

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-19/0425**  
**of 21 January 2020**

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

ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm  
XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL

Product family  
to which the construction product belongs

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

Manufacturer

Ravago Building Solutions Germany GmbH  
Value Park Y51  
06258 Schkopau  
DEUTSCHLAND

Manufacturing plant

RAVAGO BUILDING SOLUTIONS Germany GmbH  
BS Schkopau D 68  
06258 Schkopau  
Deutschland

RAVAGO BUILDING SOLUTIONS FRANCE  
8 Route de Herrlisheim  
67410 Drusenheim  
Frankreich

This European Technical Assessment  
contains

15 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 extruded polystyrene foam boards are made of rigid cellular plastics material extruded from polystyrene or one of its copolymers and which has a closed cell structure. The blowing agent mixture is carbon dioxide (CO<sub>2</sub>), isobutene and additives. The extruded polystyrene foam boards have a skin on both surfaces and a special edge treatment (shiplap).

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

The extruded polystyrene foam boards have the following designations:

"ROOFMATE SL-AP", "Ravatherm XPS 300 SL", "Ravatherm XPS 300 SL B1",  
 "FLOORMATE 500-AP", "Ravatherm XPS 500 SL", "Ravatherm XPS 500 SL B1",  
 "FLOORMATE 700-AP" and "Ravatherm XPS 700 SL".

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

Nominal thicknesses:	50 mm to 200 mm for ROOFMATE SL-AP, Ravatherm XPS 300 SL and Ravatherm XPS 300 SL B1,
	50 mm to 200 mm for FLOORMATE 500-AP, Ravatherm XPS 500 SL and Ravatherm XPS 500 SL B1
	50 mm to 120 mm for FLOORMATE 700-AP and Ravatherm XPS 700 SL
Nominal length:	1250 mm
Nominal widths:	600 mm

The European Technical Assessment has been issued for the products 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 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 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)
- 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 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Compressive stress at 10 % deformation or compressive strength test acc. to EN 826:2013 "ROOFMATE SL-AP", "Ravatherm XPS 300 SL", "Ravatherm XPS 300 SL B1"  "FLOORMATE 500-AP", "Ravatherm XPS 500 SL", "Ravatherm XPS 500 SL B1"  "FLOORMATE 700-AP" and "Ravatherm XPS 700 SL"	Level (individual values may fall below this level up to 10 %):  $\geq 300$ kPa  $\geq 500$ kPa  $\geq 700$ kPa
Slip deformation	See Annex A
Compressive stress or compressive strength in the transverse and longitudinal directions	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 "ROOFMATE SL-AP", "Ravatherm XPS 300 SL", "Ravatherm XPS 300 SL B1"  thickness $50 \text{ mm} \leq d \leq 120 \text{ mm}$  thickness $120 \text{ mm} < d \leq 200 \text{ mm}$	$\sigma_{0,05} = 346 \text{ kPa}$ ( $n= 50$ ; $\sigma_{\text{mean}}= 431 \text{ kPa}$ ; $s_{\sigma}=52 \text{ kPa}$ )  $\sigma_{0,05} = 355 \text{ kPa}$ ( $n= 50$ ; $\sigma_{\text{mean}}= 458 \text{ kPa}$ ; $s_{\sigma}=63 \text{ kPa}$ )

