

*new*  
**INSULIT**

**Bi+5**  
Double layer

# Acoustic floor insulation

against impact and shock noises

**$\Delta L_w$  23 dB !**  
2012 CSTC Report

## New double layer with pyramidal structure

Insulit Bi+5 is an acoustical underlay intended to limit the transmission of impact and shock noises between different floors. It is put under a floating screed of approximately 8 cm thick. Insulit Bi+5 is developed and produced by Insulco, the Belgian specialist in acoustical underlay for 25 years. This underlay succeeds the famous insulit 5+. This underlay has test reports made by the CSTC (Belgian Scientific and Technical Center of the Construction) in 2012 and respects the stringent criteria of the new noise standard in force (NBN S01-400-1).

Insulit Bi+5 is made up of a double layer ( $2 \times \pm 3$  mm) of closed-cells physically reticulated polyolefin foam. The inferior face of the two layers of foam is structured to obtain little pyramids which improve the spring effect of the product.

### Acoustic performances

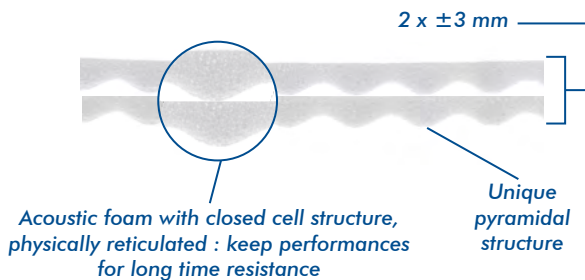
**$\Delta Lw$**                       **23 dB** (2012 CSTC report)

**$L'nT,w^*$**                     **52 dB<sup>1\*</sup>** (NBN S01-400-1)  
**49 dB<sup>2\*</sup>** (NBN S01-400-1)

*1\* : Basic floor 350 kg/m<sup>2</sup>- Lateral walls 150 kg/m<sup>2</sup> - Receiver room 80 m<sup>3</sup>*

*2\* : Basic floor 450 kg/m<sup>2</sup>- Lateral walls 150 kg/m<sup>2</sup> - Receiver room 80 m<sup>3</sup>*

*Simulations realised with the CSTC calculation software.*



**Double structure = double security**



### Benefits

- ✓ Exclusive pyramidal double structure
- ✓ Pre-enrolled double layer
- ✓ Double spring effect
- ✓ High performances
- ✓ Double security
- ✓ Tearing resistant
- ✓ Lightweight and flexible
- ✓ Easy and quick installation
- ✓ Tape provided for the overlaps
- ✓ Physically reticulated polyolefin
- ✓ Closed cells
- ✓ Low dynamic rigidity
- ✓ 2012 CSTC Report  
= guarantee of results

# Double layer with pyramidal structure



## Characteristics

<b>Thickness</b>	2 x ±3 mm*
<b>Color</b>	Silver grey
<b>Material</b>	Physically reticulated polyolefin
<b>λ Value</b>	0,035 W/mk
<b>Compression</b>	±10 % under 2KPa*
<b>Dynamic stiffness</b>	24 St' [MN/m³]
<b>2012 CSTC Report</b>	DE 631xB063 N° AC5437 DE 635xA037 N° MODA 52
<b>Roll size</b>	50 m x 1,05 m

\* 10 % tolerance

## Description of the installation

### Preparation

Make a first screed in order to cover the tubes and other sheaths if needed. This pre-screed will be executed thanks to a thermal concrete or a similar mix that will bring a thermal insulation between stages. If the realisation of this pre-screed is impossible, the concrete slab will have to be flat and carefully brushed. At the crossing of the tubes, flashings and ogees will be needed. In all cases, the vertical tubes, heating and sanitary, will be carefully isolated from the flooring they cross with the help of insulation sleeves made on the spot from the insulit Bi+5 or from the Insulco Stickelfoam self-adhesive foam..

