

DECLARATION OF PERFORMANCE

No. **0764-CPR-0321 - UK - vs01**

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

Rockpanel Durable 8 mm finish Colours and Rockpanel Durable 8 mm finish ProtectPlus

2. *Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11 (4):*

Backside print on the board.

3. *Intended use / es*

Internal and external wall and ceiling finishes

4. *Manufacturer*

ROCKWOOL B.V.
Industrieweg 15
NL-6045 JG Roermond, Netherlands
Tel. +31 475 353 353

5. *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 for reaction to fire and system 2+ for other characteristics

6. *European Assessment Document:*

EAD 090001-01-0404 for Prefabricated compressed mineral wool boards with organic or inorganic finish and with specified fastening system.

European Technical Assessment: ETA-07/0141 of 2020-05-05

Technical Assessment Body: ETA-Danmark A/S
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and issued: **Certificate of Constancy of performance No. 0764 - CPR – 0321**

7. Characteristics of the product

The Rockpanel Durable Colours panels are surface treated with a four-layer water-borne polymer emulsion paint on one side, in a range of colours.

The Rockpanel Durable ProtectPlus panels are surface treated with a four-layer water-borne polymer emulsion paint on one side, which has been provided with an extra anti-graffiti clear coat as a fifth layer on the colour paint.

The physical properties of '**Rockpanel Durable**' 8 mm are indicated below:

- thickness 8
- length, max 3050 mm
- width, max 1250 mm
- density nominal 1050 kg/m³
- bending strength length and width $f_{05} \geq 27$ N/mm²
- Modulus of Elasticity 4015 N/mm²
- Thermal conductivity 0.37 W/(m.K)

Clause 8 contains the performances of Rockpanel Durable 8 mm.

8. 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 boards				
	Fixing method	Ventilated or non-ventilated	vertical wooden subframe	vertical aluminum subframe	ETA-07/0141 issued on 2020-05-05 EN 13501-1
			'Durable Colours' and 'Durable ProtectPlus'		
	mechanically fixed	Non-ventilated. Cavity filled with mineral wool	B-s1,d0 closed horizontal joint		
		Ventilated with EPDM gasket on the battens [a] [d]	B-s2,d0 open 6 mm horizontal joint		
		Ventilated with 6 or 8 mm ROCKPANEL strips on the battens [b] [d]	B-s2,d0 open 6 mm horizontal joint		
		Ventilated with 9 mm wind board in front of insulation and > 20 mm cavity, with EPDM gasket on the battens.	B-s1,d0 open 6 mm horizontal joint		
		Ventilated with 8 mm ROCKPANEL strips on the battens [b]	B-s1,d0 open 6 mm horizontal joint for finish white and black [c]		
	bonded	ventilated with 8 mm ROCKPANEL strips on the battens [b]	B-s2,d0 open 6 mm horizontal joint		
		ventilated		B-s2,d0 open 6 mm horizontal joint	
[a] width of the gasket 15 mm at both sides wider than the batten [b] width of the strip 15 mm at both sides wider than the batten		[c] also valid for a mixture of the colours white and black [d] also valid for boards with a primer finish			

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 or adhered as described in table 1, which are attached to the subframe mentioned below
 - Adhered to a wooden subframe with intermediate ROCKPANEL strips mechanically fixed
 - The panels are backed with minimum 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)
 - The panels are backed with minimum 40 mm mineral wool insulation with density 30-70 kg/m³ according to EN 13162 without an air gap between the wooden subframe (mechanically fixed – non ventilated)
 - The panels are backed with minimum 50 mm mineral wool insulation with density 30-70 kg/m³ according to EN 13162 with a cavity between the panels and the insulation (fixing method Adhesive ROCKPANEL Tack-S)

Substrates: • Concrete walls, masonry walls, timber framing

Insulation: • Ventilated constructions: The battens are backed with minimum 50 mm mineral wool insulation with density 30-70 kg/m³ according to EN 13162 with a cavity of minimum 28 mm between the panels and the insulation
• Non-ventilated constructions: The panels are backed with minimum 40 mm mineral wool insulation with 30-70 kg/m³ between the battens and minimum 50 mm with density 30-70 kg/m³ behind the battens without air gap
• Ventilated construction and fixing method adhesive ROCKPANEL Tack-S: The panels are backed with minimum 50 mm mineral wool insulation with density 30-70 kg/m³ according to EN 13162 with a cavity of minimum 36 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 same type of panel used without insulation, if the substrate chosen according EN 13238 is made of panel with Euro class A1 or A2 (e.g. fibre-cement panel)

