIGN AND CONSTRUCTION OF QRDS. THIS BROCHURE AIMS TO ADDRESS COMMON MISCONCEPTIONS AND QUESTIONS ABOUT THESE DIFFUSION TECHNIQUES. IT ASSUMES THE READER HAS BASIC KNOWLEDGE OF QRDS AND PRD AND THEIR GENERAL APPLICATIONS.

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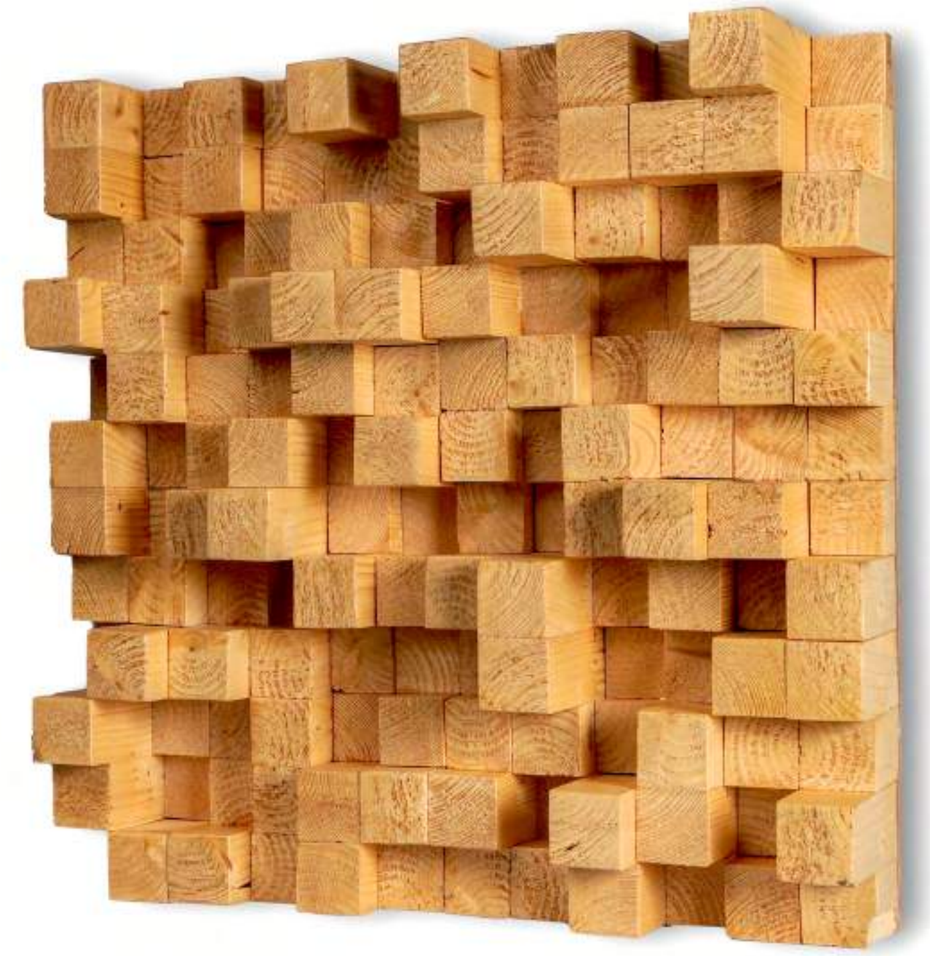
SKYLINE PRD DIFFUSER - OMNIDIRECTIONAL

- The Skyline diffuser is a custom-designed solution for evenly scattering higher frequencies. This two-dimensional diffuser, inspired by the use of primitive root numbers, features a silhouette resembling a city skyline with towering skyscrapers.

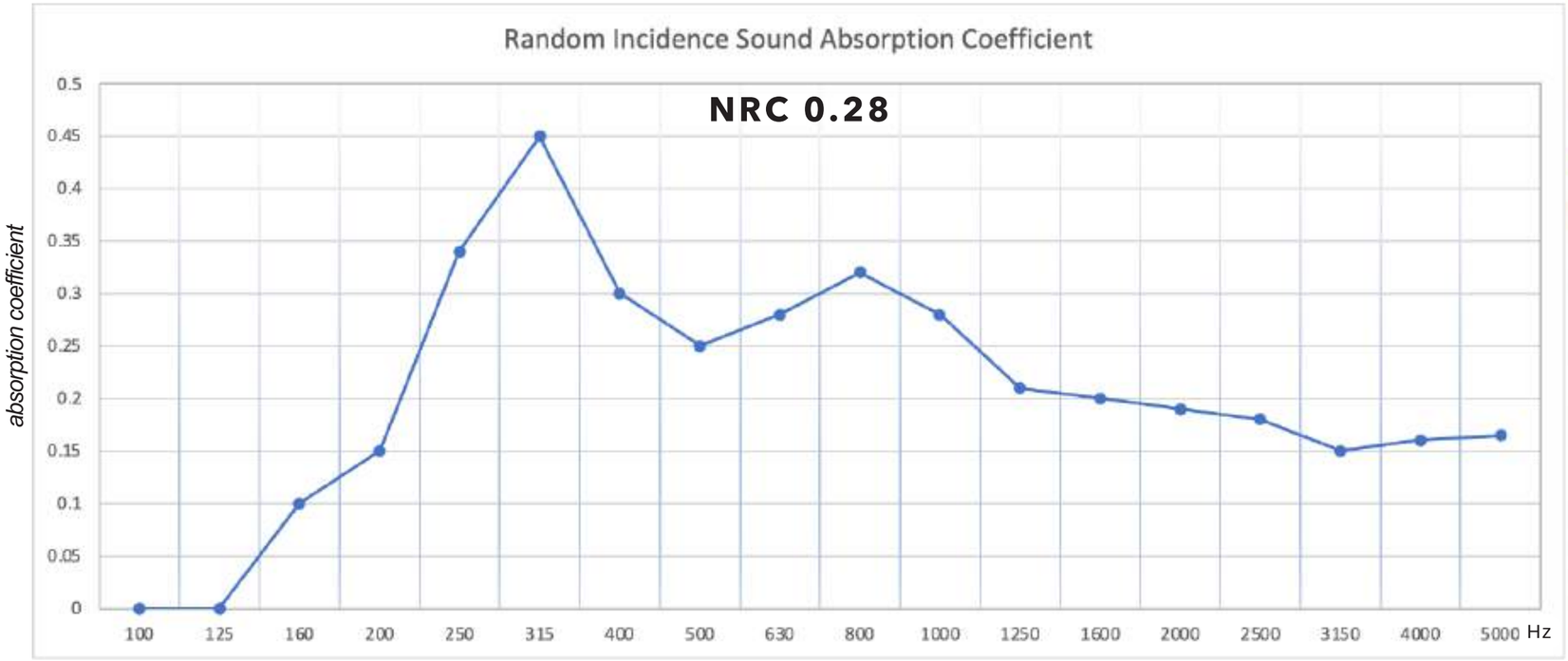
- The Science Behind Skyline: Primitive root diffusers (PRDs) were first introduced in 1995 by Peter D'Antonio and John Konnert, who developed a primitive root calculator for two-dimensional diffusion.

