

DECLARATION OF PERFORMANCE

No. **0764-CPR-0252 - DK - vs01**

1. Unique identification code of the product-type:

ROCKPANEL Durable 8 mm finish Structure

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 2014.

European Technical Assessment: ETA-13/0352 of 2015-08-11

Technical Assessment Body: ETA-Danmark A/S
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and issued: **Certificate of Constancy of performance No. 0764 - CPR – 0252**

Internet www.mpa-bau.de/

6. Characteristics of the product

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

The physical properties of **ROCKPANEL Structure** 8 mm are indicated below:

- thickness 8 ± 0,5 mm
- length, max 3050 mm
- width, max 1250 mm
- density nominal 1050 ± 150 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 7 contains the performances of ROCKPANEL Structure 8 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 boards				
	Fixing method	Ventilated or non-ventilated	‘Durable Structure’		ETA-13/0352 issued 2015-08-11 EN 13501-1:2007
			vertical wooden subframe	vertical metal subframe	
	mechanically fixed	Non-ventilated. Cavity filled with mineral wool	B-s1,d0 closed 6 mm horizontal joint	See ‘Subframe’ in ‘Field of Application’	
		Ventilated with EPDM gasket on the battens [a]	B-s2,d0 open 6 mm horizontal joint		
		Ventilated with 6 or 8 mm ROCKPANEL strips on the battens [b]	B-s2,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]			
[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					

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 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 min. 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)
- Substrates:
- Concrete walls, masonry walls, timber framing

- Insulation:
- Ventilated constructions: The battens are backed with min. 50 mm mineral wool insulation with density 30-70 kg/m³ according to EN 13162 with a cavity of min. 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 min. 50 mm with density 30-70 kg/m³ behind the battens without air gap
 - 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
 - The test result of a test with mineral wool insulation shall be valid, without test, for the same type of panel used without insulation, if the substrate chosen according to EN 13238 is made of panel with Euro-class A1 or A2 (e.g. fibres-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 (without the use of strips)
 - 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 mm, individual tolerances $\pm 0,5$ mm
- Density:
- Nominal 1050 kg/m³ , individual tolerances ± 150 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 Structure: $s_d < 1,30$ 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-13/0352 issued 2015-08-11 EN ISO 12572 test condition B
	Water permeability incl. joints for non-ventilated applications	NPD No performance determined	ETA-13/0352 issued 2015-08-11

Essential characteristics	Table 3 - Performance - Release of dangerous substances		Harmonised technical specification
	Property	Product specification	
BR3 – Hygiene, health and environment	Influence on air quality and Release of dangerous substances to soil and water	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 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-13/0352 issued 2015-08-11

*) 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					Harmonised technical specification	
	For service class 2 (see 'Note') and load-duration class ' Instantaneous ' [c] For hole diameters fixings see Table 5						
	Property	8 mm boards	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0352 issued 2015-08-11 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	a fixing	b board			
		screw fixing [a][e] with the use of 8 mm ROCKPANEL strips	600	600	C18 [d]: 284 / 241 / 118 C24 [d]: 306 / 241 / 118	6-3 [c]	
		nail fixing (32 mm) [e] with the use of gaskets nail fixing (40 mm) [e] and 8 mm ROCKPANEL strips	400	600	C18 [d]: 142 / 142 / 142 C24 [d]: 170 / 170 / 170	6-4 [c]	
		Rivet fixing [e]	600	600	654 / 309 / 156	6-1 [c]	
[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction			[d] Strength class EN 338				
[b] see Table 6a			[e] for specifications fixings see Table 8				
[c] $k_{mod} = 1,10$ in accordance with Table 3.1 – 'Values of k_{mod} ' DS/EN 1995-1-1 DK NA:2010; For 'service class' 2 ['ventilated structures protected against precipitation'] and 'load-duration class' ' Instantaneous ' [Table 2.2 DS/ EN 1995-1-1 DK NA:2010-05]			Note (according to DS/ EN 1995-1-1 NA:2010-05 §2.3.1.3 (3)P): Service class 2 - "ventilated structures protected against precipitation, e.g. ventilated roof structures". EN 1995-1-1: 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 8 mm 'Durable' 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	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0352 issued 2015-08-11 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		7-2 [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		7-3 [c]
		nail fixing (32 mm) [e] with the use of gaskets nail fixing (40 mm) [e] and 8 mm ROCKPANEL strips		400	600	C18 [d]: 116 / 116 / 116 C24 [d]: 139 / 139 / 139		7-4 [c]
Rivet fixing [e]			600	600	654 / 309 / 156	7-1 [c]		

