

SILENT FLOOR

Waterproof, soundproofing membrane

Polyester felt and elastoplastomer bitumen



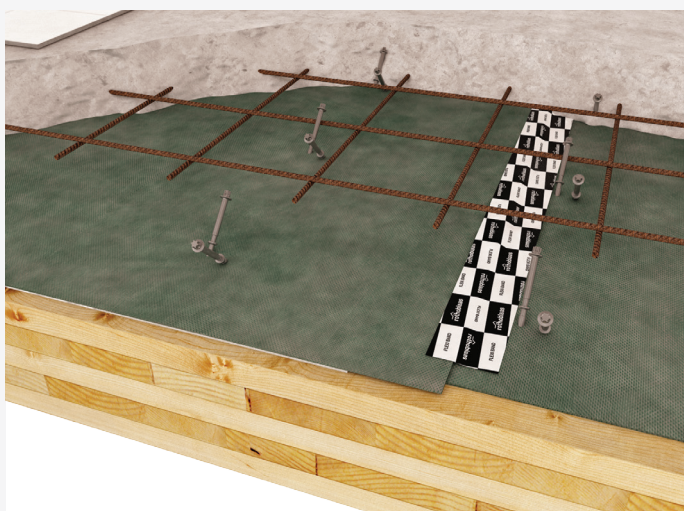
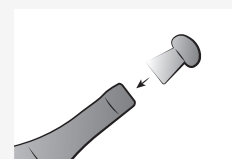
EFFECTIVE

The special structure absorbs vibrations from foot traffic up to 26 dB.



AIRTIGHT

Thanks to the bituminous mixture the product tends to close around the fastening system, ensuring watertightness



STRUCTURAL REHABILITATION

Suitable for applying wood-cement connectors. Protects the substrates without risk of percolation of concrete

LONG LASTING

Stable over time, thanks to the bituminous mixture. Also highly compatible with fresh concrete

CODES AND DIMENSIONS

code	width [m]	length [m]	surface area [m ²]	pcs/ 
D84113	1.0	10	10	20

TECHNICAL SPECIFICATIONS

PROPERTY	STANDARD	UNIT OF MEASURE	VALUE
Mass per unit area	-	kg/m ²	approx. 1.5
Thickness	UNI 9947	mm	approx. 5
Apparent dynamic stiffness - s't	-	MN/m ³	7
Dynamic stiffness - s'	-	MN/m ³	27
Theoretical estimation of the reduction level in foot traffic noise ΔLw ***	-	dB	approx. 27
Thickness reduction from compression testing under constant load	EN 106 (200 kg/m ²)	mm	≤ 1
Compression capability - thickness determination	EN 12431:2000	mm	≤ 2
Resistance to loading			
• static	EN 12730	kg	35
• dynamic	EN 12691	cm	20
Water vapour diffusion coefficient μ	-	-	100,000
Thermal conductivity coefficient λ			
• non-woven fabric	-	W/mK	0.045
• sound resilient foil	-	W/mK	0.17
Heat capacity per surface	-	KJ/m ² K *	1.62
Thermal resistance R	-	m ² K/W **	0.13
Watertightness	EN 1928	kPa	1

* apparent value found by calculating the values of the individual components referring to m² of material.

** value determined based on material subject to a load of 1 KPa (100 kg/m²).

*** see calculation example below

EXAMPLE OF ESTIMATE CALCULATION OF THE FOOTSTEP NOISE LEVEL AT WORK FOR REINFORCED CONCRETE FLOORS ^{1 2}

20+4 Concrete floor (m₁'=300 kg/m²) covered on top by a lightened layer (m₂'=300 kg/m² and thickness 10 cm) for installing systems and with floating screed in cement sand with interposition of a resilient material.

Total surface mass = 330 kg/m² Resilient layer dynamic stiffness s'= 27 MN/m³

Use the following formula to calculate the sound pressure level transmitted by the structure without resilient material:

$$L_{nweq} = 160 - 35 \log \left(\frac{m_1'}{\frac{1 \text{ kg}}{m^2}} \right) = 71,8 \text{ dB}$$

To calculate the reduction of noise from foot traffic, given by the resilient material:

$$\begin{aligned} \Delta L_w &= 13 \log(m_2') - 14,2 \log(s') + 20,8 \text{ dB} = \\ &= 13 \log(100) - 14,2 \log(27) + 20,8 \text{ dB} = 26 - 20,3 + 20,8 = 26,5 \text{ dB} \end{aligned}$$

Average side transmission calculated according to table UNI TR 1175:2010 Prospectus 5:

$$L'_{nw} = L_{nweq} - \Delta L_w + k \quad \text{Dove } k=3 \text{ dB } ^3 \quad L'_{nw} = 71,8 \text{ dB} - 26,5 \text{ dB} + 3 \text{ dB} = 48,6 \text{ dB}$$

¹ EN 12354-2:2006

² Di Bella A., Semprini G., Schiavi A., Astolfi A. – "Proposal for a definition of a reference curve for a beam and clay block floor." Italian magazine of acoustics vol. .35 2011, P.47-51. ISBN 0393-1110

³The term k depends on the side structure connected to the floor and must be assessed case by case.

APPLICATIONS AND APPLICATION TIPS

SILENT FLOOR was designed as an acoustic insulating material for absorbing noise and vibrations due to foot traffic. Due to the bituminous base composition it is completely impermeable to air, water and humidity. It restores continuity inside slabs, compensating for any irregularities in traditional structures or dry systems and guaranteeing protection of the underlying structure in the event of equipment failure or leaks

of any kind. The bituminous layer, in fact, is able to adhere and close around connections, compensating for any tears. SILENT FLOOR creates an elastic separation between stiff elements, screed, slabs and walls, dampening vibrations due to foot traffic and to the various sound sources in the rooms.