

# THE IMPORTANCE OF ACOUSTIC DETAILING IN HOTEL AND LIVING AREA

Webinar series organized by ACouRETE ACOUSTICS



**R. Arief Yudistira**  
*Moderator*



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**Retno Ajeng Pratiwi**  
**S.Si., M.Si.**  
*Acoustic Product Consultant  
at Acourete*

**FREE**

Link Pendaftaran:  
<https://bit.ly/WebinarAcourete28>

• LIVE 

## Poin Pembahasan

- Jenis-jenis ruangan pada hotel
- Aspek akustik hotel dan rumah hunian
- Cara menginsulasi dan desain akustik pada ruangan
- Material akustik peredam suara yang tepat untuk hotel dan rumah hunian



**JUMAT, 8 DESEMBER 2023**



**14.45 - 17.00 WIB**

Join Meeting:



## Manfaat

- Wawasan baru
- Ilmu yang bermanfaat
- Relasi baru
- E-Certificate

# CURRICULUM VITAE

- Name** : Ramadhan Akmal Putra  
**Year of Birth** : 15th of April 1991  
**Phone** : +62 878 8580 8980  
**Job** : Associate Director at Geonoise Indonesia  
**E-mail** : akmal@geonoise.asia  
**Education** :
- 2016 – 2018 : Master of Science, Institut Teknologi Bandung (ITB)  
Engineering Physics
  - 2009 – 2013 : Bachelor of Science, Institut Teknologi Bandung (ITB)  
Engineering Physics

## WORK EXPERIENCE :

- March 2021 – present (Geonoise Asia Co., Ltd., Jakarta, Associate Director)
- September 2013 – February 2021 (PT. LITAC - Lighting & Acoustic Consultant, Jakarta, Technical Director)





# ASPEK KENYAMANAN YANG DIBUTUHKAN DARI HOTEL DAN RUMAH HUNIAN

- Kenyamanan Visual
- Kenyamanan Audio
- Kenyamanan Termal
- Kenyamanan Odor



# JENIS RUANGAN DAN ASPEK AKUSTIK PADA HOTEL DAN RUMAH HUNIAN



# LOBBY

## Kualitas akustik yang diperlukan :

- Suara percakapan terdengar jelas satu sama lain meskipun kondisi lobby hotel sedang ramai.
- Tidak ada dengung berlebihan yang dapat mengganggu kenyamanan di lobby hotel

## Kuantitas akustik yang diperlukan :

- *Noice Criteria* = 50-55 dBA
- *Reverberation time* = 0,95 – 1,1 s



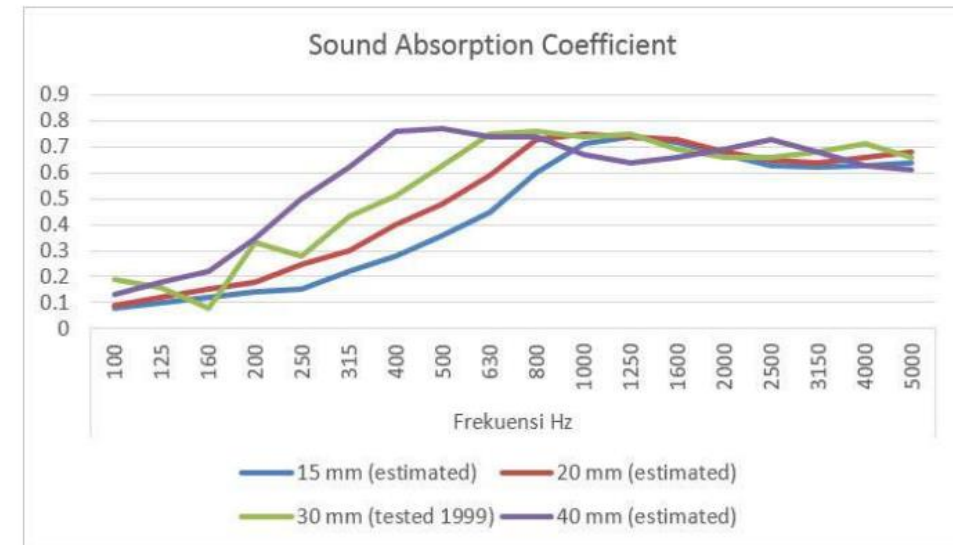
# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI LOBBY HOTEL



# BERPORI BATU



Description	Value
Weighted sound absorption (SAA)	0.72
Fire resistance	Class A1
Sound absorption class (thickness 3cm/ 1.18in)	C
NRC	0.75
Thermal resistance (R) (for 1cm/ 0.4 in thickness)	0.133 m <sup>2</sup> K/W
Mechanical resistance	2.8N/mm <sup>2</sup>
Breathability (μ)	4
Thermal conduction (λ)	0.075W/mK
Density	400 ± 30% kg/m <sup>3</sup> 24.9 ± 1.87 % lb/ft <sup>3</sup>
Color	Light Grey
Country of Origin	Italy





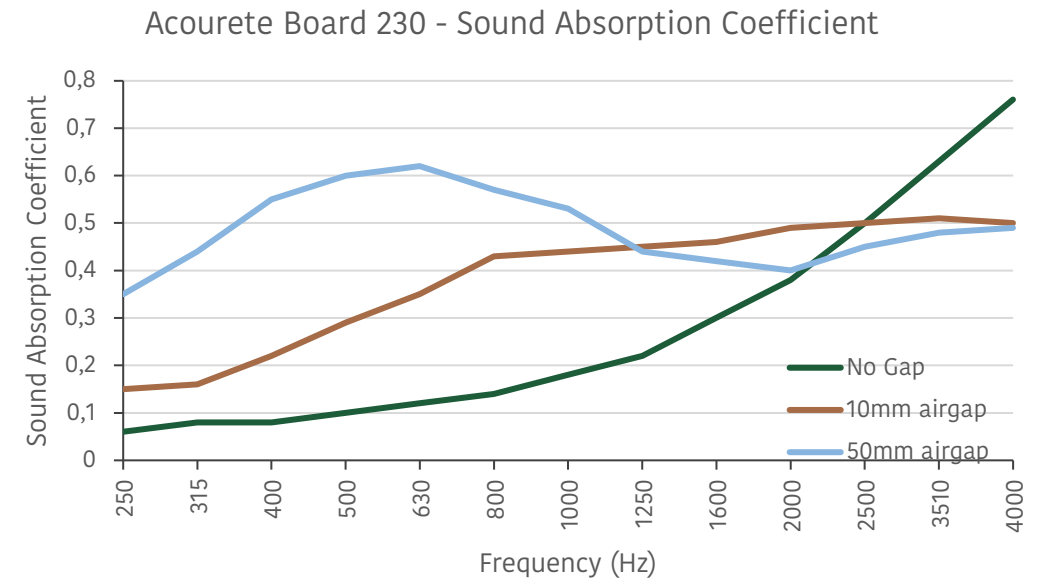




# BERPORI PET



Description	Value
Type	Acoustics Board Ceiling Wall
Dimension	1200mm x 600mm x 9mm
Material	Polyester
Density	230g/m <sup>3</sup>
Weight	1.5kg
NRC	0.47
Color	White, Beige, Light Grey atau sesuai desain
Country of Origin	Korea











