



# ISOLMANT UNDERSPECIAL

## UNDERSCREED INSULATION

SPECIFIC FOR UNDERSCREED IMPACT SOUND IN DOUBLE LAYER APPLICATIONS WITH FINISHING SCREED  $\geq 5$  CM.

### WHAT IS ISOLMANT UNDERSPECIAL?

High performance resilient layer made of 5 or 10 mm polyethylene Isolmant Special joined on the underside to FIBTEC XF1 (special needle-worked fibre produced according to specifications designed to provide a better noise reduction). It provides excellent impact sound and airborne insulation for horizontal partitions. 8 mm and 13 mm thickness available.

### SPECIFIC APPLICATIONS

Isolmant Underspecial is specific for floating screeds as provided by UNI 11516:2013 standards with any type of flooring. This product is recommended for applications under a finishing screed (double layer solution), it requires a finishing screed at least 4.5 cm thick (for 8 mm UnderSpecial) or at least 7 cm thick (for 13 mm UnderSpecial). In case of disjointing a floating screed from perimeter walls, it is recommended not to turn Isolmant Underspecial upside down but to use Isolmant Fascia Perimetrale perimeter band. Install Isolmant Under Special with the embossed and screenprinted side ISOLMANT facing upwards.

### ADVANTAGES

- Excellent acoustic impact sound and airborne insulation.
- Suitable for use in both renovation and new construction.
- Low thermal conductivity.
- Inalterable over time.
- Unlimited durability.
- Contact with water does not compromise performance or characteristics.
- Resistant to mould or insects

### ADVANTAGES FOR INSTALLATION

- Easy to lay products.
- Product with overlaps.
- Easy to trim: can be easily cut with a utility knife or box cutter.

### ISOLMANT Green Planet

- Volatile substances free(VOC A+)[(Eurofins Indoor Air Comfort GOLD Certification)]
  - Eco-friendly and recyclable.
  - Manufactured with low environmental impact.
  - Contributes to achieving credits for the environmental certification of a building according to the LEED or ITACA protocols.
  - this product can be disposed of according to CER n. 170604.
- 
- Complies with the requirements defined by the Italian CAM Edilizia for acoustic and thermal insulation materials regarding the request for high acoustic insulation performance, the percentage of recycled material and the absence of hazardous substances.



SUSTAINABLE



HEALTHY



ECOLOGICAL

## ISOLMANT UNDERSPECIAL TECHNICAL SPECIFICATIONS

**To be installed with the embossed and screen-printed side ISOLMANT facing upwards.**

NOMINAL THICKNESS:	8 mm	13 mm
DYNAMIC STIFFNESS	$s' = 11 \text{ MN/m}^3$ <sup>(1)</sup>	$s' = 9 \text{ MN/m}^3$ <sup>(2)</sup>
IMPACT SOUND INSULATION:	$\Delta L_w = 34 \text{ dB}$ <sup>(3)</sup>	$\Delta L_w = 36 \text{ dB}$ <sup>(4)</sup>
"IN SITU" IMPACT SOUND INSULATION:	$L'_{n,w} = 51 \text{ dB}$ <sup>(5)</sup>	$L'_{n,w} = 48 \text{ dB}$ <sup>(6)</sup>
AIRBORNE NOISE INSULATION:	$R_w = 61 \text{ dB}$ <sup>(7)</sup>	$R_w = 63 \text{ dB}$ <sup>(8)</sup>
COMPRESSION CLASS	CP2 <sup>(9)</sup>	
CONDUCTIVITY:	$\lambda = 0,035 \text{ W/mK}$	
THERMAL RESISTANCE	$R_t = 0.234 \text{ m}^2\text{K/W}$	$R_t = 0.376 \text{ m}^2\text{K/W}$
SPECIFIC HEAT CAPACITY	$c = 2100 \text{ J/kgK}$	
VAPOUR RESISTANCE	$\mu = 3600$	
EMISSION OF VOLATILE ORGANIC SUBSTANCES:	VOC A+ <sup>(10)</sup>	
CE MARKING:	<p>Harmonised standards for CE marking are NOT currently available for acoustic insulation products. This means that Isolmant products are currently NOT subject to CE marking, nor to the drawing up of a PDO (declaration of performance) or DDP (declaration of performance). All Isolmant products are placed on the market in compliance with the regulations in force in the country of destination and with the necessary certifications to guarantee their use in dedicated applications.</p>	
SIZE:	<p>Rolls of: 1.50 m x 25 m (h x L) = 37.5 m</p> <p>Product with overlaps. After overlapping the sheets they should be sealed by means of Isolmant Fascia Nastro or Isolmant Nastro Telato.</p>	<p>Rolls of: 1.50 m x 25 m (h x L) = 37.5 m<sup>2</sup></p>
PACKAGE:	Single rolls	