### Installation of the underlay

The insulit Bi+5 will have to be unrolled, the pyramidal side down and respecting the recovery of 5 to 10 cm between bands. The overlaps will be maintained with the help of the adhesive provided (for one meter, 30 cm of adhesive glued perpendicularly to the overlaps is enough). The insulit Bi+5 will be raised by ±15 cm against the walls.

### Underfloor heating system

It is possible to use the insulit Bi+5 in combination with an underfloor heating system. In this case, we advise that the heating system should be placed above the insulit Bi+5. The piping system will be maintained in a soft structured membrane designed to be put in floating installation. The pipes can not be fixed under any circumstances through the insulit Bi+5.

### Realisation of the screed

Cover the insulit Bi+5 with a screed of approximately ±8 cm thick. Once the screed is finished and the floor covering laid, the surplus of insulit Bi+5 will have to be cut. The baseboard will be laid slightly higher than the floor covering to avoid any lateral acoustic transmission. Then, a flexible seal will be made under the baseboard.

## Description for the specifications

The insulation against impact noises for concrete floorings will be obtained thanks to the installation (under a lightweight concrete screed) of an insulit Bi+5 mat of 2 x ±3 mm thick. The acoustic membrane will be made up of a double layer of closed cells polyolefin foam, reticulated by a physical process without chemical additives. The two layers will be silvery grey with one side with pyramidal structure. The insulit Bi+5 mat will be unrolled with the pyramidal sides down and the flat ones up. Follow the instructions of installations of the manufacturer.

The membrane will have been tested according to the last standard in force and will have the corresponding test reports. The acoustic attenuation will offer a ΔLw of 23 dB. The dynamic stiffness will be of 24 St' [MN/m³]. Its acoustic improvement will be: ±9.1 dB at 250 Hz - ±22 dB at 500 Hz - ±30.8 dB at 1600 Hz - ±49.1 dB at 4000 Hz.



Unroll the Bi+5, covering the other side with the surplus



Keep the recovering maintained with the adhesive provided



Rise the underlay alongside the wall (±15 cm)



Realise a ±8 cm thick screed up the insulit Bi+5



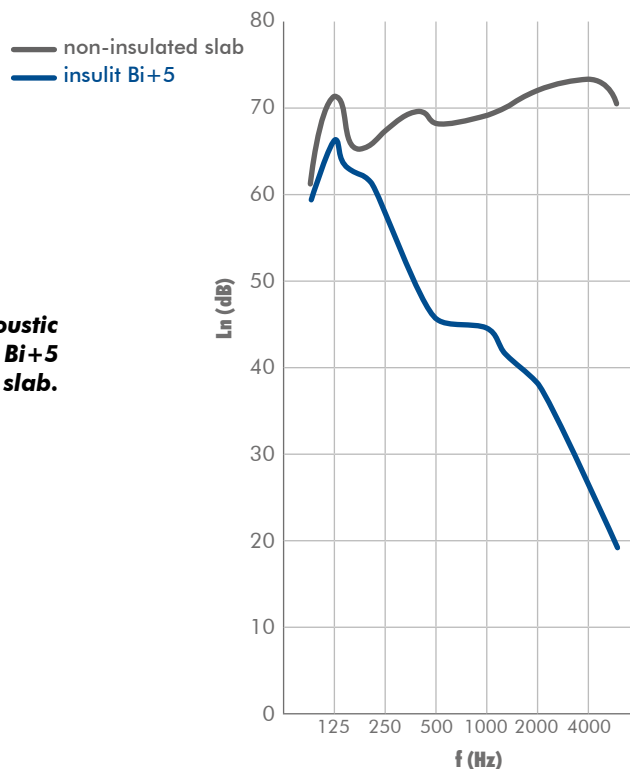
# insulit Bi+5

## CSTC report



We want to draw your attention on the importance of the choice of the acoustic membrane. The use of underlayers without acoustic reports established according to the criteria of the new noise standard in Belgium NBN S01-400-1 could present the risk that the building does not meet the stringent acoustic requirements in force.

**This graph shows the acoustic improvement brought by the insulit Bi+5 compared to a non-insulated slab.**



**insulco**  
Technical products The specialist against impact noises

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