

# 2B

RESINE

PRODOTTI INSONORIZZANTI

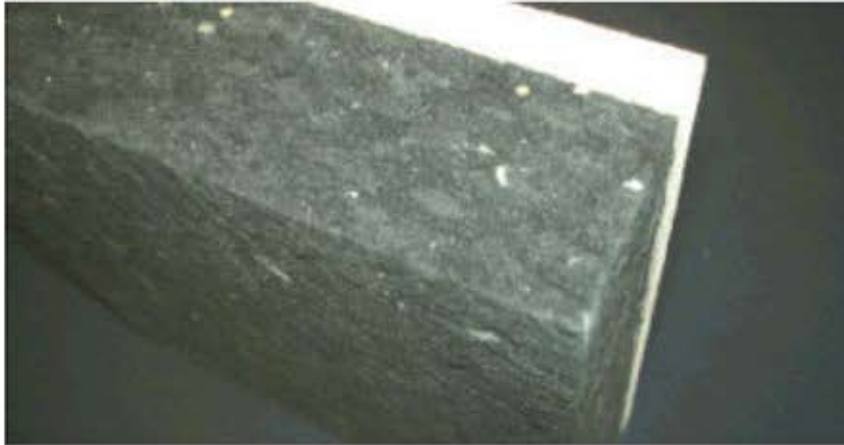
WALL OF THE SILENCE  
HABITAT I e HABITAT II



WALKABLE SURFACE

Date 01/01/2017

Data Sheet



FORMAT  
mm 1.200 x 2.800/3.000  
or on request 1.400/1.500

THICKNESS  
33-43-53 mm

WEIGHT  
12-13-14 kg/mq

CONDUCTIVITY THERMAL  
W/mK 0,035 10°C

SOUND INSULATION POWER  
Rw = 32 db

SOUND INSULATION CON FUNZIONE SIA  
FONOIMPEDENTE CHE FONOASSOR-  
BENTE E ISOLAMENTO TERMICO

## Generality

**HABITAT** is a self-supporting sound insulating panel coupled to a plasterboard plate, used for the creation of acoustic false walls.

**HABITAT I** is composed of agglomerated polyurethane foam flakes with polyurethane resins, 40/50 mm thick, coupled to a plasterboard plate.

**Habitat II** is composed of polyurethane agglomerate, 10/20 mm thick, coupled to a plasterboard plate.

## Applications

**Habitat** is a good solution. It is inserted in double walls or used in building renovations for bettering the acoustics of adjacent rooms and to create acoustic false walls against existing walls. Habitat I and Habitat II work as soundproofing and sound-absorbing masses, and guarantee excellent thermal insulation too. The large size of the panels reduces the formation of sound bridges and installation time. Applied to existing walls it increases sound insulation, plaster walls with an acoustic function. Habitat also makes acoustic false ceiling and isolates pillars, stairwells and elevator shafts.

**Wall in adherence to the existing wall:** The HABITAT I panel is adhered to the wall either with a water-based glue we can provide or with cement mortar or dowels. Align the pre-coupled panels and carefully seal them. The wall is finished with plaster. Apply the second panel Habitat II. Finally seal, plaster and paint the wall.

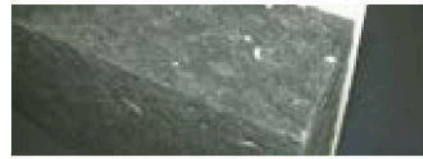
**Warning:** During assembly and panel alignment, sealing is necessary using transparent or white silicone. This sealing is also to be done near the base, and the height of the corners of the wall. The same goes when used for a ceiling.

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## Applications

Wall and ceiling sound insulation.

Adjacent room walls must offer a good degree of sound insulation, preventing noise between them. If noise filters between rooms it indicates that the mass of which the wall is composed it is too light, and thus does not ensure the necessary sound insulation, as foreseen in residential construction legislature (50 dB). *DPCM5/12/97*.