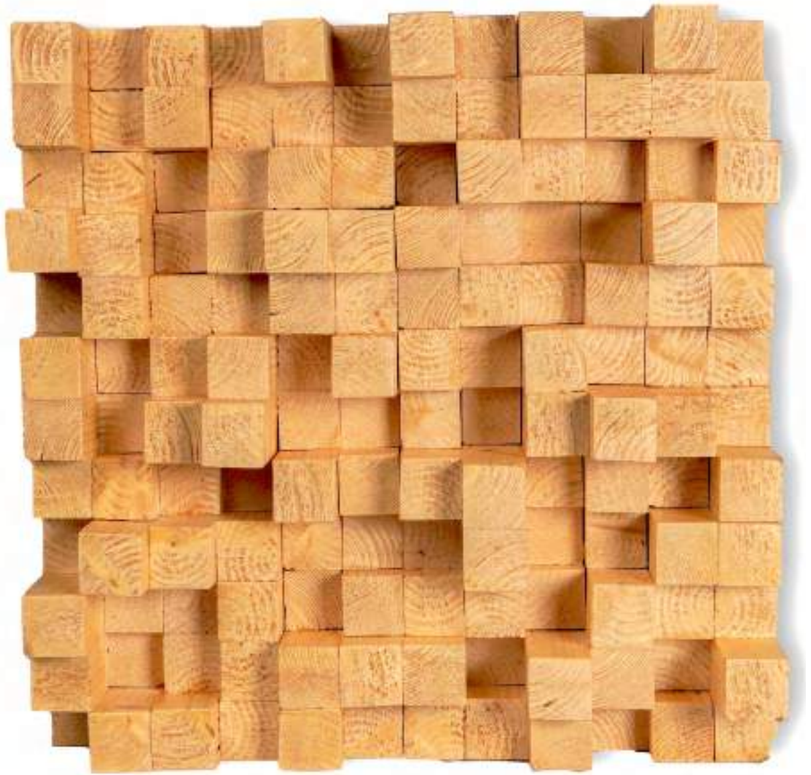
- Specifications and Benefits:
- Frequency Range: Operates effectively above 560 Hz - 4,120 Hz , a broad frequency spectrum, enhancing clarity and reducing echoes.
- Material Properties: Made of fire-resistant, non-toxic pinewood .
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Paintability: Can be customised with standard paints to match or enhance the room's aesthetics.
- Size: 600x600mmx100mm; 600x600x150mm [HxWxD]
- Finishes: PU Clear Paint
- Installation: Using Wall Mount / Ceiling mount accessories.



DIMENSIONS: 600x600x110mm

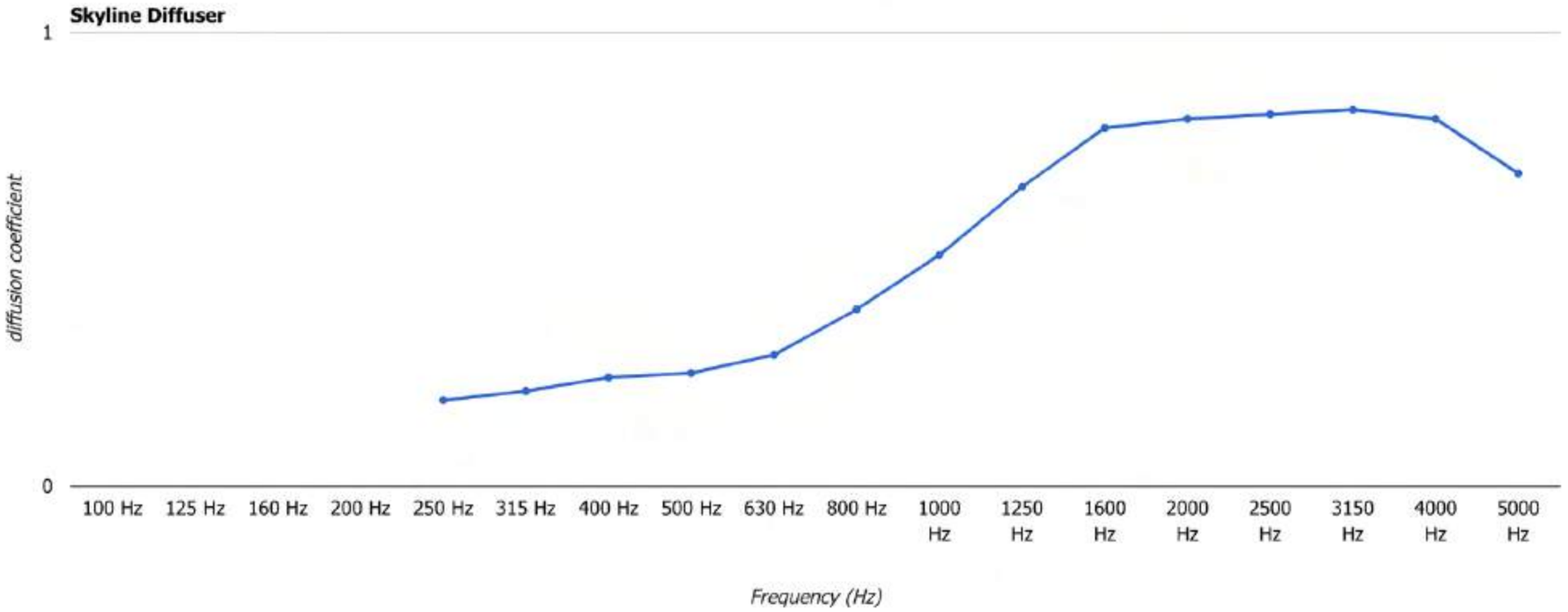
SKYLINE PRD DIFFUSER - OMNIDIRECTIONAL : SPECIFICATIONS





DIMENSIONS: 600x600x110mm

SKYLINE PRD DIFFUSER - OMNIDIRECTIONAL : SPECIFICATIONS



SKYLINE DIFFUSER fmin 560 Hz – fmax 4120 Hz [Operating Frequency range]

MINIMUM DISTANCE FROM LISTENER/MICROPHONE : 1.81 METERS / 5.93 FT / ~ 72 INCHES

NRC 0.2

QRD N7 DIFFUSER - 2 DIMENSIONAL

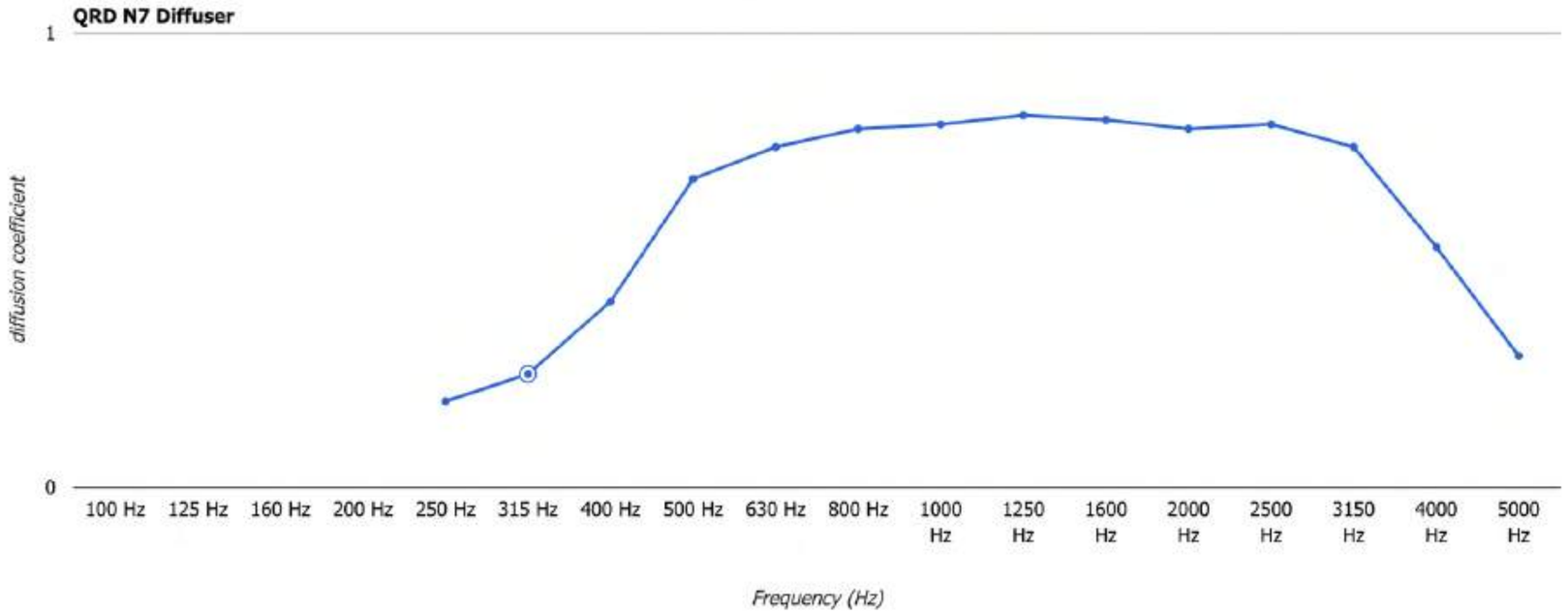
- A QRD is a Quadratic residue diffuser. The term was first used by Schroeder to describe an optimum acoustic diffuser surface he had devised for use in concert halls.This surface is a reflection phase grating with the phase variation produced by the different depths of adjacent wells. In the QRD, the well depths are based on a numerical sequence known as the quadratic residue sequence.
- Generating a quadratic residue sequence calls for a prime number. There is an infinite number of primes but there are only a few that are useful for diffuser design because of practical and dimensional limitations. Examples: 7, 11, 17 etc.
- Diffusion from a Schroeder diffuser is two-dimensional with scattering taking place in a plane perpendicular to the plane of the well separators. This scattering plane is sometimes referred to as a hemidisc.