[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction [b] see Table 6a [d] Strength class EN 338 [e] for specifications fixings see Table 8

[c] $k_{mod} = 0,90$ in accordance with Table 3.1 – 'Values of k_{mod} ' DS/EN 1995-1-1 DK NA:2010; For 'service class' **3** ["External uses fully exposed"] and 'load-duration class' '**Instantaneous**' [Table 2.2 DS/ EN 1995-1-1 DK NA:2010-05] **Note** (according to DS/ EN 1995-1-1 NA:2010-05 §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		
	For service class 2 (see 'Note') and load-duration class ' Permanent ' [c] For hole diameters fixings see Table 5							
BR4 – Safety in use	Property	8 mm boards	Span in mm [b]		$X_d = X_k / \gamma_M$ in N Middle / Edge / Corner	Table in ETA	ETA-13/0352 issued 2015-08-11 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]: 396 / 241 / 118 C24[d]: 425 / 241 / 118		6-2 [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		6-3 [c]
		nail fixing (32 mm) [e] with the use of gaskets nail fixing (40 mm) [e] and 8 mm ROCKPANEL strips		400	600	C18 [d]: 77 / 77 / 77 C24 [d]: 93 / 93 / 93		6-4 [c]
Rivet fixing [e]			600	600	654 / 309 / 156	6-1 [c]		

[a] with $\alpha \geq 30^\circ$: α is the angle between the screw axis and the grain direction [b] see Table 6a [d] Strength class EN 338 [e] for specifications fixings see Table 8

[c] $k_{mod} = 0,60$ in accordance with Table 3.1 – 'Values of k_{mod} ' DS/EN 1995-1-1 DK NA:2010; For 'service class' **2** ["ventilated structures protected against precipitation"] and 'load-duration class' '**Permanent**' [Table 2.2 DS/ EN 1995-1-1 DK NA:2010-05] **Note** (according to DS/ EN 1995-1-1 NA:2010-05 §2.3.1.3 (3)P): **Service class 2** - "ventilated structures protected against precipitation, e.g. ventilated roof structures". EN 1995-1-1: 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 'Durable' boards					Harmonised technical specification
	Fixing type [a]	Fixed point	Moving points	Slotted points horizontally	Board dimension considered 'Durable'	
BR4 – Safety in use	Screw	3,2	6,0	3,4 * 6,0	1200 * 3050	ETA-13/0352 issued 2015-08-11 Table 7
	Nail	2,5	4,0	2,8 * 4,0	1200 * 1750 [b]	
	Rivet [c]	5,2	8,0	5,2 * 8,0	1200 * 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 6a	Performance fixings according to Table 4 and 5 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 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-13/0352 issued 2015-08-11 Table 5, 7 and Fig. 8																	
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FPM [b]	Creating a fixed point by the use of a sleeve FPM																												
Fixing type	b_{max}	a_{max}	a_1	a_2																									
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Screw	600	600	≥ 15	≥ 50																									
Nail	600	400	≥ 15	≥ 50																									
Subframe Aluminum :	FPM – Sleeve [a] [b]	Drill hole according to Table 5 8 mm	Sleeve $\varnothing 8 \times 7.5$ – drill hole $\varnothing 5.1$																										
	FP - 'Fixed point' FP (according to Table 5) in the central area of the vertical edge of the board																												

