

Revolutionary Talk

MENILIK KENYAMANAN SUARA (KEBISINGAN) PADA MODA TRANSPORTASI KAPAL LAUT



Pembicara 1:
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CALISTA TALITA, S.T.
Product Consultant of
Acourete Acoustics



Host:
ARIEF YUDISTIRA

• LIVE 



**JUMAT,
30 SEPTEMBER
2022**



**FROM 15.00
TO 17.00 WIB**

FASILITAS

- Free Registration
- Free E Certificate

For registration please visit:

<https://bit.ly/WebinarAcourete22>

Join Meeting:



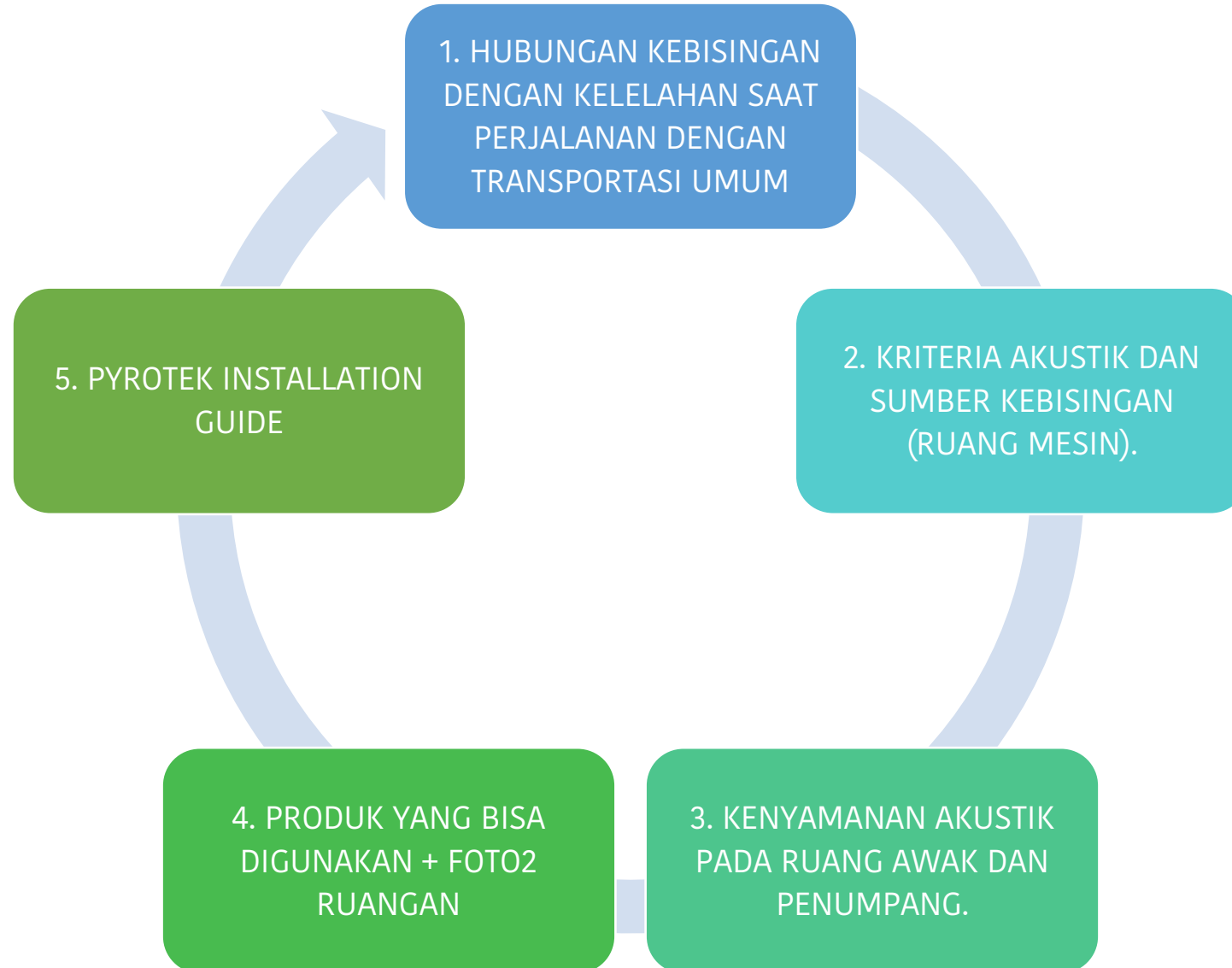
MENILIK KENYAMANAN SUARA (KEBISINGAN) PADA MODA TRANSPORTASI KAPAL LAUT

CURRICULUM VITAE

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B. Eng, Marine Engineering - Sepuluh Nopember Institute of Technology
S2, Maritime Resources and Technology – Universitas Indonesia