**A hollow brick wall (8cm thick) has an RW isolation of only 42/43 dB.**

Sound insulation is further lessened when walls are perforated for the passage of electrical and plumbing equipment, (discharges, switches, etc.), or are not properly constructed. This leads to a failure of the insulating partition, with consequent neighborly complaints (voices, televisions, music and more...).

To solve these problems 2B Resine uses a system called wall of silence, which is composed of a "sandwich" mechanism: mass - spring - mass.

The mass (the wall) carries out the sound-resistant function, while the flexible system (the spring), lowers vibrations, subtracting energy from the sound source (the disturbing sound).

Our panels applied in adherence or contact-fixed to a wall (mass) are composed of a sound-absorbing part (the spring), applied to a mass (plasterboard), and they provide elevated and long-lasting soundproofing.

**Laboratory data confirms that an 8 cm thick hollow brick wall, of 40 dB RW, can result in RW 57 with the Habitat I and Habitat II double-panels applied in adherence.**

The system also works with impact sounds transmitted via the building's solid structures (i.e. the floor). Of course, the application sequence cannot be the same as for a wall, but is similar, using the supports provided for the mounting of plasterboard panels. See the accompanying drawings. The average lowering of a false ceiling is between 15 and 20 cm.

The acoustic result is the containment of impact sounds produced on the floor of the above apartment.

As shown in the diagram sounds transmitted via the building's solid structures, also pass through the lateral walls and supporting pillars.

It is therefore good practice to insulate boundary walls as well, when insulating ceilings.

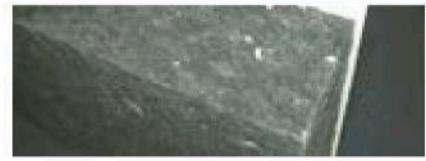


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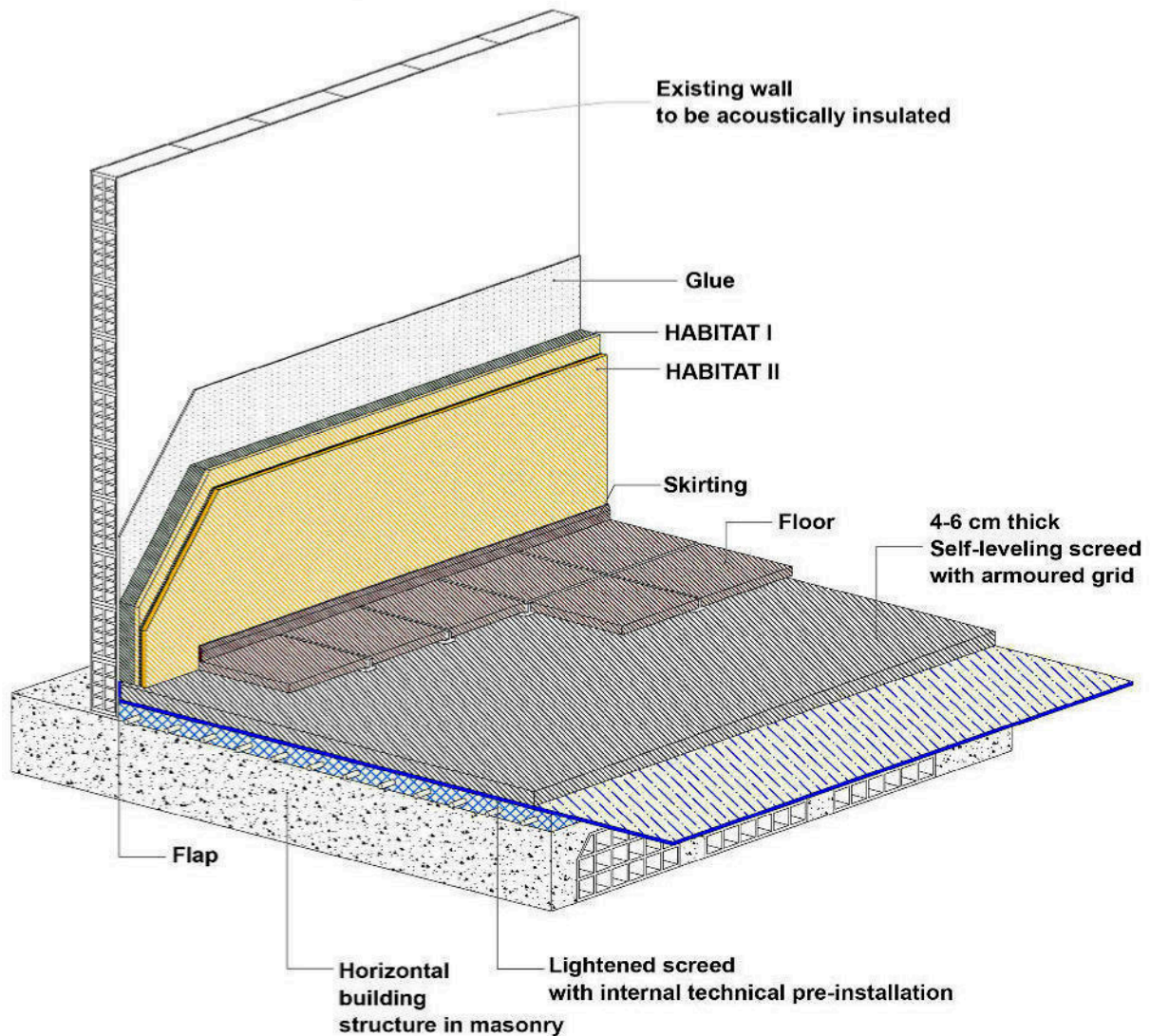


