

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-20/0213**  
**of 9 June 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

JUBHome BASE 300,  
JUBHome BASE 400

Product family  
to which the construction product belongs

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

Manufacturer

JUB d.o.o.  
Dol pri Ljubljani 28  
1262 DOL PRI LJUBLJANI  
SLOWENIEN

Manufacturing plant

JUB d.o.o. obrat Nova vas  
Nova vas 56  
1385 Nova vas  
Slowenien

This European Technical Assessment  
contains

12 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

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## Specific Part

### 1 Technical description of the product

The expanded polystyrene foam modules consist 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 one side and a moulded surface on the other side of the board. The 20 mm high buttons on the moulded surface are square in shape, with base side length of 49 mm. The buttons are arranged in both directions in a grid pattern, with center-to-center distances of 75 mm. The buttons (square prisms with a depth 20 mm) of the upper layer and the lower layer interlock.

The thermal insulation is made in two layers of boards whereat the bottom layer has a thickness of 80 mm and the upper layer a thickness up to 220 mm.

The expanded polystyrene foam boards are butt-joined, and the overlap of the joints is ensured by overlapping the upper board to the lower one by a minimum of 15 cm. The preformed edge and corner components have special edge treatment (tongue and groove).

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

The expanded polystyrene foam modules have the following designations:

"JUBHome BASE 300" and

"JUBHome BASE 400".

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

Nominal thicknesses of the boards: 80 to 220 mm

Nominal length of the boards: 1200 mm

Nominal widths of the boards: 900 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 outside the waterproofing. The boards are laid uniformly on the substrate.

The performance according to section 3 only applies if the polystyrene foam modules 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 polystyrene foam modules, also the respective national regulations shall be observed.

Where the polystyrene foam modules 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 "JUBHome BASE 300" "JUBHome BASE 400" Slip deformation	Level (individual values may fall below this level up to 10 %):  ≥ 300 kPa ≥ 400 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 "JUBHome BASE 300" "JUBHome BASE 400"	$\sigma_{0,05} = 347 \text{ kPa}$ (n= 32; $\sigma_{\text{mean}} = 361 \text{ kPa}$ ; $s_{\sigma} = 8 \text{ kPa}$ ) $\sigma_{0,05} = 433 \text{ kPa}$ (n= 43; $\sigma_{\text{mean}} = 450 \text{ kPa}$ ; $s_{\sigma} = 9 \text{ kPa}$ )
Compressive creep	See Annex A
Behaviour under shear load (large-sized specimen) test acc. to the EAD and the guidelines in EN 12090:2013 "JUBHome BASE 300", one layer, thickness 200 mm "JUBHome BASE 300", two layers, thickness 80+220 mm	$T_{\text{large}} = 172 \text{ kPa}$  $T_{\text{large}} = 115 \text{ kPa}$
Creep under shear load	See Annex A
Creep under combined compressive and shear load	See Annex A
Compressive modulus of elasticity	No performance assessed
Adhesion behaviour under compressive and shear load on large-sized samples	No performance assessed

Essential characteristic	Performance
Density test acc. to EN 1602:2013 "JUBHome BASE 300" "JUBHome BASE 400"	density range: 43 kg/m <sup>3</sup> - 47 kg/m <sup>3</sup> 50 kg/m <sup>3</sup> - 54 kg/m <sup>3</sup>
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 in accordance with EN 13163:2012+A1:2015	Declared value: <sup>1</sup> $\lambda_D = 0,033 \text{ W}/(\text{m} \cdot \text{K})$
Moisture conversion coefficient	No performance assessed
Water absorption Long term water absorption by total immersion test acc. to EN 12087:2013 (method 2A) with deviating drip-off time of max. 10 seconds Long term water absorption by diffusion test acc. to EN 12088:2013	$\leq 3 \text{ Vol.}\%$  WD(V) <sup>3</sup> ( $W_{dV} \leq 3,0 \text{ Vol.}\%$ )
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 Reduction in compressive stress at 10 % deformation or in compressive strength of the re-dried specimens, when tested in accordance with EN 826:2013	FTCD5 ( $W_v \leq 5,0 \text{ Vol.}\%$ )  $\leq 10 \%$
Water vapour diffusion resistance factor	No performance assessed

<sup>1</sup> The declared value is representative for at least 90 % of the production with a confidence level of 90 % and applies to the density range mentioned in section 3.

