

DECLARATION OF PERFORMANCE

No. **0764-CPD-0251-UK-vs01**

1. *Unique identification code of the product-type:*

ROCKPANEL Natural Durable 8 mm and 10 mm
ROCKPANEL Natural Xtreme 8 mm and 10 mm

2. *Intended use / es*

External cladding for walls, fascias, soffits and ceilings

3. *Manufacturer*

ROCKWOOL B.V. / ROCKPANEL Group
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4. *System or systems of AVCP (assessment and verification of constancy of performance of the construction product) as set out in Annex V (amended by : OJ L 157, 27.5.2014, p. 76-79)*

System 1

5. *European Assessment Document:*

EAD 090001-00-0404 for Prefabricated compressed mineral wool boards with organic or inorganic finish and with specified fastening system, edition May 2015.

European Technical Assessment: ETA-13/0648 of 2015-11-02

Technical Assessment Body: ETA-Danmark A/S
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and issued: **Certificate of Constancy of performance No. 0764 - CPR – 0251**

6. Characteristics of the product

The ROCKPANEL 'Natural' panels are not surface treated with an organic or inorganic finish.

The physical properties of **ROCKPANEL 'Natural Durable'** 8 mm and 10 mm and **ROCKPANEL 'Natural Xtreme'** 8 mm and 10 mm are indicated below:

thickness	'Durable'		'Xtreme'	
	8 mm	10 mm	8 mm	10 mm
Tolerances thickness mm	± 0.5			
Length mm, max	3050			
Width mm, max	1250			
Density nominal kg/m ³	1050		1200	
Density tolerances kg/m ³	± 150		± 100	
Bending strength length and width f ₀₅ N/mm ²	≥ 27		≥ 34.5	
Modulus of Elasticity m(E) N/mm ²	≥ 4015		≥ 5260	
Thermal conductivity W/(m•K)	0.37		0.43	

Clause 7 contains the performances of ROCKPANEL 'Natural Durable' 8 mm and 10 mm and ROCKPANEL 'Natural Xtreme' 8 mm and 10 mm.

7. Declared performance

Essential characteristics	Performance			Harmonised technical specification
Basic Requirements for construction works BR2 - Safety in case of fire	Table 1 - Euroclass classification of different constructions with ROCKPANEL 'Natural' boards			ETA-13/0648 issued 2015-11-02 EN 13501-1:2010
	Fixing method	Ventilated or non-ventilated	vertical wooden subframe 'Natural' in the composition / thicknesses	
			'Durable' 8 'Xtreme' 10 mm	
	mechanically fixed	Ventilated with EPDM gasket on the battens [a]	B-s2,d0 open 6 mm horizontal joint	
[a] width of the gasket 15 mm at both sides wider than the batten				

Field of application

The following field of application applies.

Euroclass classification

The classification mentioned in Table 1 is valid for the following end use conditions:

- Mounting:
- Mechanically fixed as described in Table 1, which are attached to the subframe mentioned below
 - The panels are backed with min. 50 mm mineral wool insulation with density 30-70 kg/m³ according to EN 13162 with a cavity between the panels and the insulation (mechanically fixed)
- Substrates:
- Concrete walls, masonry walls
- Insulation:
- Ventilated constructions: The battens are backed with min. 50 mm mineral wool insulation with density 30-70 kg/m³ with an air gap of min. 28 mm between the panels and the insulation
 - Results are also valid for all greater thickness of mineral wool insulation layer with the same density and the same or better reaction to fire classification
 - Results are also valid for the panels without insulation, if the substrate chosen according to EN 13823 is made of panel with Euro-class A1 or A2 (e.g. fibre-cement panels)
- Sub-frame:
- Vertical softwood battens without fire retardant treatment, thickness minimum 28 mm
 - Test results are also valid for the same type of panel with aluminum or steel frame
 - Test results are also valid for the same type of panel with vertical LVL battens, without fire retardant treatment, thickness minimum 27 mm
- Fixings:
- Results are also valid with higher density of the fixing devices
 - Test results are also valid for the same type of panel fixed by rivets made of the same material of screws and vice versa
- Cavity:
- Unfilled
 - The depth of the cavity is minimum 28 mm
 - Test results are also valid for other higher thickness of air space between the back of the board and the insulation
- Joints:
- Vertical joints are with an EPDM foam gasket backing (*Celdex EPDM Soft EP-4530*) as described in Table 1 and horizontal joints can be open or with an aluminum profile
 - Test results are also valid in the case of using 6 mm ROCKPANEL strips instead of EPDM foam gaskets
 - Test results are also valid for higher thicknesses of ROCKPANEL strips
 - The result from a test with an open horizontal joint is also valid for the same type of panel used in applications with horizontal joints closed by steel or aluminum profiles

The classification is also valid for the following product parameters:

- Thickness:
- Nominal 8 mm, individual tolerances $\pm 0,5$ mm
 - Nominal 10 mm, individual tolerances $\pm 0,5$ mm
- Density:
- Nominal 1050 kg/m^3 , individual tolerances $-150 / +150 \text{ kg/m}^3$
 - Nominal 1200 kg/m^3 , individual tolerances $-100 / +100 \text{ kg/m}^3$