#MenujuSuarayangBaik

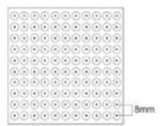


# BERONGGA KAYU

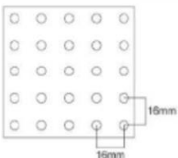
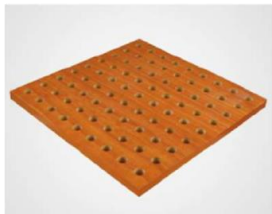
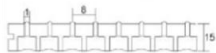


Description	Value
Surface Density	8.5kg/m <sup>3</sup>
Material	MDF
Front Finished	Melamine
Back Finished	Unfinished + Acoustics Felt
Length	1200mm / 600mm
Width	600mm
Thickness	12mm
Fire Rating	No
Eco Friendly	Yes
Color	See Color Table
NRC Perfowood 16166	0.66
Country of Origin	China

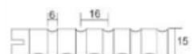
# BERONGGA KAYU



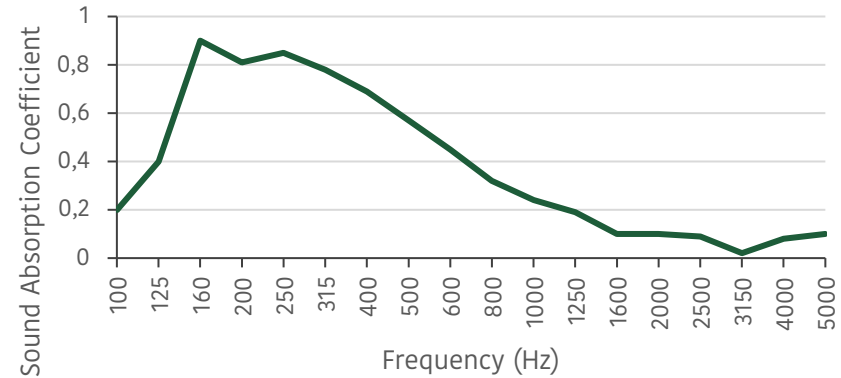
Pattern: 8-8-1 Micro Holes



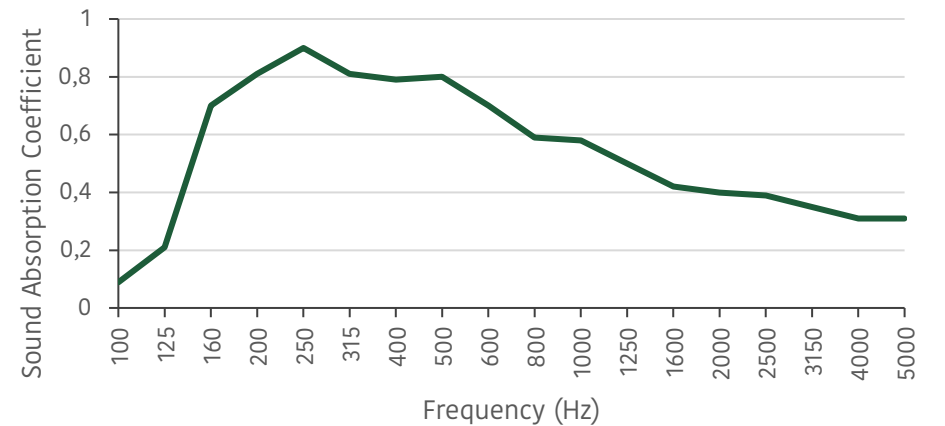
Pattern: 16-16-6



Acourete Perforated Wood (8-8-1 Micro Holes) - Sound Absorption Coefficient



Acourete Perforated Wood (16-16-6) - Sound Absorption Coefficient





Credit : CV. Kharisma, Gereja Palangkaraya

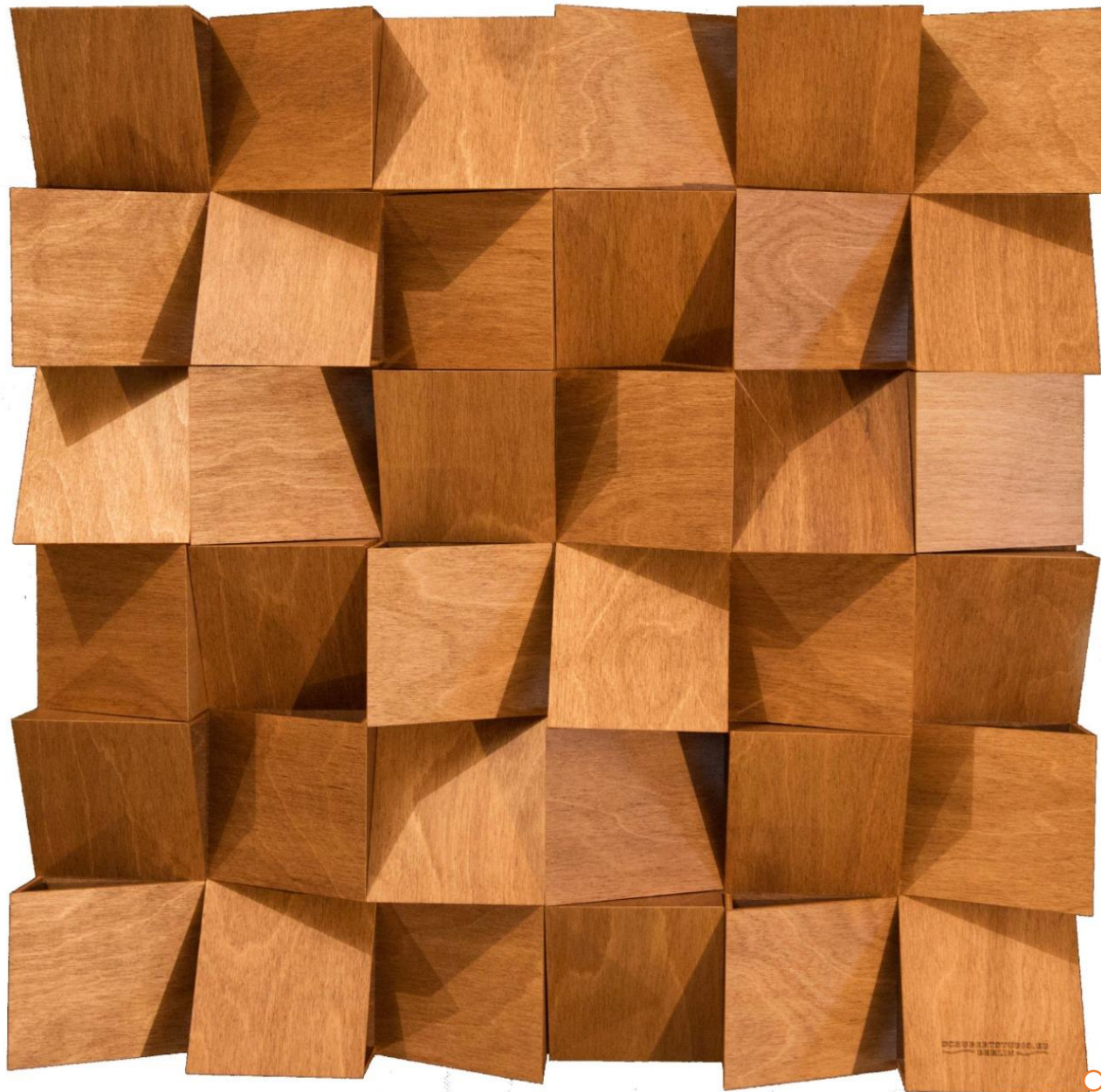






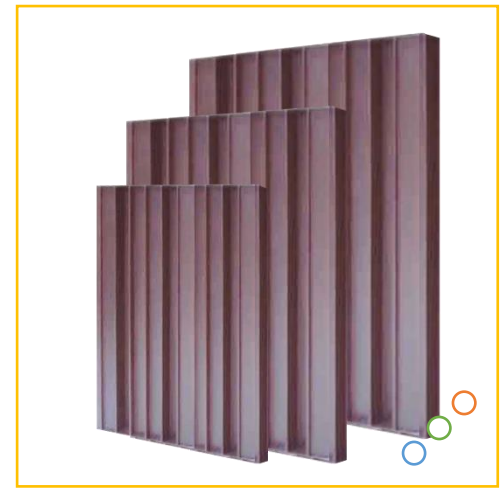
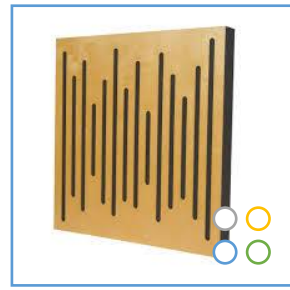
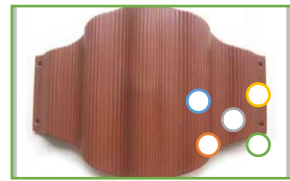


# BERPOLA TIDAK RATA



Acourete

#MenujuSuarayangBaik