Essential characteristic	Performance
Geometrical properties	tolerance
Thickness test acc. EN 823:2013 (clause 7.2, figure 2, measuring set-up 3)	$\pm 2$ mm
Length, width test acc. EN 822:2013 and in accordance with EN 13163:2012+A1:2015	L(2) ( $\pm 2$ mm)
Squareness in direction of length and width; in direction of thickness test acc. EN 824:2013 and in accordance with EN 13163:2012+A1:2015	S(2) (2 mm/m)
Flatness in direction of length and width test acc. EN 825:2013	2 mm
Profiling and volume loss	No performance assessed
Deformation under specified compressive load and temperature conditions test acc. to EN 1605:2013 and in accordance with EN 13163:2012+A1:2015	load: 40 kPa; temperature: $(70 \pm 1)$ °C; time: $(168 \pm 1)$ h DLT(2)5 ( $\leq 5$ %)
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	No performance assessed
Bending strength test acc. to EN 12089:2013 (method B) "JUBHome BASE 300" "JUBHome BASE 400"	$\geq 450$ kPa $\geq 600$ 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 9 June 2021 by Deutsches Institut für Bautechnik

Frank Iffländer  
Head of Section

*beglaubigt:*  
Wendler

JUBHome BASE 300,  
JUBHome BASE 400

Annex A

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

JUBHome BASE 300	thickness 160 mm (80+80 mm)			thickness 300 mm (80+220 mm)		
density (kg/m <sup>3</sup> )	46			45		
compressive stress/ deformation acc. EN 826:2013 (kPa / %)	372/-			355/-		
<b>load stage (kPa)</b>	<b>90</b>	<b>115</b>	<b>150</b>	<b>90</b>	<b>115</b>	<b>150</b>
X <sub>0</sub> (mm)	0,81	1,11	1,34	1,41	1,77	2,35
X <sub>ct</sub> (mm)	0,31	0,43	0,67	0,49	0,61	1,13
X <sub>ct50</sub> (mm)	0,59	0,80	1,25	1,01	1,25	2,39
<b>X<sub>t50</sub>(mm)</b>	<b>1,40</b>	<b>1,90</b>	<b>2,59</b>	<b>2,41</b>	<b>3,02</b>	<b>4,74</b>

JUBHome BASE 400	thickness 160 mm (80+80 mm)			thickness 300 mm (80+220 mm)		
density (kg/m <sup>3</sup> )	52			52		
compressive stress/ deformation acc. EN 826:2013 (kPa / %)	456/-			447/-		
<b>load stage (kPa)</b>	<b>110</b>	<b>150</b>	<b>190</b>	<b>110</b>	<b>150</b>	<b>190</b>
X <sub>0</sub> (mm)	0,85	1,04	1,40	1,39	1,90	2,51
X <sub>ct</sub> (mm)	0,32	0,51	0,87	0,62	0,91	1,67
X <sub>ct50</sub> (mm)	0,66	0,96	1,74	1,96	2,25	3,98
<b>X<sub>t50</sub>(mm)</b>	<b>1,51</b>	<b>2,00</b>	<b>3,14</b>	<b>3,35</b>	<b>4,15</b>	<b>6,49</b>

2. Creep under shear load  
test acc. to EAD 040773-00-1201

JUBHome BASE 300	thickness 200 mm
density (kg/m <sup>3</sup> )	46
shear strength/ deformation acc. EN 12090 (kPa)	172/-
<b>load stage (kPa)</b>	<b>60,2</b>
X <sub>τ0</sub> (mm)	1,70
X <sub>τct</sub> (mm)	0,92
X <sub>τct50</sub> (mm)	2,40
<b>X<sub>τt50</sub>(mm)</b>	<b>4,10</b>



