

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

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European Technical Assessment

ETA-21/0389
of 1 July 2021

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"Biolan"

Product family
to which the construction product belongs

In-situ formed thermal insulation made of mineral-based
foam

Manufacturer

ISOLAHN GmbH
Durolanweg 1
26441 Jever
DEUTSCHLAND

Manufacturing plant

ISOLAHN GmbH
Durolanweg 1
26441 Jever
DEUTSCHLAND

This European Technical Assessment
contains

6 pages including 1 annex which form an integral part of
this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 041561-00-1201

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Specific part

1 Technical description of the product

This European Technical Assessment applies to thermal insulation product using the predominantly inorganic thermal insulation foam "Biolan" which is used to completely fill the cavity layer of double-wall masonry for external walls. The thermal insulation foam is subsequently injected as in-situ foam into the cavity layer of double-wall masonry.

The liquid components of the thermal insulation foam are delivered to the construction site e.g. in drums or containers. The first component (surfactant and additives) is foamed with the help of pressurized air and is then mixed with the second component (inorganic filler, polymer binders and additives). Finally a cross-linking agent is added as the third component.

The European Technical Assessment has been issued for the product on the basis of agreed data/ information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed. The European Technical Assessment applies only to products corresponding to this agreed data/information.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The thermal insulation foam "Biolan" can be used as a thermal insulation layer with a thickness $d \leq 150$ mm for thermally insulating double-wall masonry (cavity completely filled) in accordance with DIN EN 1996-1-1 (EC 6).

The performance according to section 3 only applies if the thermal insulation product is installed according to the manufacture's installation instructions by machine-processed injection and considering the conditions in accordance with annex A.

The thermal insulation foam is not intended for use between diffusion-resistant layers.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the thermal insulation product of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

For sampling, conditioning and testing the provisions of the EAD No 041561-00-1201 "In-situ formed thermal insulation made of mineral-based foam" apply.

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire test acc. to EN 13823:2010+A1:2014 and EN ISO 1716:2010	Class A2-s1,d0 acc. to EN 13501-1:2018 ^{1, 2}
¹ valid for applications on or between substrates made of building materials classified as A1 or A2-s1,d0 acc. to EN 13501-1 with a thickness $d \geq 12$ mm and a density $\rho \geq 650$ kg/m ³ ² valid for a thickness range as stated in clause 2 and a density range as stated in table 3.2	

3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity test acc. to EN 12667:2001	Declared value of thermal conductivity $\lambda_{D(23/50)} = 0.034 \text{ W/(m}\cdot\text{K)}^*$
Conversion of humidity acc. to EN ISO 10456:2010 Moisture conversion factor (23 °C/ 50 % rel. humidity to 23 °C/ 80 % rel. humidity)	$F_m = 1.015$
Density test acc. to EN 1602:2013	Density range 29 kg/m ³ to 35 kg/m ³
Water absorption at long term partial immersion test acc. to EN 12087:2013	$W_{ip} \leq 1.0 \text{ kg/m}^2$
Dimensional stability at 23 °C and 50% relative humidity test acc. to EN 1603:2013 Conditioning: 28 d at 23 °C and 50 % relative humidity	Relative changes in length, width and thickness $\leq 2.0 \%$ (length, width, thickness)
Dimensional stability at 70 °C and 90% relative humidity test acc. to EN 1604:2013 Conditioning: 28 d at 70°C and 90 % relative humidity	Relative changes in length, width and thickness $\leq 5.0 \%$ (length, width) $\leq 12.0 \%$ (thickness)
Dimensional stability at - 30 °C test acc. to EN 1604:2013 Conditioning: 24 h at - 30 °C	Relative changes in length, width and thickness $\leq 2.0 \%$ (length, width, thickness)
Reactivity acc. to a.m. EAD (clause 2.2.8)	≤ 60 seconds
* Declared value of thermal conductivity for a moisture content of the insulation product at 23 °C/50% relative humidity, representative of at least 90% of production with a 90% confidence level.	

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with the European Assessment Document EAD No 041561-00-1201 "In-situ formed thermal insulation made of mineral-based foam" the legal basis is:

Commission Decision 1999/91/EC (as amended).

The system to be applied is: system 3.

In addition, with regard to reaction to fire the applicable European legal act is: 1999/91/EC (as amended).

The system to be applied is: system 1.

English translation prepared by DIBt

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

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Frank Iffländer
Head of Section

beglaubigt:
Getzlaff

"Biolan"

Annex A

The performances of the thermal insulation foam given in Section 3 apply if the following is considered concerning installation and use:

- Before built-in the foam, the executing company ensures that the outer and inner masonry leaf are in a proper condition and free from moisture. Particular care must be taken to ensure that visible faces are properly jointed. Defects and cracks in the joints must be eliminated before inserting the core insulation.
- The foam is built-in at air temperatures of a least 5°C.
- Existing ventilation openings in the outer masonry leaf at the base of the wall are maintained.
- The thermal insulation foam is uniform in texture and colour. The density of the installed thermal insulation foam (dry) is 29 kg/m³ to 35 kg/m³.
- The core insulation thickness used for the calculation of the thermal resistance is determined by the average clear distance between the masonry leaves. To determine this distance, the bed joint of the masonry is drilled through at at least five places per wall surface and floor to determine the depths of the free cavity at these places. The insulation thickness is given as the average of these five measurements (rounded to 5 mm).
- The executing company ensures the density and the thickness of the installed insulation layer.
- The thermal insulation product is only processed by companies stated in a list of the manufacturer which have adequate experience in installing the insulation foam. These companies have been trained for this purpose by the manufacturer.
- For each application site, the executing company issues a certificate which, by reference to this European Technical Assessment, contains the following information:
 - mineral-based thermal insulation foam built-in on site
 - name and address of the executing company
 - building project and building component
 - date of installation
 - installation thickness (average clear distance) of the core insulation