

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-20/0220
of 9 March 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

GLAPOR Schaumglasplatte PG 600.3
GLAPOR Schaumglasplatte PG 900.3
GLAPOR Schaumglasplatte PG 1600

Product family
to which the construction product belongs

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

Manufacturer

GLAPOR Werk Mitterteich GmbH
Hüblteichstraße 17
95666 Mitterteich
DEUTSCHLAND

Manufacturing plant

GLAPOR Werk Mitterteich GmbH
Hüblteichstraße 17
95666 Mitterteich

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 040777-00-1201

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

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:

- "GLAPOR Schaumglasplatte PG 600.3",
- "GLAPOR Schaumglasplatte PG 900.3" and
- "GLAPOR Schaumglasplatte PG 1600"

The cellular glass boards are cut from continuous forms and manufactured with the following dimensions:

- | | |
|----------------------|----------------------------------|
| Nominal thicknesses: | 60 mm to 140 mm |
| Nominal length: | 600 mm, 800 mm or 1200 mm |
| Nominal widths: | 300 mm, 400 mm, 600 mm or 800 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/ or 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 layer and thermal insulation underneath foundation slabs for boards "GLAPOR Schaumglasplatte PG 900.3" and "GLAPOR Schaumglasplatte PG 1600"
- 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 adhesives 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 "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	Level (individual values may fall below this level up to 10 %): $\sigma_m \geq 900$ kPa $\sigma_m \geq 1600$ 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 "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	 $\sigma_{0,05} = 854$ kPa (n = 50; $\sigma_{\text{mean}} = 1037$ kPa; $s_\sigma = 103$ kPa) $\sigma_{0,05} = 1668$ kPa (n = 21; $\sigma_{\text{mean}} = 1879$ kPa; $s_\sigma = 114$ kPa)
Compressive creep "GLAPOR Schaumglasplatte PG 1600"	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 "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	density range: 110 kg/m ³ – 140 kg/m ³ 140 kg/m ³ – 170 kg/m ³

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	Class A1 ¹

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>"GLAPOR Schaumglasplatte PG 600.3"</p> <p>"GLAPOR Schaumglasplatte PG 900.3"</p> <p>"GLAPOR Schaumglasplatte PG 1600"</p>	<p>acc. to EN 13167:2012+A1:2015</p> <p>$\lambda_D = 0,052 \text{ W/(m} \cdot \text{K)}$</p> <p>$\lambda_D = 0,052 \text{ W/(m} \cdot \text{K)}$</p> <p>$\lambda_D = 0,058 \text{ W/(m} \cdot \text{K)}$</p>
<p>Water absorption</p> <p>Short term water absorption by partial immersion</p> <p>test acc. to EN 1609:2013 (method A)</p> <p>"GLAPOR Schaumglasplatte PG 600.3"</p> <p>"GLAPOR Schaumglasplatte PG 900.3"</p> <p>"GLAPOR Schaumglasplatte PG 1600"</p> <p>Long term water absorption by partial immersion</p> <p>test acc. to EN 12087:2013 (method 1A)</p> <p>"GLAPOR Schaumglasplatte PG 600.3"</p> <p>"GLAPOR Schaumglasplatte PG 900.3"</p> <p>"GLAPOR Schaumglasplatte PG 1600"</p>	<p>acc. to EN 13167:2012+A1:2015</p> <p>WS ($W_p \leq 0.5 \text{ kg/m}^2$)</p> <p>acc. to EN 13167:2012+A1:2015</p> <p>WL(P) ($W_{ip} \leq 0.5 \text{ kg/m}^2$)</p>
<p>Water vapour diffusion resistance factor</p> <p>test acc. to EN 12086:2013</p> <p>"GLAPOR Schaumglasplatte PG 600.3"</p> <p>"GLAPOR Schaumglasplatte PG 900.3"</p> <p>"GLAPOR Schaumglasplatte PG 1600"</p>	<p>acc. to EN 13167:2012+A1:2015</p> <p>MU ($\mu > 40000$)</p>
<p>Geometrical properties</p> <p>Thickness</p> <p>test acc. EN 823:2013 (clause 7.2, figure 2, measuring set-up 3)</p> <p>"GLAPOR Schaumglasplatte PG 600.3"</p> <p>"GLAPOR Schaumglasplatte PG 900.3"</p> <p>"GLAPOR Schaumglasplatte PG 1600"</p> <p>Length</p> <p>test acc. EN 822:2013</p> <p>"GLAPOR Schaumglasplatte PG 600.3"</p> <p>"GLAPOR Schaumglasplatte PG 900.3"</p> <p>"GLAPOR Schaumglasplatte PG 1600"</p>	<p>Tolerance</p> <p>acc. to EN 13167:2012+A1:2015</p> <p>$\pm 2 \text{ mm}$</p> <p>$\pm 2 \text{ mm}$</p>