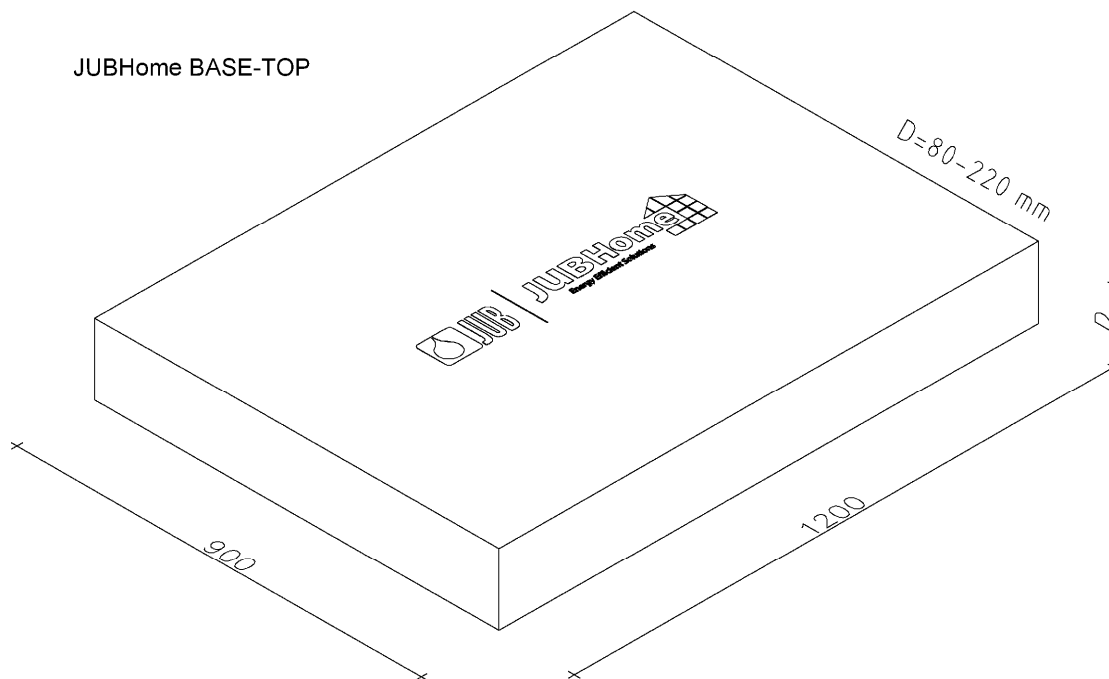
JUBHome BASE 300,  
JUBHome BASE 400

Annex A

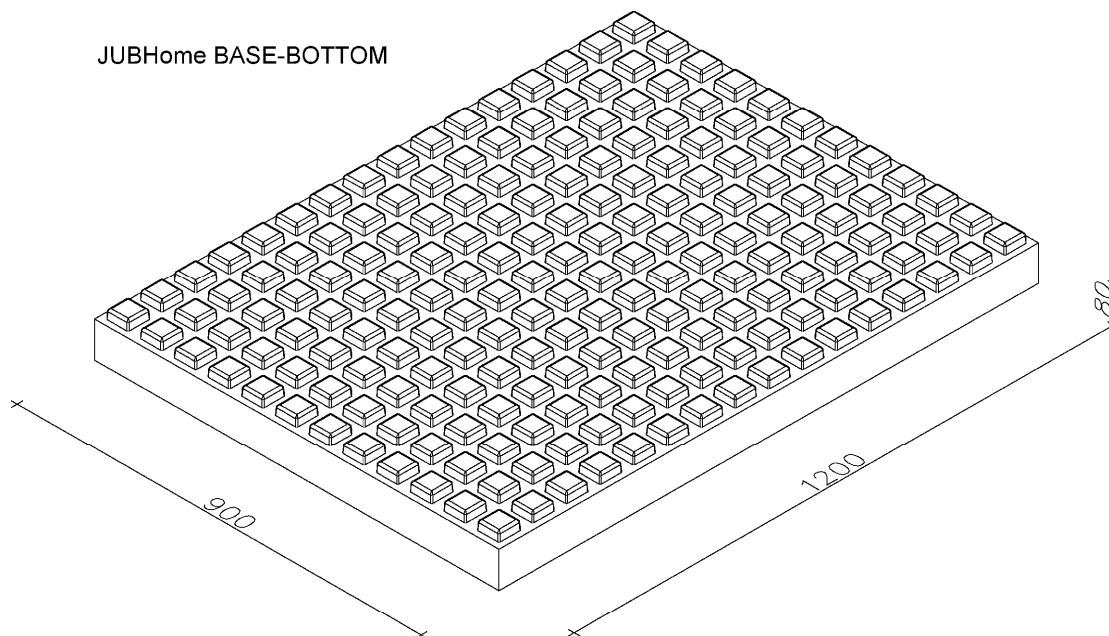
3. Creep under combined compressive and shear load  
test acc. to EAD 040773-00-1201