<i>Essential characteristics</i>	Table 2 - Performance - Water vapour permeability and water permeability		<i>Harmonised technical specification</i>
	<i>Property</i>	<i>Declared values</i>	
BR3 – Hygiene, health and environment	Water vapour permeability	'Natural' all versions: $s_d < 0.20 \text{ m}$ at 23°C and $85\% \text{RH}$ The designer shall consider the relevant needs for ventilation, heating and insulation to minimise condensation in service.	ETA-13/0648 issued 2015-11-02 EN ISO 12572 test condition B
	Water tightness of joints	NPD No performance determined.	ETA-13/0648 issued 2015-11-02

<i>Essential characteristics</i>	Table 3 - Performance - Release of dangerous substances		<i>Harmonised technical specification</i>
	<i>Property</i>	<i>Product specification</i>	
BR3 – Hygiene, health and environment	Content, emission and/or release of dangerous substances	Use category: Outdoor S/W2 The kit does not contain/release dangerous substances specified in TR 034, dated April 2013*), except Formaldehyde concentration $0,0105 \text{ mg/m}^3$ Formaldehyde class E1 The used fibres are not potential carcinogenic No biocides are used in the ROCKPANEL boards No flame retardant is used in the boards No cadmium is used in the boards.	ETA-13/0648 issued 2015-11-02

*) In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

Essential characteristic	Table 4a - Performance - Design value of the axial load for mechanical fixing 10 mm [g] 'Natural' boards					Harmonised technical specification		
	For service class 2 (see 'Note') and load-duration class ' Instantaneous ' [c] For hole diameters fixings see table 5							
BR4 – Safety in use	Property	10 mm boards [g] 'Durable' and 'Xtreme'	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0648 issued 2015-11-02 EN 14592:2008+A1:2012 (E)	
			a fixing	b board				
	Design value of the axial load $X_d = X_k / \gamma_M$	screw fixing [a][e] with the use of gaskets	600	600	C18/C24 [d]: 533 / 241 / 118	9 [c]		
			screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d]: 210 / 210 / 118 C24 [d]: 225 / 225 / 118		10 [c]
			nail fixing (40 mm) [e] with the use of gaskets	400	600	C18 [d]: 250 / 250 / 199 C24 [d]: 299 / 299 / 199		13 [c]
			Rivet fixing [f]	600	600	654 / 309 / 156	6	
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338		[e] for specifications fixings see table 8a			
[b] see Table 6			[f] for specifications fixings see table 8b		[g] for thickness reduction see table 12			
[c] $k_{mod} = 1,10$ in accordance with Table 3.1 – 'Values of k_{mod} ' BS EN 1995-1-1:2004+A1:2008; For 'service class' 2 [NA to BS EN 1995-1-1:2004+A1:2008 Table NA.2 "External uses where member is protected from direct wetting"] and 'load-duration class' ' Instantaneous ' [Table NA.1 NA to BS EN 1995-1-1:2004+A1:2008]			Note (according to BS EN 1995-1-1:2004+A1:2008 §2.3.1.3 (3)P) : Service class 2 is characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85 % for a few weeks per year. In service class 2 the average moisture content in most softwoods will not exceed 20 %.					

Essential characteristic	Table 4b - Performance - Design value of the axial load for mechanical fixing 10 mm [g] 'Natural' boards					Harmonised technical specification		
	For service class 3 (see 'Note') and load-duration class ' Instantaneous ' [c] For hole diameters fixings see table 5							
BR4 – Safety in use	Property	10 mm boards [g] 'Durable' and 'Xtreme'	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0648 issued 2015-11-02 EN 14592:2008+A1:2012 (E)	
			a fixing	b board				
	Design value of the axial load $X_d = X_k / \gamma_M$	screw fixing [a][e] with the use of gaskets	600	600	C18 [d]: 485 / 241 / 118 C24 [d]: 521 / 241 / 118	9 [c]		
			screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d]: 171 / 171 / 118 C24 [d]: 184 / 184 / 118		10 [c]
			nail fixing (40 mm) [e] with the use of gaskets	400	600	C18 [d]: 205 / 205 / 199 C24 [d]: 245 / 245 / 199		13 [c]
			Rivet fixing [f]	600	600	654 / 309 / 156	6	
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338		[e] for specifications fixings see table 8a			
[b] see Table 6			[f] for specifications fixings see table 8b		[g] for thickness reduction see table 12			
[c] $k_{mod} = 0,90$ in accordance with Table 3.1 – 'Values of k_{mod} ' BS EN 1995-1-1:2004+A1:2008; For 'service class' 3 [NA to BS EN 1995-1-1:2004+A1:2008 Table NA.2 "External uses fully exposed"] and 'load-duration class' ' Instantaneous ' [Table NA.1 NA to BS EN 1995-1-1:2004+A1:2008]			Note (according to BS EN 1995-1-1:2004+A1:2008 §2.3.1.3 (3)P) : Service class 3 is characterised by climatic conditions leading to higher moisture contents than in service class 2 (compare 'Note' in Table 4a).					