(1) ICN Galileo Ferraris test report no. 36262-02

(2) Isolmant laboratory test report no. 1001\_0416

(3) CSI Test Report No. 0019-B/DC/ACU/04

(4) Value calculated according to UNI EN ISO 12354-2 and UNI TR 11175 on the following stratigraphy: 20+4 concrete slab with lightened concrete substrate and thick concrete flooring finishing screed. 7 cm

(5) Value measured on site - see structure page 3 of this data sheet

(6) Value measured on site - see structure page 4 of this data sheet

(7) Value calculated according to UNI EN 12354-1 and UNI TR 11175 on the following stratigraphy: 20+4 concrete slab with lightened concrete substrate and thick concrete floor finishing screed. 5 cm

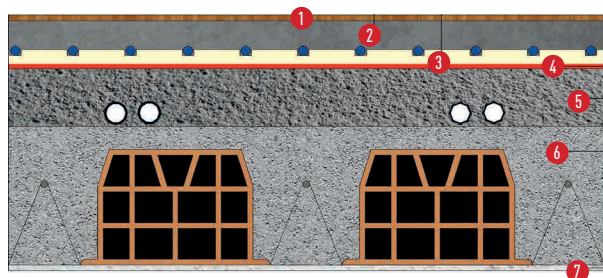
(8) Value calculated according to UNI EN 12354-1 and UNI TR 11175 on the following stratigraphy: 20+4 concrete slab with lightened concrete substrate and thick concrete floor finishing screed. 7 cm

(9) Test report no. 1002\_1410 - Test report no. 1010\_1501

(10) Eurofins Indoor Air Comfort GOLD® test report no 392-2021-00160901\_A\_EN

## ITEM SPECIFICATIONS

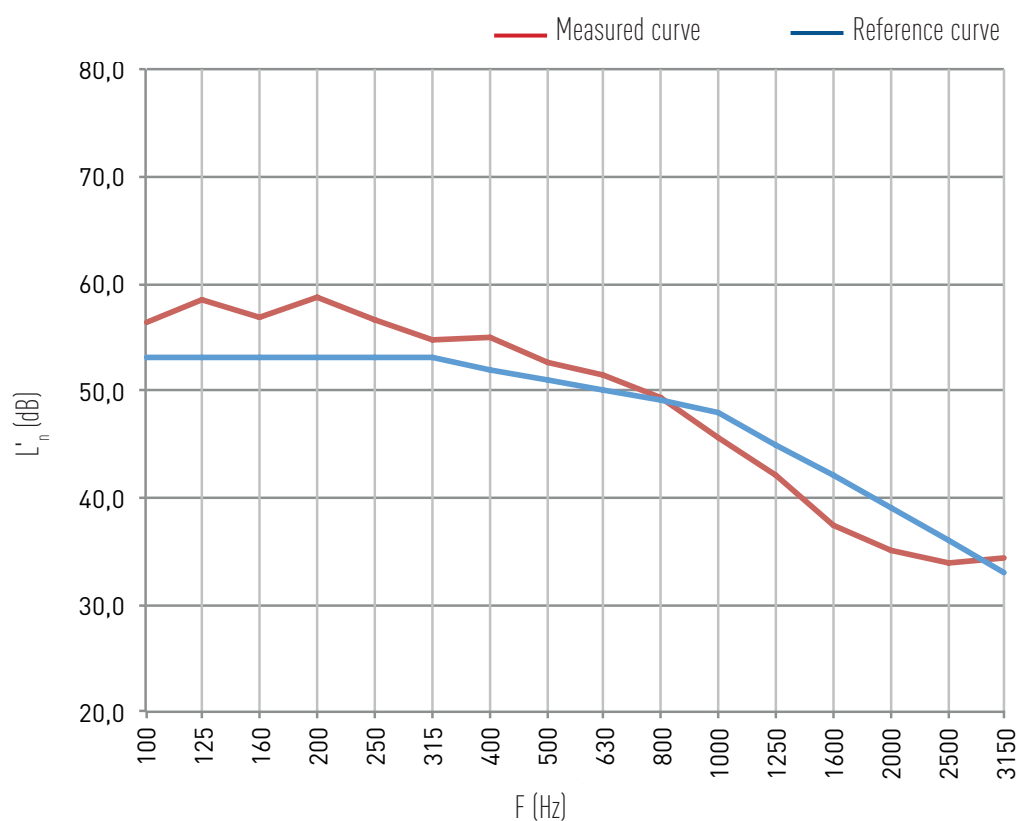
Resilient layer is made of reticulated expanded closed-cell polyethylene, with the upper side embossed and screen-printed joined on the under side with a special needleworked fibre that is conceived to enhance the acoustic performance (Isolmant UnderSpecial). To be installed with the Isolmant screen-printed side facing upwards. Product with overlaps. 8 or 13 mm nominal thickness Dynamic stiffness 11 MN/m<sup>3</sup> or 9 MN/m<sup>3</sup> for versions 8 or 13 mm respectively.