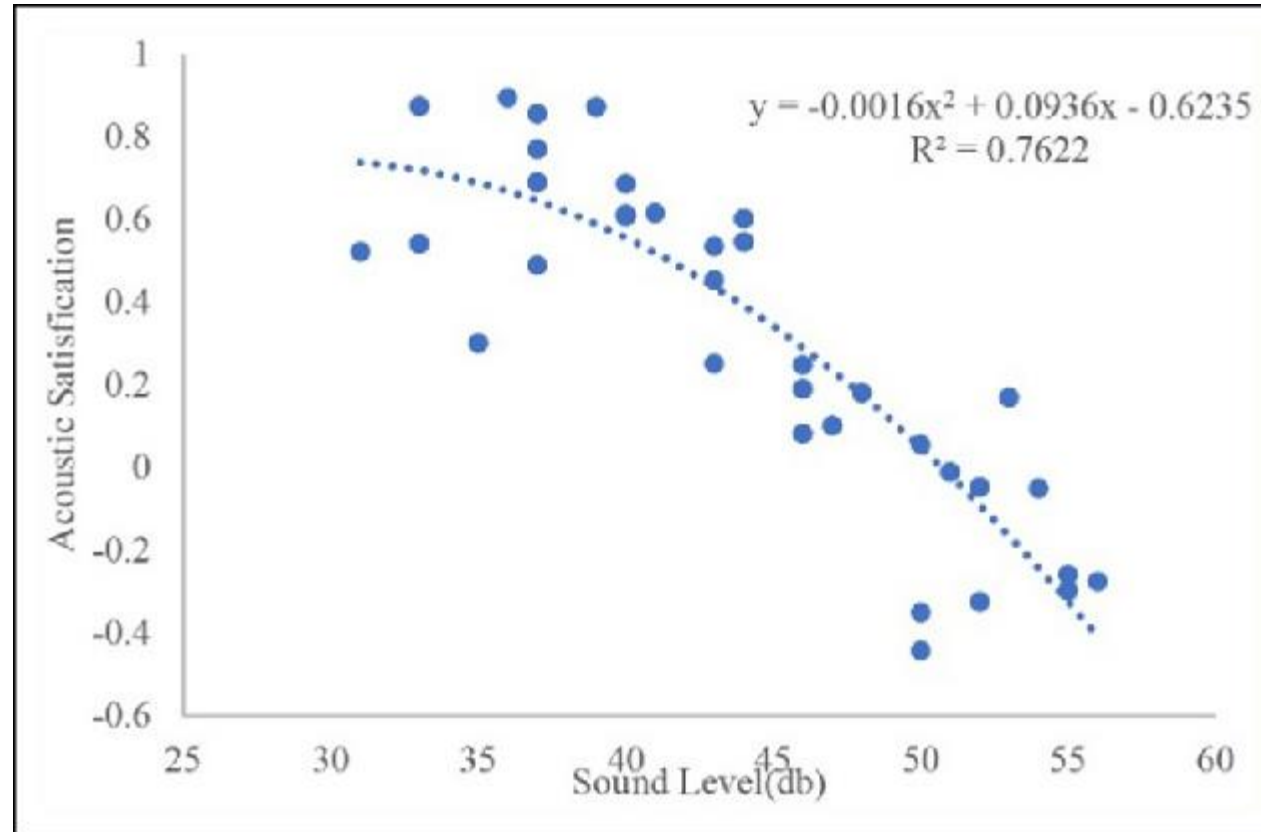
OUTLINES



HUBUNGAN KEBISINGAN DENGAN KELELAHAN SAAT MELAKUKAN PERJALANAN DENGAN TRANSPORTASI UMUM



HUBUNGAN KEBISINGAN DAN KENYAMANAN



Tahsildoost, Mohammad dkk, 2018, Indoor environment quality assessment in classrooms: An integrated approach, Iran, Journal of Building Physics

HUBUNGAN KEBISINGAN DAN KELELAHAN

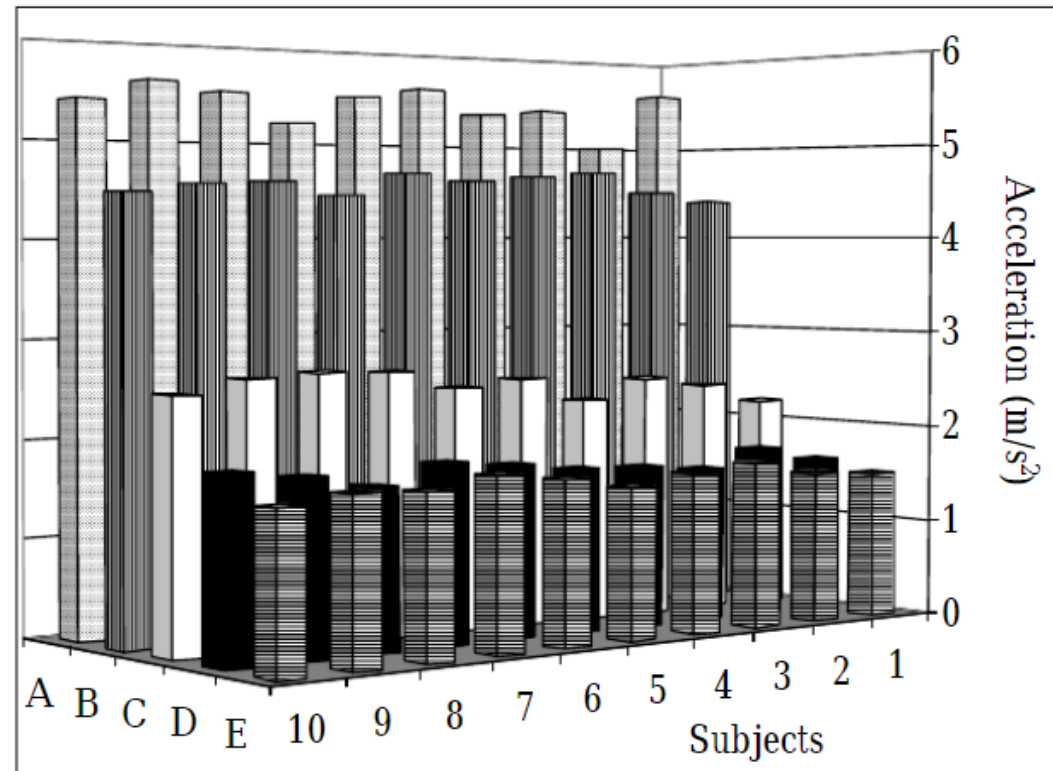


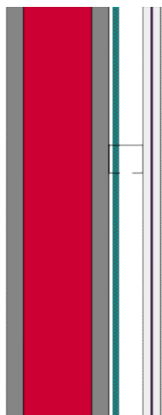
Figure 2 WBV - Accelerations r.m.s. - A: Engine room (⊗); B: Bridge above the engine room (||); C: Main deck (□); D: Control cabin (■); E: Recreation cabin (≡)

Picu, Fiz. Laurentiu dkk, 2017, Studies of vibrations induced and their effect on the river ship crew fatigue, Romania, Conference: New trends in environmental and materials engineering – TEME2017

KRITERIA AKUSTIK DAN SUMBER KEBISINGAN

SOUND TRANSMISSION CLASS

Sound Transmission Class (STC) adalah *rating* satu nilai yang merepresentasikan performa peredam transmisi suara *airborne* yang dimiliki oleh sebuah partisi di antara dua buah ruangan.



STC 61
OITC 53

Mass-air-mass resonant frequency = ~54 Hz
Panel Size = 2,7 m x 4,0 m
Partition surface mass = 256 kg/m²

STC	Keterangan
20-25	Sangat jelek, suara pelan dapat terdengar
25-30	Buruk, suara normal jelas dan mudah didengarkan
30-35	Cukup, suara keras cukup terdengar
35-40	Bagus, suara keras terdengar namun harus lebih didengarkan lagi
40-50	Sangat bagus, suara keras terdengar lemah
50-60	Sangat bagus sekali, suara keras terdengar sangat lemah hampir tidak ada sama sekali