Essential characteristic	Performance
<p>Characteristic value of compressive stress or compressive strength</p> <p>5 %-fractile value for a one-sided confidence level of 75 % under unknown or known variance using ISO 12491:1997</p> <p>"FLOORMATE 500-AP", "Ravatherm XPS 500 SL", "Ravatherm XPS 500 SL B1"</p> <p>thickness <math>50 \text{ mm} \leq d \leq 120 \text{ mm}</math></p> <p>thickness <math>120 \text{ mm} &lt; d &lt; 200 \text{ mm}</math></p> <p>"FLOORMATE 700-AP", "Ravatherm XPS 700 SL"</p> <p>thickness <math>50 \text{ mm} \leq d \leq 120 \text{ mm}</math></p>	<p><math>\sigma_{0,05} = 533 \text{ kPa}</math> (<math>n= 36</math>; <math>\sigma_{\text{mean}} = 625 \text{ kPa}</math>; <math>s_o = 55 \text{ kPa}</math>)</p> <p><math>\sigma_{0,05} = 518 \text{ kPa}</math> (<math>n= 34</math>; <math>\sigma_{\text{mean}} = 601 \text{ kPa}</math>; <math>s_o = 50 \text{ kPa}</math>)</p> <p><math>\sigma_{0,05} = 759 \text{ kPa}</math> (<math>n= 32</math>; <math>\sigma_{\text{mean}} = 820 \text{ kPa}</math>; <math>s_o = 37 \text{ kPa}</math>)</p>
Compressive creep	See Annex A
Behaviour under shear load (large-sized specimen)	See Annex A
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	See Annex A
Shear strength	No performance assessed
<p>Density</p> <p>test acc. to EN 1602:2013</p> <p>"ROOFMATE SL-AP", "Ravatherm XPS 300 SL", "Ravatherm XPS 300 SL B1"</p> <p>"FLOORMATE 500-AP", "Ravatherm XPS 500 SL", "Ravatherm XPS 500 SL B1"</p> <p>"FLOORMATE 700-AP", "Ravatherm XPS 700 SL"</p>	<p>density range:</p> <p><math>32 \text{ kg/m}^3 - 39 \text{ kg/m}^3</math></p> <p><math>37 \text{ kg/m}^3 - 45 \text{ kg/m}^3</math></p> <p><math>41 \text{ kg/m}^3 - 45 \text{ kg/m}^3</math></p>

### 3.2 Safety in case of fire (BWR 2)

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

3.3 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
<p>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</p> <p>"ROOFMATE SL-AP", "Ravatherm XPS 300 SL", "Ravatherm XPS 300 SL B1"</p> <p>thickness 50 mm ≤ d ≤ 120 mm thickness 120 mm &lt; d ≤ 160 mm thickness 160 mm &lt; d ≤ 200 mm</p> <p>"FLOORMATE 500-AP", "Ravatherm XPS 500 SL", "Ravatherm XPS 500 SL B1"</p> <p>thickness 50 mm ≤ d ≤ 70 mm thickness 70 mm &lt; d ≤ 120 mm thickness 120 mm &lt; d ≤ 160 mm thickness 160 mm &lt; d ≤ 200 mm</p> <p>"FLOORMATE 700-AP", "Ravatherm XPS 700 SL"</p> <p>thickness 50 mm ≤ d ≤ 70 mm thickness 70 mm &lt; d ≤ 120 mm</p>	<p><math>\lambda_{D(90d)} = 0,033 \text{ W/(m} \cdot \text{K)}</math> <math>\lambda_{D(90d)} = 0,035 \text{ W/(m} \cdot \text{K)}</math> <math>\lambda_{D(90d)} = 0,036 \text{ W/(m} \cdot \text{K)}</math></p> <p><math>\lambda_{D(90d)} = 0,034 \text{ W/(m} \cdot \text{K)}</math> <math>\lambda_{D(90d)} = 0,035 \text{ W/(m} \cdot \text{K)}</math> <math>\lambda_{D(90d)} = 0,036 \text{ W/(m} \cdot \text{K)}</math> <math>\lambda_{D(90d)} = 0,037 \text{ W/(m} \cdot \text{K)}</math></p> <p><math>\lambda_{D(90d)} = 0,034 \text{ W/(m} \cdot \text{K)}</math> <math>\lambda_{D(90d)} = 0,035 \text{ W/(m} \cdot \text{K)}</math></p>
Moisture conversion coefficient	No performance assessed
<p>Water absorption Long term water absorption by total immersion test acc. to EN 12087:2013 (method 2A)</p> <p>Long term water absorption by diffusion test acc. to EN 12088:2013</p>	<p>WL(T)0,7 (<math>W_{lt} \leq 0,7 \text{ Vol.}\%</math>)</p> <p>WD(V)3 (<math>W_{dV} \leq 3,0 \text{ Vol.}\%</math>)</p>
<p>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</p> <p>Reduction in compressive stress at 10 % deformation or in compressive strength of the re- dried specimens, when tested in accordance with EN 826:2013</p>	<p>FTCD1 (<math>W_v \leq 1,0 \text{ Vol.}\%</math>)</p> <p>≤ 10 %</p>

