

new  
**INSULIT**

**Bi+7**

Felt + foam

# Acoustic floor insulation

against impact and shock noises

High technology !  
 $\Delta L_w$  26 dB !  
2012 CSTC Report

## A new superior acoustic comfort

Insulit Bi+ 7 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+7 is developed and produced by Insulco, the Belgian specialist in acoustical underlay for 25 years. This underlay succeeds the famous insulit 7+ and has test reports made by the CSTC (Belgian Scientific and Technical Center of the Construction) in 2012 that respects the stringent criteria of the new noise standard in force (NBN S01-400-1).

## A new underlay with two components: foam + felt

Insulit Bi+7 is made up of a layer of approximately 3.5 mm of closed-cells physically reticulated polyolefin foam combined with a low dynamic rigidity acoustic felt of more or less 4 mm thick. The interior face of the foam is structured to obtain little pyramids which improve the spring effect of the product. The interest to combine a felt with a foam is to be able to cover a much larger frequency range. The felt corrects the low frequencies and the foam corrects the medium and high frequencies.

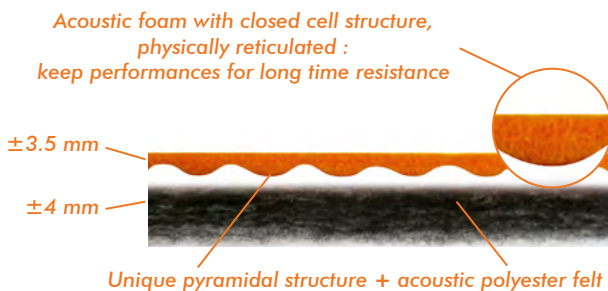
### Acoustic performances

$\Delta L_w$	<b>26 dB</b> (2012 CSTC report)
$L'_{nT,w}^*$	<b>49 dB<sup>1*</sup></b> (NBN S01-400-1)
	<b>46 dB<sup>2*</sup></b> (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.*



### Benefits

- ✓ **Felt + foam with pyramidal structure**
- ✓ **Double spring effect**
- ✓ **Very low dynamic rigidity**
- ✓ **Double security**
- ✓ **Very thin**
- ✓ **Flexible and resistant**
- ✓ **Lightweight, easy and quick installation**
- ✓ **Tape provided for the overlaps**
- ✓ **Physically reticulated polyolefin**
- ✓ **Closed-cells**
- ✓ **2012 CSTC Report**  
= guarantee of results

**Foam + Felt**  
= **Comfort et security**



### Very easy to install

Furnished in rolls, insulit Bi+7 can be unrolled easily on the floor, felt side down. The cut of the product and the raise against the baseboard are also very easy. Insulit Bi+7 proposes a new system of recovering. The foam overflows by  $\pm 5$  cm the felt to overlap without any problems the next roll. An adhesive is provided with each roll in order to hold in place the overlaps.

# Foam + felt : unique performances !



## Characteristics

<b>Thickness</b>	$\pm 7.5$ mm under 1 KPa*
<b>Color</b>	Orange (foam) / Anthracite (felt)
<b>Material</b>	Physically reticulated polyolefin Acoustic polyester felt
<b><math>\lambda</math> Value</b>	0,036 W/mk (foam) / 0,042 W/mk (felt)
<b>Compression</b>	$\pm 10$ % under 2KPa*
<b>Dynamic stiffness</b>	4 S <sub>f</sub> ' [MN/m <sup>3</sup> ]
<b>2012 CSTC Report</b>	DE 631xB063 N° AC5438 DE 635xA037 N° MODA 53
<b>Roll size</b>	50 m x 1.05 m (foam) / 1 m (felt)

\*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 floors. If the realization 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+7 or from the Insulco Stickelfoam self-adhesive foam.

### Installation of the underlay

The insulit Bi+7 will have to be unrolled, the felt side down. An overlap of approximately 5 cm will be realised thanks to the surplus of foam provided for that purpose. You need to ensure that the installation between the two different tapes should be felt against felt. The foam cannot under any circumstances be in direct contact with the floor on which the membrane is unrolled. 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+7 will be raised by  $\pm 15$  cm against the walls.

### Underfloor heating system

It is possible to use the insulit Bi+7 in combination with an underfloor heating system. In this case, we advise that the heating system should be placed above the insulit Bi+7. 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+7.

### Realisation of the screed

Cover the insulit Bi+7 with a screed of  $\pm 8$  cm thick. Once the screed is finished and the floor overlap laid, the surplus of insulit Bi+7 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 realised 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+7 mat made up of a closed-cells physically reticulated polyolefin orange foam with a pyramidal structure of  $\pm 3.5$  mm thick assembled on an anthracite acoustic felt with low dynamic rigidity of  $\pm 4$  mm. The insulit Bi+7 mat will be unrolled with the felt side down and the foam side up. The foam will laterally overflow of  $\pm 5$  cm in order to realise the overlap between the tapes. 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  $\Delta L_w$  of 26 dB. The dynamic stiffness will be of 4 St' [MN/m<sup>3</sup>]. Its acoustic improvement will be :  $\pm 12.5$  dB at 250 Hz -  $\pm 22.6$  dB at 500 Hz -  $\pm 33.5$  dB at 1600 Hz -  $\pm 49.5$  dB at 4000 Hz.



Unroll the Bi+7, covering the other side with the surplus



Keep the overlap maintained with the adhesive provided



Rise the underlay alongside the wall ( $\pm 15$  cm)



Realise a  $\pm 8$  cm thick screed up the insulit Bi+7

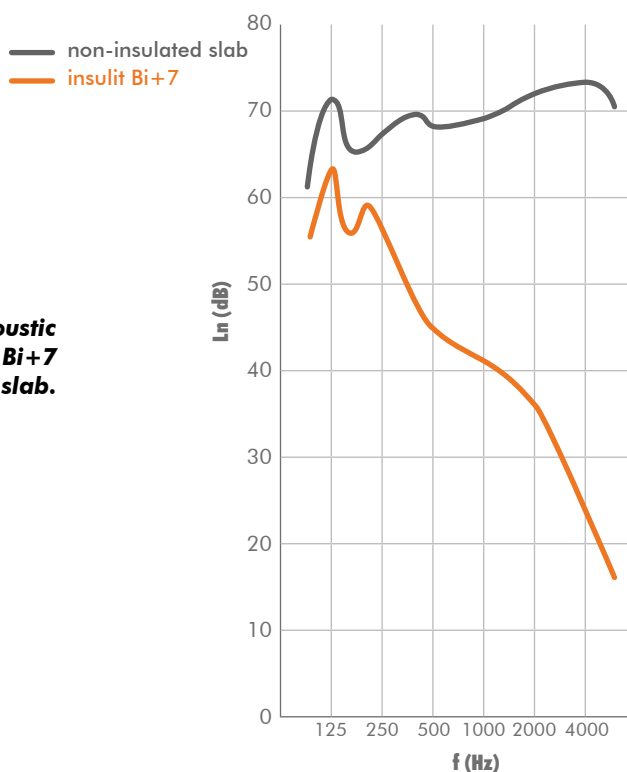
# insulit Bi+7

## CSTC reports



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+7 compared to a non-insulated slab.**



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Technical products The specialist against impact noises

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Visit [www.insulit.com](http://www.insulit.com), our website dedicated to the Insulco underlays

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