WALKABLE SURFACE

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## Contact-fixing and insulation system for walkable surfaces



### HABITAT I

wallboard thick 13/15 mm coupled to composite of polyurethane or polyester fiber.  
Thick 40/50 mm  
Slabs 1200x2000 mm

### HABITAT II

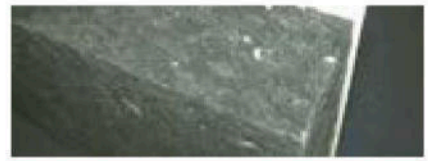
wallboard thick 13/15 mm coupled to composite of polyurethane or polyester fiber.  
Thick 10/20 mm  
Slabs 1200x2000 mm

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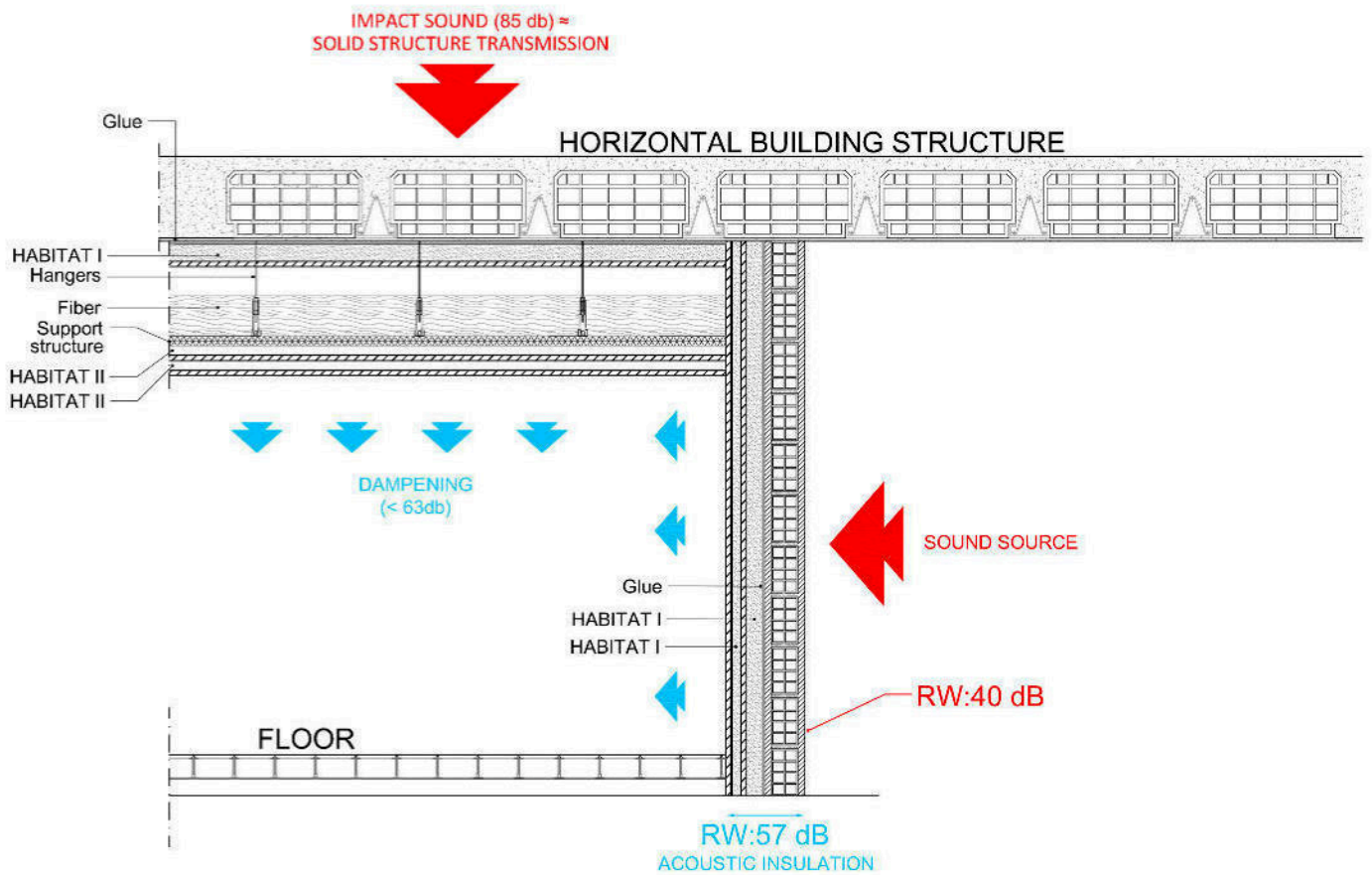
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## Ceiling and wall applications

Ceiling and wall mount diagram of pre-coupled plasterboard plate, named Habitat I - II

### CEILING AND INNER WALL MOUNTING DIAGRAM HABITAT I-II

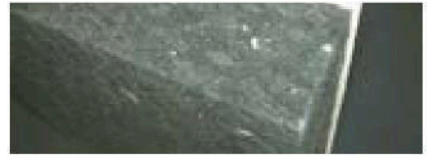


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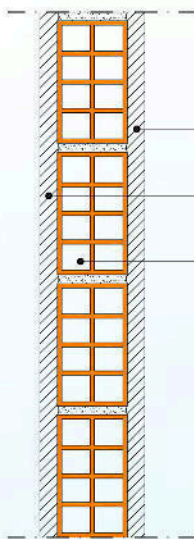