Essential characteristic	Performance
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) thickness ≤ 120 mm thickness > 120 mm 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 thickness ≤ 120 mm thickness > 120 mm	tolerance  ± 2 mm +5/-2 mm  ± 8 mm  ±5 mm/m  2 mm 3 mm
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) (Δε <sub>l</sub> ≤ 5 %, Δε <sub>b</sub> ≤ 5 %, Δε <sub>d</sub> ≤ 5 %)
Tensile strength perpendicular to faces	No performance assessed
Volume percentage of closed cells test acc. to EN ISO 4590:2016 (method 1 with correction)	≥ 95 %

English translation prepared by DIBt

**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<sup>1</sup>.

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 21 January 2020 by Deutsches Institut für Bautechnik

Maja Tiemann  
Head of Department

*beglaubigt:*  
Wendler

<sup>1</sup> as amended



**ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL**

**Annex A**

## 1. Compressive stress

### Slip deformation

Deformation until the conventional elastic zone (distinct straight portion of the force-displacement curve) is reached

<b>ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1 (<math>\rho = 34 \text{ kg/m}^3</math>)</b>				
thickness (mm)	1x100	3x100	1x120	2x120
compressive stress, $\sigma_a$	92	104	133	106
initial displacement $X_a$ (mm)	<b>0,75</b>	<b>1,56</b>	<b>1,57</b>	<b>2,71</b>
<b>ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1 (<math>\rho = 35 \text{ kg/m}^3</math>)</b>				
thickness (mm)	1x120	2x120		
compressive stress, $\sigma_a$	70	54		
initial displacement $X_a$ (mm)	<b>0,45</b>	<b>0,57</b>		
<b>FLOORMATE 700-AP, Ravatherm XPS 700 SL (<math>\rho = 41 \text{ kg/m}^3</math>)</b>				
thickness (mm)	1x100	3x100	1x120	2x120
compressive stress, $\sigma_a$	246	142	122	96
initial displacement $X_a$ (mm)	<b>1,33</b>	<b>2,04</b>	<b>0,62</b>	<b>1,01</b>

## 2. Compressive creep

### 2.1 Compressive creep (single-layer board)

<b>ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1</b>	<b>thickness 40 mm</b>			<b>thickness 200 mm</b>		
density ( $\text{kg/m}^3$ )	33			38		
compressive stress/ deformation acc. EN 826 (kPa / %)	312/-			541/-		
<b>load stage (kPa)</b>	<b>110</b>	<b>130</b>	<b>150</b>	<b>110</b>	<b>130</b>	<b>150</b>
$X_0$ (mm)	0,24	0,28	0,33	0,93	1,01	1,23
$X_{ct}$ (mm)	0,17	0,24	0,30	0,36	0,43	0,70
$X_{ct50}$ (mm)	0,36	0,51	0,64	0,62	0,69	1,34
<b><math>X_{t50}</math> (mm)</b>	<b>0,6</b>	<b>0,79</b>	<b>0,97</b>	<b>1,55</b>	<b>1,70</b>	<b>2,57</b>

**ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL**

**Annex A**

<b>ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1</b>	<b>thickness 50 mm</b>		<b>thickness 120 mm</b>		<b>thickness 200 mm</b>	
density (kg/m <sup>3</sup> )	32,5	33,1	32	34,5	38,5	38
compressive stress/ deformation acc. EN 826 (kPa / %)	368/-	479/-	351/-	396/-	549/-	445/-
<b>load stage (kPa)</b>	<b>130</b>	<b>145</b>	<b>130</b>	<b>145</b>	<b>130</b>	<b>145</b>
X <sub>0</sub> (mm)	0,85	1,00	0,90	0,55	0,45	0,45
X <sub>ct</sub> (mm)	0,22	0,31	0,36	0,39	0,36	0,46
X <sub>ct50</sub> (mm)	1,15	1,30	0,60	0,75	0,30	0,55
<b>X<sub>t50</sub>(mm)</b>	<b>2,00</b>	<b>2,30</b>	<b>1,50</b>	<b>1,30</b>	<b>0,75</b>	<b>1,00</b>
<b>FLOORMATE 500L-AP, Ravatherm XPS 500 SL, Ravatherm XPS 500 SL B1</b>						
	<b>thickness 50 mm</b>			<b>thickness 200 mm</b>		
density (kg/m <sup>3</sup> )	39			40		
compressive stress/ deformation acc. EN 826 (kPa / %)	582/-			684/-		
<b>load stage (kPa)</b>	<b>150</b>	<b>180</b>	<b>210</b>	<b>150</b>	<b>180</b>	<b>210</b>
X <sub>0</sub> (mm)	0,29	0,21	0,39	1,17	1,14	1,36
X <sub>ct</sub> (mm)	0,25	0,46	0,38	0,38	0,30	0,34
X <sub>ct50</sub> (mm)	0,46	0,67	0,74	0,63	0,62	0,82
<b>X<sub>t50</sub>(mm)</b>	<b>0,75</b>	<b>0,88</b>	<b>1,13</b>	<b>1,80</b>	<b>1,76</b>	<b>2,18</b>
<b>FLOORMATE 500L-AP, Ravatherm XPS 500 SL, Ravatherm XPS 500 SL B1</b>						
	<b>thickness 50 mm</b>		<b>thickness 120 mm</b>		<b>thickness 200 mm</b>	
density (kg/m <sup>3</sup> )	39,5	39,5	40	40	42,4	42,4
compressive stress/ deformation acc. EN 826 (kPa / %)	611/-	611/-	685/-	685/-	676/-	676/-
<b>load stage (kPa)</b>	<b>180</b>	<b>210</b>	<b>180</b>	<b>210</b>	<b>180</b>	<b>210</b>
X <sub>0</sub> (mm)	0,31	0,384	0,65	0,70	0,45	0,60
X <sub>ct</sub> (mm)	0,32	0,42	0,22	0,27	0,29	0,36
X <sub>ct50</sub> (mm)	1,44	2,27	0,91	0,50	0,95	1,40
<b>X<sub>t50</sub>(mm)</b>	<b>1,75</b>	<b>2,65</b>	<b>1,13</b>	<b>1,47</b>	<b>1,40</b>	<b>2,00</b>

**ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL**

**Annex A**

<b>FLOORMATE 700L-AP , Ravatherm XPS 700 SL</b>	<b>thickness 50 mm</b>			<b>thickness 120 mm</b>		
density (kg/m <sup>3</sup> )	45			39		
compressive stress/ deformation acc. EN 826 (kPa / %)	742/-			701/-		
<b>load stage (kPa)</b>	<b>220</b>	<b>250</b>	<b>280</b>	<b>220</b>	<b>250</b>	<b>280</b>
X <sub>0</sub> (mm)	0,27	0,28	0,35	0,81	0,68	0,64
X <sub>ct</sub> (mm)	0,12	0,14	0,18	0,65	0,85	1,41
X <sub>ct50</sub> (mm)	0,41	0,40	0,57	1,30	1,75	2,87
<b>X<sub>t50</sub>(mm)</b>	<b>0,68</b>	<b>0,68</b>	<b>0,92</b>	<b>2,11</b>	<b>2,43</b>	<b>3,51</b>