Specifications and Benefits:

- Frequency Range: Operates effectively from approximately 491 Hz – 3127.
- Material Properties: Made of Moisture-resistant, non-toxic Birch-ply .
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: 490x600x155mm; 490x1200x155 mm [HxWxD]
- Finishes: Fabric, PU Paint, Water based preservative wood stains.
- Installation: Using Wall Mount / Ceiling mount accessories.

DIMENSIONS: 490x600x155mm

QRD N7 DIFFUSER - 2 DIMENSIONAL : SPECIFICATIONS



QRD N7 fmin 490 Hz – fmax 3127 Hz [Operating Frequency range]

MINIMUM DISTANCE FROM LISTENER/MICROPHONE : 2.1 METERS /6.8' FT / ~81 INCHES

NRC 0.2

DIMENSIONS: 490x600x155mm

QRD N17 DIFFUSER - FINISHES : BIRCHPLY & PU ON MDF

AVAILABLE DIMENSIONS: 600x490x155mm; 1200x490x155mm

QRD N17 DIFFUSER - 2 DIMENSIONAL

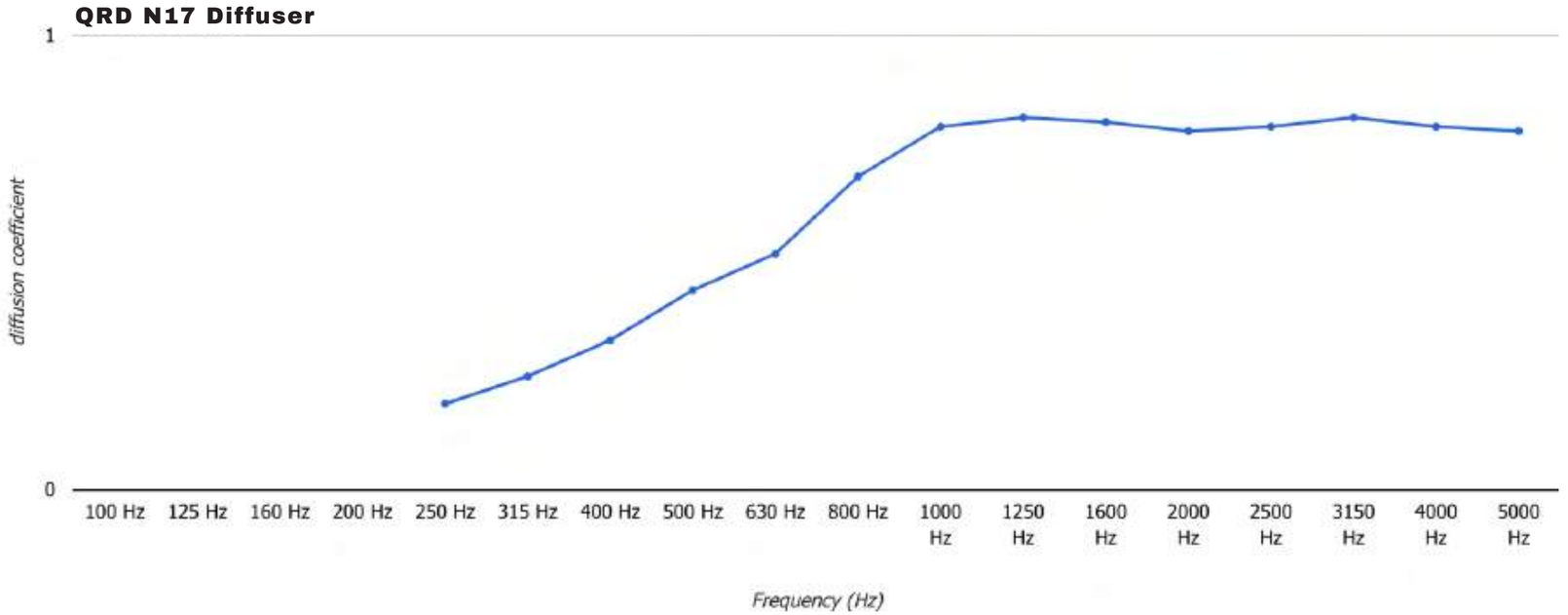
- A QRD is a Quadratic residue diffuser. The term was first used by Schroeder to describe an optimum acoustic diffuser surface he had devised for use in concert halls.This surface is a reflection phase grating with the phase variation produced by the different depths of adjacent wells. In the QRD, the well depths are based on a numerical sequence known as the quadratic residue sequence.
- Generating a quadratic residue sequence calls for a prime number. There is an infinite number of primes but there are only a few that are useful for diffuser design because of practical and dimensional limitations. Examples: 7, 11, 17 etc.
- Diffusion from a Schroeder diffuser is two-dimensional with scattering taking place in a plane perpendicular to the plane of the well separators. This scattering plane is sometimes referred to as a hemidisc.

Specifications and Benefits:

- Frequency Range: Operates effectively from approximately 775 Hz - 5375 Hz .
- Material Properties: Made of Moisture-resistant, non-toxic Birch-ply .
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: 600x600x127mm; 1200x600x127mm [HxWxD]
- Finishes: PU Clear Paint, Water based preservative wood stains.
- Installation: Using Wall Mount / Ceiling mount accessories.

DIMENSIONS: 490x600x155mm

QRD N17 DIFFUSER - 2 DIMENSIONAL : SPECIFICATIONS



QRD N17 fmin 775 Hz – fmax 5375 Hz [Operating Frequency range]