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## Test Report



Plaster

Plaster

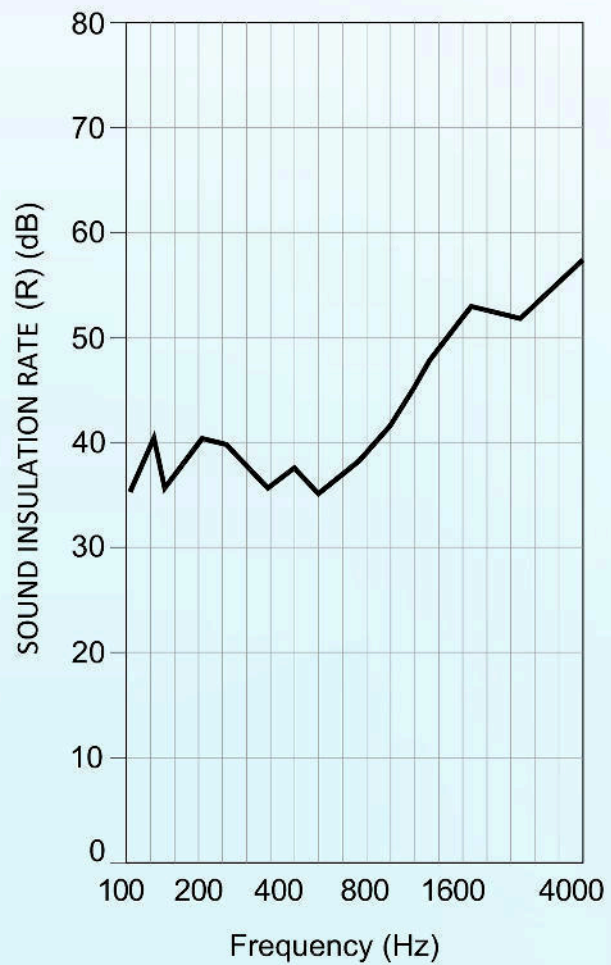
Hollow brick wall

**Sample composition:**

8 cm thick hollow brick wall, plastered on both sides

Test sound - white noise  
filtered in bands  
of a third of an octave

RW: 40 db





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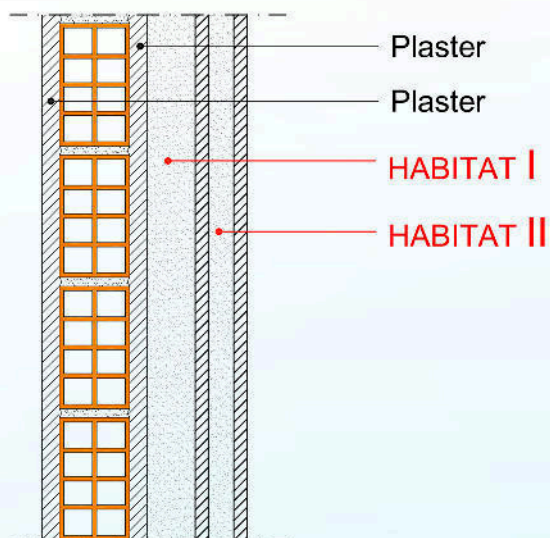