**RESIDENTIAL BUILDING IN FLORENCE (FI)**


$$L'_{n,w}(cl) = 51 (-0) \text{ dB}$$

No.	Layer	Material	Thickness (m)	Surface mass (kg/m²)
1	Flooring	Wooden flooring	0.01	
2	Supporting screed	Sand and cement	0.05	90
3	Underfloor heating	PSE panel	0.025	
4	Resilient material	<b>Isolmant UNDERSPECIAL</b>	0.008	
5	Levelling Screed	Lightweight concrete	0.08	24
6	Structural slab	Concrete	0.24	290
7	Plaster	Premix	0.01	14
		<b>Total thickness:</b>	<b>0.42</b>	

Frequency (Hz)	$L'_n$ (dB)
100	56.4
125	58.4
160	56.8
200	58.8
250	56.5
315	54.8
400	54.9
500	52.7
630	51.4
800	49.4
1000	45.5
1250	42.1
1600	37.4
2000	35
2500	33.9
3150	34.4



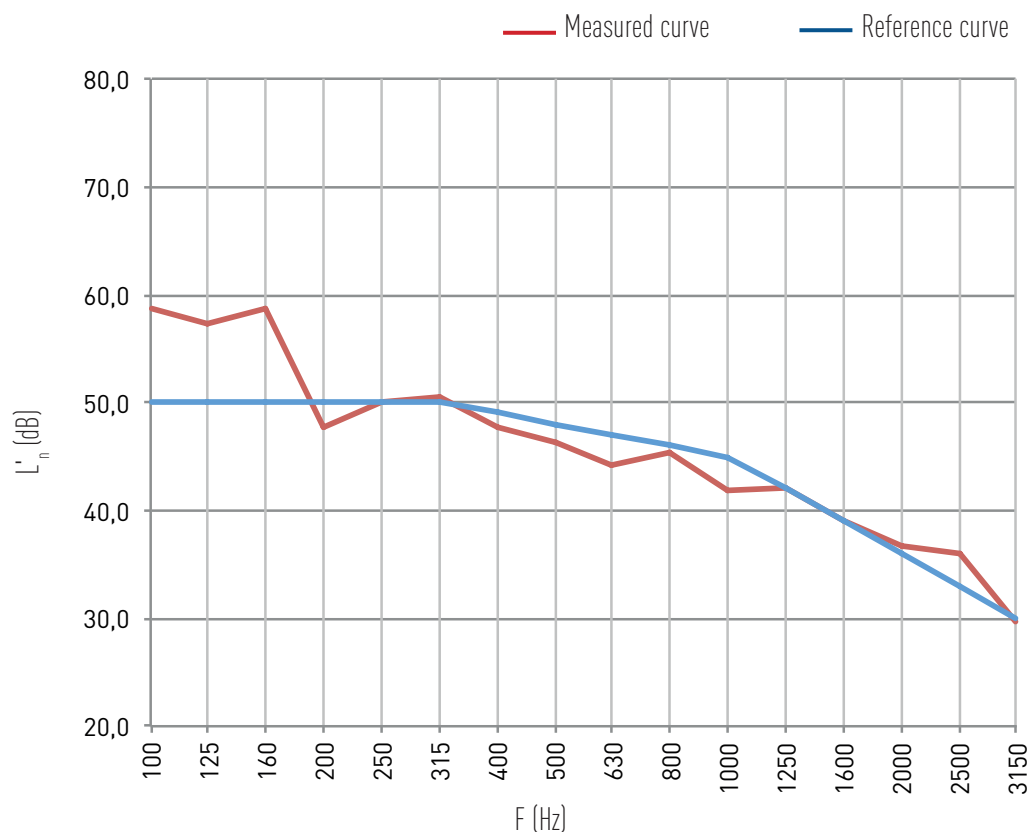
## RESIDENTIAL BUILDING IN MONZA (MB)



$$L'_{n,w}(Cl) = 48 (1) \text{ dB}$$

No.	Layer	Material	Thickness (m)	Surface mass (kg/m²)
1	Flooring	Wooden flooring		
2	Supporting screed	Sand and cement	0.07	126
3	Resilient material	<b>Isolmant UNDERSPECIAL</b>	0.013	
4	Levelling Screed	Expanded clay	0.08	40
5	Structural slab	Concrete	0.24	290
6	Plaster	Premix	0.01	14
Total thickness:			<b>0.425</b>	