MINIMUM DISTANCE FROM LISTENER/MICROPHONE : 1.33 METERS /4.36' FT / ~52 INCHES

NRC 0.2

DIMENSIONS: 600x600x127mm

QRD N17 DIFFUSER - FINISHES : BIRCHPLY & PU ON MDF

DIMENSIONS: 600x600x127mm

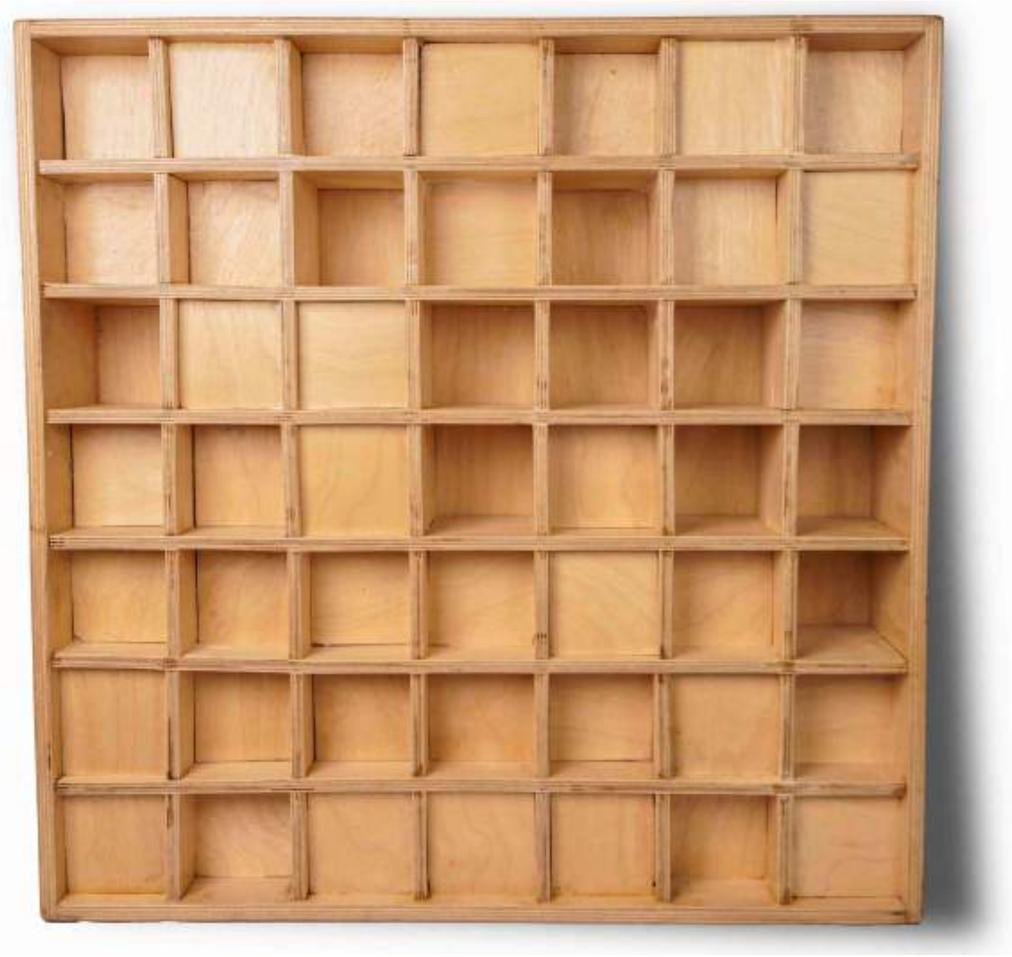
DIMENSIONS: 1200x600x127mm

QRD N7 DIFFUSER - OMNI DIRECTIONAL

- A QRD is a Quadratic residue diffuser. The term was first used by Schroeder to describe an optimum acoustic diffuser surface he had devised for use in concert halls.This surface is a reflection phase grating with the phase variation produced by the different depths of adjacent wells. In the QRD, the well depths are based on a numerical sequence known as the quadratic residue sequence.
- Generating a quadratic residue sequence calls for a prime number. There is an infinite number of primes but there are only a few that are useful for diffuser design because of practical and dimensional limitations. Examples: 7 11, 17 etc.
- Diffusion from It is a 2D hemi-disc diffuser, meaning it disperses reflections by spreading sound energy in the horizontal and vertical plane. This panel allows for a reasonably controlled acoustic quality, by fragmenting the reflected energy, without the absorption factor being too high.

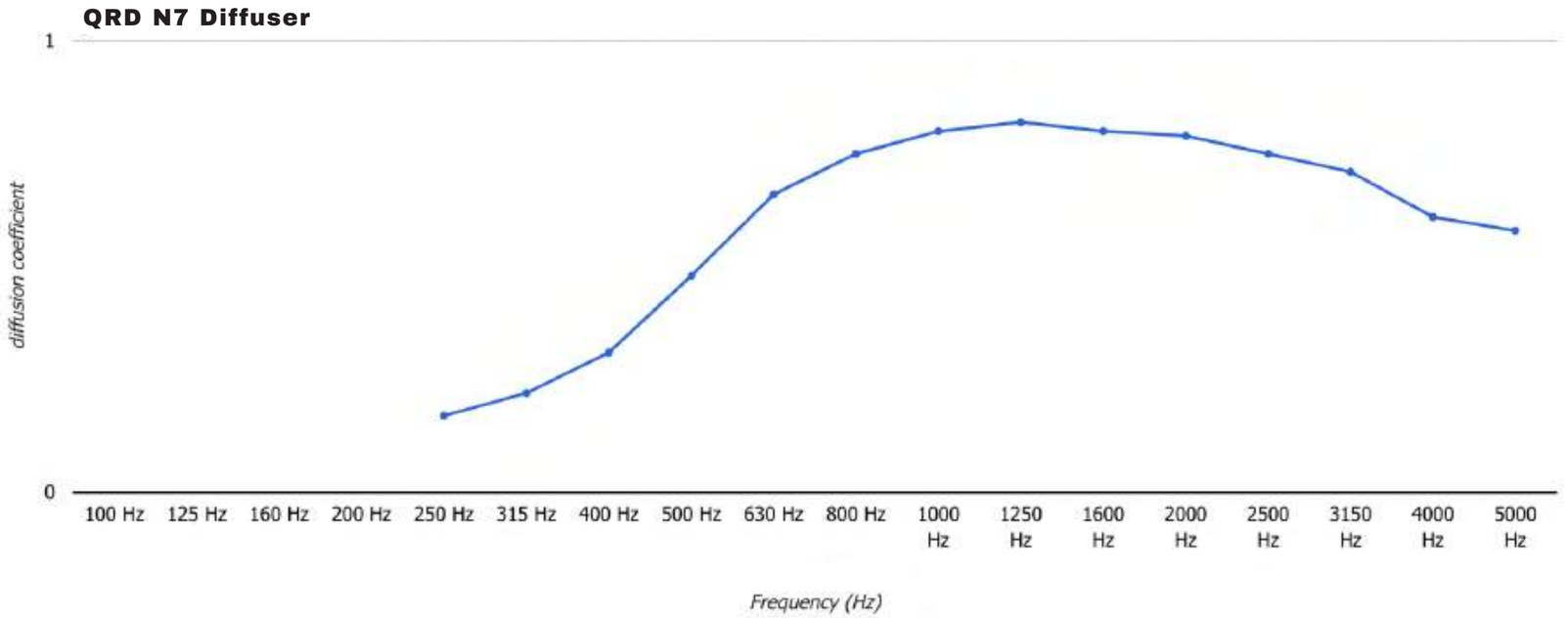
Specifications and Benefits:

- Frequency Range: Operates effectively from approximately 782 Hz – 2356 Hz .
- Material Properties: Made of Moisture-resistant, non-toxic Birch-ply .
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: 600x600x120mm; [HxWxD]
- Finishes: PU Clear Paint, Water based preservative wood stains.
- Installation: Using Wall Mount / Ceiling mount accessories.



DIMENSIONS: 600x600x120mm

QRD N7 DIFFUSER - OMNI DIRECTIONAL : SPECIFICATIONS



QRD N7 fmin 782 Hz – 2356 Hz [Operating Frequency range]