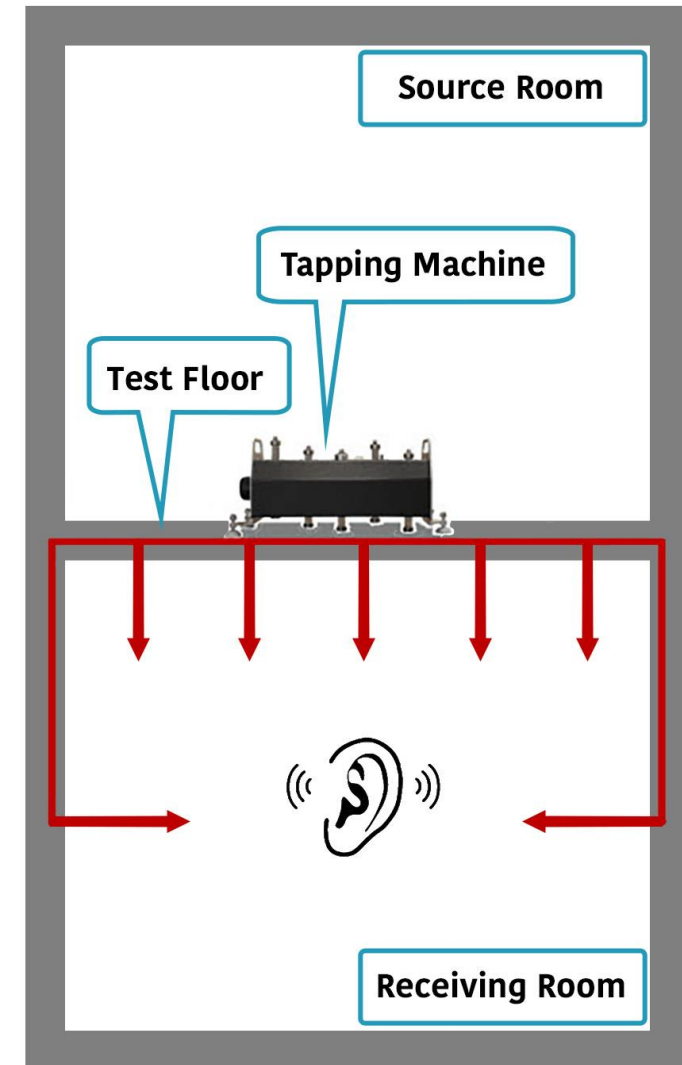
IMPACT INSULATION CLASS

Impact Insulation Class adalah rating kemampuan *floor-ceiling assembly* untuk menahan perambatan impact noise ke ruangan di bawahnya. *Floor-ceiling assembly* dengan peringkat IIC rendah berpotensi menyebabkan kebisingan yang mengganggu ruangan di bawahnya.



IIC 64

Application	IIC rating
Hotel	55+
Apartment	50+
Office/Commercial	40
School (core learning)	40-45



SUMBER KEBISINGAN

Perambatan kebisingan melalui *air-borne* (udara) dan *structure-borne noise* (struktur bangunan) dari ruang mesin.



KENYAMANAN AKUSTIK PADA RUANG AWAK DAN PENUMPANG

STANDAR KEBISINGAN SECARA UMUM

Noise Exposure Limits

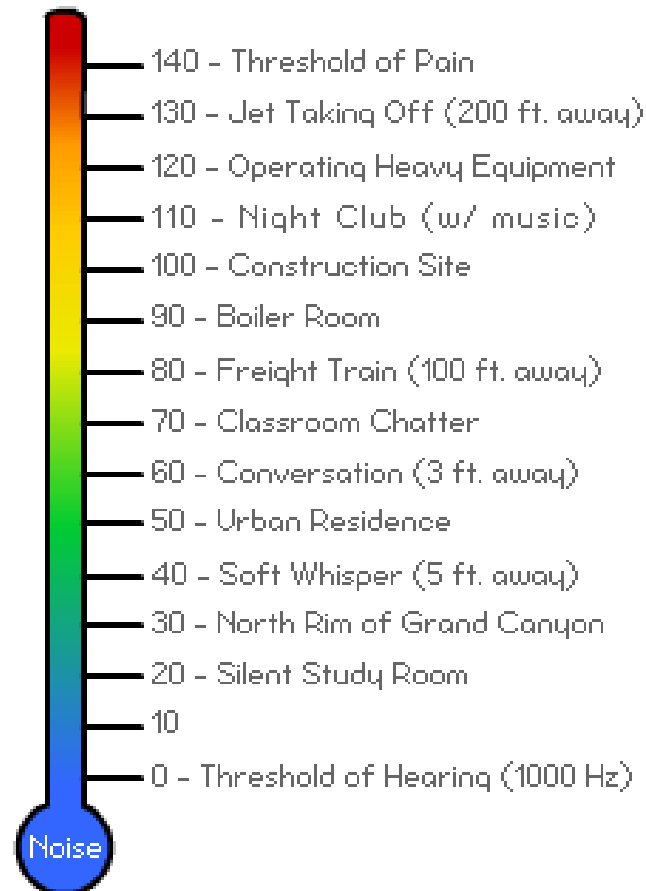
	NIOSH	OSHA
Exposure Time	<i>dB SPL</i>	<i>dB SPL</i>
8 hrs	85	85
4 hrs	88	90
2 hrs	91	95
1 hr	94	100
30 min	97	105
15 min	100	110
7.5 min	103	115
3.75 min	106	120
> 2 min	109	-
> 1 min	111	-

NIOSH The National Institute for Occupational Safety and Health

OSHA Occupational Safety and Health Administration

dB SPL Decibel sound pressure level

Typical Sound Levels (dBA)



STANDAR KEBISINGAN SECARA UMUM

Tingkat Kebisingan Maksimum di Ruang Akomodasi Menurut ABS

<i>Spaces and Open Recreation Areas</i>	<i>Maximum Acceptable L_{Aeq} value dB (A)</i>
<i>Indoor Public Spaces (including Snack bars, dining spaces, lounges, cocktail bars, etc.)</i>	55
<i>Indoor seating Areas (Grouped seating on ferries or HSC)</i>	60
<i>Indoor Recreation spaces and game rooms</i>	65
<i>Passageways near public areas</i>	70
<i>Outdoor public space and outdoor seating areas</i>	65
<i>Medical and first aid spaces</i>	55

Sumber : Noise Criteria – Vessels without Passenger Berthing Cabins, section 4 Noise

Tingkat Kebisingan Maksimum di Ruang Kamar Mesin Menurut ABS

No.	Ruangan	Tingkat dB(A)
1	Kamar mesin dengan ABK berada terus menerus di dalam kamar mesin	100
2	Kamar mesin dengan ABK yang tidak terus menerus didalam kamar mesin	110
3	Workshop (ruang yang biasa digunakan untuk perbaikan, alat-alat bengkel)	100
4	Ruang control (ruangan yang digunakan untuk mengontrol ruangan lain, mengontrol permesinan)	100
5	Ruang kipas (ruangan yang terdapat kipas untuk ventilasi, menghisap dan meniupkan udara)	100