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## Test Report

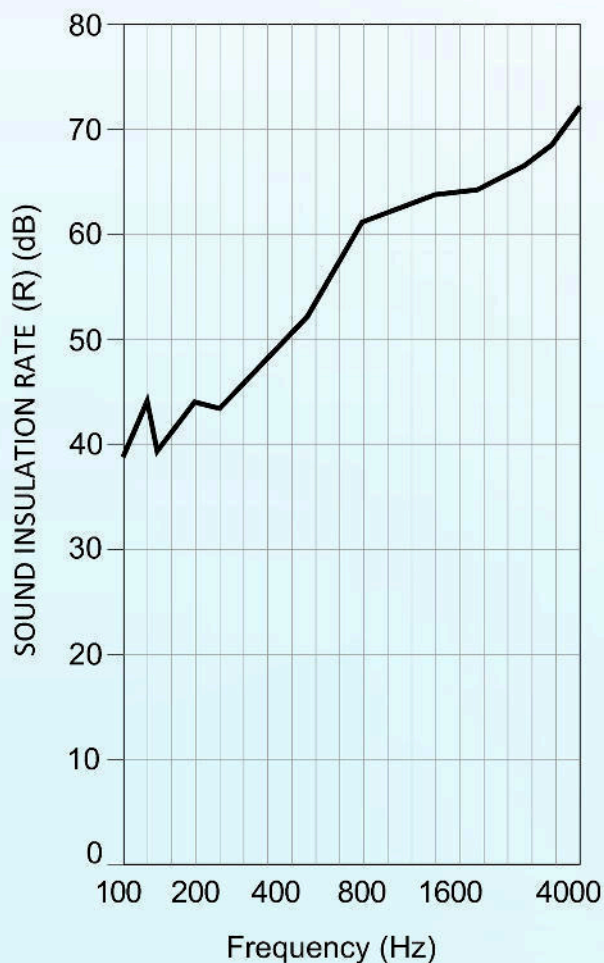


Sample composition:

Hollow brick wall plastered on both sides +  
13mm thick plasterboard plate pre-coupled with  
40mm thick polyurethane agglomerate + 13mm  
thick plasterboard plate pre-coupled with 20mm  
thick polyurethane agglomerate