MINIMUM DISTANCE FROM LISTENER/MICROPHONE : 1.32 METERS /4.33' FT /~51 INCHES

NRC 0.2

DIMENSIONS: 600x600x120mm

QRD DIFFUSER : CLEAR PU & WOOD STAINS FINISHES

CLEAR PU FOR NATURAL

MAHOGANY

WOOD STAIN COLORS

AVAILABLE DIMENSIONS: 600x490x155mm; 1200x490x155mm

07

LOW FREQUENCY ABSORBERS

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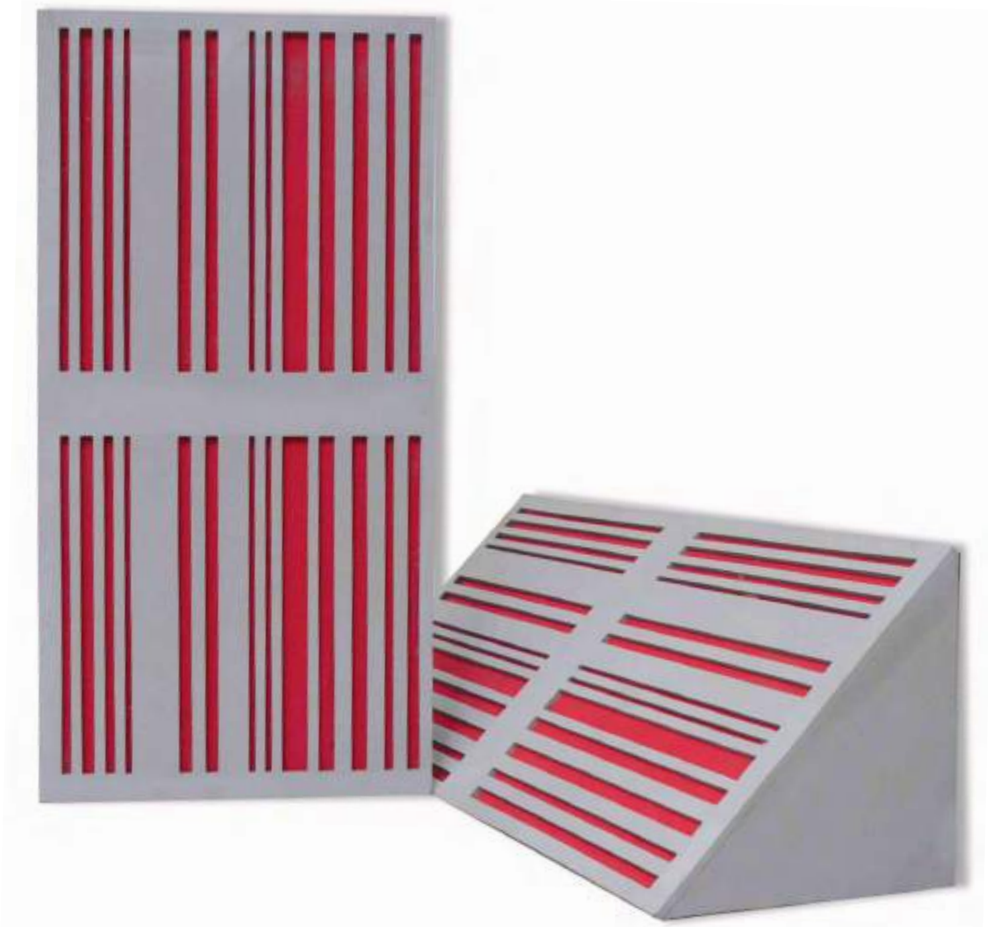
CORNER LF MEMBRANE ABSORBER

- Small rooms exhibit poor low frequency response with modal resonances. As small rooms have lesser space and porous absorption remains ineffective since modal frequencies have air velocity closer to zero in the corners.
- The solution is to build a pressure zone membrane absorber that can be corner mounted and is stackable. This is achieved by building an internally damped membrane absorber that provides ideal absorption in the modal frequency region.

Specifications and Benefits:

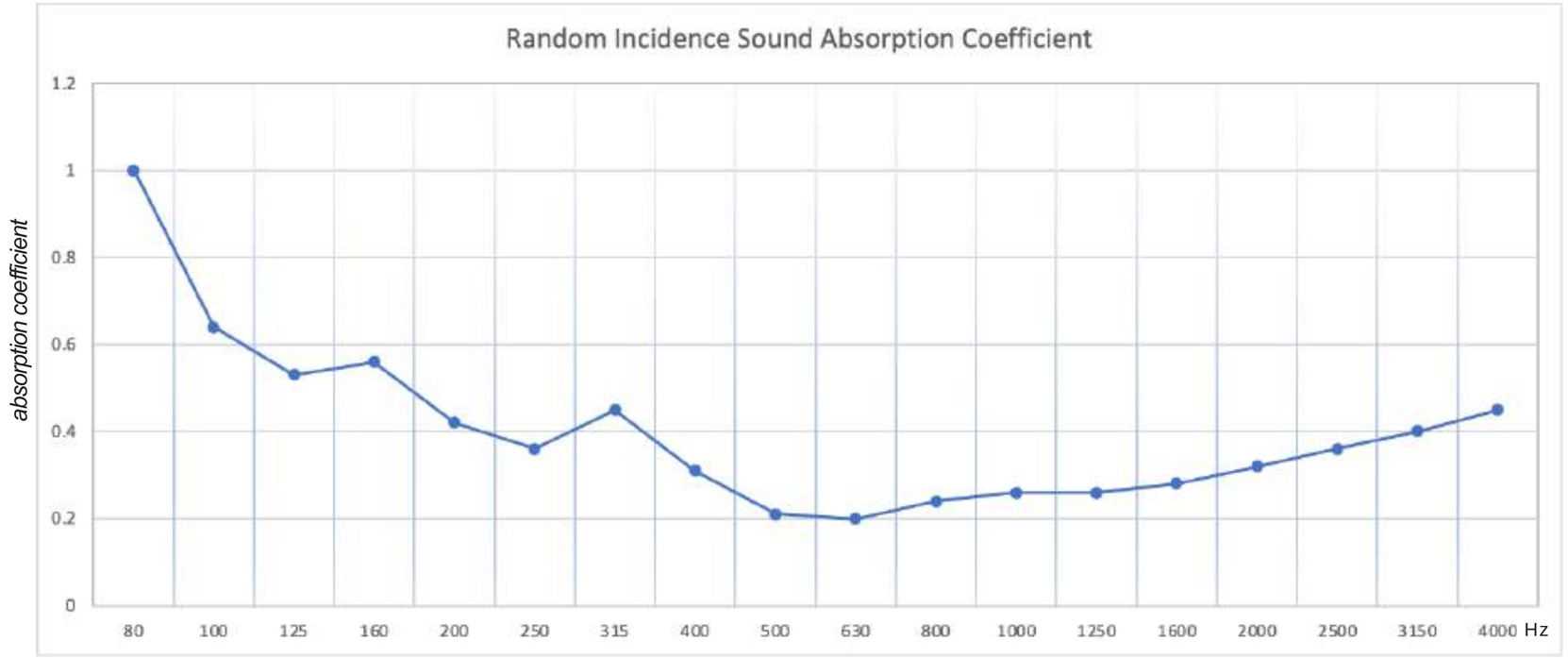
- Frequency Range: Operates effectively from approximately 80 Hz – 200 Hz .
- Material Properties: Made of Moisture-resistant, non-toxic MDF.
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: TRIANGULAR DIMENSIONS: 610x432x432mm
- HEIGHT: 1200mm / 600mm

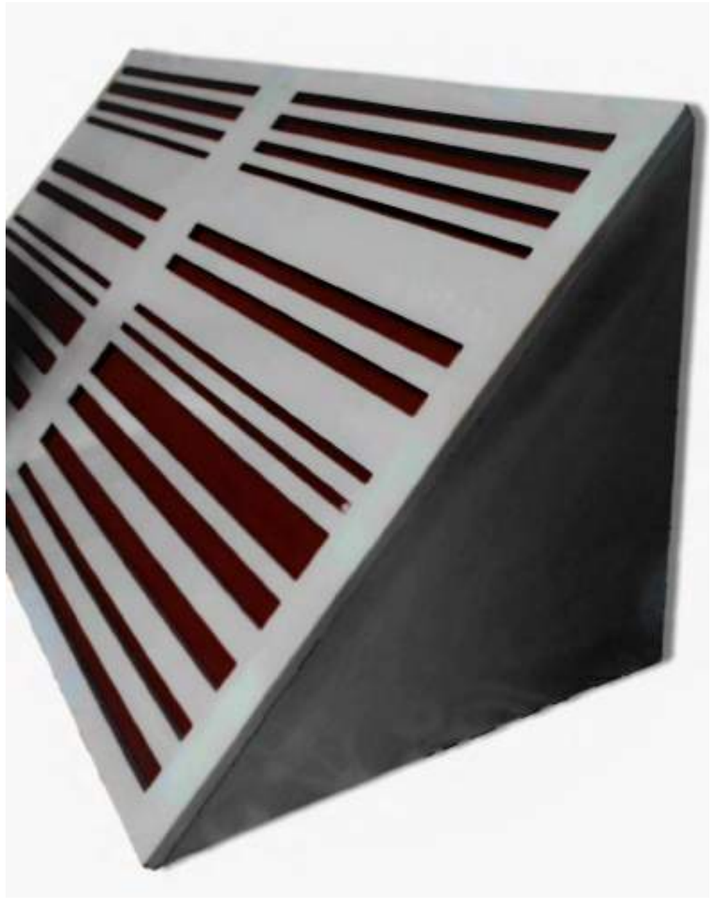
- Finishes: PU Paint / Fabric
- Installation: Using Wall Mount accessories / Floor standing (No accessories required)