JUBHome BASE 300	thickness 300 mm (80+220 mm)	
	density (kg/m <sup>3</sup> )	46
compressive stress/ deformation acc. EN 826 (kPa / %)	355	
shear strength/ deformation acc. EN 12090 (kPa)	115	
<b>load stage (kPa)</b>	<b>40,25</b>	<b>53,25</b>
deformation under	shear load	compressive load
X <sub>τ0</sub> /X <sub>0</sub> (mm)	2,48	1,18
X <sub>τct</sub> /X <sub>ct</sub> (mm)	0,77	0,86
X <sub>τct50</sub> /X <sub>ct50</sub> (mm)	2,06	2,28
<b>X<sub>τ50</sub>/X<sub>t50</sub>(mm)</b>	<b>4,54</b>	<b>3,14</b>

JUBHome BASE-TOP

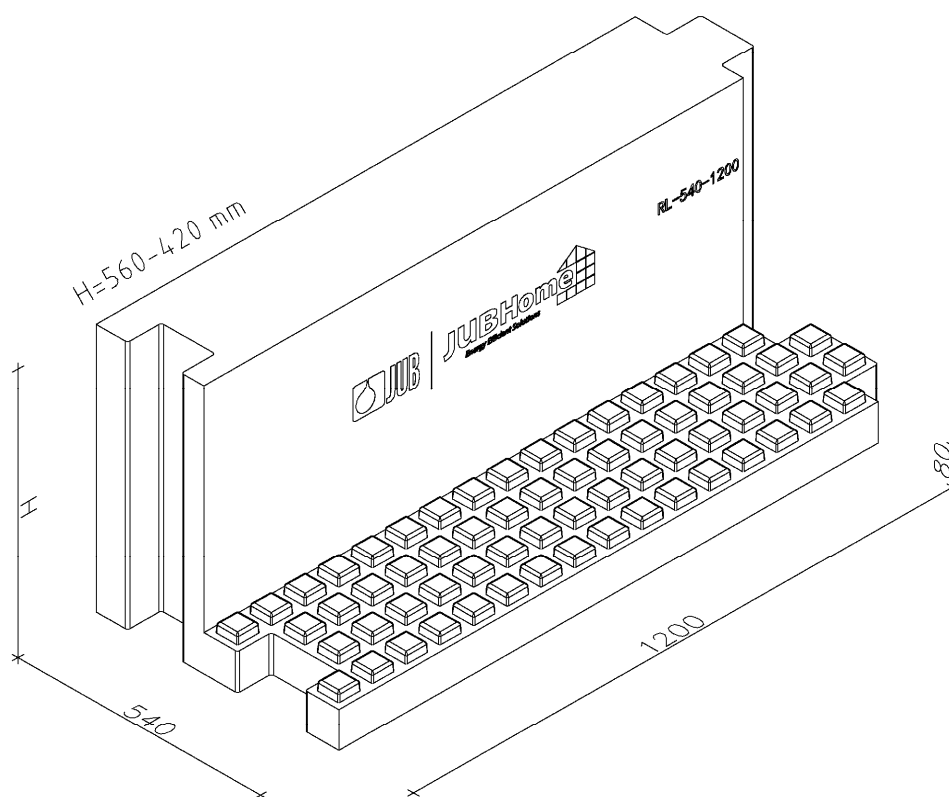