Essential characteristic	Table 4c - Performance - Design value of the axial load for mechanical fixing 8 mm [g] 'Natural' boards					Harmonised technical specification	
	For service class 2 (see 'Note') and load-duration class ' Instantaneous ' [c] For hole diameters fixings see table 5						
BR4 – Safety in use	Property	8 mm boards [g] 'Durable' and 'Xtreme'	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0648 issued 2015-11-02 EN 14592:2008+A1:2012 (E)
			a fixing	b board			
Design value of the axial load $X_d = X_k / \gamma_M$	screw fixing [a][e] with the use of gaskets	screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	300	400	C18/C24[d]: 334 / 182 / 111	7 [c]	
			300	400	C18 [d]: 293 / 182 / 111 C24 [d]: 314 / 182 / 111	8 [c]	
			400	600	C18 [d]: 146 / 146 / 132 C24 [d]: 174 / 157 / 132	11 [c]	
			300	480	C18 [d]: 146 / 146 / 132 C24 [d]: 174 / 157 / 132	12 [c]	
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338		[e] for specifications fixings see table 8a		
[b] see Table 6			[g] for thickness reduction see table 12				
[c] $k_{mod} = 1,10$ in accordance with Table 3.1 – 'Values of k_{mod} ' BS EN 1995-1-1:2004+A1:2008; For 'service class' 2 [NA to BS EN 1995-1-1:2004+A1:2008 Table NA.2 "External uses where member is protected from direct wetting"] and 'load-duration class' ' Instantaneous ' [Table NA.1 NA to BS EN 1995-1-1:2004+A1:2008]			Note (according to BS EN 1995-1-1:2004+A1:2008 §2.3.1.3 (3)P): Service class 2 is characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85 % for a few weeks per year. In service class 2 the average moisture content in most softwoods will not exceed 20 %.				

Essential characteristic	Table 4d - Performance - Design value of the axial load for mechanical fixing 8 mm [g] 'Natural' boards					Harmonised technical specification	
	For service class 3 (see 'Note') and load-duration class ' Instantaneous ' [c] For hole diameters fixings see table 5						
BR4 – Safety in use	Property	8 mm boards [g] 'Durable' and 'Xtreme'	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0648 issued 2015-11-02 EN 14592:2008+A1:2012 (E)
			a fixing	b board			
Design value of the axial load $X_d = X_k / \gamma_M$	screw fixing [a][e] with the use of gaskets	screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	300	400	C18/C24[d]: 334 / 182 / 111	7 [c]	
			300	400	C18 [d]: 239 / 182 / 111 C24 [d]: 257 / 182 / 111	8 [c]	
			300	480	C18 [d]: 119 / 119 / 119 C24 [d]: 142 / 142 / 132	11 [c]	
			300	480	C18 [d]: 119 / 119 / 119 C24 [d]: 142 / 142 / 132	12 [c]	
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338		[e] for specifications fixings see table 8a		
[b] see Table 6			[g] for thickness reduction see table 12				
[c] $k_{mod} = 0,90$ in accordance with Table 3.1 – 'Values of k_{mod} ' BS EN 1995-1-1:2004+A1:2008; For 'service class' 3 [NA to BS EN 1995-1-1:2004+A1:2008 Table NA.2 "External uses fully exposed"] and 'load-duration class' ' Instantaneous ' [Table NA.1 NA to BS EN 1995-1-1:2004+A1:2008]			Note (according to BS EN 1995-1-1:2004+A1:2008 §2.3.1.3 (3)P): Service class 3 is characterised by climatic conditions leading to higher moisture contents than in service class 2 (compare 'Note' in Table 4c).				

Essential characteristic	Table 4e - Performance - Design value of the axial load for mechanical fixing 10 mm [g] 'Natural' boards					Harmonised technical specification		
	For service class 2 (see 'Note') and load-duration class ' Permanent ' [c] For hole diameters fixings see table 5							
BR4 – Safety in use	Design value of the axial load $X_d = X_k / \gamma_M$	Property	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0648 issued 2015-11-02 EN 14592:2008+A1:2012 (E)	
			a fixing	b board				
		10 mm boards [g] 'Durable' and 'Xtreme'						
		screw fixing [a][e] with the use of gaskets	600	600	C18[d] : 324 / 241 / 118 C24[d] : 348 / 241 / 118	9 [c]		
		screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d] : 114 / 114 / 114 C24 [d] : 123 / 123 / 118	10 [c]		
		nail fixing (40 mm) [e] with the use of gaskets	400	600	C18 [d] : 136 / 136 / 136 C24 [d] : 163 / 163 / 163	13 [c]		
		Rivet fixing [f]	600	600	654 / 309 / 156	6		
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338		[e] for specifications fixings see table 8a			
[b] see Table 6			[f] for specifications fixings see table 8b		[g] for thickness reduction see table 12			
[c] $k_{mod} = 0,60$ in accordance with Table 3.1 – 'Values of k_{mod} ' BS EN 1995-1-1:2004+A1:2008; For 'service class' 2 [NA to BS EN 1995-1-1:2004+A1:2008 Table NA.2 "External uses where member is protected from direct wetting"] and 'load-duration class' ' Permanent ' [Table NA.1 NA to BS EN 1995-1-1:2004+A1:2008]			Note (according to BS EN 1995-1-1:2004+A1:2008 §2.3.1.3 (3)P) : Service class 2 is characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85 % for a few weeks per year. In service class 2 the average moisture content in most softwoods will not exceed 20 %.					