TRIANGULAR DIMENSIONS: 610x432x432mm
HEIGHT: 1200mm

CORNER LF MEMBRANE ABSORBER : SPECIFICATIONS





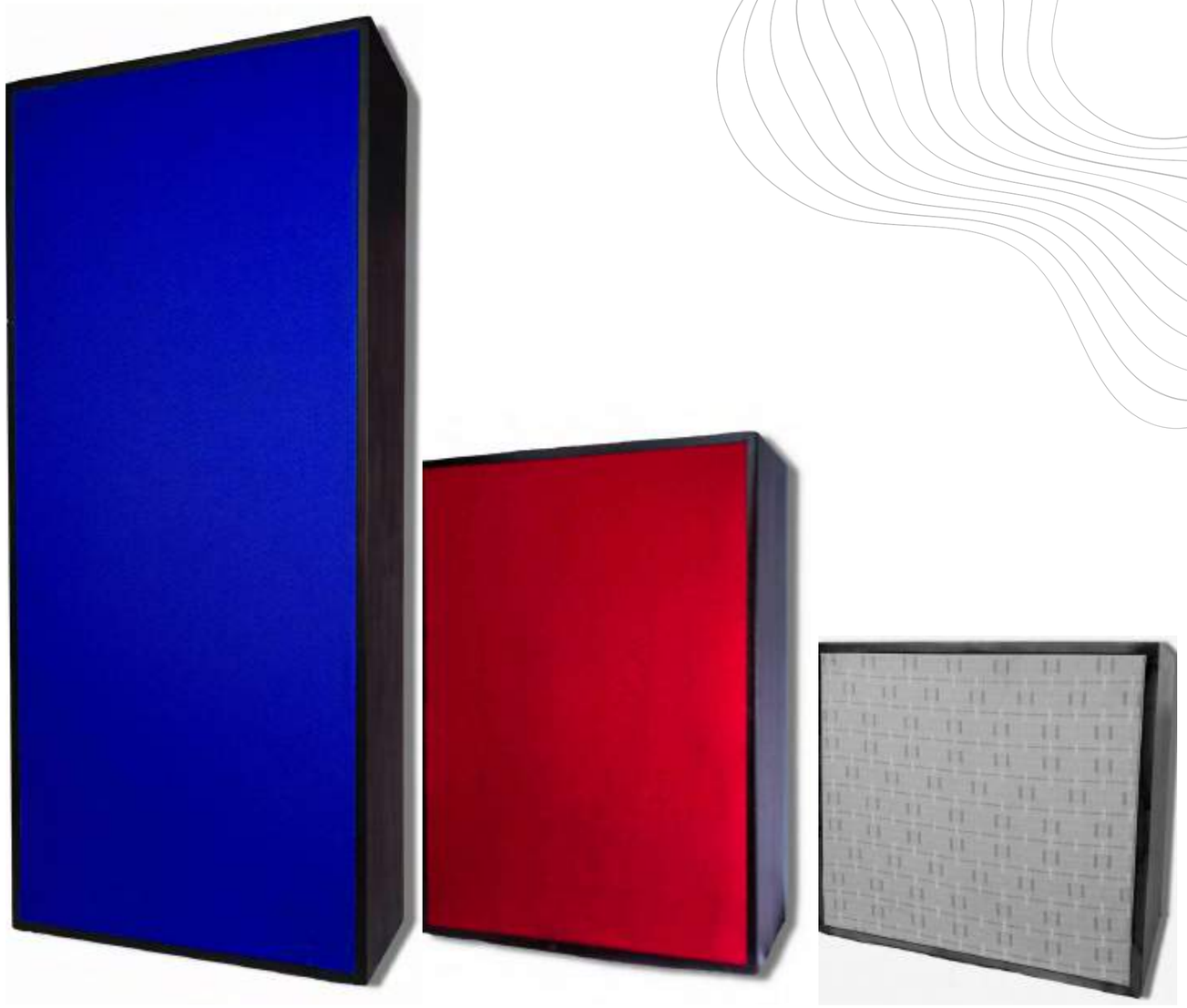
TRIANGULAR DIMENSIONS: 610x432x432mm
HEIGHT: 1200mm

DUAL MEMBRANE LF ABSORBER

- Small rooms exhibit poor low frequency response with modal resonances. As small rooms have lesser space and porous absorption remains ineffective since modal frequencies have air velocity closer to zero in the corners.
- This device has dual membrane of MDF separated with air gap and insulation. This is achieved by building an internally damped membrane absorber that provides ideal absorption in the modal frequency region.

Specifications and Benefits:

- Frequency Range: Operates effectively from approximately 50 Hz – 300 Hz .
- Material Properties: Made of Moisture-resistant, non-toxic MDF.
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: W 27" x H 60" x D 12"; W 27" x H 36" x D 12"; W 27" x H 24" x D12"
- Finishes: PU Paint / Fabric
- Installation: Floor Standing