<b>FLOORMATE 700L-AP , Ravatherm XPS 700 SL</b>	<b>thickness 50 mm</b>	<b>thickness 60 mm</b>	<b>thickness 120 mm</b>
density (kg/m <sup>3</sup> )	42,5	41	41,5
compressive stress/ deformation acc. EN 826 (kPa / %)	785/-	798/-	800/-
<b>load stage (kPa)</b>	<b>275</b>	<b>275</b>	<b>275</b>
X <sub>0</sub> (mm)	0,9	0,95	0,80
X <sub>ct</sub> (mm)	0,41	0,29	0,38
X <sub>ct50</sub> (mm)	0,90	0,95	0,60
<b>X<sub>t50</sub>(mm)</b>	<b>1,70</b>	<b>1,20</b>	<b>1,40</b>

## 2.2. Compressive creep (multi-layer installation)

<b>ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1</b>	<b>thickness 3x100 mm</b>		
density (kg/m <sup>3</sup> )	34,5		
compressive stress/ deformation acc. EN 826 (kPa / %)	350/10		
<b>load stage (kPa)</b>	<b>110</b>	<b>130</b>	<b>150</b>
X <sub>0</sub> (mm)	1,45	1,89	2,65
X <sub>ct</sub> (mm)	1,14	1,40	1,58
X <sub>ct50</sub> (mm)	2,04	2,46	3,08
<b>X<sub>t50</sub>(mm)</b>	<b>3,50</b>	<b>4,35</b>	<b>5,73</b>

ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL

Annex A

FLOORMATE 700-AP , Ravatherm XPS 700 SL	thickness 2x120 mm		
density (kg/m <sup>3</sup> )	42,4		
compressive stress/ deformation acc. EN 826 (kPa / %)	660/10		
<b>load stage (kPa)</b>	<b>220</b>	<b>250</b>	<b>280</b>
X <sub>0</sub> (mm)	0,98	0,80	1,25
X <sub>ct</sub> (mm)	0,60	0,63	0,87
X <sub>ct50</sub> (mm)	1,25	1,44	1,79
<b>X<sub>t50</sub>(mm)</b>	<b>2,23</b>	<b>2,24</b>	<b>3,04</b>

### 3. Behaviour under shear load (large-sized specimen)

ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1	thickness 200 mm	
density (kg/m <sup>3</sup> )	39	37
<b>shear strength</b> $\tau_{\text{large}}$ acc. EAD chapter 2.2.4 and the guidelines in EN 12090 (kPa)	<b>188</b>	<b>161</b>

ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL

Annex A

#### 4. Creep under shear

ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1	
<b>thickness</b>	<b>200 mm</b>
density (kg/m <sup>3</sup> )	39
shear strength/ deformation acc. EAD (kPa)	188
<b>load stage (kPa)</b>	<b>66</b>
X <sub>τ0</sub> (mm)	1,74
X <sub>τct</sub> (mm)	0,93
X <sub>τct50</sub> (mm)	1,49
<b>X<sub>τt50</sub>(mm)</b>	<b>3,23</b>

#### 5. Creep under combined compressive and shear load

ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1		
<b>thickness</b>	<b>200 mm</b>	
density (kg/m <sup>3</sup> )	39	
<b>load stage (kPa)</b>	<b>66</b>	<b>130</b>
deformation under	shear load	compressive load
X <sub>τ0</sub> /X <sub>0</sub> (mm)	2,19	1,52
X <sub>τct</sub> /X <sub>ct</sub> (mm)	0,66	0,44
X <sub>τct50</sub> /X <sub>ct50</sub> (mm)	1,22	1,17
<b>X<sub>τt50</sub>/X<sub>t50</sub>(mm)</b>	<b>3,41</b>	<b>2,69</b>

ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL

Annex A

6. Adhesion behaviour under compressive and shear load on large-sized samples

<b>ROOFMATE SL-AP, Ravatherm XPS 300 SL, Ravatherm XPS 300 SL B1</b>			
<b>Adhesive friction coefficient between the extruded polystyrene foam boards</b> Acc. EAD chapter 2.2.8, Annex A, A.3.1			
<b>thickness</b>	<b>2x 120 mm</b>		
density (kg/m <sup>3</sup> )	36		
<b>Compression stress – load stage (kPa)</b>	<b>15</b>	<b>45</b>	<b>90</b>
Adhesive friction coefficient regarding the compression stress – load stage	0,65	0,75	0,77
<b>Adhesive friction coefficient</b>	<b>0,73</b>		
<b>Adhesive friction coefficient between the extruded polystyrene foam boards and in-situ concrete as well as a concrete finished part with foil</b> Acc. EAD chapter 2.2.8, Annex A, A.3.2			
<b>thickness</b>	<b>2x 120 mm</b>		
density (kg/m <sup>3</sup> )	36		
<b>Compression stress – load stage (kPa)</b>	<b>15</b>	<b>45</b>	<b>90</b>
Adhesive friction coefficient regarding the compression stress – load stage	0,51	0,56	0,62
<b>Adhesive friction coefficient</b>	<b>0,57</b>		
<b>Adhesive friction coefficient between the extruded polystyrene foam boards and in-situ concrete without foil</b> Acc. EAD chapter 2.2.8, Annex A, A.3.3			
<b>thickness</b>	<b>2x 120 mm</b>		
density (kg/m <sup>3</sup> )	36		
<b>Compression stress – load stage (kPa)</b>	<b>15</b>	<b>45</b>	<b>90</b>
Adhesive friction coefficient regarding the compression stress – load stage	2,46	1,41	1,07
<b>Adhesive friction coefficient</b>	<b>1,65</b>		

ROOFMATE SL-AP, Ravatherm XPS 300 SL,  
Ravatherm XPS 300 SL B1  
FLOORMATE 500-AP, Ravatherm XPS 500 SL,  
Ravatherm XPS 500 SL B1  
FLOORMATE 700-AP, Ravatherm XPS 700 SL

Annex A

<b>FLOORMATE 700-AP, Ravatherm XPS 700 SL</b>			
<b>Adhesive friction coefficient between the extruded polystyrene foam boards</b> Acc. EAD chapter 2.2.8, Annex A, A.3.1			
<b>thickness</b>	<b>2x 120 mm</b>		
density (kg/m <sup>3</sup> )	43		
<b>Compression stress – load stage (kPa)</b>	<b>35</b>	<b>105</b>	<b>210</b>
Adhesive friction coefficient regarding the compression stress – load stage	0,70	0,72	0,77
<b>Adhesive friction coefficient</b>	<b>0,73</b>		
<b>Adhesive friction coefficient between the extruded polystyrene foam boards and in-situ concrete as well as a concrete finished part with foil</b> Acc. EAD chapter 2.2.8, Annex A, A.3.2			
<b>thickness</b>	<b>2x 120 mm</b>		
density (kg/m <sup>3</sup> )	42		
<b>Compression stress – load stage (kPa)</b>	<b>35</b>	<b>105</b>	<b>210</b>
Adhesive friction coefficient regarding the compression stress – load stage	0,51	0,54	0,58
<b>Adhesive friction coefficient</b>	<b>0,54</b>		
<b>Adhesive friction coefficient between the extruded polystyrene foam boards and in-situ concrete without foil</b> Acc. EAD chapter 2.2.8, Annex A, A.3.3			
<b>thickness</b>	<b>2x 120 mm</b>		
density (kg/m <sup>3</sup> )	42,5		
<b>Compression stress – load stage (kPa)</b>	<b>35</b>	<b>105</b>	<b>210</b>
Adhesive friction coefficient regarding the compression stress – load stage	1,71	1,07	0,95
<b>Adhesive friction coefficient</b>	<b>1,24</b>		