Essential characteristic	Table 4f - Performance - Design value of the axial load for mechanical fixing 8mm [g] 'Natural' boards					Harmonised technical specification		
	For service class 2 (see 'Note') and load-duration class ' Permanent ' [c] For hole diameters fixings see table 5							
BR4 – Safety in use	Design value of the axial load $X_d = X_k / \gamma_M$	Property	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0648 issued 2015-11-02 EN 14592:2008+A1:2012 (E)	
			a fixing	b board				
		8 mm boards [g] 'Durable' and 'Xtreme'						
		screw fixing [a][e] with the use of gaskets	300	400	C18/C24 [d] : 334 / 182 / 111	7 [c]		
		screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	300	400	C18 [d] : 160 / 160 / 111 C24 [d] : 171 / 171 / 111	8 [c]		
		nail fixing (32 mm) [e] with the use of gaskets	300	480	C18 [d] : 79 / 79 / 79 C24 [d] : 95 / 95 / 95	11 [c]		
		nail fixing (40 mm) [e] with the use of 8 mm ROCKPANEL strips	300	480	C18 [d] : 79 / 79 / 79 C24 [d] : 95 / 95 / 95	12 [c]		
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338		[e] for specifications fixings see table 8a			
[b] see Table 6			[f] for specifications fixings see table 8b		[g] for thickness reduction see table 12			
[c] $k_{mod} = 0,60$ in accordance with Table 3.1 – 'Values of k_{mod} ' BS EN 1995-1-1:2004+A1:2008; For 'service class' 2 [NA to BS EN 1995-1-1:2004+A1:2008 Table NA.2 "External uses where member is protected from direct wetting"] and 'load-duration class' ' Permanent ' [Table NA.1 NA to BS EN 1995-1-1:2004+A1:2008]			Note (according to BS EN 1995-1-1:2004+A1:2008 §2.3.1.3 (3)P) : Service class 2 is characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85 % for a few weeks per year. In service class 2 the average moisture content in most softwoods will not exceed 20 %.					

Essential characteristic	Table 5 – Performance mechanical fixings : hole diameters for 'Natural' boards						Harmonised technical specification
	Fixing type [a]	Fixed point	Moving points	Slotted points horizontally	Board dimension considered		
					'Durable'	'Xtreme'	
BR4 – Safety in use	Screw	3.2	6.0	3.4 * 6.0	1250 * 3050	1250 * 2900 [b]	ETA-13/0648 issued 2015-11-02 Table 5
	Nail	2.5	4.0	2.8 * 4.0	1250 * 1600 [b]	1250 * 1400 [b]	
	Rivet [c]	5.1	8.0	5.1 * 8.0	1250 * 3050	1250 * 3050	

[a] for specifications fixings see table 8a and 8b

[b] In the case of a larger panel length, and certain climatic conditions, a tension between shaft and panel-hole may occur.

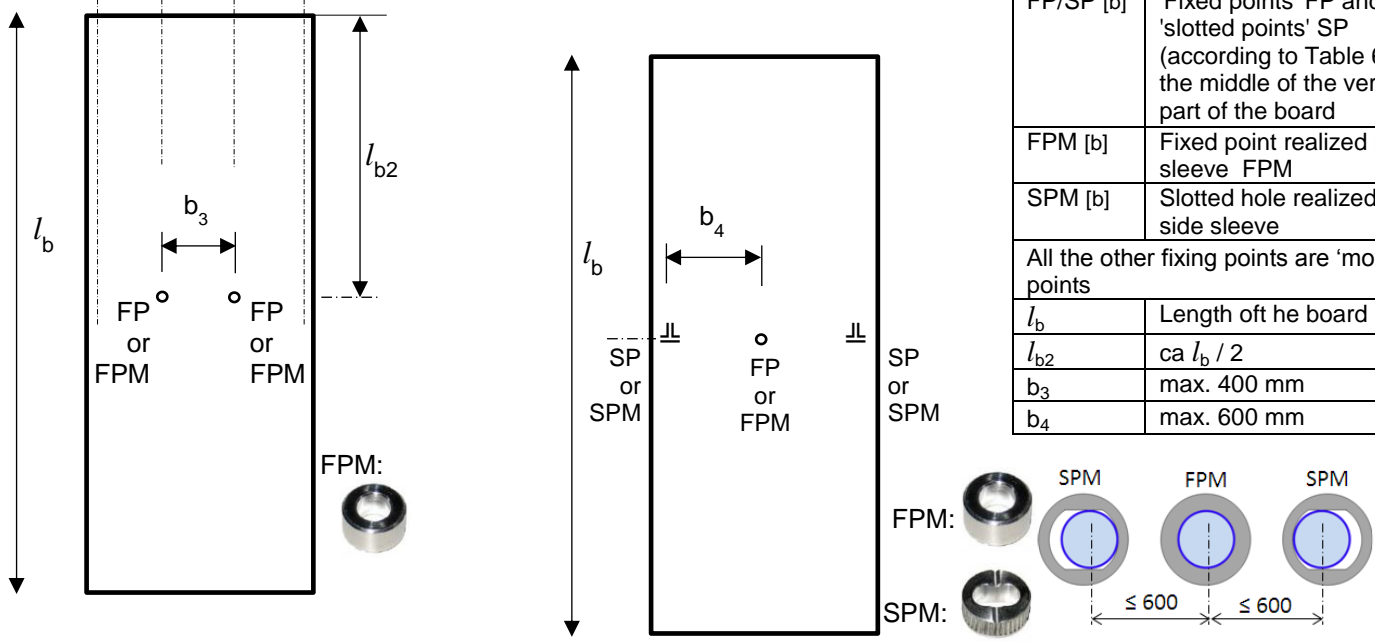
[c] For correct fixing, a riveting tool with rivet spacer must be used