Test sound - white noise  
filtered in bands  
of a third of an octave

**RW: 57,5 db**




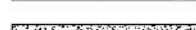
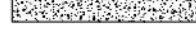


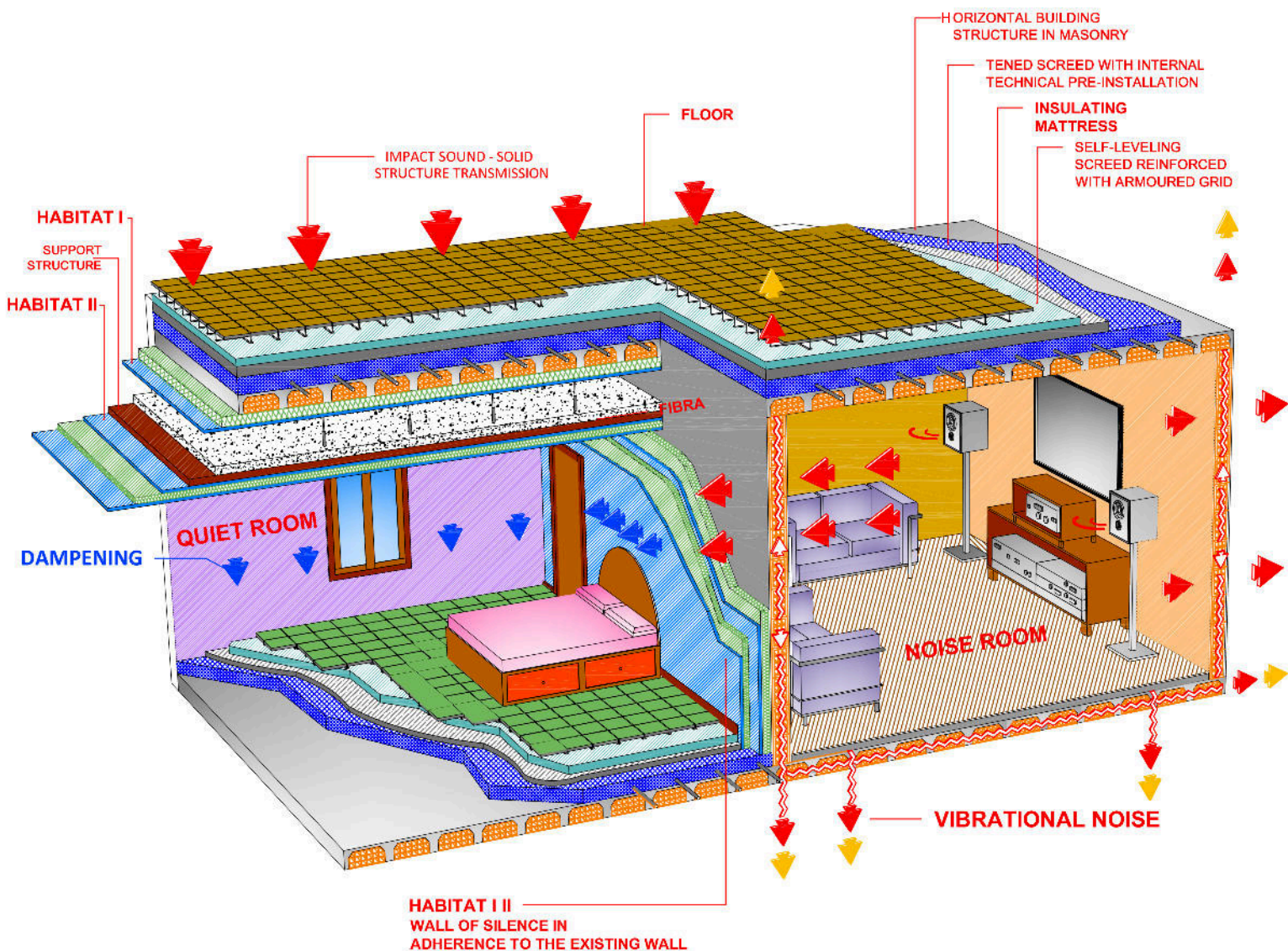
# SPREAD OF NOISE BY AIR AND BY STRUCTURAL CEILING AND INNER WALL MOUNTING DIAGRAM HABITAT I - II (WALL OF SILENCE) AND FLOOR INSULATION

