

### CSTB report on spray-on insulation performance

Multiple players in the trade have teamed up to conduct a study led by the CSTB to compare the thermal performance of spray-on insulation and rock wool panels.

According to the results of this study, the joints and metal fastenings of traditional insulation panels are a source of thermal bridges. An additional thermal bridge is formed due to the load-bearing structures, which are often impossible to insulate using this kind of system.

Conversely, spray-on insulation materials can cover all of the surface requiring insulation, providing continuous coverage and limiting thermal bridges.

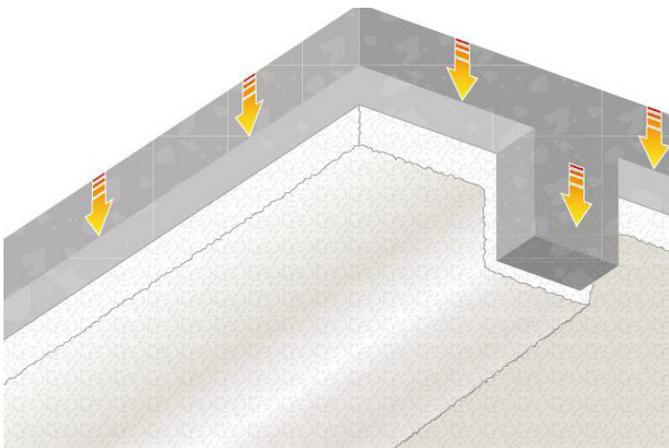
For this reason, although insulation panels may have better thermal conductivity  $\lambda$  than spray-on insulation, insulation panels, due to their installation constraints, are likely to be less effective in terms of heat loss once they are installed.

Study DER/HTO2010-336-AD/LS conducted by the CSTB, which compared these two insulation types, confirms this reasoning.

The study report specifies that heat loss in a system insulated using spray-on coating is up to 34% lower than for a system using rock wool panels.

These conclusive results can be attributed to «the absence of integrated thermal bridges and the ability to insulate beams (with spray-on insulation)».

#### Thermal insulation on the underside of a concrete wall using FIBREXPAN®



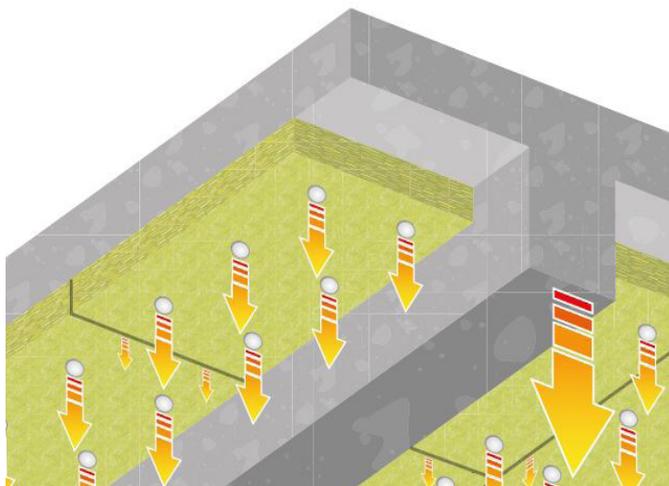
$\lambda$  of 0.046 in 2010, now  $\lambda$  of 0.038

>Continuity of thermal insulation

>Beam insulation

**System heat loss:  
0.44 to 0.46 W/m<sup>2</sup>.K**

#### Thermal insulation on the underside of a concrete wall using rock wool panels



$\lambda$  of 0.038 in 2010, still the same in 2016

>Seams between panels

>Attachments passing through the insulation

> Beams are difficult to insulate

**System heat loss:  
0.64 to 0.70 W/m<sup>2</sup>.K**

In the scenarios considered, the heat loss of the system insulated with FIBREXPAN is up to 34% less than that using rock wool panel insulation.

The metal attachments and the seams between the panels form integrated thermal bridges.

#### Conclusion of the CSTB report:

“For insulation with equal thermal resistance, the insulation technique using spray-on slag wool is superior due to the absence of integrated thermal bridges and the ability to insulate beams.”