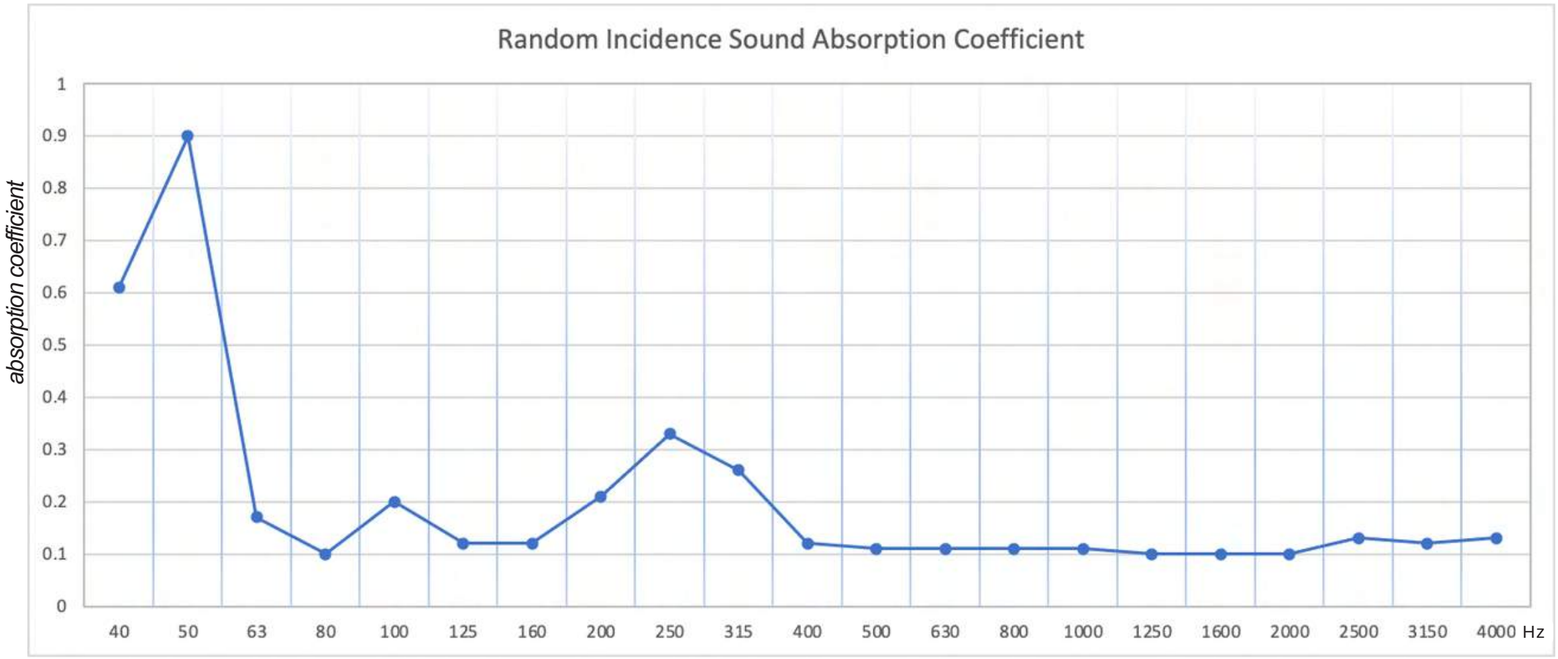


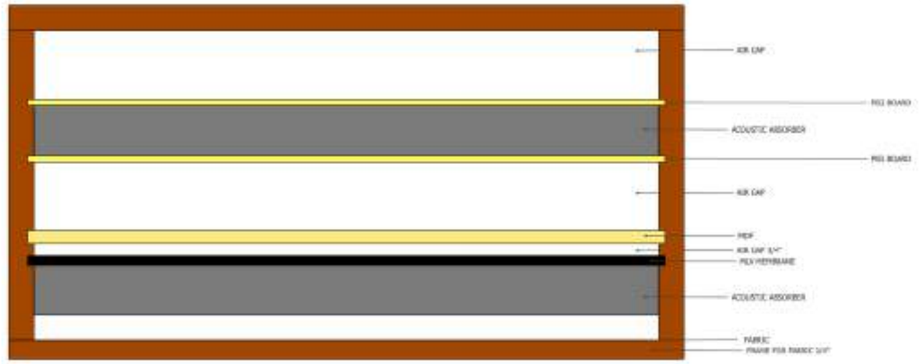
DIMENSIONS: W 27"x H 60" x D 12"

DIMENSIONS: W 27"x H 36" x D 12"

DIMENSIONS: W 27"x H 24" x D 12"

DUAL MEMBRANE LF ABSORBER : SPECIFICATIONS





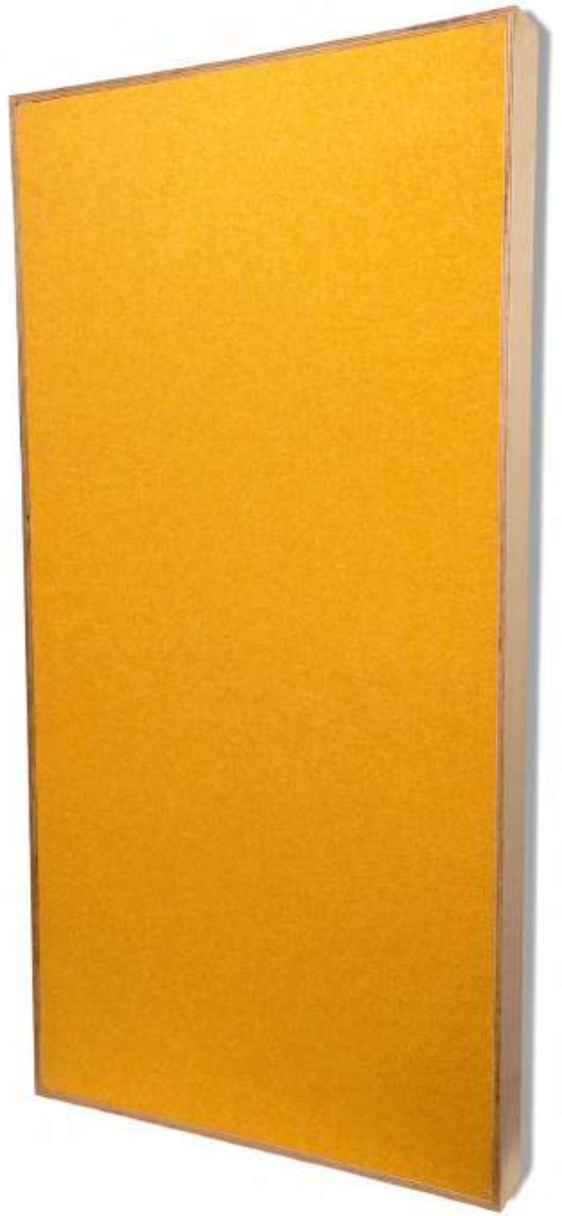
VINYL/STEEL MEMBRANE LF ABSORBER

- Axial Modes that usually are exhibited as small rooms have lesser space and porous absorption remains ineffective since modal frequencies have air velocity closer to zero in the corners.
- These membrane absorbers use heavy dense membrane such as Steel and MLV and a tuned based on the room’s axial modes.

Specifications and Benefits:

- Frequency Range: Tuned to specific resonant modes from approximately 30 Hz – 80Hz .
- Material Properties: Made of Moisture-resistant, non-toxic MDF body, MLV/Steel as membrane. Enclosed space with no vent.
- Versatility: Suitable for recording studios, home theaters, auditoriums, and other critical listening spaces.
- Size: H 60"x W 27"/36" x 50 - 200mm Depending on specific frequency.
- Recommended 4 units minimum to treat Length and Width axial modes

- Finishes: Fabric
- Installation: Using Wall Mount accessories



DIMENSIONS:H 60"x W 27"/36"x DEPTH VARIES BETWEEN 50-200mm

CONTACT US

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AUDIOPHILE ROOM KITS

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ARCHITECTURAL ACOUSTIC PRODUCTS

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PET ABSORPTION PANELS

- PET Polyester Acoustic Panels are an acoustically absorbent panel made from 100% PET plastic with a felt-like finish. These Polyester Acoustic Panels are Porous in nature which makes it ideally suitable for Acoustic Treatment, sound absorption, Heat and thermal insulation.
- These can also be grooved, through cut or UV printed
- NRC ranging from 0.4 to 1.0

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WOODEN SLATS

- Perforated wooden slats combine the best of aesthetics and sound absorption. We can provide perforations/slots based on your style/design needs. Perforated wood paneling offers a rustic look to almost all building structures, such as auditoriums, offices, gymnasiums, and concert halls.
- Wood Slats are MDF Grooved panels, used to decorate walls. wooden acoustic panels are useful for reducing reverberant sound levels.
- NRC ranginf from 0.8 to 1.0

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ACOUSTIC WOODEN FELT

- The Acoustic Wooden Felt panel is a combination of MDF slats and PET panel.
- Featuring a beautifully designed wood strip decorative wall and ceiling panel which boasts high-quality acoustic properties.
- Wood Slats are MDF Grooved panels, used to decorate walls. wooden acoustic panels are useful for reducing reverberant sound levels.
- NRC ranging from 0.7 to 1.0

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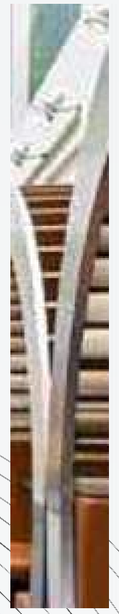
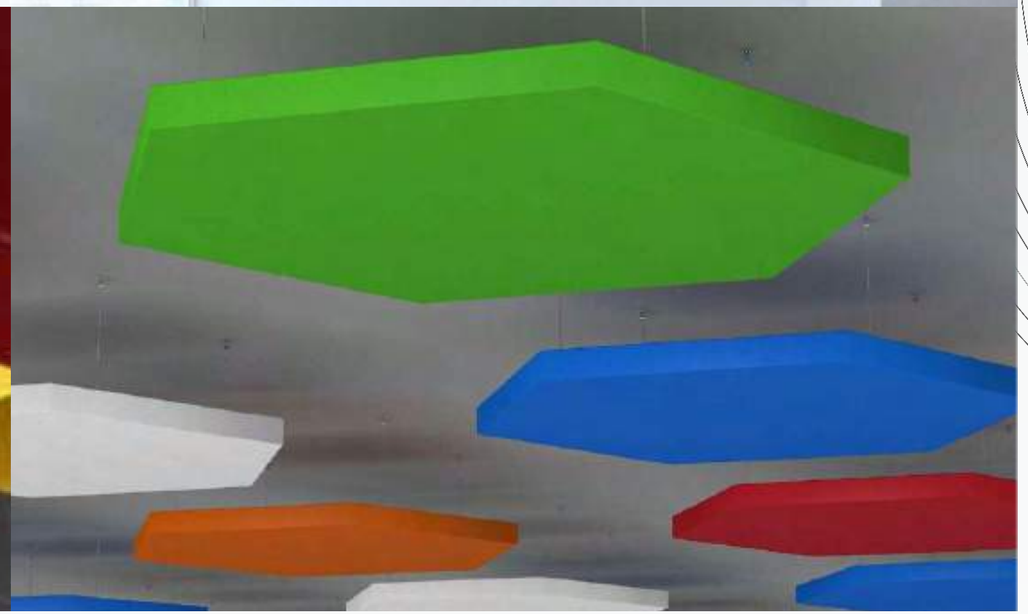
ACOUSTIC CEILING BAFFLES