Subframe: • 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 or filled with insulation of stone wool with a nominal density 30-70 kg/m³ according to EN 13162
• 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*) or ROCKPANEL strip backing as described in table 1 and horizontal joints can be open (ventilated constructions) or with an aluminum profile (ventilated and non-ventilated constructions)
• 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

Density: • Nominal 1050 kg/m³

Essential characteristics	Table 2 - Performance - Water vapour permeability and water permeability		Harmonised technical specification
	Property	Declared values	
BR3 – Hygiene, health and environment	Water vapour permeability	Durable Colours: $s_d < 1.80$ m at 23°C and 85 %RH Durable ProtectPlus: $s_d < 3.5$ m at 23°C and 85 %RH The designer shall consider the relevant needs for ventilation, heating and insulation to minimise condensation in service.	ETA-07/0141 issued on 2020-05-05 EN ISO 12572 test condition B
	Water permeability	Incl. joints for non-ventilated applications: NPD	ETA-07/0141 issued on 2020-05-05

Essential characteristics	Table 3 - Performance - Release of dangerous substances		Harmonised technical specification
	Property	Product specification	
BR3 – Hygiene, health and environment	Dangerous substances	The kit does not contain/release dangerous substances specified in TR 034, dated April 2013*), except Formaldehyde concentration 0.0105 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-07/0141 issued on 2020-05-05

*) 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 8 mm 'Durable' boards Subframe: solid wood / metal			Harmonised technical specification	
	Property	8 mm boards	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-07/0141 issued on 2020-05-05 EN 14592:2008+A1:2012 (E)
BR4 – Safety in use	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	6-3 [c]	
		screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d]: 284 / 241 / 118 C24 [d]: 306 / 241 / 118	6-4 [c]	
		Standard nail fixing (32 mm) [e] with the use of gaskets	400	600	C18 [d]: 142 / 142 / 142 C24 [d]: 170 / 170 / 170	6-5 [c]	
		High Performance nail fixing (35 mm)[e] with the use of gaskets	400	600	C18 [d]: 341 / 314 / 199 C24 [d]: 376 / 314 / 199	6-5 [c]	
		Rivet fixing in metal [e]	600	600	654 / 309 / 156	6-1	
		Screw fixing in steel [e]	600	600	533 / 241 / 118	6-2	
[a] with $a \geq 30^\circ$: a is the angle between the screw axis and the grain direction			[d] Strength class BS EN 338				
[b] see Table 7a			[e] for specifications fixings see table 9a, 9b and 9c				
[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 %.				
Table 4b - Performance -		Design value of the axial load for mechanical fixing 8 mm 'Durable' boards			Harmonised technical specification		

