FEICA®

CASE STUDY

Sealants and durability: key drivers of sustainable construction

Insulation, adhesion and mechanical properties of one-component foam for window installation are still intact after 25 years.

Durability in sustainable construction is critical to the reduction of the carbon footprint, with sealants playing a pivotal role in supporting durability of the insulation levels of buildings in the construction sector. Key findings of a test involving one-component foam (OCF) demonstrate the effectiveness of sealants.

Reducing the carbon footprint of buildings is of great importance as the building and construction sector is responsible for more than 40% of the CO_2 emissions in the EU. Energy losses in the use phase can be limited by insulation.

One-component foam (OCF) is used to seal the joint between the window and the masonry without allowing heat loss. The long-term durability of PU-based rigid foam material is decisive for the desired properties during decades of use.

The effectiveness of the OCF foam over time was clearly demonstrated in the test case of three buildings, one each in Belgium, the Czech Republic, and Poland. After 25 years of service, the foams were still properly filling the gap with the insulation and adhesion properties at the same level as when the foam was originally applied.

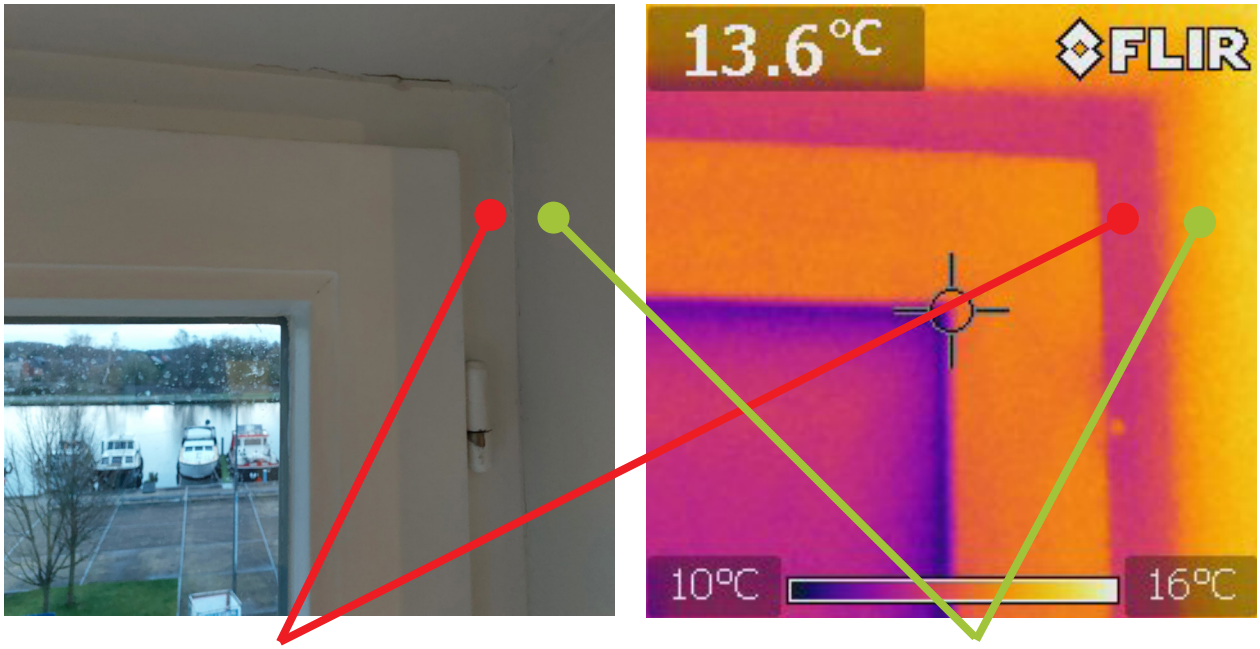
For more information on One-Component Foam (OCF), please visit this page.

The windows of old type, which had been installed up to 25 years prior, were replaced by new PVC units.

Before the old windows were removed, infrared measurements were carried out with a thermal imaging camera.

Clearly visible from the imaging, the plaster and the One-Component Foam (OCF) directly next to the profile insulated better than the window.

The foam structure and the adhesion to the substrate were still well preserved*.



Window frame

Wall with insulation

*Buidling constructed in 1997, Nieuwe Kaai 28, 2300, Turnhout, Belgium - Tests conducted by Soudal

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FEICA© Publication ref.: FMI-EX-N09-018