Essential characteristic	Table 6 – Performance fixings according to table 4 and 5 with the required edge distances, maximum distances and fixing method						Harmonised technical specification					
BR4 – Safety in use							ETA-13/0648 issued 2015-11-02 Table 4 and 5					
	l_{mv} : 'moving length' \leq 1510 mm l_m : length max 3050 mm			Fixing positions concerning loads M: fixing at intermediate position E: fixing at edge C: fixing in corner								
	Fixed point FP and slotted points SP in the middle of the vertical part of the board. All other positions: moving points			b_{max} in mm		a_{max} in mm			a_1 in mm		a_2 in mm	
	Board thickness mm		8	10	8	10			8	10	8/10	
Fixing type	Rivet [a]	---	600	---	600	---	\geq 20	\geq 50				
	Screw	400	600	300	600	\geq 15	\geq 20	\geq 50				
	Nail	480	600	300	400	\geq 15	\geq 20	\geq 50				
[a] : For correct fixing, a riveting tool with rivet spacer must be used												

Essential characteristic	Table 6a	Performance fixings according to table 4, 5 and 6 with the required edge distances, maximum distances and horizontal installation of 10 mm boards	Harmonised technical specification																																																	
BR4 – Safety in use		<table border="1"> <tr> <td>FP/SP [b]</td> <td>'Fixed hole' FP and 'slotted holes' SP (according to Table 5) in the middle of the vertical part of the board</td> </tr> <tr> <td colspan="2">All the other fixing points are 'moving points'</td> </tr> <tr> <td>l_m</td> <td>length max 3050 mm</td> </tr> <tr> <td>l_{mv}</td> <td>'moving length' \leq 1510 mm</td> </tr> </table> <p>Location of the fixing M: middle of the board E: edge of the board C: corner of the board</p>	FP/SP [b]	'Fixed hole' FP and 'slotted holes' SP (according to Table 5) in the middle of the vertical part of the board	All the other fixing points are 'moving points'		l_m	length max 3050 mm	l_{mv}	'moving length' \leq 1510 mm		ETA-07/0141 Issued on 2014-12-15 Table 5 and fig. 8																																								
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	<table border="1"> <tr> <td>l_b</td> <td>Length of the board</td> </tr> <tr> <td>b_2</td> <td>max. 600 mm; b_2 in the central area of the board length l_b</td> </tr> <tr> <td>FPM [b]</td> <td>Creating a fixed point by the use of a sleeve FPM</td> </tr> </table>	l_b	Length of the board	b_2	max. 600 mm; b_2 in the central area of the board length l_b	FPM [b]	Creating a fixed point by the use of a sleeve FPM	<table border="1"> <thead> <tr> <th rowspan="2">Fixing type</th> <th rowspan="2">Board thickness mm</th> <th colspan="2">b_{max} in mm</th> <th colspan="2">a_{max} in mm</th> <th colspan="2">a_1 in mm</th> <th>a_2 mm</th> </tr> <tr> <th>8</th> <th>10</th> <th>8</th> <th>10</th> <th>8</th> <th>10</th> <th>8/10</th> </tr> </thead> <tbody> <tr> <td>Rivet [a]</td> <td>---</td> <td>600</td> <td>---</td> <td>600</td> <td>---</td> <td>≥ 20</td> <td>≥ 50</td> <td>≥ 50</td> </tr> <tr> <td>Screw</td> <td>400</td> <td>600</td> <td>300</td> <td>600</td> <td>≥ 15</td> <td>≥ 20</td> <td>≥ 50</td> <td>≥ 50</td> </tr> <tr> <td>Nail</td> <td>480</td> <td>600</td> <td>300</td> <td>400</td> <td>≥ 15</td> <td>≥ 20</td> <td>≥ 50</td> <td>≥ 50</td> </tr> </tbody> </table>	Fixing type	Board thickness mm	b_{max} in mm		a_{max} in mm		a_1 in mm		a_2 mm	8	10	8	10	8	10	8/10	Rivet [a]	---	600	---	600	---	≥ 20	≥ 50	≥ 50	Screw	400	600	300	600	≥ 15	≥ 20	≥ 50	≥ 50	Nail	480	600	300	400	≥ 15	≥ 20	≥ 50	≥ 50	
l_b	Length of the board																																																			
b_2	max. 600 mm; b_2 in the central area of the board length l_b																																																			
FPM [b]	Creating a fixed point by the use of a sleeve FPM																																																			
Fixing type	Board thickness mm	b_{max} in mm		a_{max} in mm		a_1 in mm		a_2 mm																																												
		8	10	8	10	8	10	8/10																																												
Rivet [a]	---	600	---	600	---	≥ 20	≥ 50	≥ 50																																												
Screw	400	600	300	600	≥ 15	≥ 20	≥ 50	≥ 50																																												
Nail	480	600	300	400	≥ 15	≥ 20	≥ 50	≥ 50																																												
Subframe aluminum :	FPM – Sleeve [a] [b] FP - 'Fixed point' FP (according to Table 6) in the central area of the vertical edge of the board	Drill hole according to Table 5 8 mm	Sleeve $\varnothing 8 \times 7.5$ – drill hole $\varnothing 5.1$																																																	