## LEGEND: FLOOR MATTRESS INSULATION

-  5MM THICK POLYETHYLENE
-  LOADED RUBBER
-  5MM THICK POLYETHYLENE

## LEGEND: WALL HABITAT I HABITAT II

-  THICKNESS 40 MM POLYURETHANE OR POLYESTER FIBER
-  THICKNESS 13 MM SLAB PLASTERBOARD
-  THICKNESS 20 MM POLYURETHANE OR POLYESTER FIBER
-  THICKNESS 13 MM SLAB PLASTERBOARD
-  FIBRE







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## Generality

A composite panel formed by the coupling of a 2 mm thick plasterboard plate and a 4 kg/m<sup>2</sup> membrane with mineral filler additives.

GENERAL TECHNICAL SPECIFICATIONS HABITAT HG			
EVALUATION CRITERIA	PROCEDURE	VALUE	U.M.
NOMINAL THICKNESS	/	16	mm
SURFACE PANEL MASS	/	13,50	Kg/mq
PANEL LENGTH	/	2000	mm
PANEL WIDTH	/	1200	mm
COATED PLASTER THERMAL CONDUCTIVITY	EN 12667	0,120	W/mK
MASSIVE MEMBRANE WEIGHT	/	4	Kg/mq
COATED PLASTER REACTION TO FIRE	EN 13501-1	A2-s1,d0 (B)	/
COUPLED PLATE SOUNDPROOFING CAPACITY	15186-1 (2003)	RW 34	dB

### APPLICATIONS:

Dividing walls and ceiling sound insulation with warping of 6 mm galvanized steel support and gap filling with insulating polyester fiber.





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### Generality

A composite panel formed by the coupling of a 2 mm thick plasterboard plate and a 4 kg/m<sup>2</sup> membrane with mineral filler additives and 6mm thick, 25 kg/m<sup>3</sup> dense self-extinguishing polyurethane foam

GENERAL TECHNICAL SPECIFICATIONS HABITAT HG PU			
EVALUATION CRITERIA	PROCEDURE	VALUE	U.M.
NOMINAL THICKNESS	/	22	mm
SURFACE PANEL MASS	/	13,50	Kg/mq
PANEL LENGTH	/	2000	mm
PANEL WIDTH	/	1200	mm
COATED PLASTER THERMAL CONDUCTIVITY	EN 12667	0,120	W/mK
MASSIVE MEMBRANE WEIGHT	/	4	Kg/mq
COATED PLASTER REACTION TO FIRE	EN 13501-1	A2-s1,d0 (B)	/
COUPLED PLATE SOUNDPROOFING CAPACITY	15186-1 (2003)	RW 34	dB

### APPLICATIONS:

Dividing walls and ceiling sound insulation with warping of 6 mm galvanized steel support and gap filling with insulating polyester fiber.