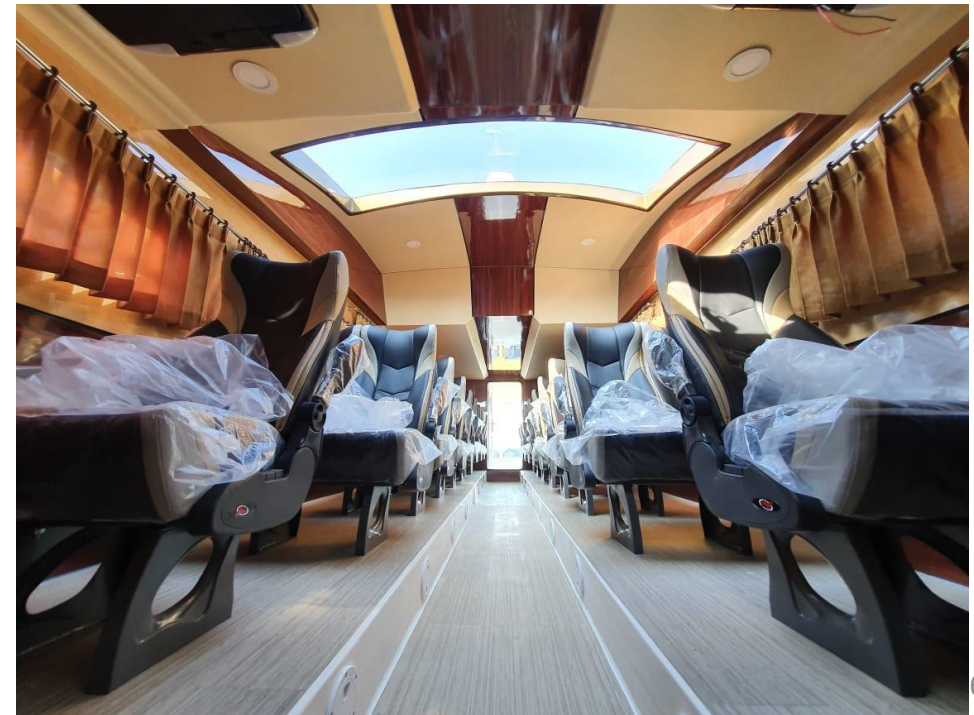
Sumber : ABS Guide For Crew Habitability On Ship section 4

ABS = American Bureau of Shipping

RUANG PENUMPANG

KEBUTUHAN KENYAMANAN AKUSTIK PADA RUANG PENUMPANG

- Kenyamanan untuk penumpang saat beristirahat.



RUANG AWAK KAPAL

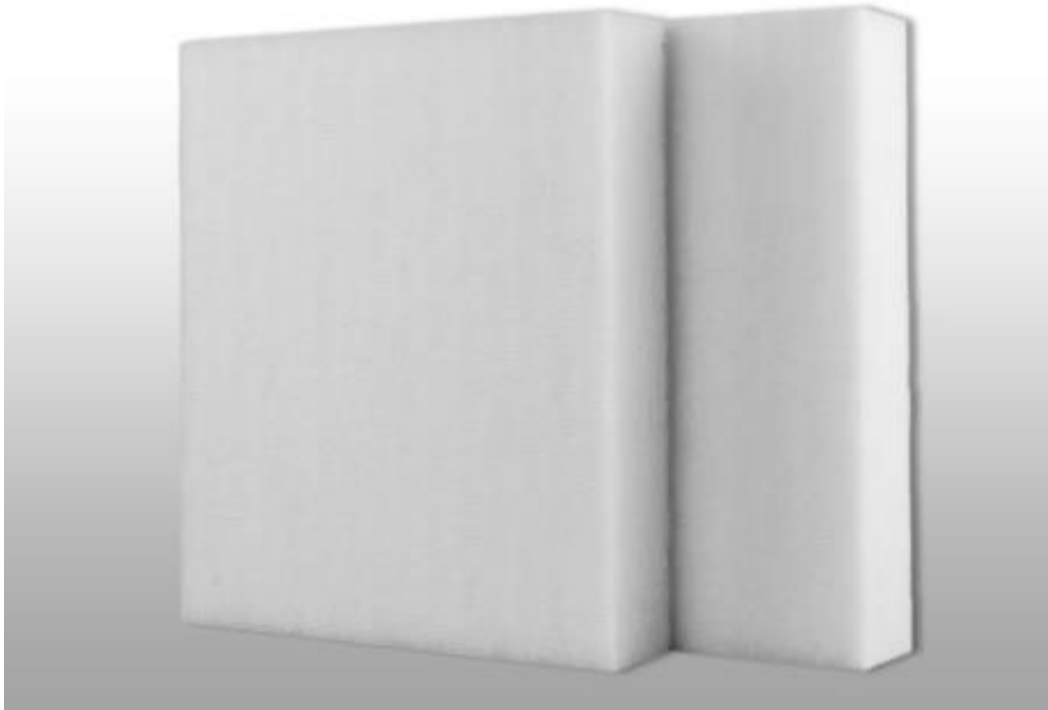
KEBUTUHAN KENYAMANAN AKUSTIK PADA RUANG AWAK KAPAL

- Kenyamanan untuk istirahat awak kapal



MATERIAL INSULASI SUARA YANG DAPAT DIGUNAKAN

SORBERPOLY 2D



APPLICATIONS

- Engine compartments and covers to control reflected noise
- Partial enclosures
- Ventilation ducts
- Hull side lining
- Cavity infill for acoustic and thermal insulation
- Fill for voids that can conduct noise from adjacent areas



Toxic-free, Efficient thermal insulation, Recyclable

DECIDAMP® DC30



APPLICATIONS

- Maximum performance achieved when using correct thickness counter plates
- Hull, deck and bulkheads to reduce vibration noise
- Floors to reduce impact noise
- Portable generator and pump units
- Propeller and bow thruster area



Fire-resistance, Weather-resistance, Flexible

ACOURETE EZ1 PAINT



Allergy free, Toxic free, Fire safety



Transportation, Metal surface

ACOURETE EZ1 PAINT



Transportation, Metal surface

ACOURETE NOISE ARMOUR



Allergy free, Toxic free, fire safety, viscoelastis



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

ACOURETE FIBER



Allergy free, Toxic free, fire safety



ACOURETE SILENT WALL



Allergy free, Toxic free, fire safety, viscoelastis



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

MATERIAL PEREDAM KEBISINGAN PADA MESIN



SORBERSCREEN



APPLICATIONS

- Acoustic wall and ceiling panels for machinery spaces
 - Ventilation ducts
 - Lining of acoustic enclosures
 - Acoustic baffles
- Interior decorative wall absorbers