[a]: For correct fixing (including SP, FP and FPM) a riveting tool with rivet spacer must be used (e.g. 0.3 mm).

[b]: Subframe aluminum

Essential characteristic	Table 6b	Performance fixings according to Table 4, 5 and 6 with the required edge distances, maximum distances and vertical installation of 10 mm boards	Harmonised technical specification																
BR4 – Safety in use	 <table border="1"> <tr> <td>FP/SP [b]</td> <td>'Fixed points' FP and 'slotted points' SP (according to Table 6) in the middle of the vertical part of the board</td> </tr> <tr> <td>FPM [b]</td> <td>Fixed point realized by a sleeve FPM</td> </tr> <tr> <td>SPM [b]</td> <td>Slotted hole realized by a side sleeve</td> </tr> <tr> <td colspan="2">All the other fixing points are 'moving' points</td> </tr> <tr> <td>l_b</td> <td>Length of the board</td> </tr> <tr> <td>l_{b2}</td> <td>ca $l_b / 2$</td> </tr> <tr> <td>b_3</td> <td>max. 400 mm</td> </tr> <tr> <td>b_4</td> <td>max. 600 mm</td> </tr> </table>		FP/SP [b]	'Fixed points' FP and 'slotted points' SP (according to Table 6) in the middle of the vertical part of the board	FPM [b]	Fixed point realized by a sleeve FPM	SPM [b]	Slotted hole realized by a side sleeve	All the other fixing points are 'moving' points		l_b	Length of the board	l_{b2}	ca $l_b / 2$	b_3	max. 400 mm	b_4	max. 600 mm	ETA-07/0141 Issued on 2014-12-15 Table 5 and fig. 8
	FP/SP [b]	'Fixed points' FP and 'slotted points' SP (according to Table 6) in the middle of the vertical part of the board																	
FPM [b]	Fixed point realized by a sleeve FPM																		
SPM [b]	Slotted hole realized by a side sleeve																		
All the other fixing points are 'moving' points																			
l_b	Length of the board																		
l_{b2}	ca $l_b / 2$																		
b_3	max. 400 mm																		
b_4	max. 600 mm																		
Subframe aluminum :	<table border="1"> <tr> <td>FPM – Sleeve [a] [b]</td> <td>8 mm</td> </tr> <tr> <td>SPM – Side sleeve [a] [b]</td> <td>8 mm</td> </tr> </table>	FPM – Sleeve [a] [b]	8 mm	SPM – Side sleeve [a] [b]	8 mm	<table border="1"> <tr> <td>Drill hole according to Table 5</td> <td>Sleeve</td> </tr> <tr> <td></td> <td>$\varnothing 8 \times 7.5$ – hole $\varnothing 5.1$</td> </tr> <tr> <td></td> <td>$\varnothing 8 \times 7.5$ – hole $\varnothing 5.1 \times 6,2$</td> </tr> </table>	Drill hole according to Table 5	Sleeve		$\varnothing 8 \times 7.5$ – hole $\varnothing 5.1$		$\varnothing 8 \times 7.5$ – hole $\varnothing 5.1 \times 6,2$							
FPM – Sleeve [a] [b]	8 mm																		
SPM – Side sleeve [a] [b]	8 mm																		
Drill hole according to Table 5	Sleeve																		
	$\varnothing 8 \times 7.5$ – hole $\varnothing 5.1$																		
	$\varnothing 8 \times 7.5$ – hole $\varnothing 5.1 \times 6,2$																		