# MD PICTURES

Acourete 2QRD7661 Omnifuser  
Akustik Panel Kayu Dua Dimensi









Studio Band



# Ruang Tidur

## Kualitas akustik yang diperlukan :

- Suara dari luar tidak masuk ke dalam ruang begitupun sebaliknya

## Kuantitas akustik yang diperlukan :

- *Noice Criteria* = 35 – 45 dBA





# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI RUANG TIDUR



# Acourete Noise Armour



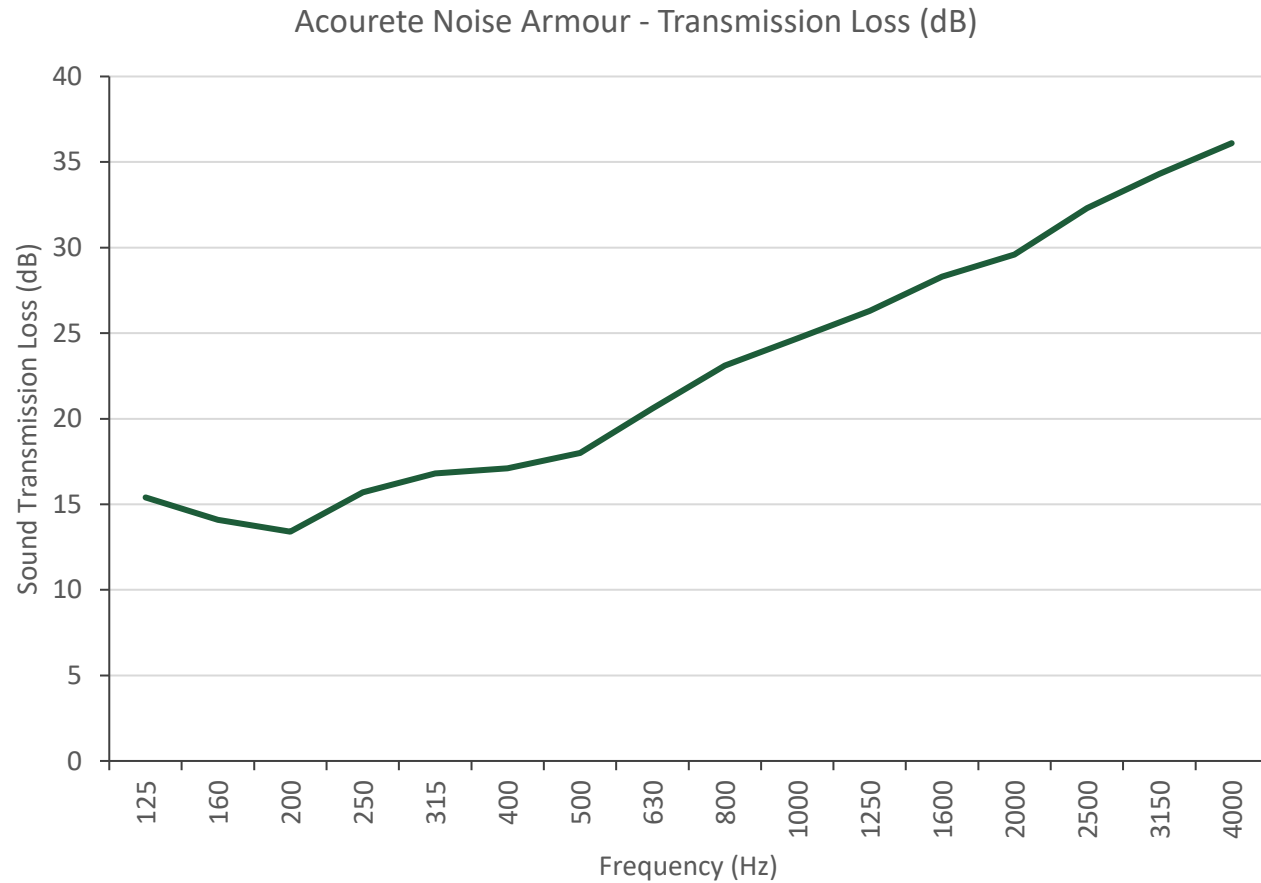
Description	Value
Type	Acoustics Vibration Insulation
Dimension	1000mm x 1000mm x 2mm
Material	Resin
Density	2000kg/m <sup>3</sup>
Mass	4,5kg
STC	0.47
Color	Black
Country of Origin	South Korea

*Broadcast studio, Music recording, Home theater, Karaoke room, Auditorium, Music hall, Discotheque, Office, Machine room*

*Allergy free, toxic free, fire resistant, viscoelastic*



# Acourete Noise Armour

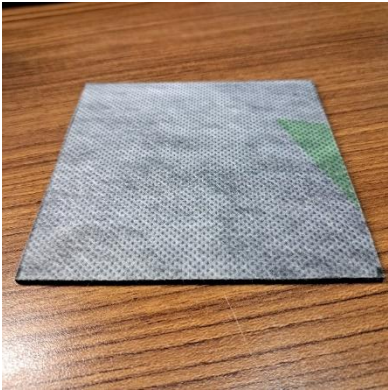








# Acourete Silent Wall



Description	Value
Type	Acoustics Vibration Insulation
Dimension	4880mm x 810mm x 2mm
Material	PVC
Mass	15kg
Density	1750kg/m <sup>3</sup>
STC	19
Color	Black
Country of Origin	Japan