Essential characteristic	Subframe: solid wood / metal					Table in ETA	ETA-07/0141 issued on 2020-05-05 EN 14592:2008+A1:2012 (E)	
	For service class 3 (see 'Note') and load-duration class 'Instantaneous' [c]. For hole diameters fixings see table 6							
	Property	8 mm boards	Span in mm [b]		$X_d = X_k / \gamma_M$ in N			
			a fixing	b board	Middle / Edge / Corner			
BR4 – Safety in use	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	6-3 [c]		
		screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d]: 233 / 233 / 118 C24 [d]: 250 / 241 / 118	6-4 [c]		
		Standard nail fixing (32 mm) [e] with the use of gaskets	400	600	C18 [d]: 116 / 116 / 116 C24 [d]: 139 / 139 / 139	6-5 [c]		
		High Performance nail fixing (35 mm)[e] with the use of gaskets	400	600	C18 [d]: 279 / 279 / 199 C24 [d]: 333 / 314 / 199	6-6 [c]		
		Rivet fixing in metal [e]	600	600	654 / 309 / 156	6-1		
		Screw fixing in steel [e]	600	600	533 / 241 / 118	6-2		
[a] with $a \geq 30^\circ$: a is the angle between the screw axis and the grain direction				[d] Strength class BS EN 338				
[b] see Table 7a				[e] for specifications fixings see table 9a, 9b and 9c				
[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 'Durable' boards		Harmonised technical specification
	Subframe: solid wood / metal							
	For service class 2 (see 'Note') and load-duration class 'Permanent' [c]. For hole diameters fixings see table 6							
	Property	8 mm boards	Span in mm [b]		$X_d = X_k / \gamma_M$ in N	Table in ETA		
			a fixing	b board	Middle / Edge / Corner			
BR4 – Safety in use	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]: 396 / 241 / 118 C24[d]: 425 / 241 / 118	6-3 [c]		
		screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d]: 155 / 155 / 118 C24 [d]: 167 / 167 / 118	6-4 [c]		
		nail fixing (32 mm) [e] with the use of gaskets	400	600	C18 [d]: 77 / 77 / 77 C24 [d]: 93 / 93 / 93	6-5 [c]		
		High Performance nail fixing (35 mm)[e] with the use of gaskets	400	600	C18 [d]: 186 / 186 / 186 C24 [d]: 222 / 222 / 199	6-6 [c]		
		Rivet fixing in metal [e]	600	600	654 / 309 / 156	6-1		
		Screw fixing in steel [e]				533 / 241 / 118	6-2	
[a] with $a \geq 30^\circ$: a is the angle between the screw axis and the grain direction				[d] Strength class BS EN 338				
[b] see Table 7a				[e] for specifications fixings see table 9a, 9b and 9c				
[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 - Design value of the axial load for mechanical fixing 8 mm 'Durable' strips for bonding purposes For service class 2 (see 'Note') and load-duration class 'Instantaneous' [c] For hole diameters fixings see table 6 Subframe: solid wood						Harmonised technical specification	
	Property	8 mm strips [b] in combination with	Span in mm			$X_d = X_k / \gamma_M$ [c] in N		Table in ETA
BR4 – Safety in use	Design value of the axial load $X_d = X_k / \gamma_M$ [c]	screw fixing and intermediate strips [a][e]	a ₂	a fixing	b adhesive ridge	SE: start / end of the strip	SM: Middle of the strip	6-8 [c]
			≥ 50	400	600	C18 [d] : 266 C24 [d] : 266	C18 [d] : 425 C24 [d] : 425	6-7 [c]
		screw fixing and end strips or joint strips [a][e]	≥ 50	400	600	C18 [d] : 124 C24 [d] : 124	C18 [d] : 412 C24 [d] : 412	6-10 [c]
		Standard nail fixing (32 mm) and intermediate strips [e]	≥ 50	300	600	C18 [d] : 133 C24 [d] : 133	C18 [d] : 142 C24 [d] : 170	6-9 [c]
		Standard nail fixing (32 mm) and end or joint strip [b][e]	≥ 50	300	600	C18 [d] : 76 C24 [d] : 76	C18 [d] : 142 C24 [d] : 170	
Strips for a wooden subframe :			located on vertical joints			located on end or between joints		
<p>[a] with $a \geq 30^\circ$: a is the angle between the screw axis and the grain direction</p> <p>[b] fixed points in the middle of the length of the strip</p> <p>[c] $k_{mod} = 1.10$ Table 3.1 BS EN 1995-1-1:2004+A1:2008 For serviceclass 2 [NA to BS EN 1995-1-1:2004+A1:2008] 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]</p> <p>[d] Strength class BS EN 338</p> <p>[e] for specifications fixings see table 9b</p>								
<p>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 %.</p>								

Essential characteristic	Table 6 – Performance mechanical fixings : hole diameters for 'Durable' boards and 'Durable' strips in bonded applications					Harmonised technical specification
	Fixing type [a]	Fixed hole	Moving hole	Slotted hole	Board dimension considered	
BR4 – Safety in use	Screw for timber	3.2	6.0	3.4 * 6.0	1200 * 3050	ETA-07/0141 issued on 2020-05-05
	Nail	2.5	3.8	2.8 * 4.0	1200 * 2420	
	Rivet	5.2	8.0	5.2 * 8.0	1200 * 3050	
	Screw for steel	4,3	8,0	4,3 * 8,0	1200 * 3050	

[a] for specifications fixings see table 9a and 9b.

