Deutsches Institut für Bautechnik
DIBt

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

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European Technical Assessment

ETA-18/0618 of 23 July 2019

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	URSA XPS D N-III TWINS
Product family to which the construction product belongs	Extruded polystyrene foam boards as load bearing layer and/or thermal insulation outside the waterproofing
Manufacturer	URSA Deutschland GmbH Carl-Friedrich-Benz-Straße 46-48 04509 Delitzsch DEUTSCHLAND
Manufacturing plant	Werk Queis Uralitastraße 1 D-06188 Queis
This European Technical Assessment contains	7 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 040650-00-1201

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Specific Part

1 Technical description of the product

The multilayer extruded polystyrene foam boards are manufactured from up to four layers of extruded polystyrene foam boards (single boards). The single boards with thicknesses from 50 mm up to 100 mm are bonded together by full-surface thermal welding. The respective total thickness of the product is composed of single layer board thicknesses with a difference of 20 mm at least. The single boards are made of rigid cellular plastics material extruded from polystyrene or one of its copolymers and which have a closed cell structure. The blowing agent mixture is carbon dioxide (CO_2) and additives.

The multilayer extruded polystyrene foam boards have a foam skin on both surfaces and a special edge treatment (shiplap).

The multilayer extruded polystyrene foam boards do not contain Hexabromocyclododecane (HBCD).

The multilayer extruded polystyrene foam boards have the following designations:

"URSA XPS D N-III TWINS"

The multilayer extruded polystyrene foam boards are manufactured with the following dimensions:

Nominal thicknesses:	100 mm to 400 mm
Nominal length:	1250 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 extruded polystyrene foam boards are intended to be used as thermal insulation outside the waterproofing. The boards are laid uniformly and even on the substrate to which they are applied. In particular the following applications are covered:

- External horizontal and vertical thermal insulation of in-ground constructions in non-structural applications (also in case of groundwater)
- Inverted roof insulation (including park deck and green roof applications)

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 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 extruded 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 040650-00-1201 "Extruded polystyrene foam boards as load bearing layer and/or thermal insulation outside the waterproofing" apply.

3.1 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

3.2 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 13164:2012+A1:2015, Annex C with deviating storage time period (sliced specimen) of (90 +2/-2) days prior to testing thickness 100 mm ≤ d ≤ 180 mm thickness 200 mm ≤ d ≤ 240 mm thickness 260 mm ≤ d ≤ 400 mm Moisture conversion coefficient	 $\lambda_{D(90d)}$ = 0,033 W/(m·K) $\lambda_{D(90d)}$ = 0,035 W/(m·K) $\lambda_{D(90d)}$ = 0,036 W/(m·K) No performance assessed
Water absorption Long term water absorption by total immersion test acc. to EN 12087:2013 (method 2A) Long term water absorption by diffusion test acc. to EN 12088:2013	 WL(T)0,7 (W_{lt} ≤ 0,7 Vol.%) WD(V)3 (W_{dV} ≤ 3,0 Vol.%)
Freeze-thaw resistance test acc. to EN 12091:2013 using the wet test specimens from having done the water diffusion test in accordance with EN 12088:2013	 FTCD1 (W_V ≤ 1,0 Vol.%)

Essential characteristic	**Performance**
Freeze-thaw resistance test acc. to EN 12091:2013 Reduction in compressive stress at 10 % deformation or in compressive strength of the re-dried specimens, when tested in accordance with EN 826:2013 Reduction in shear strength of the re-dried specimens, when tested in accordance with EN 12090:2013	 ≤ 10 % ≤ 10 %
Water vapour diffusion resistance factor	See Annex A
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	tolerance +4/-2 mm ± 8 mm 5 mm/m 3 mm
Compressive stress at 10 % deformation or compressive strength test acc. to EN 826:2013	Level (individual values may fall below this level up to 10 %): ≥ 300 kPa
Density test acc. to EN 1602:2013	density range: 29 kg/m³ - 33 kg/m³
Deformation under specified compressive load and temperature conditions test acc. to EN 1605:2013	load: 40 kPa; temperature: (70 ± 1) °C; time: (168 ± 1) h ≤ 5 %
Dimensional stability under specified conditions test acc. to EN 1604:2013	 temperature: 70 °C and 90% R.H. DS(70,90) ($\Delta\varepsilon_l \leq 5$ %, $\Delta\varepsilon_b \leq 5$ %, $\Delta\varepsilon_d \leq 5$ %)
Tensile strength perpendicular to faces test acc. to EN 1607:2013	 TR150 ($\sigma_{mt} \geq 150$ kPa)

Essential characteristic	Performance
Volume percentage of closed cells test acc. to EN ISO 4590:2003 (method 1 with correction)	≥ 95%
Shear strength test acc. to EN 12090:2013	≥ 150 kPa
Compressive creep	No performance assessed

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

In accordance with EAD No. 040650-00-1201, the applicable European legal acts are: 1995/467/EC and 1999/91/EC[1]

The system to be applied is:

System 3

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 23 July 2019 by Deutsches Institut für Bautechnik

Maja Tiemann
Head of Department

beglaubigt:
Wendler

[1] as amended

Deutsches Institut für Bautechnik DIBt

URSA XPS D N-III TWINS **Annex A**

Water vapour transmission
in accordance with EN 12086

URSA XPS D N-III TWINS	**thickness 100 mm (2x 50 mm)**
density (kg/m^3)	32
sliced thickness of the specimens in mm	
Skin layer	20
Adhesion layer	20
Core layer	20
water vapour diffusion resistance factor (mean values for the sliced thickness)	
μ_{skin}	158
μ_{ad}	146
μ_{core}	130