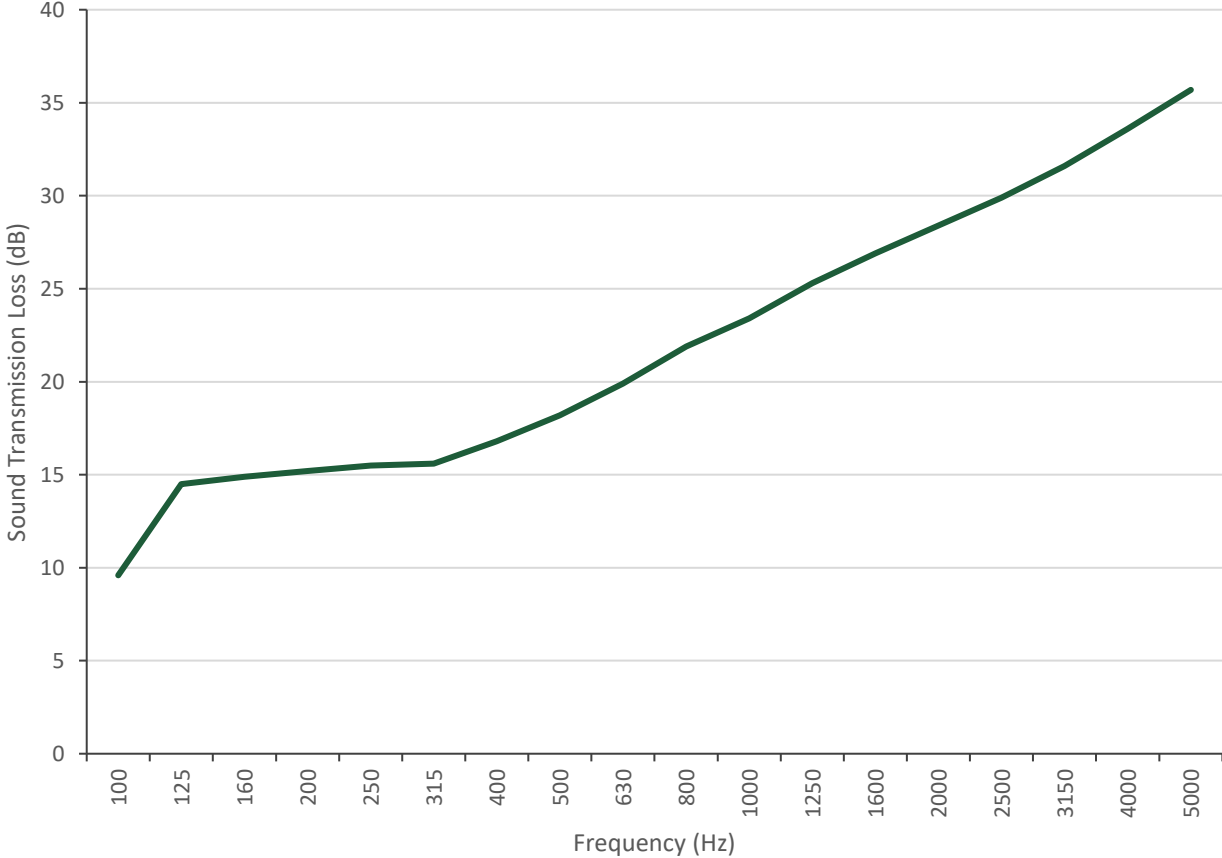
*Broadcast Studio, Music Recording, Home Theater, Karaoke Room, Auditorium, Music Hall, Discotheque, Office, Machine Room*

*Allergy free, toxic free, fire resistant, viscoelastics*



# Acourete Silent Wall

Acourete Silent Wall - Transmission Loss (dB)



# Acourete Fiber

*sebagai isian Acourete Echobaffle (padded wall)*



*Allergy free, toxic free, fire resistant*

Description	Value
Type	Acoustics Absorbing Material
Dimension	Fiber 300 = 1000mm x 1500mm x 3mm Fiber 600 = 1000mm x 1500mm x 6mm Fiber 800 = 1000mm x 1500mm x 8mm Fiber 1000 = 1000mm x 1500mm x 10mm
Material	Polypropylene
Weight	Fiber 300 = 0.45 kg Fiber 600 = 0.9 kg Fiber 800 = 1.5 kg Fiber 1000 = 2.25 kg
NRC	Fiber 300 = 0.375 Fiber 600 = 0.63 Fiber 800 = 0.69 Fiber 1000 = 0.8
Density	Fiber 300 : 100 kg/m <sup>3</sup> , Fiber 600 : 100 kg/m <sup>3</sup> Fiber 800 : 125 kg/m <sup>3</sup> , Fiber 1000 : 150 kg/m <sup>3</sup>
Colour	White
Country of Origin	Korea

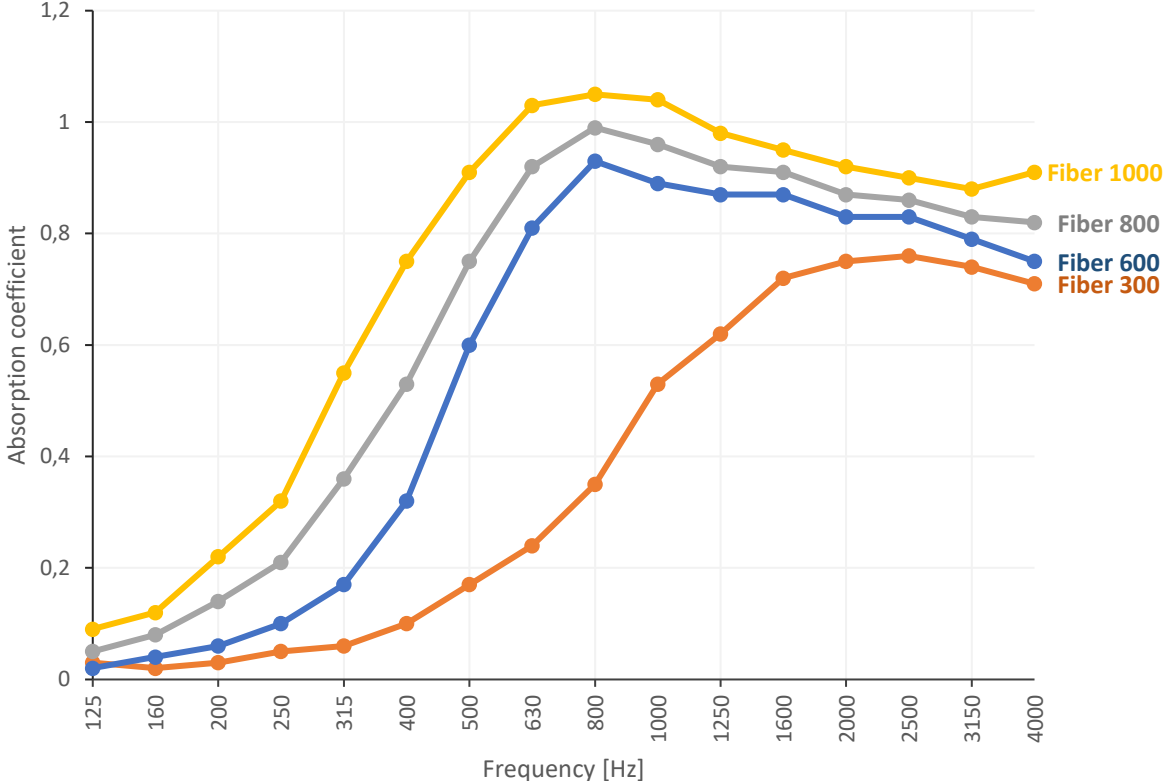
*Hall, Home theater, Karaoke room, Music lounge,  
Office, Hospital, Hotel*



# Acourete Fiber

sebagai isian Acourete Echobaffle (padded wall)

Acourete Fiber Sound Absorption Coefficient



# Acourete Regupol Sonus Multi 3



Description	Value
Type	Vibration Damping
Dimension	1000mm x 1000mm x 3mm
Material	PUR – Foam and Cork Elastomer
Weight	1.55kg/m <sup>2</sup>
Color	Brown
Rolls	20000mm x 1000mm
Country of Origin	Germany
Production and Certification	OHAS 18001: 2007 DIN ISO 9001: 2008 DIN ISO 14001: 2004 Management System