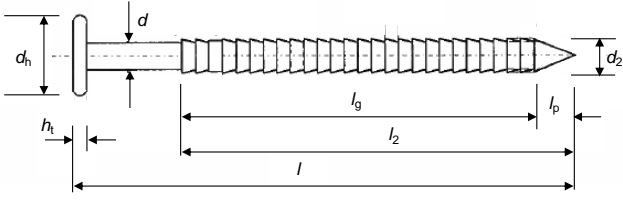
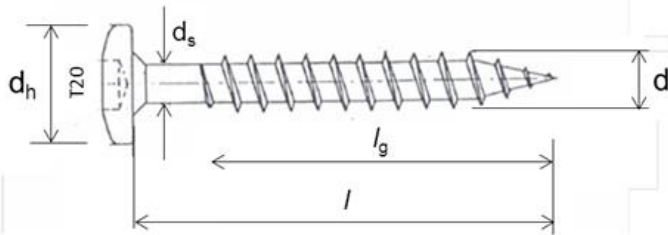
[a]: For correct fixing (including SP, SPM, FP and FPM) a riveting tool with rivet spacer must be used (e.g. 0.3 mm).
[b]: Subframe aluminum

Essential characteristic	Table 6c	Performance fixings according to table 4 and 5 with the fixing locations and installation method of 8 mm boards	Harmonised technical specification
BR4 – Safety in use	<p>l_b = length board FP – fixed point [a] [b] All the other fixing points are 'moving points'</p>	<p>C: Fixing in corner E: Fixing at edge M: Fixing at intermediate position</p>	ETA-08/0343 issued on 2014-09-16 Table 5.1 and 5.2

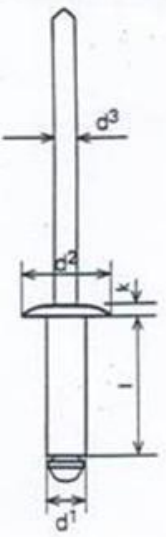
[a]: For correct fixing (including FP) a riveting tool with rivet spacer must be used (e.g. 0.3 mm).

[b]: Subframe aluminum

Essential characteristic	Table 7 – Performance shear strength mechanical fixings	Fixing	8 mm 'Durable'/'Xtreme'		10 mm 'Durable'/'Xtreme'		Harmonised technical specification
			Failure load	Deformation	Failure load	Deformation	
BR4 – Safety in use	Characteristic shear strength mechanical fixings - Average values	Rivet	---	---	1722 N	1.7 mm	ETA-13/0648 issued 2015-11-02
		Screw	1182 N	8 mm	1549 N	9 mm	
		Nail	1062 N	12 mm	1325 N	15 mm	

Essential characteristic	Table 8a - Specifications mechanical fixings		Harmonised technical specification
	Ring-shank nail 2.7/2.9 x 32 and 2.7/2.9 x 40 mm	Torx screws 4,5 x 35 mm	
Stainless steel in accordance with EN 10088	Stainless steel in accordance with EN 10088		
Material number 1.4401 or 1.4578	Material number 1.4401 or 1.4578		
BR4 – Safety in use			
	l for nail 32 = 31 – 32,5 l for nail 40 = 39 – 40,5 l_2 for nail 32 = 24 – 26 l_2 for nail 40 = 32 – 34	$d = 2.6 – 2.8$ $d_2 = 2.8 – 3.0$ $l_p \leq 4.8$	

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Essential characteristic	Table 8b - Specifications mechanical fixings - Rivet aluminum or stainless steel [e]					Harmonised technical specification	
	BR4 – Safety in use		Code	aluminum [d] AP14-50180-S	stainless steel A4 [a] SSO-D15-50180		aluminum [d] 1290406
Body			aluminum EN AW-5019 (AlMg5) in accordance with EN 755-2	stainless steel material number 1.4578 in accordance with EN 10088	aluminum EN AW-5019 (AlMg5) in accordance with EN 755-2	stainless steel material number 1.4567 in accordance with EN 10088	
Mandrel			stainless steel material number 1.4541 in accordance with EN 10088	stainless steel material number 1.4541 in accordance with EN 10088	stainless steel material number 1.4541 in accordance with EN 10088	stainless steel material number 1.4541 in accordance with EN 10088	
Pull-out strength			$F_{mean,n} = 2038$	$F_{mean,n} = 1428$	$F_{mean,10} = 2318$	$F_{mean,10} = 3212$	
			$s = 95$	$s = 54$	$s = 85$	$s = 83$	
			$F_{u,5} = 1882$	$F_{u,5} = 1339$	$F_{u,5} = 2155$	$F_{u,5} = 3052$	
d^1			5	5	5	5	
d^2			14	15	14	14	
d^3			2.7	2.7	2.7	2.95	
l			18	18	18	16	
k	1.5	1.5	1.5	1.5			
profile	aluminum $t \geq 1.5$ mm	steel $t \geq 1.0$ mm [a]	aluminum $t \geq 1.8$ mm	steel $t \geq 1.5$ mm [b]			