KEBISINGAN PADA MESIN



1. Alas Mesin



Acourete
Regufoam 150



Regupol 300

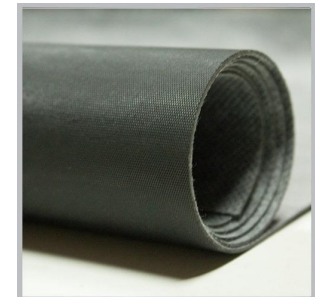
2. Selubung Insulasi ruangan



Acourete
Noise Armour



Acourete Fiber



Acourete
Silent Wall

MATERIAL PEREDAM KEBISINGAN LANGKAH KAKI



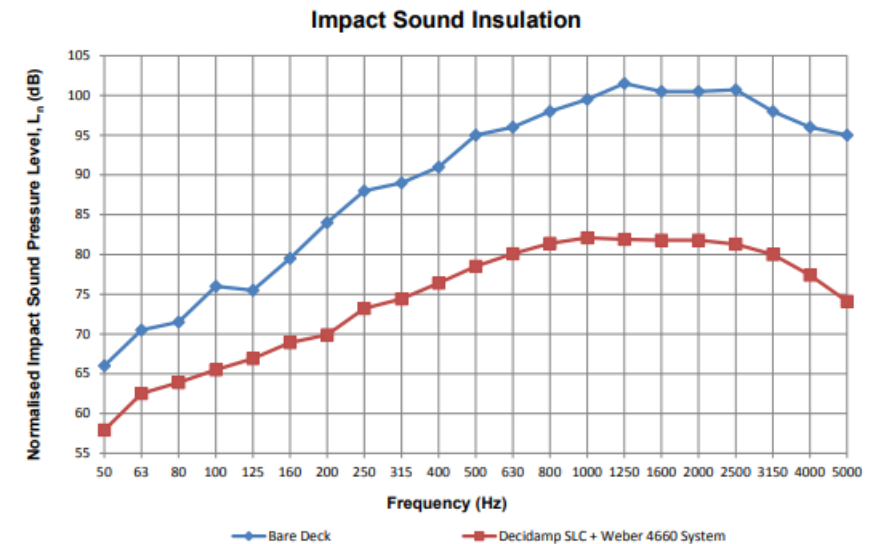
#REVOLUTIONARYMOVEMENT



DECIDAMP SLC - Viscoelastic Self-levelling Vibration Damping Compound



Penggunaan: di geladak, sebagai lapisan *self-leveling* untuk mengurangi kebisingan getaran dan kebisingan akibat struktur



Viskoelastic, Fire safety, Fast application

REGUPOL 4515



Allergy free, Toxic free, fire safety, easy to use

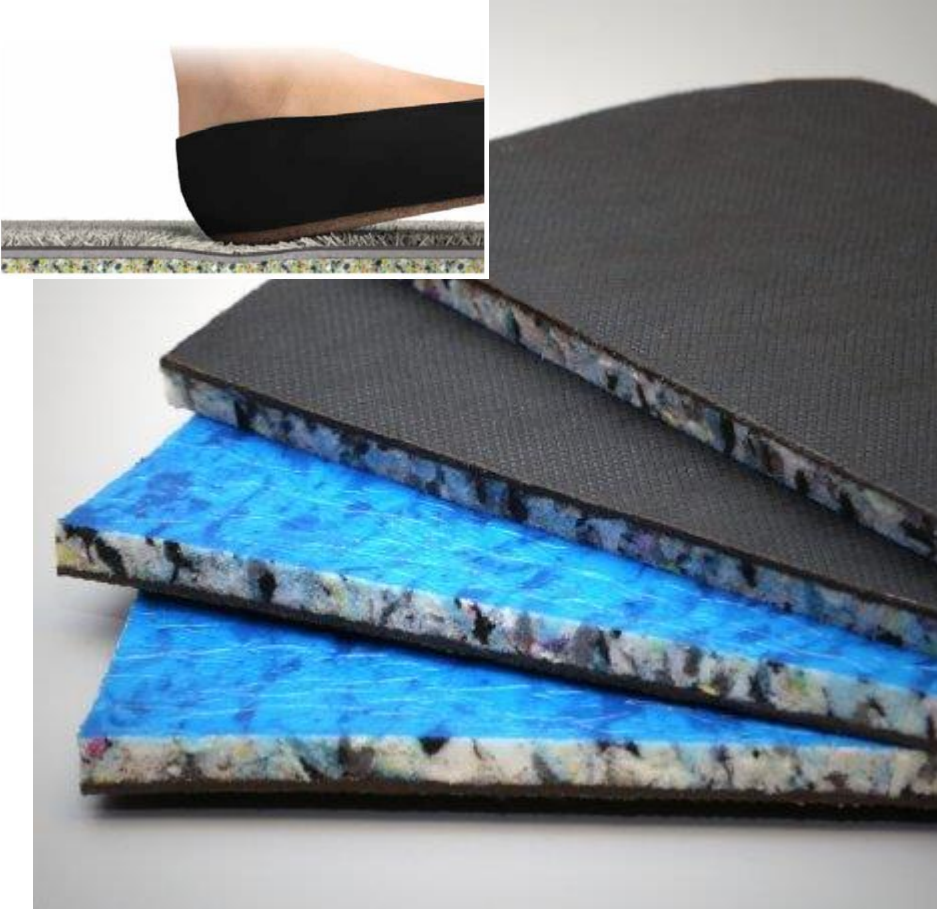
Hotel, Office, Hospital, Home theater,
Music studio, Karaoke room, Gym



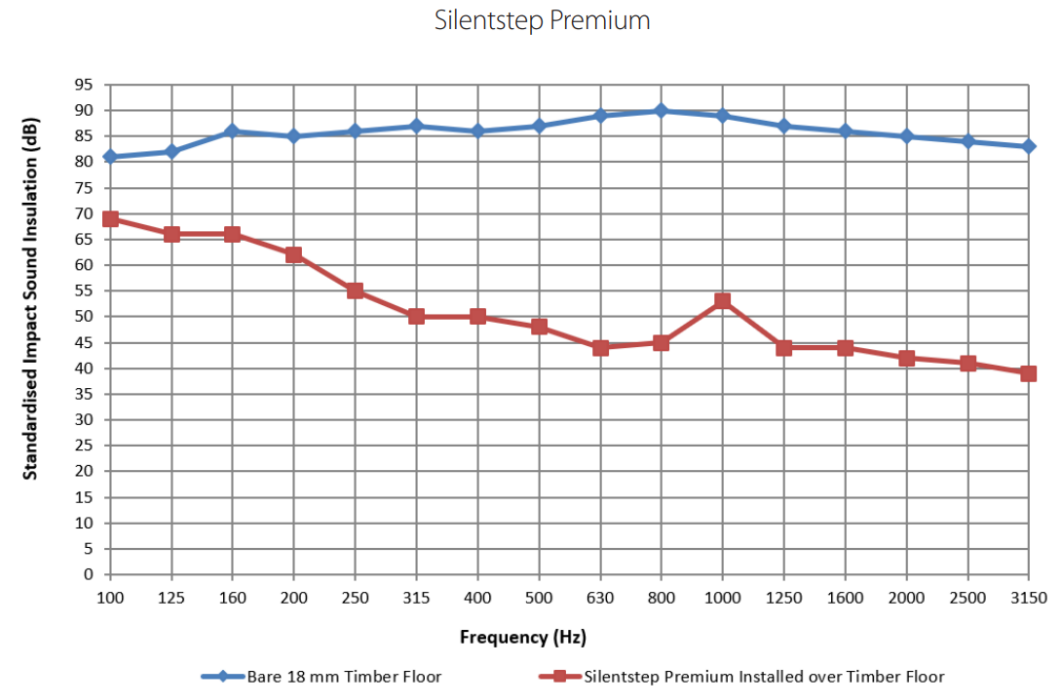
SILENTSTEP PREMIUM

Applications

- Marine vessels to stop engine noise travelling into staterooms, salons, VIP cabins etc.