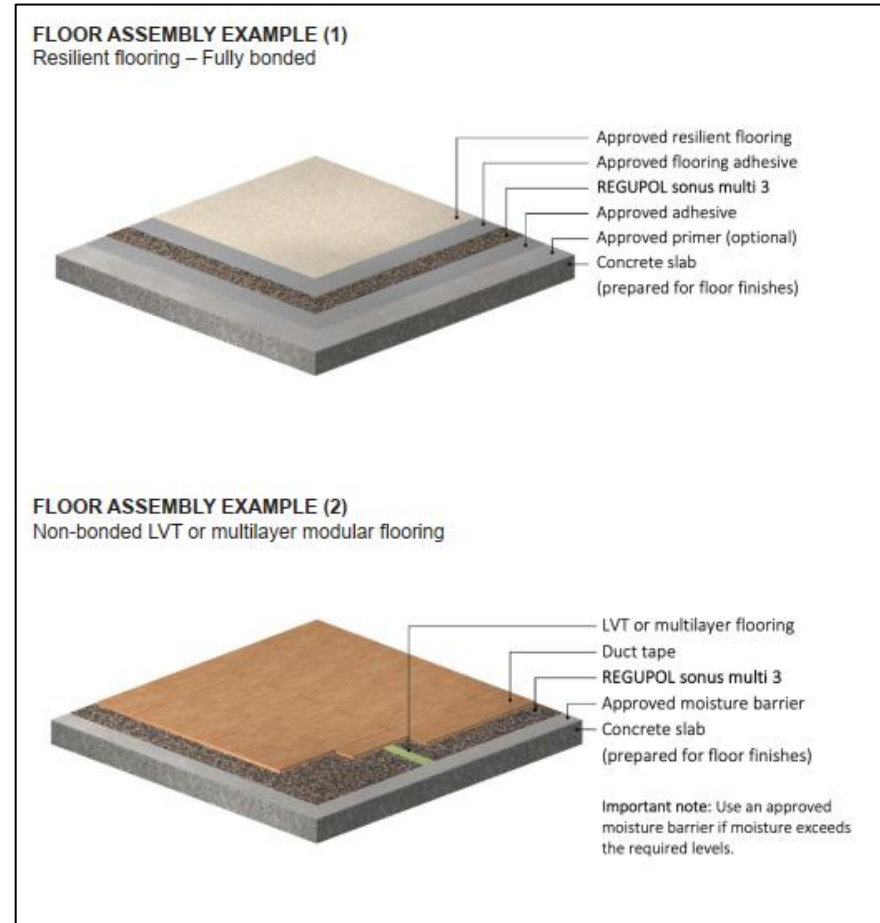
*Hotel, Office, Hospital, Home theater, Music studio, Karaoke room, Gym*

*Allergy free, toxic free, cradle to cradle certified, easy to use*



# Acourete Regupol Sonus Multi 3

Acoustical Performance	Standard	Result	Comment
<b>Under vinyl planks:</b>			
4.5 mm LVT vinyl planks, REGUPOL sonus multi 3, 150 mm concrete slab	AS ISO 717.2-2004 ISO 140-8:2006 (E) ISO 140-6-2006 ASTM E989-89	ALw 18 dB L <sub>nw</sub> 59 dB IIC 52	Test report RG084 - INR210-04-01
4.5 mm LVT vinyl planks (non-bonded), REGUPOL sonus multi 3, (non-bonded), 150 mm concrete slab	AS ISO 717.2-2004 ISO 140-8:2006 (E) ISO 140-6-2006 ASTM E989-89	ALw 19 dB L <sub>nw</sub> 58 dB IIC 52	Test report RG081 - INR210-01-01
2 mm vinyl planks, REGUPOL sonus multi 3, 150 mm concrete slab	AS ISO 717.2-2004 ISO 140-8:2006 (E) ISO 140-6-2006 ASTM E989-89	ALw 18 dB L <sub>nw</sub> 59 dB IIC 52	Test report RG019 - INR153 Test Floor (a)
<b>Under sheet vinyl:</b>			
2 mm sheet vinyl, REGUPOL sonus multi 3	AS ISO 717.2-2004 ISO 140-8:2006 (E) ISO 140-6-2006 ASTM E989-89	ALw 18 dB L <sub>nw</sub> 59 dB IIC 52	Test report RG082 - INR210-08-02
*Assembly from top to bottom			





Acourete

Studio Musik



# Ruang Pertemuan

## Kualitas akustik yang diperlukan :

- Suara dari luar tidak masuk ke dalam ruang begitupun sebaliknya
- Suara percakapan di dalam ruang dapat terdengar jelas

## Kuantitas akustik yang diperlukan :

- *Noice Criteria* = 35 – 45 dBA
- *Reverberation time* = 0,5 – 0,8 s



# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI RUANG PERTEMUAN



# Acourete



ACOURETE FIBER



ACOURETE REGUPOL  
SONUS MULTI 3



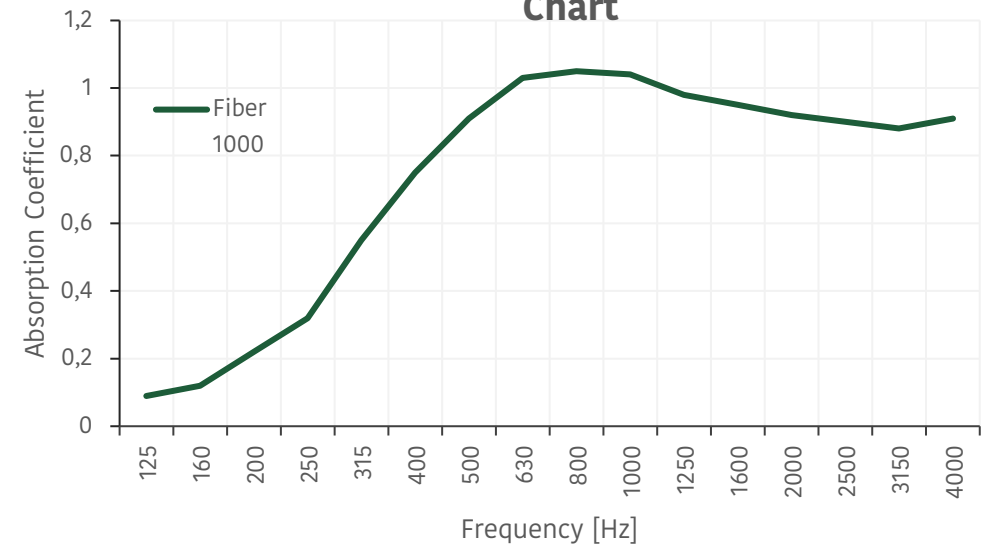
# BERPORI FABRIC

## ACOURETE ECHO BAFFLE



Description	Value
Type	Acoustics Fabric Panel
Dimension	120cm x 60cm atau sesuai desain
Material	Plywood, Acourete Fiber 1000
Finishing	Fabric
Weight	0.7kg
NRC	0,8
Color	Vanilla Creme, Eternal Blue, Stitches, Soft Eclair, Strawberry Squash atau sesuai desain
Mounting	Wall and Ceiling
Country of Origin	Indonesia