Frequency (Hz)	$L'_n$ (dB)
100	58.8
125	57.4
160	58.7
200	47.7
250	50.1
315	50.6
400	47.7
500	46.3
630	44.3
800	45.4
1000	41.9
1250	42.1
1600	39
2000	36.8
2500	35.9
3150	29.7

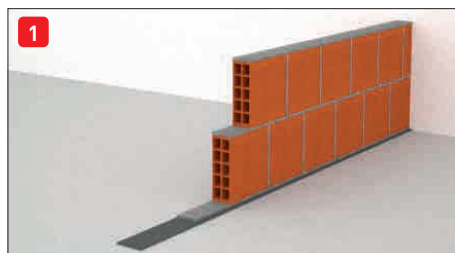






1

**Installing Fascia Tagliamuro.** Before installing all the partitions, Isolmant Fascia Tagliamuro must be laid. This high density, reticulated polyethylene foam accessory is specifically designed to disjoint partitions and slabs, thereby helping to reduce the structural sound transmission from the walls to the slab. This band is available in different thicknesses and densities depending on the weight of the partitions (fig. 1).



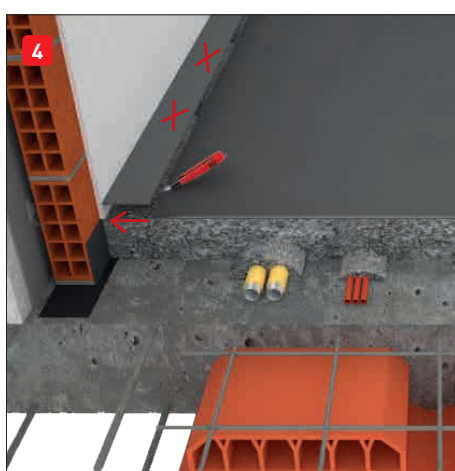
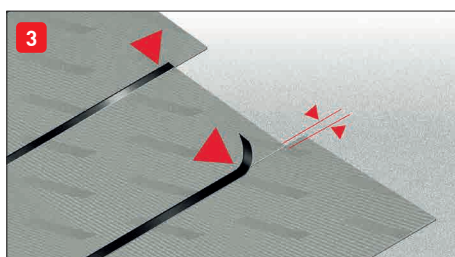
2

**Disjoint of reinforced concrete structures.** In the presence of stairwells, elevator compartments and pillars (even if contained within the vertical partitions) that rigidly connect all the structural elements from the foundations to the last floor, it is necessary to cover them with elastic material (such as Isolmant Cemento Armato) and then finish them, where possible, with a 4/5 cm board or with coated plaster panels. With a reduced thickness element, it is possible to fix a strong plaster-holding net directly onto the elastic insulating material with nylon plugs, and then plaster it over, paying particular attention to the cracks (fig. 2).