100% recycled material, Easily installed, high density

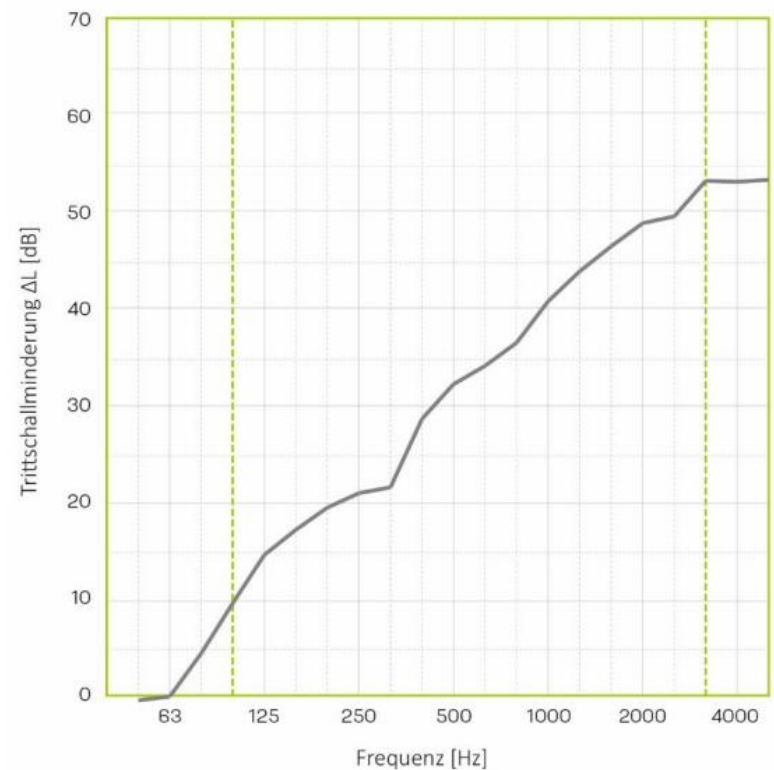


REGUPOL SOUND 12



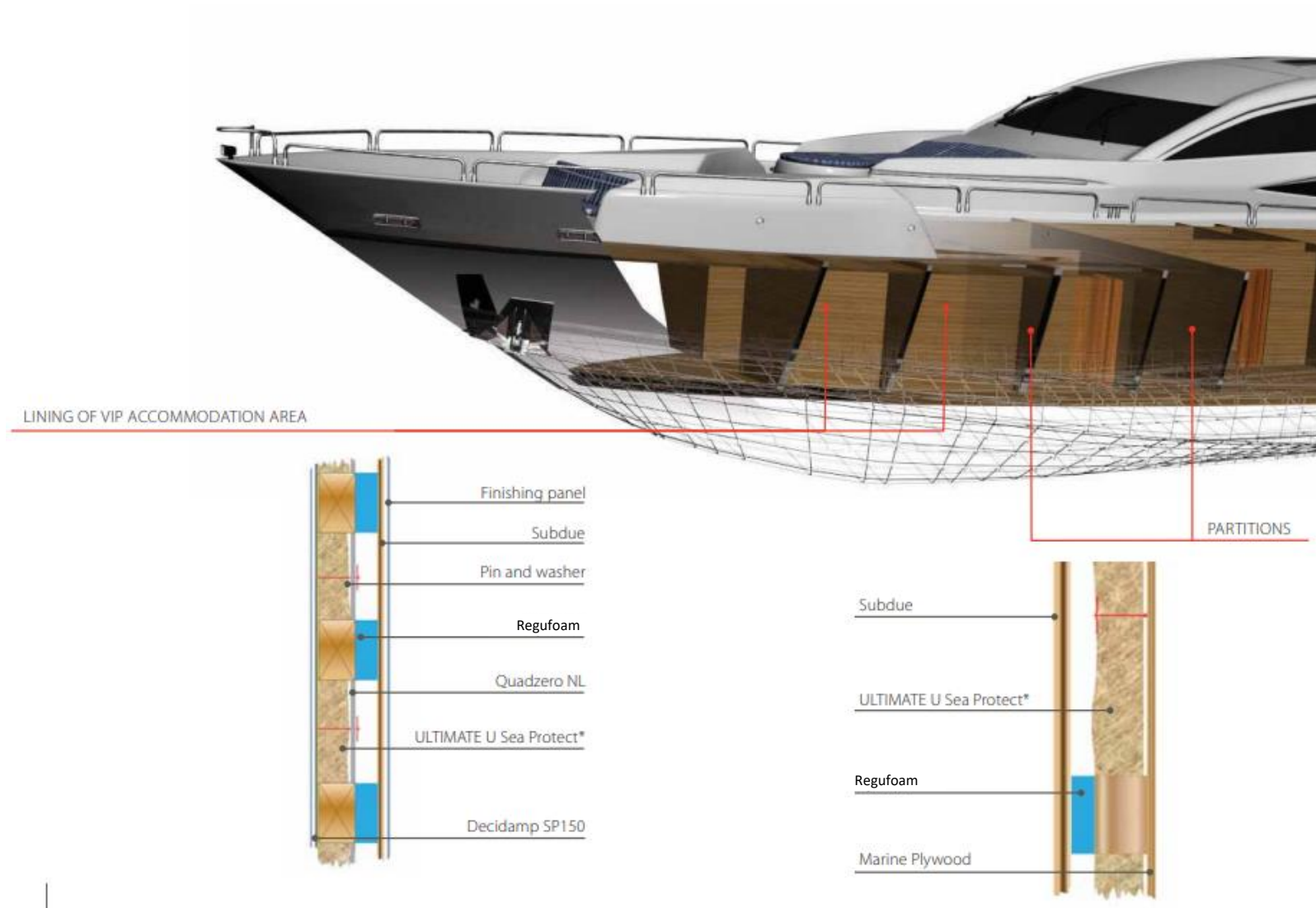
Long-lasting, ecofriendly

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

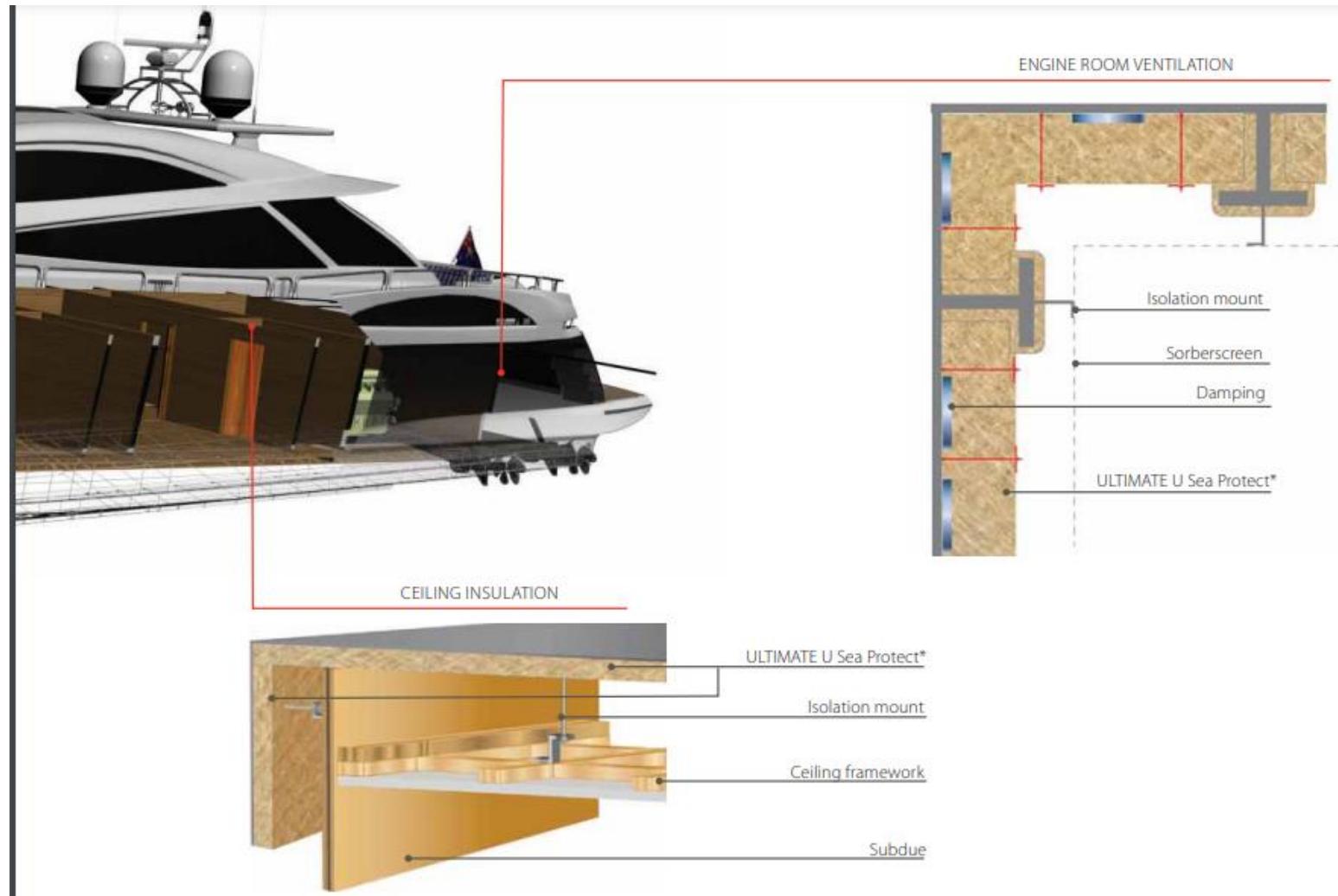


PYROTEK INSTALLATION GUIDE

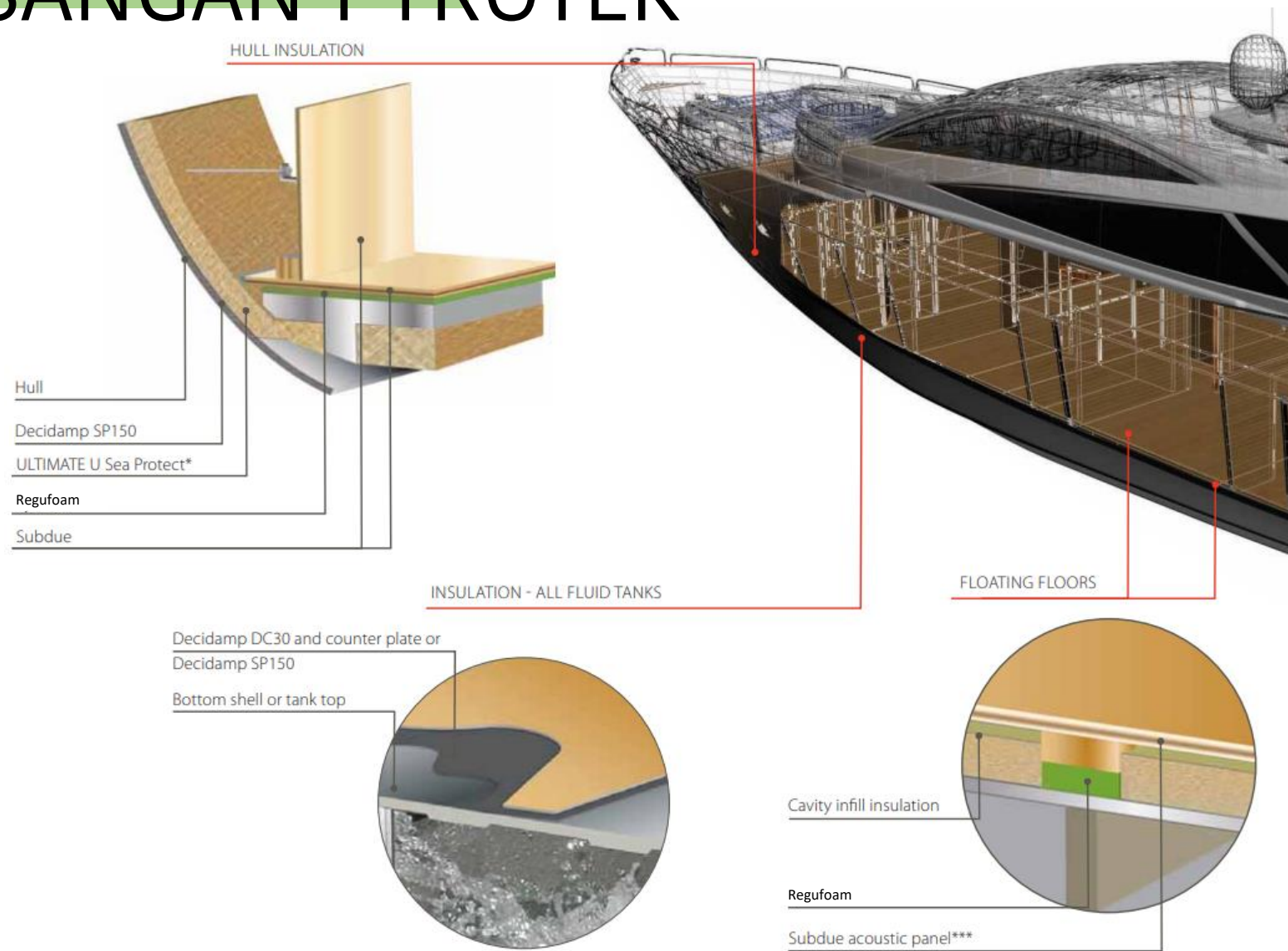
PEMASANGAN PYROTEK



PEMASANGAN PYROTEK

