

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

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General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

FOAMGLAS-Platte T4+ and
FOAMGLAS-Floor Board T4+

Product family
to which the construction product belongs

Cellular glass boards as load bearing layer and thermal
insulation outside the waterproofing

Manufacturer

PITTSBURGH CORNING EUROPE N.V.
Albertkade 1
3980 TESSENDERLO
BELGIEN

Manufacturing plant

Pittsburgh Corning Europe NV
Albertkade 1
B-3980 TESSENDERLO

Pittsburgh Corning CR,s.r.o.
IP Verne, Prumyslova 3,
CZ-43151 Klasterec nad Ohfi

This European Technical Assessment
contains

8 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 No 040777-00-1201

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Specific part

1 Technical description of the product

The thermal insulation products (cellular glass boards) are made of expanded cellular glass with a closed cell structure. Cellular glass boards are manufactured with straight edges.

The cellular glass boards have the following designation:

"FOAMGLAS-Platte T4+" and
"FOAMGLAS-Floor Board T4+".

The cellular glass boards "FOAMGLAS-Platte T4+" are cut from blocks and manufactured with the following dimensions:

Nominal thicknesses:	60 mm to 180 mm
Nominal length:	600 mm
Nominal widths:	450 mm

The cellular glass boards "FOAMGLAS-Floor Board T4+" consist of either one board "FOAMGLAS-Platte T4+" or a number of these boards bonded edge to edge in the factory and are lined with a special paper on both sides by the application of a bitumen layer.

The boards are manufactured with the following dimension (without coating):

Nominal thicknesses:	60 mm to 180 mm
Nominal length:	1200 mm
Nominal widths:	600 mm

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 boards are intended to be used as load bearing layer and thermal insulation outside the waterproofing. The boards are laid uniformly on the substrate to which they are applied.

In particular the following applications are intended:

- Load bearing and thermal insulation underneath foundation slabs
- External horizontal and vertical thermal insulation of in-ground constructions in non-structural applications (also in case of groundwater)

The performance according to section 3 only applies if the thermal insulation boards are installed according to the manufacturer's installation instructions and if they are protected from precipitation, wetting or weathering during transport and storage before installation.

Concerning the application of the thermal insulation boards, also the respective national regulations shall be observed.

Where the thermal insulation boards are fixed by using adhesives, only such adhesions shall be used, which are suitable for this purpose. The assessment of these fixings is not subject of this European Technical Assessment.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the cellular glass boards of at least 50 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer, 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 040777-00-1201 "Cellular glass boards as load bearing layer and thermal insulation outside the waterproofing" apply.

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Compressive strength test acc. to EN 826:2013 "FOAMGLAS-Platte T4+" "FOAMGLAS-Floor Board T4+"	Level (individual values may fall below this level up to 10 %): $\sigma_m \geq 600$ kPa $\sigma_m \geq 600$ kPa
Characteristic value of compressive stress or compressive strength 5%-fractile value for a one-sided confidence level of 75 % under unknown or known variance using ISO 12491:1997 "FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"	$\sigma_{0,05} = 633$ kPa (n= 50; $\sigma_{\text{mean}} = 750$ kPa; $s_\sigma = 55$ kPa)
Compressive creep	See Annex A
Behaviour under compressive load (large-sized specimen, double-layer installation)	No performance assessed
Shear strength	No performance assessed
Behaviour under shear load (large-sized specimen)	No performance assessed
Density test acc. to EN 1602:2013 "FOAMGLAS-Platte T4+" "FOAMGLAS-Floor Board T4+"	density range: 100 kg/m ³ - 120 kg/m ³ 100 kg/m ³ - 120 kg/m ³

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	
"FOAMGLAS- Platte T4"	Class A1 ¹
Reaction to fire test acc. to EN ISO 11925-2:2010	
"FOAMGLAS-Floor Board T4"	Class E acc. to EN 13501-1:2007 + A1:2009

¹ According to decision 96/603/EC (as amended)