Essential characteristic	Performance
<p>Geometrical properties</p> <p>Width test acc. EN 822:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"</p> <p>Squareness in direction of length and width test acc. EN 824:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"</p> <p>in direction of thickness test acc. EN 824:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"</p> <p>Flatness test acc. EN 825:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"</p>	<p>Tolerance acc. to EN 13167:2012+A1:2015 ± 2 mm</p> <p>5 mm/m</p> <p>2 mm</p> <p>2 mm</p>
<p>Dimensional stability under specified conditions test acc. to EN 1604:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"</p>	<p>acc. EN 13167:2012+A1:2015 temperature: 70 °C and 90% R.H. DS(70,90) ($\Delta\epsilon_l \leq 0.5 \%$, $\Delta\epsilon_b \leq 0.5 \%$, $\Delta\epsilon_d \leq 1 \%$)</p>
<p>Density test acc. to EN 1602:2013 "GLAPOR Schaumglasplatte PG 600.3"</p>	<p>density range: 105 kg/m³ – 135 kg/m³</p>

Essential characteristic	Performance
Compressive strength test acc. to EN 826:2013 "GLAPOR Schaumglasplatte PG 600.3"	$\sigma_m \geq 600$ kPa
Tensile strength perpendicular to faces test acc. to EN 1607:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	acc. EN 13167:2012+A1:2015 TR150 ($\sigma_{mt} \geq 150$ kPa)
Bending strength test acc. to EN 12089:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	acc. to EN 13167:2012+A1:2015 BS450 ($\sigma_b \geq 450$ kPa) BS500 ($\sigma_b \geq 500$ kPa) BS700 ($\sigma_b \geq 700$ kPa)
Point load test acc. to EN 12430:2013 "GLAPOR Schaumglasplatte PG 600.3" "GLAPOR Schaumglasplatte PG 900.3" "GLAPOR Schaumglasplatte PG 1600"	acc. to EN 13167:2012+A1:2015 PL(P)1,0 ($P_d \leq 1.0$ mm) PL(P)1,0 ($P_d \leq 1.0$ mm) PL(P)0,5 ($P_d \leq 0.5$ mm)

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 act is: 1995/467/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 9 March 2021 by Deutsches Institut für Bautechnik

Frank Iffländer
Head of Section

beglaubigt:
Wendler

GLAPOR Schaumglasplatte PG 600.3
GLAPOR Schaumglasplatte PG 900.3
GLAPOR Schaumglasplatte PG 1600

Annex A

1. Compressive creep (single-layer board)

GLAPOR Schaumglasplatte PG 1600	thickness 120 mm
density (kg/m ³)	163
compressive strength acc. EN 826 (kPa)	1539
Load stage (kPa)	420
X ₀ (mm)	1.00
X _{ct} (mm) with t = 20 month	1.29
X _{ct50} (mm)	1.37
X_{t50} (mm)	2.37