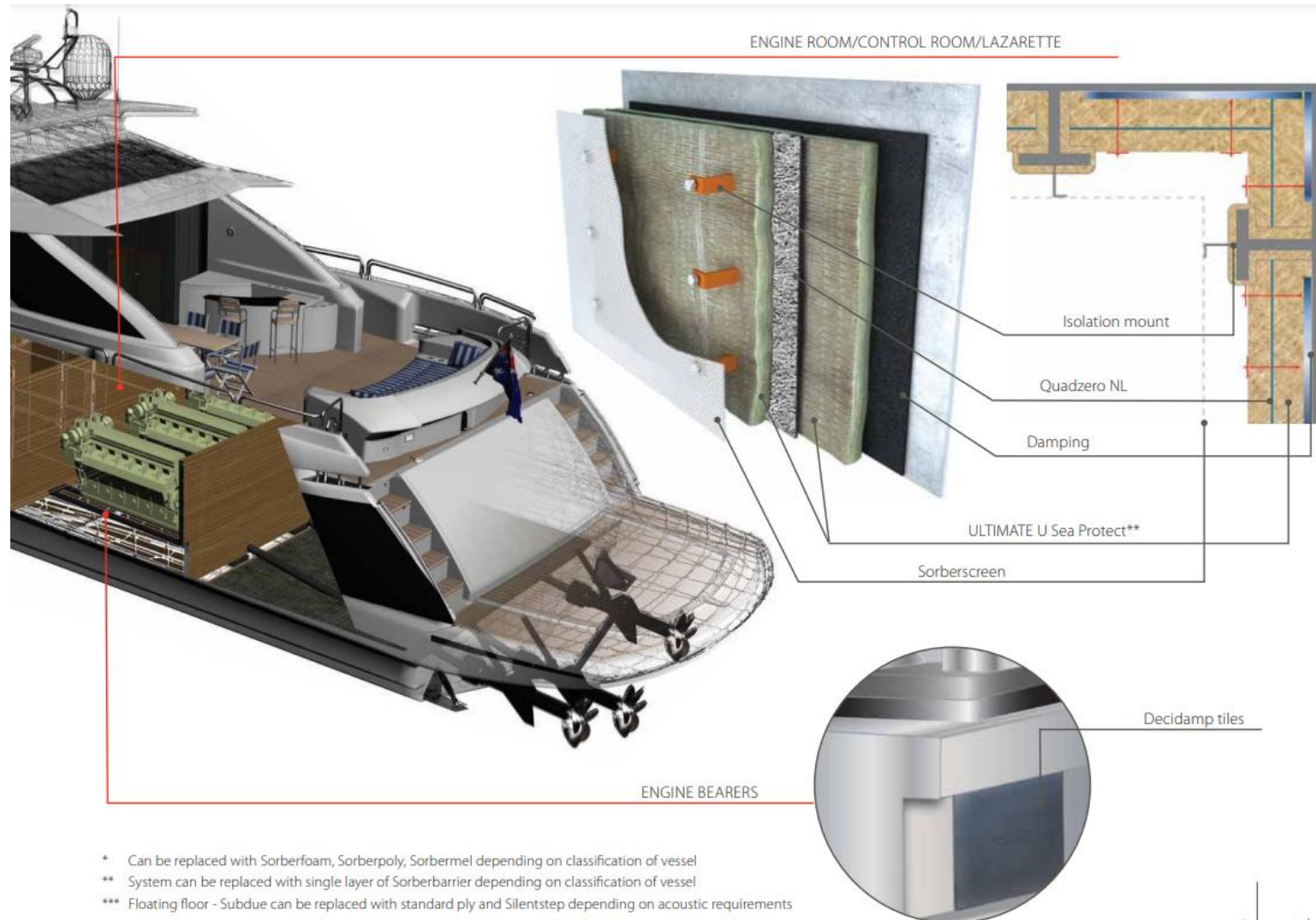


PEMASANGAN PYROTEK



#REVOLUTIONARYMOVEMENT

PEMASANGAN PYROTEK



BUKU BARU ACOURETE:



Rekomendasi Desain Akustik
Studio Produksi Konten Suara Profesional
Musik, Percakapan, dan Spesial Efek

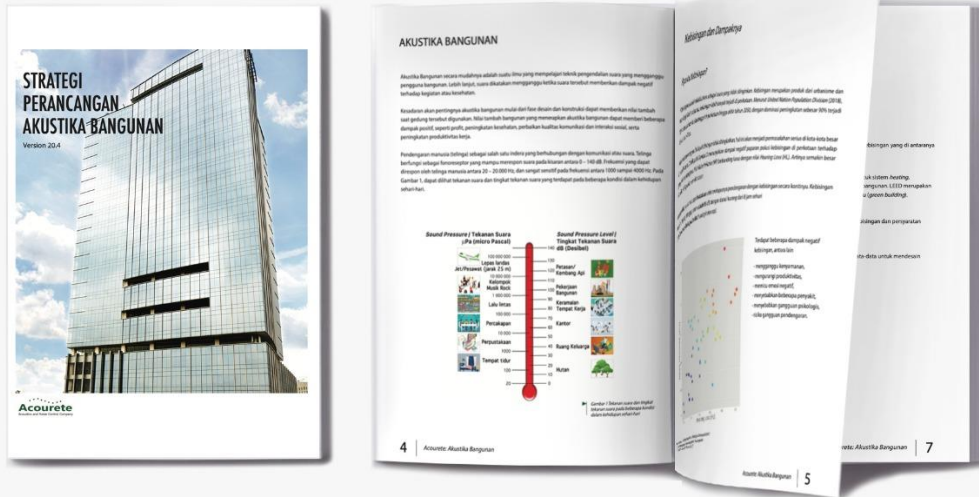
ISI BUKU:

1. Mendesain studio yang hening sehingga dapat merekam seluruh detail suara
2. Studio dengan karakteristik akustik yang netral.
3. Studio dengan karakteristik akustik khusus, atau variabel akustik.



STRATEGI PERANCANGAN AKUSTIKA BANGUNAN

DASAR-DASAR PERANCANGAN AKUSTIKA ARSITEKTUR



<https://acourete.com/ebook-akustika-bangunan/>

<https://acourete.com/e-book-akustika-arsitektur/>

CONTACT US



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Noise Control**



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