

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-18/0052
of 20 February 2018

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

WTM-Bodendämmplatten

Product family
to which the construction product belongs

Expanded polystyrene foam boards as load bearing layer
and/or thermal insulation

Manufacturer

WOLF THERMO MODULE GmbH
Am Ahlbach 3
97297 Waldbüttelbrunn-Roßbrunn
DEUTSCHLAND

Manufacturing plant

Storopack Deutschland GmbH + Co. KG
Fabrikstraße 1
D-74838 Limbach/ Krumbach

This European Technical Assessment
contains

11 pages including 4 annexes 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 040773-00-1201

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This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No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 expanded polystyrene foam modules consists of factory made boards and shape moulding of expanded polystyrene (EPS) with a closed cell structure. The expanded polystyrene foam boards have a smooth surface on the bottom side and grooved embossment (depth 3 mm) on the upper side. The expanded polystyrene foam modules have special edge treatment (shiplap).

The expanded polystyrene foam modules do not contain Hexabromocyclododecane (HBCD).

The expanded polystyrene foam modules have the following designation:

"WTM-Bodendämmplatte"

The expanded polystyrene foam modules are manufactured with the dimensions according to Annex A (boards), Annex B (preformed edge components) and Annex C (preformed corner components)

Nominal thicknesses of the boards: 250 mm

Nominal length of the boards: 1250 mm

Nominal widths of the boards: 750 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 expanded polystyrene foam boards are intended to be used as load bearing layer and /or thermal insulation inside the waterproofing. The boards are laid uniformly on the substrate above the waterproofing.

The performance according to section 3 only applies if the thermal insulation boards are installed according to the manufacture's installation instructions and if they are protected from precipitation, wetting or weathering during transport and storage before and while 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 expanded polystyrene foam 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 040773-00-1201 apply.

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Compressive stress at 10 % deformation or compressive strength test acc. to EN 826:2013 Slip deformation	Level (individual values may fall below this level up to 10 %): ≥ 300 kPa No performance assessed
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	$\sigma_{0,05} = 312 \text{ kPa}$ ($n = 33$; $\sigma_{\text{mean}} = 350 \text{ kPa}$; $s_{\sigma} = 22 \text{ kPa}$)
Compressive creep	See Annex D
Behaviour under shear load (large-sized specimen) test acc. to the EAD and the guidelines in EN 12090:2013	$T_{\text{large}} = 103 \text{ kPa}$
Creep under shear load	See Annex D
Creep under combined compressive and shear load	See Annex D
Compressive modulus of elasticity	No performance assessed
Adhesion behaviour under compressive and shear load on large-sized samples	No performance assessed
Density test acc. to EN 1602:2013	density range: 42 kg/m ³ - 47 kg/m ³
Shear strength	No performance assessed

3.2 Safety in case of fire (BWR 2)

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

3.3 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity at mean reference temperature of 10 °C test acc. to EN 12667:2001 or EN 12939:2001 and aging procedure acc. EN 13163:2012+A1:2015, Annex A	$\lambda_D = 0,034 \text{ W}/(\text{m} \cdot \text{K})$

Essential characteristic	Performance
Moisture conversion coefficient	No performance assessed
Water absorption Long term water absorption by total immersion Long term water absorption by diffusion	No performance assessed No performance assessed No performance assessed
Freeze-thaw resistance	No performance assessed
Water vapour diffusion resistance factor	No performance assessed
Geometrical properties Thickness test acc. EN 823:2013 (clause 7.2, figure 2, measuring set-up 3) Length, width test acc. EN 822:2013 Squareness in direction of length and width; in direction of thickness test acc. EN 824:2013 Flatness in direction of length and width test acc. EN 825:2013 Profiling and volume loss	tolerance ± 2 mm ± 2 mm 2 mm/m 2 mm No performance assessed
Deformation under specified compressive load and temperature conditions	No performance assessed
Dimensional stability under specified conditions test acc. to EN 1604:2013	temperature: 70 °C and 90 % R.H. DS(70,90)5 ($\Delta\epsilon_l \leq 5\%$, $\Delta\epsilon_b \leq 5\%$, $\Delta\epsilon_d \leq 5\%$)
Tensile strength perpendicular to faces test acc. to EN 1607:2013	TR100 ≥ 100 kPa
Bending strength test acc. to EN 12089:2013 (method B)	≥ 450 kPa

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

In accordance with EAD No. 040773-00-1201, 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