Essential characteristic	Table 7a Performance fixings according to table 4, 5 and 6 with the required edge distances, maximum distances and horizontal installation of 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 6) 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' ≤ 1510 mm</td> </tr> </table> <p style="text-align: center;">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 6) 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' ≤ 1510 mm																							
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	<p>[a]: For correct fixing (SP, FP and SPM) a riveting tool with rivet spacer must be used (e.g. 0.3 mm).</p> <p>[b]: Subframe aluminum</p>																																

ETA-07/0141
Issued on
2020-05-05
Table 5 and
fig. 8

Essential characteristic	Table 7b	Performance fixings according to Table 4, 5 and 6 with the required edge distances, maximum distances and vertical installation of 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 2020-05-05 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																
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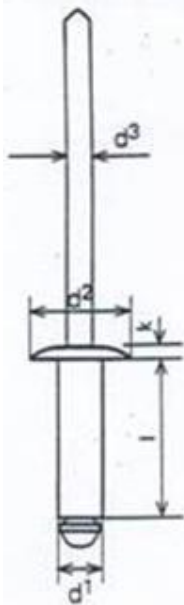
[a]: For correct fixing (including SP, SPM, FP and FPM) a riveting tool with rivet spacer must be used (e.g. 0.3 mm).

[b]: Subframe aluminum

Essential characteristic	Table 8 – Performance shear strength mechanical fixings			Harmonised technical specification	
	Fixing	Failure load	Deformation		
BR4 – Safety in use	Characteristic shear strength mechanical fixings	Screws (applies to screws for steel and screws to timber)	1549 N	9 mm	ETA-07/0141 issued 2020-05-05
	Average values	Nails (applies to standard Nail and to HP Nail)	1325 N	15 mm	
		Rivets	1722 N	1.7 mm	

Table 9a - Specifications mechanical fixings - Rivet aluminum or stainless steel [e]

	SFS Aluminum [d]	SFS Stainless steel A4 [a]	MBE Aluminum [d]	MBE stainless steel [b]
Code	AP14-50180-S	SSO-D15-50180	1290406	1290806
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]