JUBHome BASE-BOTTOM



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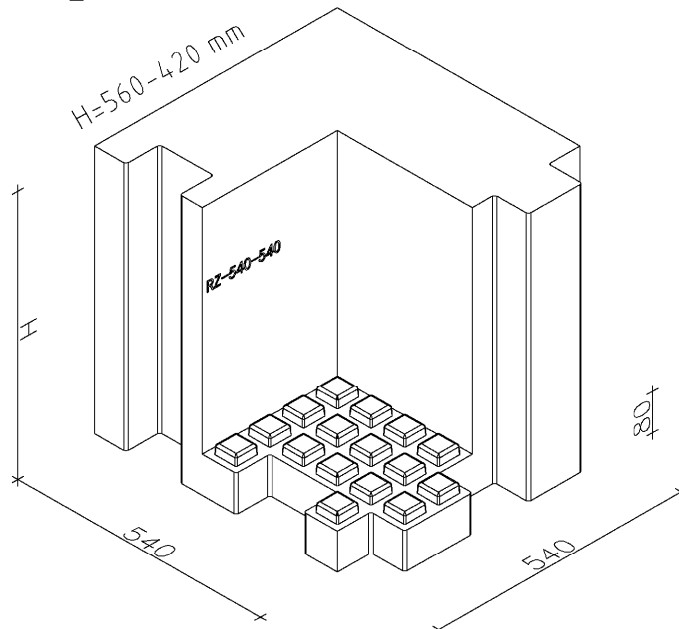
JUBHome BASE 300, JUBHome BASE 400	Annex B
Boards BASE-300-TOP and BASE-300-BOTTOM Boards BASE-400-TOP and BASE-400-BOTTOM	



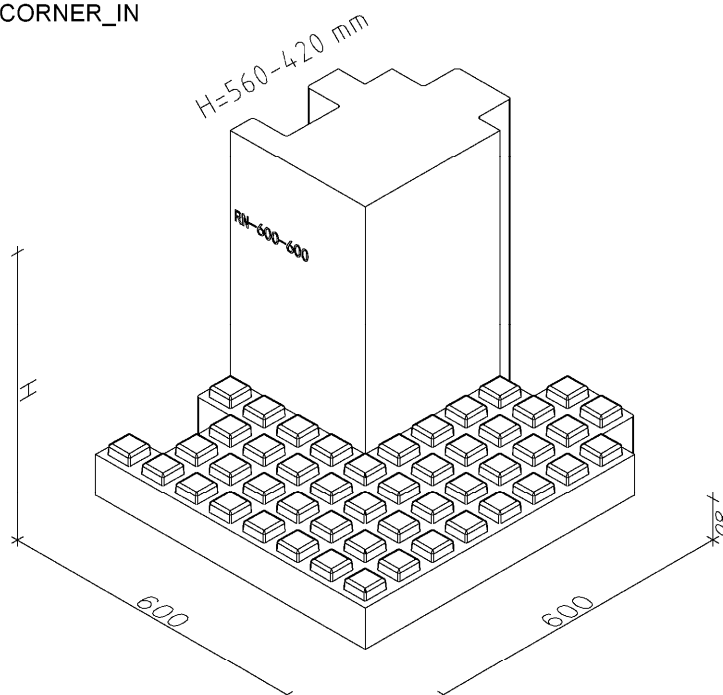
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JUBHome BASE 300, JUBHome BASE 400	Annex C
Preformed edge components BASE-EDGE	

JUBHome BASE-CORNER\_OUT



JUBHome BASE-CORNER\_IN



JUBHome BASE 300, JUBHome BASE 400	Annex D
Preformed corner components BASE-CORNER_OUT BASE-CORNER_IN	