[a] : The minimum thickness of the vertical steel profiles is 1,0 mm. The steel quality is S320GD +Z EN 10346 number 1.0250 (or equivalent for cold forming).
For minimum coating thickness see [c]

- [b]: The minimum thickness of the vertical steel profiles is 1,5 mm. The steel quality is EN 10025-2:2004 S235JR number 1.0038. For minimum coating thickness see [c]
- [c]: The minimum coating thickness (Z or ZA) is determined by the corrosion rate (amount of corrosion loss in thickness per year) which depends on the specific outdoor atmospheric environment (the Zinc Life Time Predictor can be used to calculate the Corrosion Rate in $\mu\text{ m / y}$ for a Z coating: <http://www.galvinfo.com:8080/zclp/> (copyright The International Zinc association).
The coating designation (classification which determines the coating mass) shall be agreed between the contractor and the building owner.
Alternatively a hot dip galvanized coating according to EN ISO 1461 can be used.
- [d]: The aluminum is AW-6060 according to EN 755-2. The $R_m/R_{p0,2}$ value is 170/140 for profile T6 and 195/150 for profile T66.
- [e]: For correct fixing, a riveting tool with rivet spacer must be used

Essential characteristic	Table 9 – Performance Subframes	Harmonised technical specification
	Appropriate preservative treatment of subframes	
BR4 – Safety in use	Use the appropriate part of EN 335 to identify the "use class" of a given service environment and geographical location. Table 1 in EN 335 will assist in determining the biological agents that can attack timber in certain situations. The user can then consider the type and duration of performance required, select an appropriate level of durability and ensure that the timber or wood-based product specified has either, as a natural (see EN 350-2) or an acquired characteristic durability as the result of appropriate preservative treatment (see EN 351-1).	ETA-13/0648 issued 2015-11-02

Essential characteristic	Table 10 – Performance Impact resistance							Harmonised technical specification
		Category						
	impactor	Hard 0.5 kg		Hard 1 kg	Soft 3 kg		Soft 50 kg	
	Energy	1 J	3 J	10 J	10 J	60 J	300 J	400 J
BR4 – Safety in use	8 mm 'Durable' / 'Xtreme'		III - II - I		IV - III			
	10 mm 'Durable' without horizontal joint	IV	III - II - I	II - I	IV - III	II - I	II	-
	10 mm 'Durable' With a horizontal joint [a]	IV	III - II - I	-				
	10 mm 'Xtreme' without horizontal joint	IV	III - II - I	II - I	IV - III	II - I	II	I
	10 mm 'Xtreme' With a horizontal joint [a]	IV	III - II - I	II - I	IV - III	II - I	II	-
								ETA-13/0648 issued 2015-11-02

[a]: Panel with a horizontal joint ready accessible and vulnerable to impacts

Essential characteristic	Table 11 – Performance dimensional stability				Harmonised technical specification
		'Durable'		'Xtreme'	
		Length	Width	Length	Width
BR4 – Safety in use	Cumulative dimensional change [a]	0.085%	0.084%	0.096%	0.098%
	Coefficient of thermal expansion ($10^{-6} \text{ }^\circ\text{K}^{-1}$)	10.5		11.1	10.8
	Coefficient of moisture expansion (mm/m) 50% to 92% RH after 4 days	0.288	0.317	0.320	0.328
					ETA-13/0648 issued 2015-11-02

[a] As a consequence the minimum joint width shall be 3 mm, preferably 5 mm.

Essential characteristic	Table 12 – Resistance to Hygrothermal cycles and Xenon Arc exposure		Harmonised technical specification
		Performance	
Aspects of durability and serviceability	Resistance to Hygrothermal cycles	Pass	ETA-13/0648 issued 2015-11-02
	Resistance to Xenon Arc exposure <i>EOTA TR010 climate class S (Technical Report 010)</i> 5000 hours artificial weathering	Pass Thickness which contributes to the mechanical properties is reduced resulting from UV-radiation [a] . In mechanical calculations the nominal thickness according to “Characteristics”, page 2, shall be reduced with 2 mm	

[a] The provisions made in this Declaration of Performance are based on an assumed intended working life of the kit of 25 years for regions with a mean annual radiant exposure not exceeding 5 GJ/m², provided that they are subject to appropriate use and maintenance. EOTA Technical Report 010 contains the map of Europa with the mean annual radiant exposure by global solar radiation: <http://www.eota.be/en-GB/content/technical-reports/11/>
The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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.

8. *The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.*

Signed for and on behalf of the manufacturer by:

ROCKWOOL B.V.
W.J.E. Dumoulin
Technical Director Operations DE-NL



At Roermond,
The Netherlands

on 28th January 2016

DOP in accordance with Commission Delegated Regulation (EU) No 574/2014 of 21 February 2014 amending Annex III to Regulation (EU) No 305/2011 of the European Parliament and of the Council on the model to be used for drawing up a declaration of performance on construction products, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014R0574>, OJ L 159, 28.5.2014, p. 41-46