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

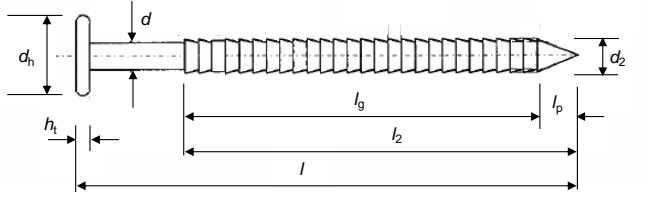
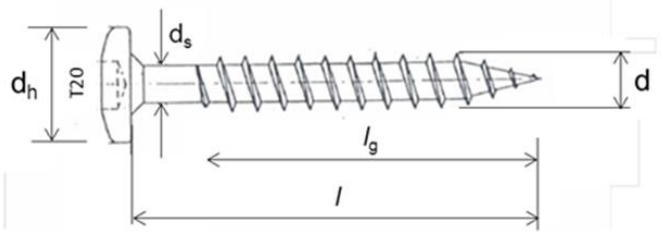
[b]: Subframe aluminum

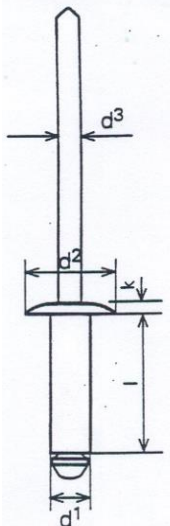
Essential characteristic	Table 6b	Performance fixings according to Table 4 and 5 with the required edge distances, maximum distances and vertical installation of boards	Harmonised technical specification																
BR4 – Safety in use	<table border="1" style="margin-left: auto; margin-right: auto;"> <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-13/0352 issued 2015-08-11 Table 7 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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SPM – Side sleeve [a] [b]	8 mm	ø8 x 7.5 – hole ø5.1 x 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 7 – Performance shear strength mechanical fixings	Fixing	Failure load	Deformation	Harmonised technical specification
		BR4 – Safety in use	Characteristic shear strength mechanical fixings	Screws	
	Average values	Nails	1325 N	15 mm	
		Rivets	1722 N	1,7 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					ETA-13/0352 issued 2015-08-11 Table 8.1 and 8.2
	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	$d = 2,6 - 2,8$ $d_2 = 2,8 - 3,0$ $l_p = \leq 4,8$	$l_g = l_2 - l_p$ $d_h = 5,8 - 6,3$ $h_t = 0,8 - 1,0$	$l = 35 - 1,25$ $l_g = 26,25 - 28,5$	

Essential characteristic	Table 8b - Specifications mechanical fixings - Rivet aluminum or stainless steel [e]					Harmonised technical specification	
		Aluminum [d]	Stainless steel A4 [a]	Aluminum [d]	stainless steel [b]		
BR4 – Safety in use		Code	AP14-50180-S	SSO-D15-50180	1290406	1290806	ETA-13/0352 issued 2015-08-11 Table 8.3
		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-13/0352 issued 2015-08-11

Essential characteristic	Table 10 – Performance Impact resistance							Harmonised technical specification
		Category						
BR4 – Safety in use	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
	Panels without horizontal joint	IV	III - II - I	II - I	IV - III	II - I	II	-
	Panels with a horizontal joint [a]	IV	III - II - I	-				
								ETA-13/0352 issued 2015-08-11

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

Essential characteristic	Table 11 – Performance dimensional stability			Harmonised technical specification
		Length	Width	
BR4 – Safety in use	Cumulative dimensional change [a]	0,085%	0,084%	
	Coefficient of thermal expansion ($10^{-6} \text{ }^\circ\text{K}^{-1}$)	$10,5 \cdot 10^{-6}$	$10,5 \cdot 10^{-6}$	
	Coefficient of moisture expansion 42% RH difference after 4 days mm/m	0,288	0,317	
			ETA-13/0352 issued 2015-08-11	

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

Essential characteristic	Table 12 – Resistance to hygro-thermal cycles and Xenon Arc exposure			Harmonised technical specification
			Performance	
Aspects of durability and serviceability	Resistance to Hygrothermal cycles			Pass
	Resistance to Xenon Arc exposure 5000 hours artificial weathering	RAL 7005, 7016, 7021, 7024, 7035 and 9010		ISO 105 A02: 3-4 or better
				ETA-13/0352 issued 2015-08-11, Table 3

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:*

At Roermond,
The Netherlands

on

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

2nd February 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