- Acoustic baffles are hung from ceilings to absorb sounds and reduce reverberation and echoes. They are used in large, open spaces like shopping centres, sports halls, concert halls, gymnasiums, hotel lobbies and manufacturing plants.
- Available in a variety of core materials such as PET Panel, Glass-wool, Polyesterwadding.
- Felt or Fabric finishes available
- NRC ranging from 0.8 to 1.0





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ACOUSTIC GRID CEILINGS

- Acoustic Ceiling Tiles are an easy and effective way to reduce the echo in a noisy room by using your existing drop ceiling grid. Our acoustic ceiling tiles can lay right into an existing T-bar suspended ceiling grid system
- The core material can vary from rockwool, glass-wool or polyester-wadding.
- NRC ranging from 0.7 to 1.0

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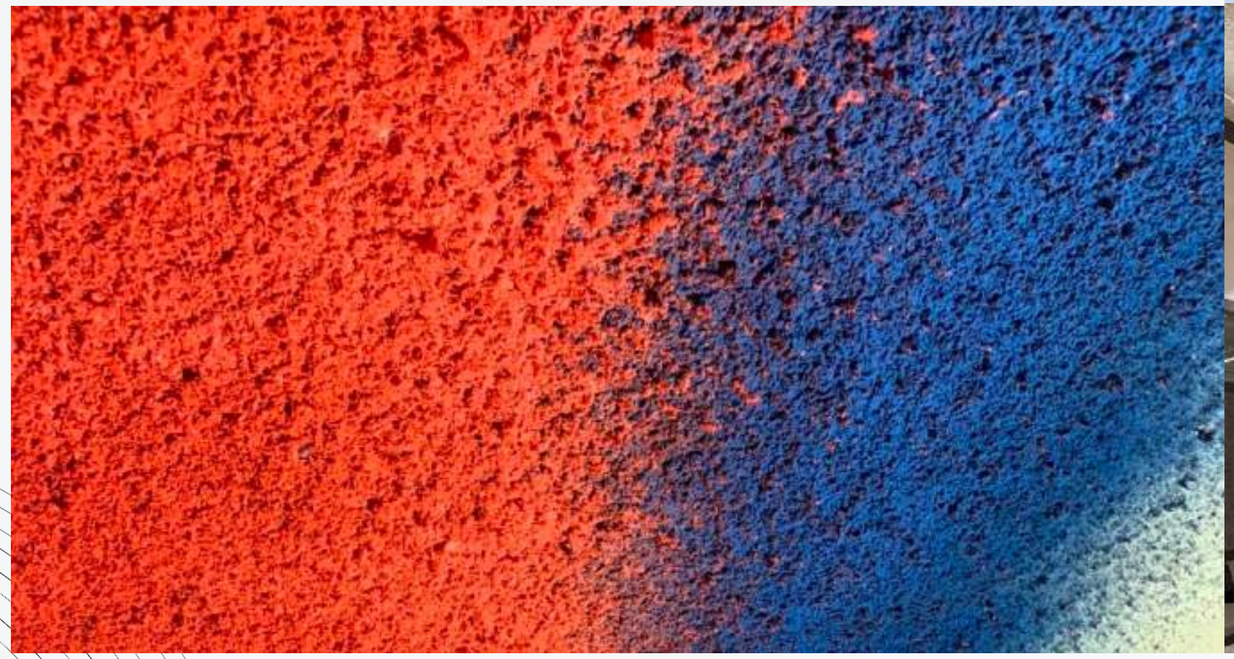
ACOUSTIC PLASTER SPRAY

- An acoustic spray plaster solution is an extremely flexible seamless sound absorption solution.
- Acoustic plasters consist of a base layer of absorptive substrate panels, which are typically mineral wool, or a non-combustible inorganic blow-glass granulate. A first finishing layer is then applied on top of the substrate panels and when dried, any RAL color can additionally be applied.
- NRC ranging from 0.7 to 1.0



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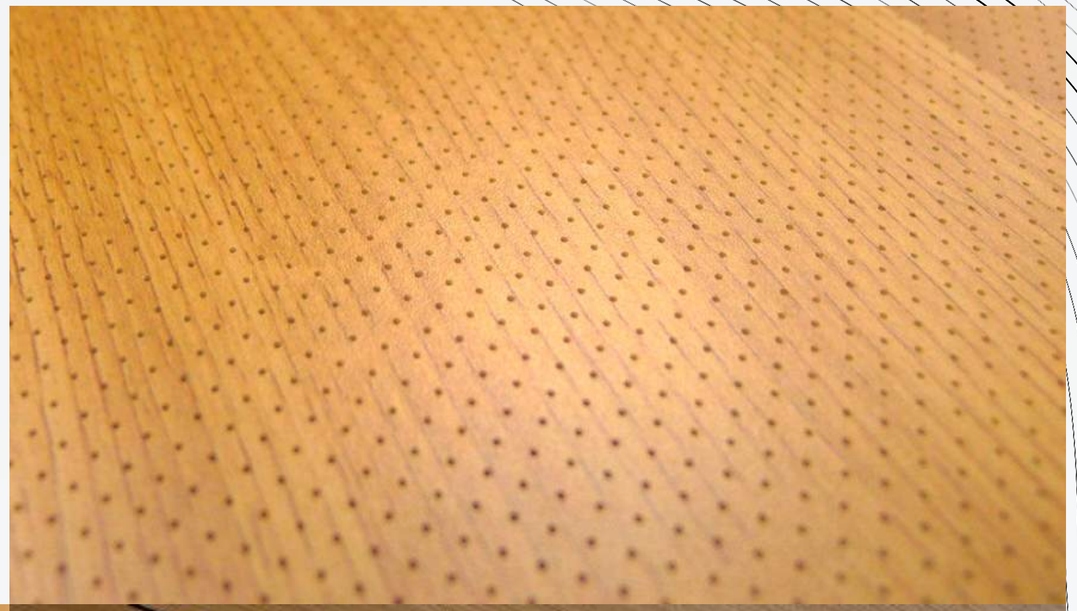
MICRO PERFORATED ACOUSTIC PANELS

- Microperforated panels (MPP) are acoustic absorbers that are. reclaimable, noncombustible, and environmentally friendly. Sound is attenuated due to viscous friction in the submillimeter. size pores. The panels are typically spaced from a hard surface.
- Perforation diameter 0.5mm onwards
- NRC upto 0.85



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ACOUSTIC FOAMS: PU & MELAMINE

- Acoustic foam is a lightweight material made from polyurethane (either polyether or polyester) or extruded melamine foam. It is usually cut into tiles. One surface of these tiles often features pyramid, cone, wedge, or uneven cuboid shapes. Acoustic foam tiles are suited to placing on sonically reflective surfaces to act as sound absorbers, thus enhancing or changing the sound properties of a room.
- Fire Rated
- NRC ranging from 0.5 to 1.0

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ACOUSTIC WOODEN DOORS

- An acoustic door is designed to mitigate the transmission of sound between rooms or areas. It is constructed using special techniques and materials that enhance its soundproofing capabilities. The door frame, core, and surface are engineered to reduce sound vibrations and prevent noise leakage.
- Acoustic doors are useful to control noise transfer from one room to another room/meeting room, Conference room, outside noise control, studio purpose, Cinema hall, and at many other places.
- STC 45 - 50dB

avesonus

SOUND BARRIERS: EXTERIOR/INTERIOR

- The sound barrier curtains can be custom fabricated to almost any application. These noise blocking blankets can be used in interior and exterior applications.
- Used as an economical, effective noise barrier and sound absorber to enclose many types of noise sources.
- Class A Fire Rated per ASTM E84.
- STC 29 - 37dB
- NRC 0.7 - 0.85

CONTACT US

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