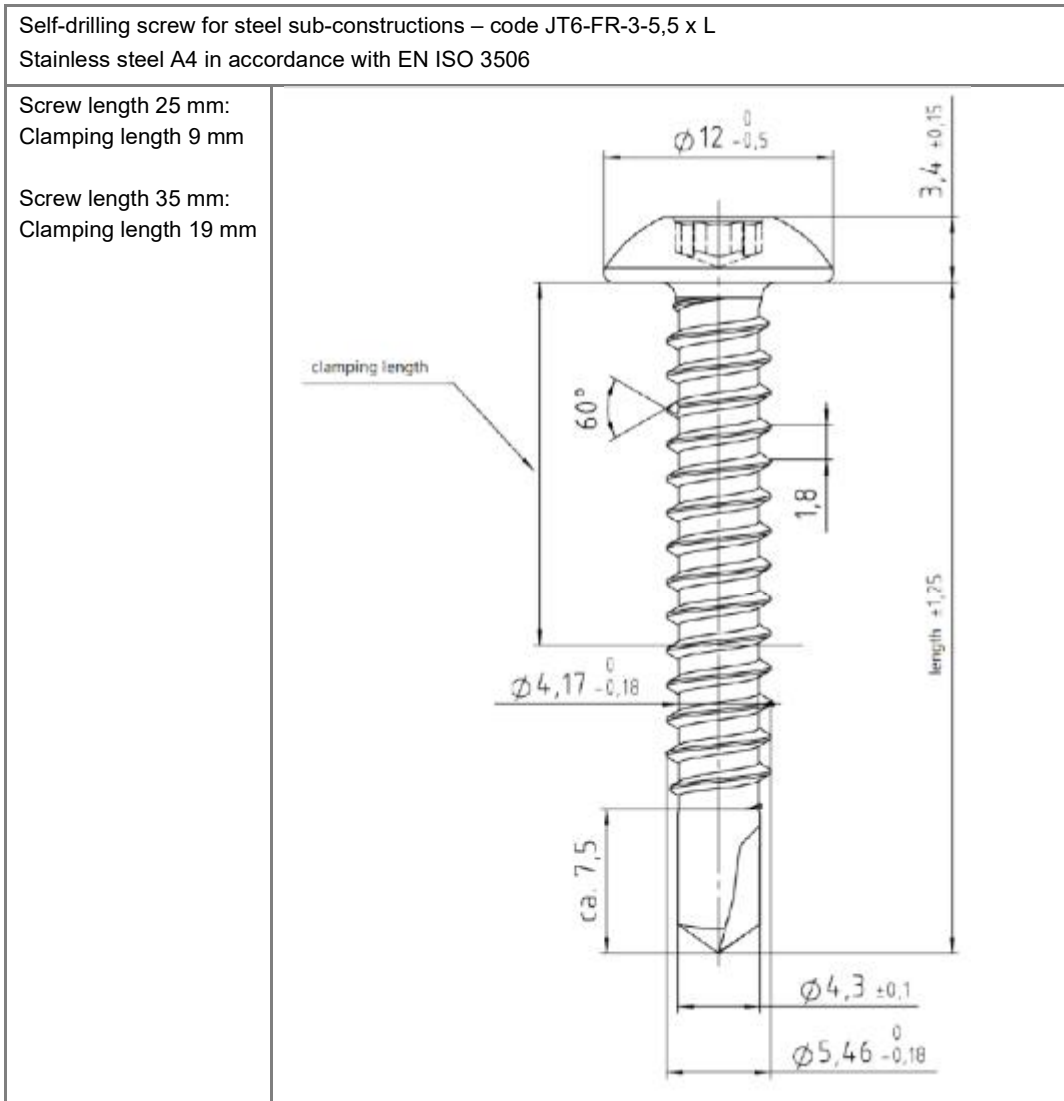


- [a] : The minimum thickness of the vertical steel profiles is 1.0 mm. The steel quality is S320GD +Z EN 10346 number 1.0250 (or equivalent for cold forming). For minimum coating thickness see [c]
- [b]: The minimum thickness of the vertical steel profiles is 1.5 mm. The steel quality is EN 10025-2:2004 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 (e.g. 0.3 mm)

Table 9b - Specifications mechanical fixings -

<p><u>Ring-shank nail</u> – Standard version 2.7/2.9 x 32 and 2.7/2.9 x 40 mm Stainless steel in accordance with EN 10088 - Material number 1.4401 or 1.4578 Definitions in accordance with EN 14592:2008+A1:2012</p>	
<p>d = 2.6 – 2.8 d_2 = 2.8 – 3.0 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 l_p = ≤ 4.8 l_g = $l_2 - l_p$ d_h = 5.8 – 6.3 h_t = 0.8 – 1.0</p>	
<p><u>Ring-shank nail</u> – High Performance version 2.7/3.1 x 35 mm Stainless steel in accordance with EN 10088 - Material number 1.4401 or 1.4578 Definitions in accordance with EN 14592:2008+A1:2012</p>	
<p>d_n = $2,7 \pm 0,1$ d_1 = $3,1 \pm 0,1$ l_n = $35 \pm 1,0$ l_2 = $28 \pm 1,0$ l_g = $25 \pm 1,0$ l_p = $3 \pm 0,5$ d_h = $6 \pm 0,2$ h_t = $0,9 \pm 0,1$</p>	
<p><u>Torx screws</u> 4.5 x 35 mm Stainless steel in accordance with EN 10088 - Material number 1.4401 or 1.4578 Definitions in accordance with EN 14592:2008+A1:2012</p>	
<p>d = 4.3 – 4.6 d_s = 3.3 – 3.4 d_h = 9.6 - 0.4 l = 35 - 1.25 l_g = 26.25 – 28.5</p>	

Table 9c - Specifications mechanical fixings -



Essential characteristic	Table 10 – Performance Tack-S adhesive and FoamTape - Initial tensile strength				Harmonised technical specification	
	Tack-S adhesive [a] Partial factor for material property $\gamma_M = 4$ (tensile caused by wind load)	Conditions:	Contact surfaces - Rear of the board onto	Characteristic N/mm^2		Design N/mm^2
BR4 – Safety in use		-40°C, -20°C, +23°C and +80°C	'ProtectPlus'	$X_k = 6.94$	$X_d = 1.735$	
			'Colours'	$X_k = 8.30$	$X_d = 2.075$	
			Primer '586'	$X_k = 4.58$	$X_d = 1.145$	
			-20°C, +23°C and +80°C	aluminum	$X_k = 5.92$	$X_d = 1.48$
	FoamTape	+23°C	'ProtectPlus'	$X_k = X_d = 0.73$		
			'Colours'	$X_k = X_d = 1.17$		
			Primer '586'	$X_k = X_d = 0.86$		
aluminum			$X_k = X_d = 0.47$			