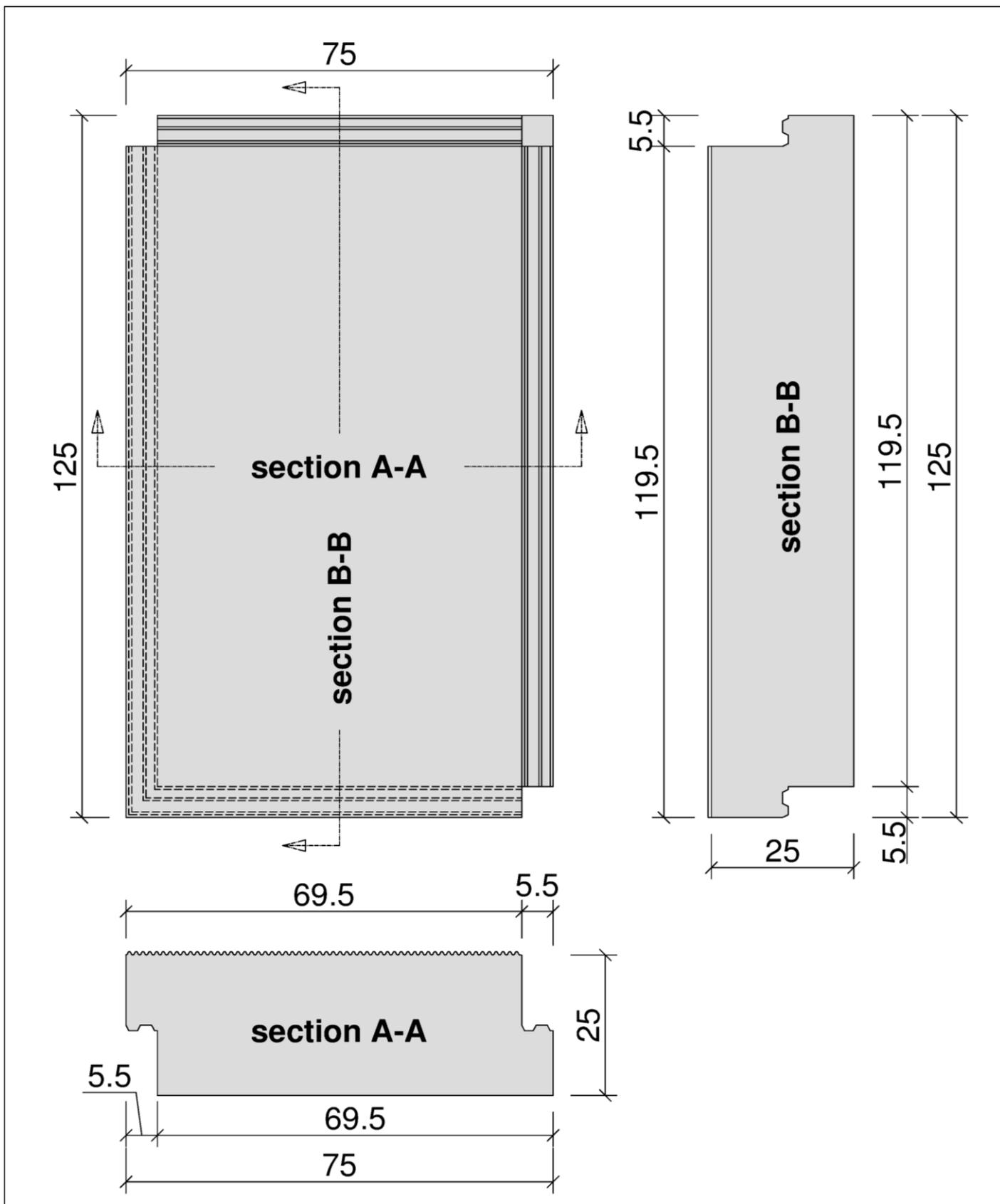
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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 20 February 2018 by Deutsches Institut für Bautechnik

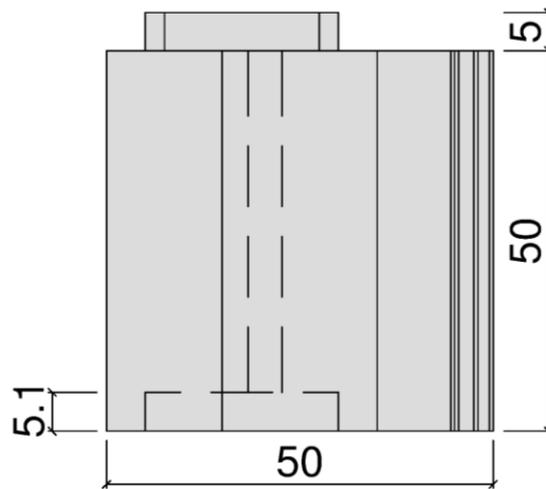
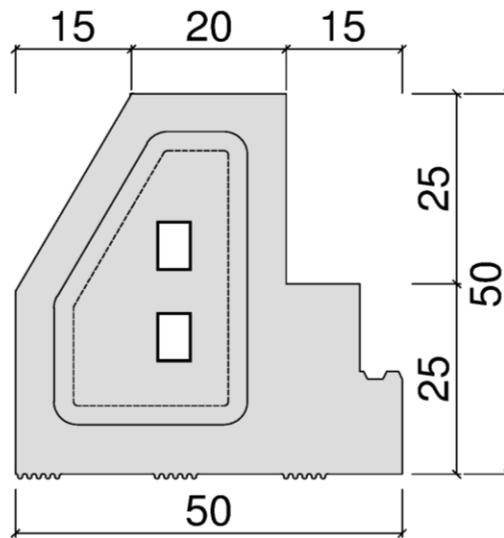
Prof. Gunter Hoppe
Head of Department

beglaubigt:
Wendler



electronic copy of the eta by dibt: eta-18/0052

WTM-Bodendämmplatten	Annex A
Expanded polystyrene foam boards (thickness 250 mm)	