## Generality

A composite panel formed by the coupling of a 13.5 mm coated plaster plate and a layer of 40 mm thick high-density polyurethane agglomerate

GENERAL TECHNICAL SPECIFICATIONS HABITAT I				
EVALUATION CRITERIA	PROCEDURE	SYMBOL	SOUND	U.M.
NOMINAL THICKNESS	/	/	53,5	mm
SURFACE PANEL MASS	/	Ms	13,5	Kg/mq
PANEL LENGTH	/	/	2000,0	mm
PANEL WIDTH	/	/	1200,0	mm
COATED PLASTER THERMAL CONDUCTIVITY	EN 12667	$\lambda$	0,120	W/mK
DENSITY AGGLOMERATE	/	$\rho$	120,0	Kg/mc
AGGLOMERATE WATER VAPOR PERMEABILITY	UNI 7891 EN 13165	$\mu$	3,0	/
AGGLOMERATE SPECIFIC HEAT	UNI EN 13786	c	1200	J/KgK
COATED PLASTER REACTION TO FIRE	EN 13501-1	/	A2-s1,d0 (B)	/
AGGLOMERATE REACTION TO FIRE	MVSS 302	/	/	mm/min
SOUNDPROOFING CAPACITY	UNI EN ISO 15186-1	RW	32	dB

PROPERTY ACOUSTIC APPLICATION				
EVALUATION CRITERIA	PROCEDURE	SYMBOL	PLUS	U.M.
ESTIMATED SOUND INSULATION INDEX	UNI EN ISO 12354-1	Rw	57,5	dB
AGGLOMERATE AIRFLOW RESISTANCE	UNI EN ISO 29053	r	16,5	KPa.* s/m
AGGLOMERATE AIRFLOW RESISTANCE	ISO 140 - 4 ISO 717-1	R'W	56,0	dB
AGGLOMERATE SOUND ABSORPTION INDEX	ISO 11654 ISO 354	$\alpha_w$	0,60	/
DYNAMIC STIFFNESS	UNI EN ISO 29052-1	s'	14,5	MN/mc



## Generality

A composite panel formed by the coupling of a 13.5 mm coated plaster plate and a layer of 20 mm thick high-density polyurethane agglomerate

GENERAL TECHNICAL SPECIFICATIONS HABITAT II				
EVALUATION CRITERIA	PROCEDURE	SYMBOL	SOUND	U.M.
NOMINAL THICKNESS	/	/	33,5	mm
SURFACE PANEL MASS	/	Ms	10,5	Kg/mq
PANEL LENGTH	/	/	2000,0	mm
PANEL WIDTH	/	/	1200,0	mm
COATED PLASTER THERMAL CONDUCTIVITY	EN 12667	$\lambda$	0,120	W/mK
DENSITY AGGLOMERATE	/	$\rho$	120,0	Kg/mc
AGGLOMERATE WATER VAPOR PERMEABILITY	UNI 7891 EN 13165	$\mu$	3,0	/
AGGLOMERATE SPECIFIC HEAT	UNI EN 13786	C	1200	J/KgK
COATED PLASTER REACTION TO FIRE	EN 13501-1	/	A2-s1,d0 (B)	/
AGGLOMERATE REACTION TO FIRE	MVSS 302	/	/	mm/min
SOUNDPROOFING CAPACITY	UNI EN ISO 15186-1	RW	32	dB

PROPERTY ACOUSTIC APPLICATION				
EVALUATION CRITERIA	PROCEDURE	SYMBOL	PLUS	U.M.
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