**Acourete Fiber Sound Absorption Coefficient Chart**

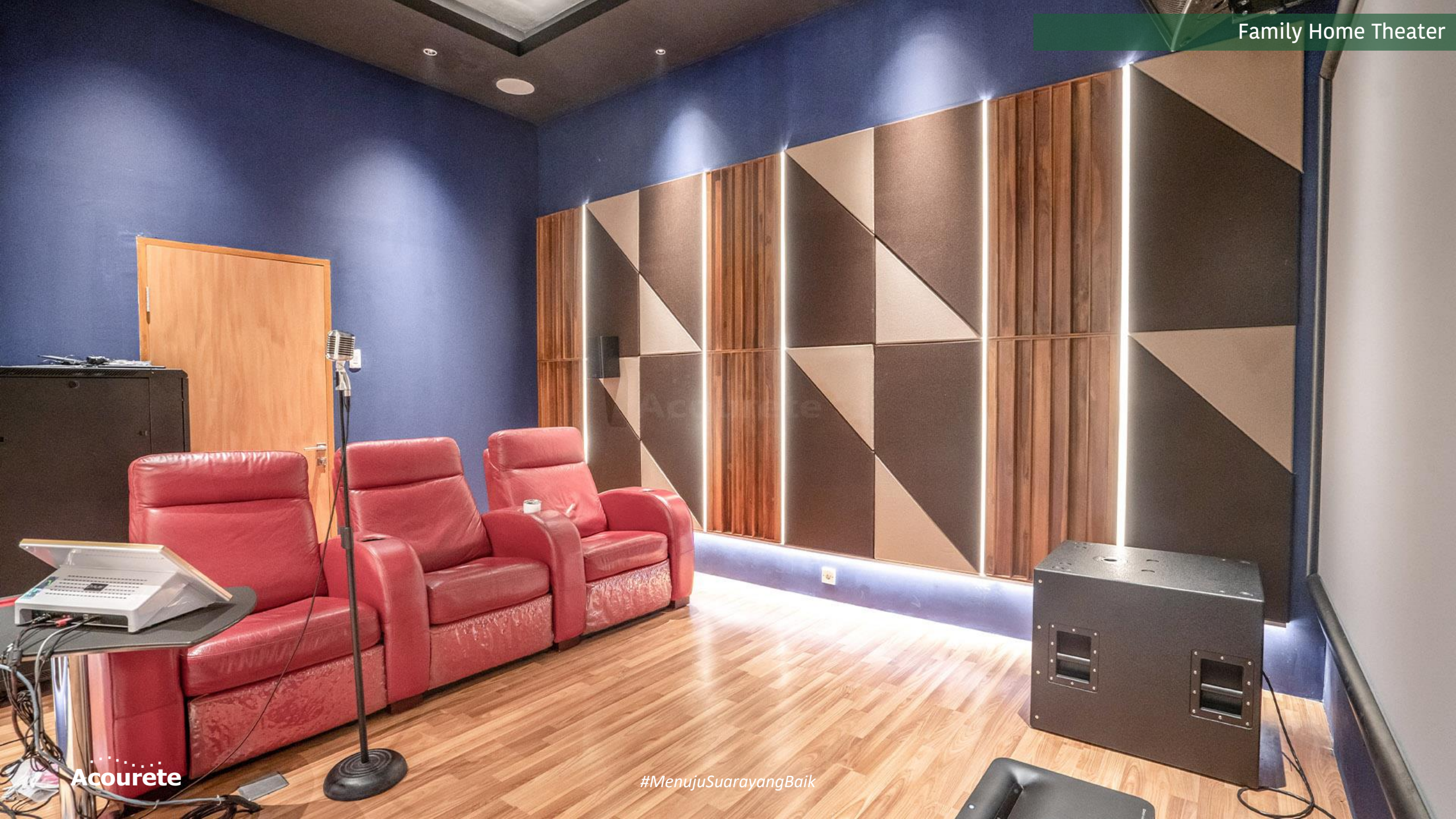




# NOICE Podcast Studio









# Restoran

## Kualitas akustik yang diperlukan :

- Suara percakapan terdengar jelas satu sama lain meskipun kondisi restoran hotel sedang ramai.
- Tidak ada dengung berlebihan yang dapat mengganggu kenyamanan di restoran hotel

## Kuantitas akustik yang diperlukan :

- *Noice Criteria* = 50 – 55 dBA
- *Reverberation time* = 0,8 – 1,1 s





# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI RESTORAN



# Acourete



#MenujuSuarayangBaik



# Gimnasion

## Kualitas akustik yang diperlukan :

- Suara dentuman dari tiap penggunaan alat gym tidak mengganggu ruangan-ruangan di sekitarnya

## Kuantitas akustik yang diperlukan :

- *Noice Criteria* = 55 – 65 dBA
- *Impact Insulation Class (IIC)*  $\geq$  50



# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI GIMNASIUM



# Acourete



**ACOURETE FIBER**



# Acourete Regupol 300



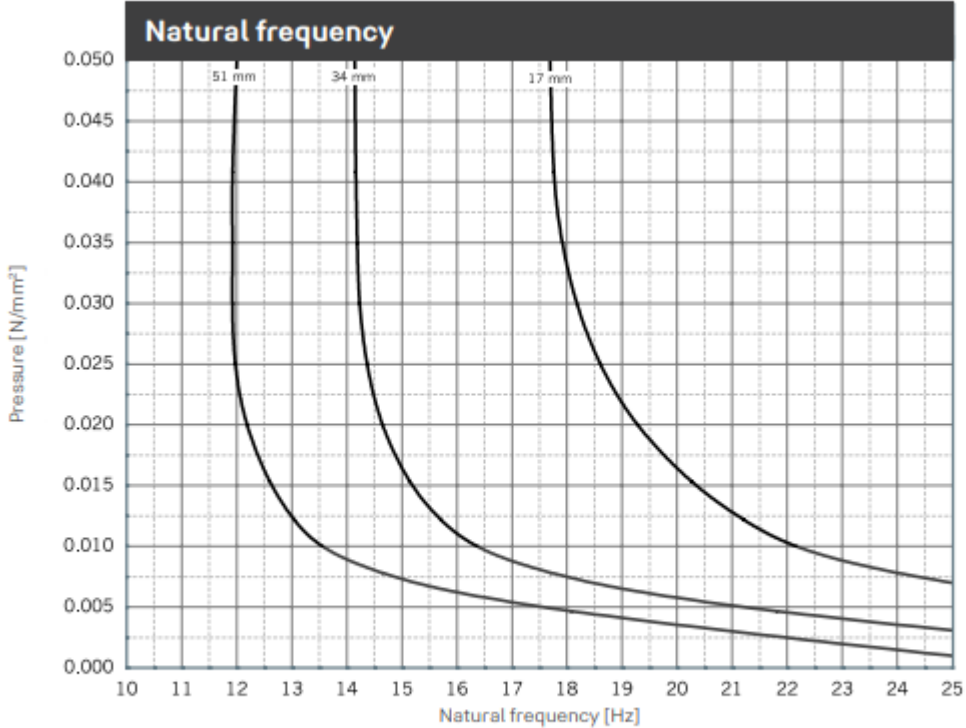
Low resonance frequency, long-lasting

Description	Value
Material	Rubber, Fibres, Styrene-butadiene rubber (SBR), Nitrile butadiene rubber (NBR) Polyurethane
Loss factor	0.18
Compression Set	4.1 %
Elongation at Break	60%
Fire Behaviour	B2 ( DIN4102 )
Dimension	1000mm x 1250mm x 17mm
Colour	Black
Permanent Static Load	5.000kg/m <sup>2</sup>
Country of Origin	Germany

Factory machine, Generator, Hotel, Apartment, Office, Public transportation, Railway, Trailer truck, Subway, Chiller machine



# Acourete Regupol 300



Natural frequency of a single-degree-of-freedom system (SDOF system) considering the dynamic stiffness of **REGUPOL vibration 300** on a rigid base. Dimensions of test specimens 300 x 300 mm.