3.3 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
<p>Thermal conductivity</p> <p>at mean reference temperature of 10 °C test acc. to EN 12667:2001 or EN 12939:2001</p> <p>"FOAMGLAS-Platte T4+" thickness 60 – 180 mm</p> <p>"FOAMGLAS-Floor Board T4+" thickness 60 - 180 mm</p>	<p>acc. EN 13167:2012+A1:2015</p> <p>$\lambda_D = 0,041 \text{ W}/(\text{m} \cdot \text{K})$</p> <p>$\lambda_D = 0,041 \text{ W}/(\text{m} \cdot \text{K})$</p>
<p>Water absorption</p> <p>Short term water absorption by partial immersion test acc. to EN 1609:2013 (method A)</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+",</p> <p>Long term water absorption by partial immersion test acc. to EN 12081:2013 (method 1A)</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>acc. EN 13167:2012+A1:2015</p> <p>WS ($W_p \leq 0,5 \text{ kg}/\text{m}^2$)</p> <p>acc. EN 13167:2012+A1:2015</p> <p>WL(P) ($W_{ip} \leq 0,5 \text{ kg}/\text{m}^2$)</p>
Water vapour diffusion resistance factor	No performance assessed
<p>Geometrical properties</p> <p>Thickness</p> <p>test acc. EN 823:2013 (clause 7.2, figure 2, measuring set-up 3)</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p> <p>Length</p> <p>test acc. EN 822:2013</p> <p>"FOAMGLAS-Platte T4+"</p> <p>"FOAMGLAS-Floor Board T4+"</p> <p>Width</p> <p>test acc. EN 822:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>tolerance</p> <p>acc. EN 13167:2012+A1:2015 (board without coating)</p> <p>$\pm 2 \text{ mm}$</p> <p>$\pm 2 \text{ mm}$</p> <p>$\pm 5 \text{ mm}$</p> <p>$\pm 2 \text{ mm}$</p>

Essential characteristic	Performance
<p>Geometrical properties</p> <p>Squareness</p> <p>in direction of length and width</p> <p>test acc. EN 824:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p> <p>in direction of thickness</p> <p>test acc. EN 824:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p> <p>Flatness</p> <p>test acc. EN 825:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>tolerance</p> <p>acc. EN 13167:2012+A1:2015</p> <p>5 mm/m</p> <p>2 mm</p> <p>2 mm</p>
<p>Dimensional stability under specified conditions</p> <p>test acc. to EN 1604:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>acc. EN 13167:2012+A1:2015</p> <p>temperature: 70 °C and 90% R.H.</p> <p>DS(70,90)</p> <p>($\Delta\varepsilon_l \leq 0,5 \%$, $\Delta\varepsilon_b \leq 0,5 \%$, $\Delta\varepsilon_d \leq 1 \%$)</p>
<p>Tensile strength perpendicular to faces</p> <p>test acc. to EN 1607:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>acc. EN 13167:2012+A1:2015</p> <p>TR150</p> <p>($\sigma_{mt} \geq 150 \text{ kPa}$)</p>
<p>Bending strength</p> <p>test acc. to EN 12089:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>acc. EN 13167:2012+A1:2015</p> <p>BS450</p> <p>($\sigma_b \geq 450 \text{ kPa}$)</p>
<p>Point load</p> <p>test acc. to EN 12430:2013</p> <p>"FOAMGLAS-Platte T4+", "FOAMGLAS-Floor Board T4+"</p>	<p>acc. EN 13167:2012+A1:2015</p> <p>PL(P)1,5</p> <p>($P_d \leq 1,5 \text{ mm}$)</p>

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

In accordance with EAD No. 040777-00-1201, the applicable European legal acts are: 1995/467/EC and 1999/91/EC

The systems to be applied are:

System 1 for Essential characteristics concerning Mechanical resistance and stability (BWR 1)

System 3 all other Essential characteristics

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.

Issued in Berlin on 22. November 2017 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Wendler

**FOAMGLAS-Platte T4+ and
FOAMGLAS-Floor Board T4+**

Annex A

1. Compressive creep (single-layer board)

FOAMGLAS-Platte T4+	thickness 120 mm	thickness 180 mm
density (kg/m ³)	106	111
compressive strength acc. EN 826 (kPa)	655	808
Load stage (kPa)	225	225
X ₀ (mm)	2,33	1,41
X _{ct} (mm) with t=20 month	3,55	2,52
X _{ct50} (mm)	1,27	1,16
X_{t50}(mm)	3,60	2,57