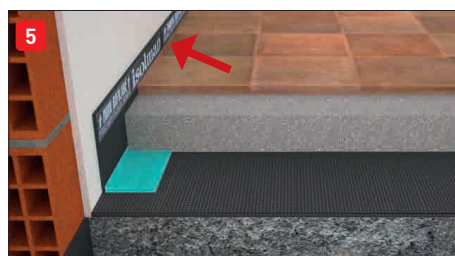
3

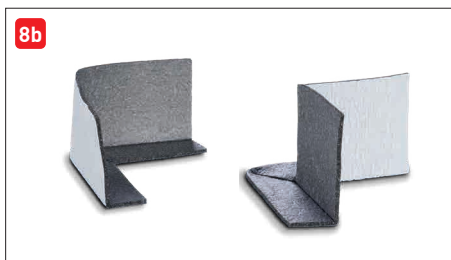
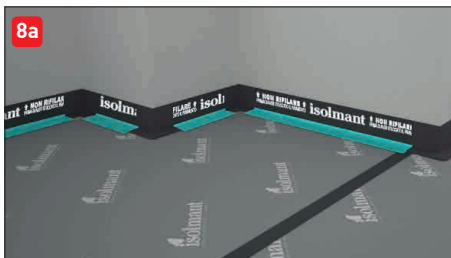
**Isolmant UnderSpecial resilient layer installation.** Isolmant UnderSpecial does not have an anti-tearing layer and is therefore not recommended for single-layer bases (in this case, Isolmant BiPlus is recommended). Before installing the underlay, a levelling screed must be laid using suitable materials and recipes to ensure adequate mechanical support and a plain and uneven surface. Then the sheets of Isolmant UnderSpecial can be laid, which must be carefully joined using the special overlapping fabric and sealed with Isolmant Nastro Telato or Isolmant Fascia Nastro (fig. 3). It is also necessary to be careful to start flush with the wall with the polyethylene, avoiding leaving strips of fibre only visible near the walls: the fibre, in fact, absorbs the cement and stiffens, generating a dangerous and continuous acoustic bridge. It is therefore necessary to trim only the fibre flush with the wall in order to guarantee the presence of both layers of product over the entire surface of the floor (fig. 4).



4

**Installing Fascia Perimetrale.** To avoid acoustic bridges, the use of Isolmant Fascia Perimetrale is recommended, to be laid along the entire perimeter of the room without interruption. The height of Isolmant Fascia Perimetrale must be chosen by the designer/contractor, taking into account the actual height at each site, in order to guarantee that the band is about 2/3 cm higher than the flooring level. This excess must be trimmed after laying the floor (fig. 5). The continuity of the installation must also be ensured along the thresholds of entrance doors and French windows, as well as in technical niches for housing the manifolds of the heating system, pillars, pilasters, doors and other wall movements. Specific accessories are available to facilitate this task: Isolmant Angoli e Spigoli e Isolmant Telaio Porte (fig. 8a - fig. 8b). It is also necessary to avoid a gap between the band and the walls at the corners (fig. 6) where cementitious material can penetrate, as well as ensuring that the perimeter band also adheres continuously along the slab-wall connection: the formation of the shell (fig. 7)





4

causes a reduction in the thickness of the screed resulting in a lack of flooring support at that point, risking cracking over time. In conclusion, before proceeding with the laying of the finishing screed, the contractor must be reasonably certain that he has created a perfect watertight tank in which the cement screed he is going to lay can "float" without establishing any rigid connection either with the load-bearing layers underneath or with the walls to its sides. Any uncovered points that could constitute an "acoustic bridge" must be covered with Isomant Fascia Nastro.

5

**Screed construction.** The finishing screed must guarantee adequate mechanical resistance according to the actual laying and loading conditions. Appropriate safety measures must be taken, such as assessing the adequate consistency of the mix, the curing time, the possible need to use collaborating elements (wire mesh or fibres), the sufficient compactness of the surface and the possible surface treatment with consolidating products (as indicated by the manufacturer of the screed and the reference standards). With reference to the thickness of the finishing screed, it is advisable to create a minimum thickness of no less than 4.5 cm in the case of the laying of Isomant Underspecial 8 mm and no less than 7 cm in the case of the laying of Isomant Underspecial 13 mm. If the thickness is less than 4.5 cm in some places, it is advisable to reinforce the screed with galvanised electro-welded mesh. In all cases, the screed must be well trodden (especially at the sides and corners), compacted throughout, smoothed and trowelled (by hand or by helicopter) to a high standard (fig. 9). When pouring the screed, special care must be taken not to tear or puncture the elastic material.

6

**Installing flooring and skirting boards.** It is essential to inform all site operators that the excess of the perimeter band must be trimmed only after the flooring has been laid and grouted (fig. 10) and before laying the skirting board. The direct contact of the flooring with the walls creates an acoustic bridge, which impedes the "floating" of the screed on the elastic underlay and causes a loss of insulation of several decibels. Therefore, the flooring should be joint to the perimeter band, ensuring the system elastic functioning. In particular, a skirting board made of tile should not be laid on the flooring but should be raised by a few millimetres and grouted with an elastic silicone-based binder or a flexible mortar (fig. 11). If the joint were rigid, it would prevent the floor from floating and would scape.

### WARNINGS:

\* This data sheet does not constitute a specification and, if it consists of several pages, please ensure that you have consulted the complete document. Although, these instructions are the result of our best expertise they are indicative. The user should establish whether the product is suitable for its intended application. The user will also be in charge of all the responsibility for the use of the product itself.

\*The sound insulation values given in this technical data sheet are the result of laboratory tests or tests carried out on site: they cannot be considered a predictive value for every situation that may occur on site. Acoustic performance is closely linked to the specific conditions of each site.

\*\*\*Caution: Do not expose the product to direct sunlight.

# isolmant



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