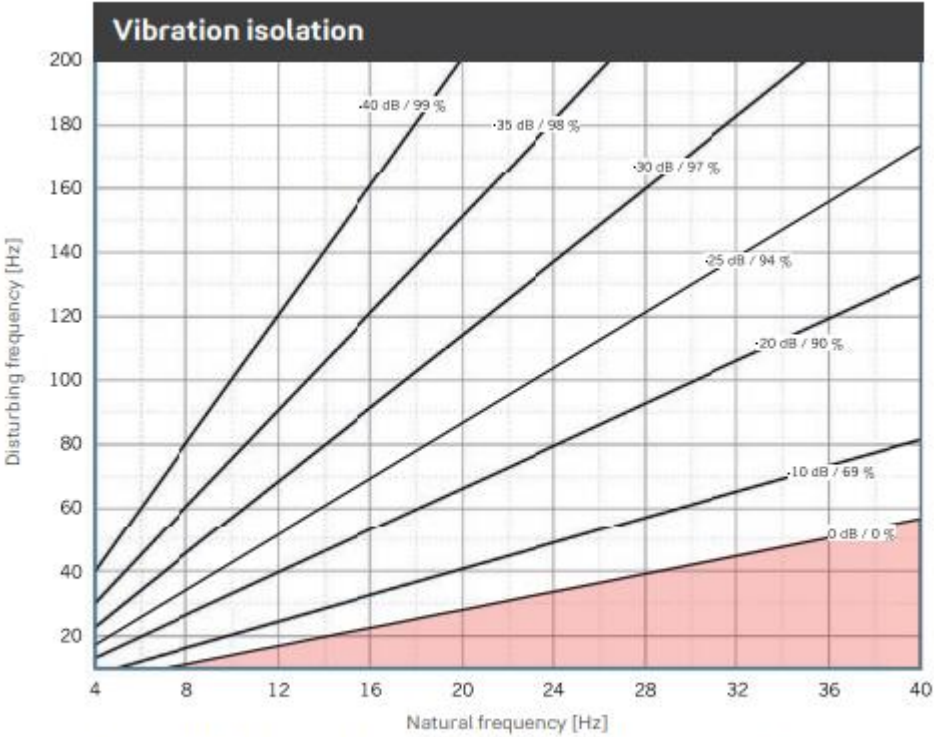


Illustration of the isolation efficiency of a single-degree-of-freedom system (SDOF system) on a rigid base with **REGUPOL vibration 300**. Parameter: power transmission (insertion loss) in dB, isolation factor in %.



# Ballroom

## Kualitas akustik yang diperlukan :

- Suara dari luar tidak masuk ke dalam ruang begitupun sebaliknya
- Suara percakapan di dalam ruang dapat terdengar jelas

## Kuantitas akustik yang diperlukan :

- *Noice Criteria* = 35 – 45 dBA
- *Reverberation time* = 0,8 – 1,1 s





# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI BALLROOM

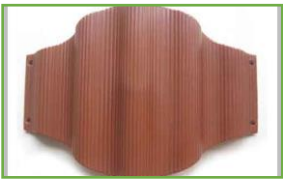


# Acourete





# Acourete





# Bar and Lounge

## Kualitas akustik yang diperlukan :

- Suara dari luar tidak masuk ke dalam ruang begitupun sebaliknya

## Kuantitas akustik yang diperlukan :

- *Background noise* yang terdengar di luar ruangan  $\leq 55$  dB



# MATERIAL AKUSTIK YANG DAPAT DIPASANG DI BAR AND LOUNGE





# Acourete



ACOURETE FIBER



# Acourete Regufoam 150



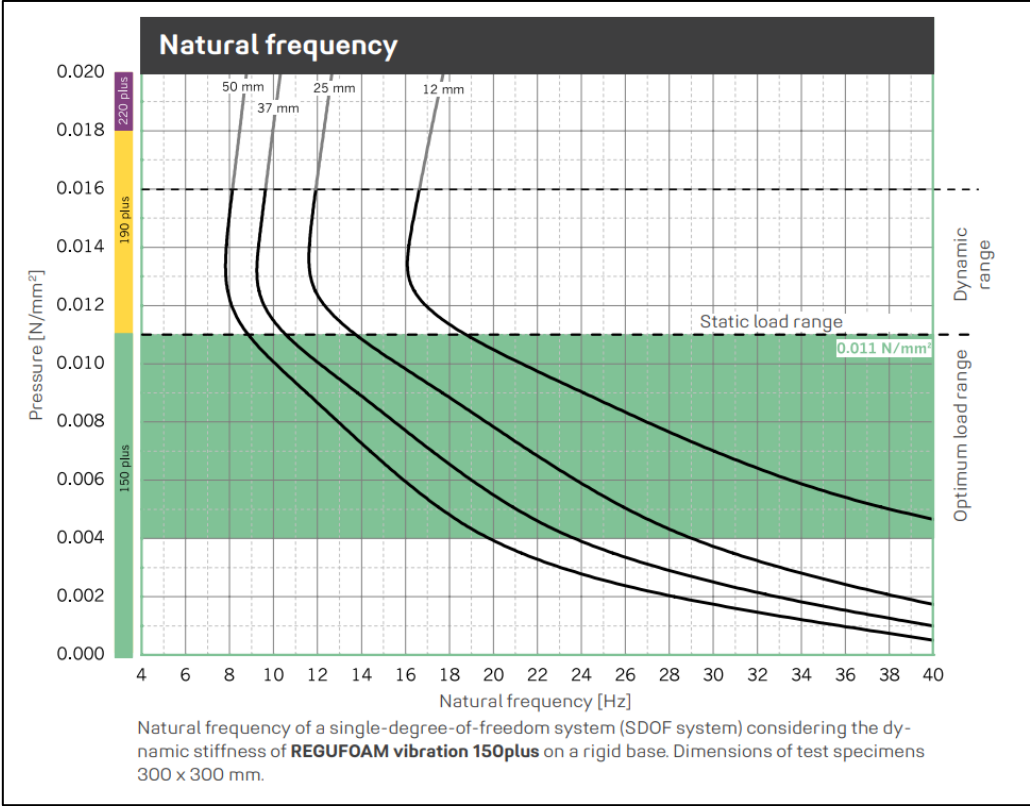
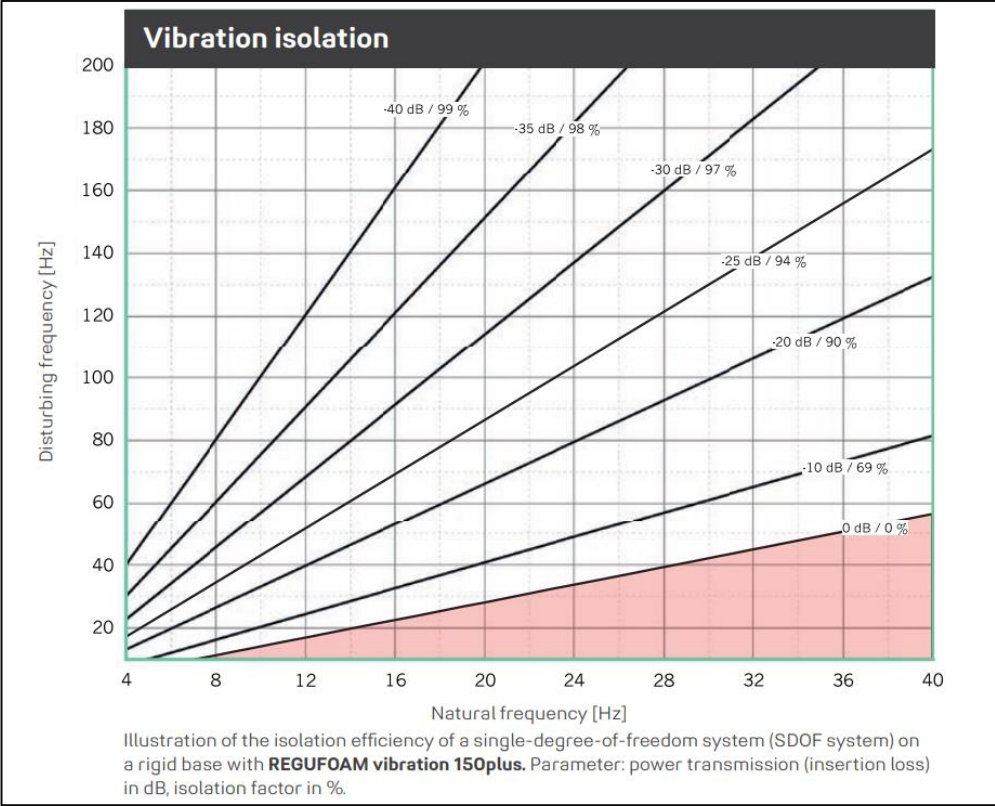
*Allergy free, toxic free, low natural frequency*