[a] For the partial load factor $g_f = 1.5$ shall be taken

Essential characteristic	Table 11 – Performance Tack-S adhesive and FoamTape - Initial shear strength					Harmonised technical specification
	Partial factor for material property γ_M	Conditions:	Contact surfaces - Rear of the board onto	Characteristic N/mm ¹	Design N/mm ¹	
BR4 – Safety in use	Tack-S adhesive [a]	40 (shear caused by permanent load)	-40°C -20°C +23°C and +80°C	'ProtectPlus'	$X_k = 7.00$	$X_d = 0.175$
				'Colours'		
				Primer '586'	$X_k = 7.69$	$X_d = 0.192$
	FoamTape	20 (shear caused by temporary load)	+23°C	'ProtectPlus'	$X_k = 1.00$	$X_d = 0.05$
				'Colours'		
				Primer '586'	$X_k = 0.85$	$X_d = 0.04$
			aluminum	$X_k = 0.99$	$X_d = 0.05$	

[a] For the partial load factor $g_f = 1.5$ shall be taken

Essential characteristic	Table 12 – Performance Tack-S adhesive- Shear : deformation declared		Harmonised technical specification
	Contact surfaces - Rear of the board onto	Deformation mm	
BR4 – Safety in use	Tack-S adhesive Conditions: -20°C, +23°C and +80°C	'ProtectPlus' and 'Colours'	7.8 – 12.2
		aluminum	9 – 12.0
		Primer 586	9.4 – 12.2

Essential characteristic	Table 13 – Performance Tack-S adhesive: Characteristic tensile strength			Harmonised technical specification
	Contact surfaces - Rear of the board onto	Performance N/mm ¹		
Aspects of durability and serviceability		Immersion in water without UV	21 days	42 days
	'ProtectPlus'		$X_k = 2.80$	$X_k = 2.22$
	'Colours'			
	Primer 586		$X_k = 5.44$	$X_k = 4.73$
	aluminum		$X_k = 3.12$	$X_k = 2.58$

[a] For the partial load factor $g_f = 1.5$ shall be taken

Essential characteristic	Table 14 – Performance Tack-S adhesive: Characteristic tensile strength		Harmonised technical specification
	Contact surfaces - Rear of the board onto	Performance	
Aspects of durability and serviceability	Humidity and NaCl	aluminum	$X_k = 6.03$ N/mm ¹
	Humidity and SO ₂	aluminum	$X_k = 6.67$ N/mm ¹

Essential characteristic	Table 15 – Performance Impact resistance				Harmonised technical specification
	Impactor	Energy	Category		
BR4 – Safety in use	Panels without a horizontal joint	Hard body	Steel ball 0.5 kg	1 J	IV
			Steel ball 1.0 kg	3 J	III, II and I
		Soft body	Ball 3 kg	10 J	II and I
				60J	IV and III
	Panels with a horizontal joint ready accessible and vulnerable to impacts	Soft body	Bag 50 kg	300 J	II
			Hard body	Steel ball 0.5 kg	1 J
	Steel ball 0.5 kg	3 J		III, II and I	

Essential characteristic	Table 16 – Performance dimensional stability	Length	Width	Harmonised technical specification
		Cumulative dimensional change [a]	0.085%	
BR4 – Safety in use	Coefficient of thermal expansion 10^{-6} K^{-1}	10.5	10.5	ETA-07/0141 issued on 2020-05-05
	Coefficient of moisture expansion 42% RH difference after 4 days mm/m	0.288	0.317	

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

Essential characteristic	Table 17 – Resistance to hygro-thermal cycles and Xenon Arc exposure		Performance	Harmonised technical specification
	Aspects of durability and serviceability	Resistance to Hygrothermal cycles		
Aspects of durability and serviceability	Resistance to Xenon Arc exposure EOTA TR010 climate class S (Technical Report 010) 5000 hours artificial weathering	Finish 'Colours/Rockclad'	ISO 105 A02: 3-4 or better	ETA-07/0141 issued on 2020-05-05
		Finish 'ProtectPlus'	ISO 105 A02: 4 or better	

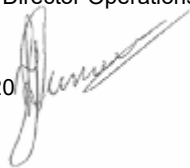
9. *The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.*

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 31-07-2020



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