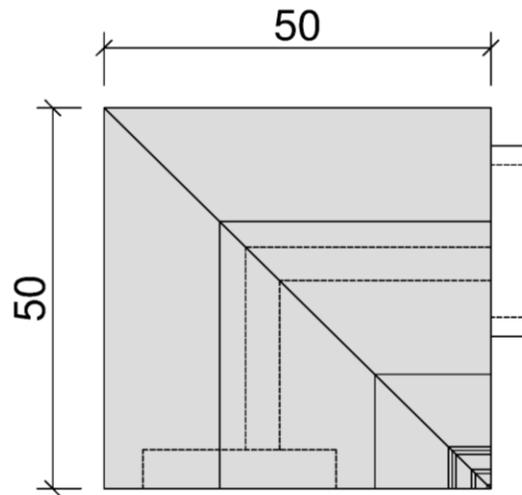
electronic copy of the eta by dibt: eta-18/0052

WTM-Bodendämmplatten

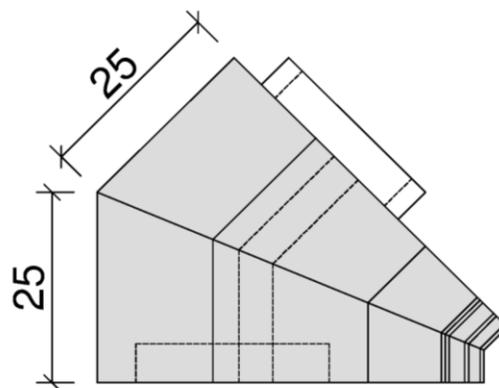
Preformed edge components

Annex B

angle 90°



**corner 45° or
angle as required**



WTM-Bodendaämmplatten

Preformed corner components

Annex C

WTM-Bodendämmplatten

Annex D

1. Compressive creep
test acc. to EN 1606:2013 and EAD 040773-00-1201

	thickness 250 mm					
density (kg/m ³)	42			48,6	42,8	45,7
compressive stress/ deformation acc. EN 826:2013 (kPa / %)	265/10			450/10	357/10	397/10
load stage (kPa)	60	100	140	85	85	90
X ₀ (mm)	1,07	1,76	2,47	0,80	1,38	0,90
X _{ct} (mm)	2,09	3,39	4,67	0,88	1,67	1,07
X _{ct50} (mm)	2,68	4,28	5,86	4,53	7,03	4,77
X_{t50}(mm)	3,75	6,04	8,34	5,33	8,41	5,67

2. Creep under shear load
test acc. to EAD 040650-00-1201

	thickness 300 mm	
density (kg/m ³)	32,0	
shear strength/ deformation acc. EN 12090 (kPa)	103/-	
load stage (kPa)	36	26
X _{τ0} (mm)	1,56	1,24
X _{τct} (mm)	1,37	0,60
X _{τct50} (mm)	2,94	1,47
X_{τt50}(mm)	4,50	2,71

WTM-Bodendämmplatten

Annex D

3. Creep under combined compressive and shear load
test acc. to EAD 040650-00-1201

	thickness 300 mm	
density (kg/m ³)	32,0	
compressive stress/ deformation acc. EN 826 (kPa / %)	300/-	
shear strength/ deformation acc. EN 12090 (kPa)	103	
load stage (kPa)	36	45
deformation under	shear load	compressive load
X _{τ0} /X ₀ (mm)	2,48	1,98
X _{τct} /X _{ct} (mm)	1,35	1,33
X _{τct50} /X _{ct50} (mm)	3,03	3,23
X_{τ50}/X_{t50}(mm)	5,51	5,21

	thickness 300 mm	
density (kg/m ³)	44,5	
compressive stress/ deformation acc. EN 826 (kPa / %)	310/-	
shear strength/ deformation acc. EN 12090 (kPa)	125	
load stage (kPa)	44	45
deformation under	shear load	compressive load
X _{τ0} /X ₀ (mm)	2,69	0,66
X _{τct} /X _{ct} (mm)	1,34	0,87
X _{τct50} /X _{ct50} (mm)	2,47	2,88
X_{τ50}/X_{t50}(mm)	3,81	3,54