Description	Value
Type	Vibration Damping Foam
Dimension	1000mm x 1500mm x 12mm
Material	Cellular Polyurethane
Weight	± 2.5kg/m
Density	150kg/m <sup>3</sup>
Color	Green
Country of Origin	Germany

*Broadcast studio, Home theater, Karaoke room, Music hall, Discotheque, Railroads, Machines, Building foundation*



# Acourete Regufoam 150



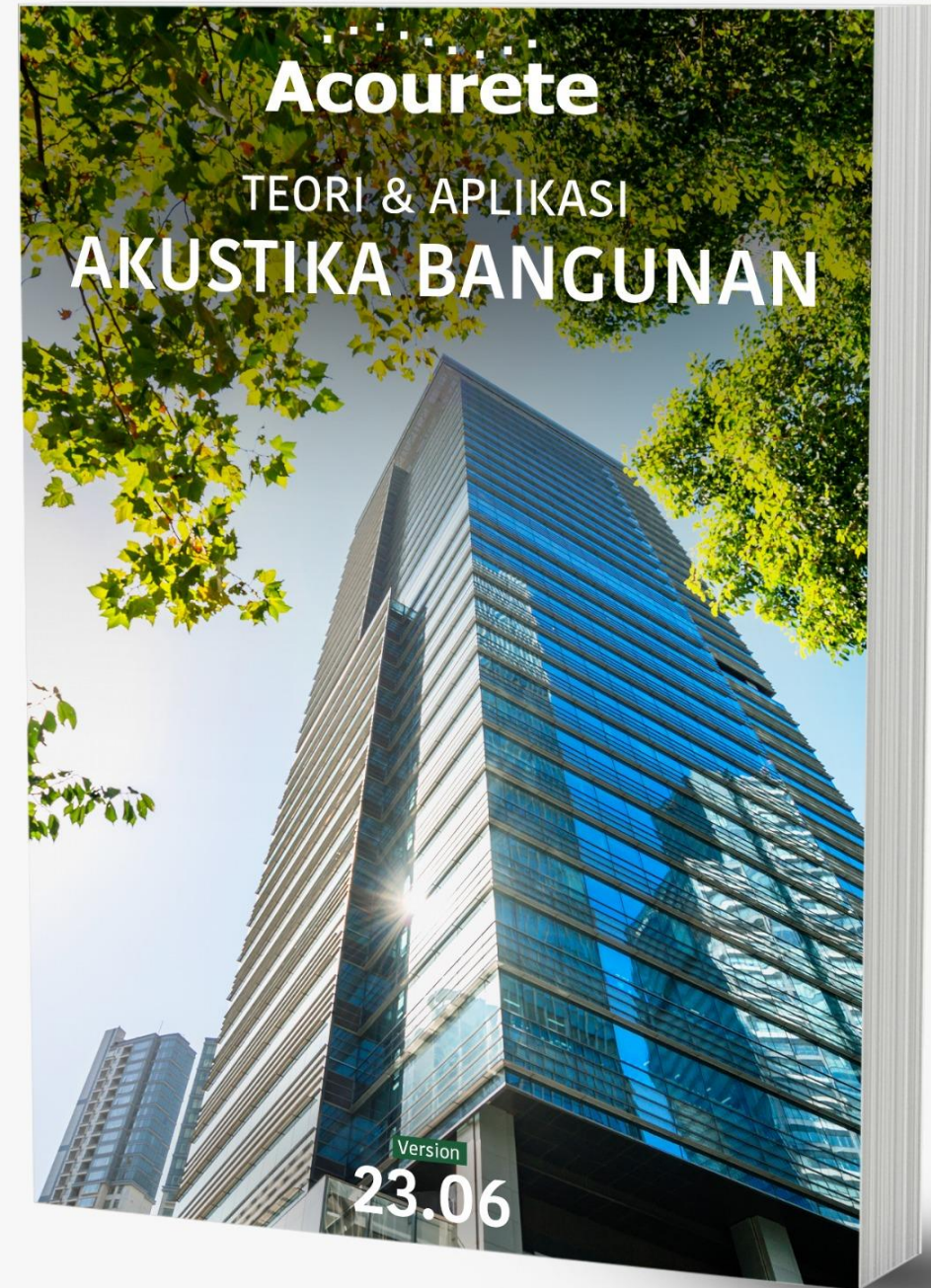






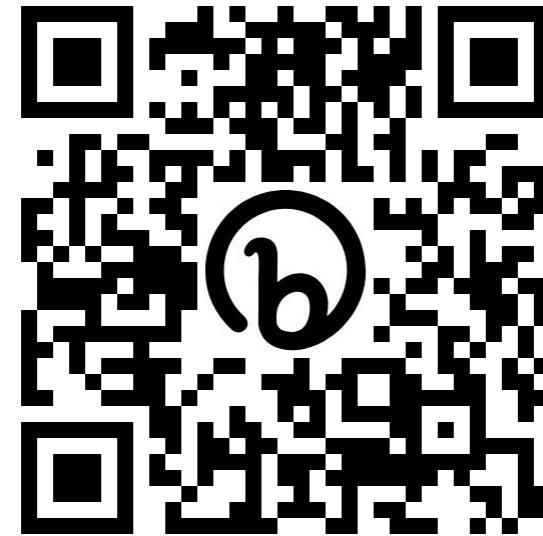
# Download Buku Teori & Aplikasi Akustika Bangunan

<https://bit.ly/UnduhBukuAkustikaBangunan>





# DASAR-DASAR PERANCANGAN AKUSTIKA ARSITEKTUR



<https://acourete.com/unduh-gratis-ebook-architectural-acoustics/>



## FEEDBACK WEBINAR ACOURETE #28

<https://bit.ly/FeedbackWebinarAcourete28>



# CONTACT US



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