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FIW durability study on FOAMGLAS in flat roof applications on behalf of PCE

During the period between June 2016 and August 2017, on request of PCE, FIW Munich has undertaken a test campaign in order to evaluate the long-term performance of FOAMGLAS thermal insulation products made out of cellular glass. Several FOAMGLAS samples have been taken from buildings selected by PCE. The sampled constructions of 28 to 43 years of age are allocated in various countries over Europe, e.g. Belgium, the Netherlands, United Kingdom and Sweden. The samplings were in most cases conducted under supervision of qualified third parties and have been tested according the current EN test methods at the laboratories of FIW for the following performances:

- Thermal conductivity (EN 12667, in sampled condition and in dried condition)
- Compressive strength (EN 826)
- Moisture content (oven-dry method)

All test results have been compared with the declarations in technical approvals, which were available at the time the buildings were constructed.

As a conclusion, FIW found that in all cases, where the waterproofing of the construction was still functional at the time of sampling and thus keeping the constructions' moisture content low the FOAMGLAS products, used in a flat roof application for multiple decades, still demonstrated a high thermal insulation performance. In those cases, the results were close to the stated values of the technical approvals with thermal conductivities between 0.043 W/(m·K) and 0.053 W/(m·K). The results showed no significant differences between the thermal conductivity in sampled condition and in dry condition. All samples showed high structural stability with a compressive strength above 500 kPa.

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