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BRE Global Classification Report

Classification report for roofs/roof coverings exposed to external fire in accordance with EN 13501-5: 2016 on Davinci Slates and Shakes (Brownstone P/N MWSL3FBBRO99N)

Prepared for: Davinci Roofscapes, LLC

Date: 08 November 2019

Report Number: Q100903-1008 Issue 1

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Prepared for:

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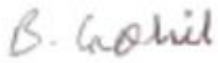
Signature 

Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 08 November 2019

Signature 

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BRE Global

EXTERNAL EXPOSURE TO FIRE CLASSIFICATION REPORT OF Davinci Slates and Shakes (Brownstone P/N MWSL3FBBRO99N)

Classification report No.:	Q100903-1008
Issue number:	1
Sponsor:	Davinci Roofscapes, LLC
Product name:	Davinci Slates and Shakes (Brownstone P/N MWSL3FBBRO99N)
Prepared by:	BRE Global Ltd., Bucknalls Lane, Garston, Watford, WD25 9XX, England.
Notified Body Number	0832
Date of issue:	08 November 2019

This classification report consists of 12 pages and may only be used or reproduced in its entirety.

1 Introduction

This classification report defines the classification assigned to roof/roof covering Davinci Slates and Shakes (Brownstone P/N MWSL3FBBRO99N) in accordance with the procedures given in EN 13501-5: 2016.

2 Sample

2.1 Traceability

The test samples were supplied by the client. BRE Global were not involved in the sample selection process and therefore cannot comment upon the relationship between samples supplied for test and the product supplied to market.

2.2 Description of the roof/roof covering

Unless otherwise stated all measurements are nominal.

Test Sponsor	Davinci Roofscapes, LLC. 13890 W 101 St., Lenexa, KS 66215, USA
Manufacturer of sample	As above
Sample name/reference	Davinci Slates and Shakes (Brownstone P/N MWSL3FBBRO99N)
Sample description (as provided by test sponsor/manufacturer)	Polymer roofing shingle. Davinci Slates and Shakes (Brownstone P/N MWSL3FBBRO99N) A product definition as supplied by the test sponsor has been included in this report as Appendix A
Description of sample (as received by BRE Global)	Davinci slate tiles arranged in 'Brownstone' pattern, as advised by Chris Bowness representing Davinci present during the test. 1) Plastic tiles varying shades of grey/brown described as 'slates'. Tiles thickness varied from 3.3 mm to 12.4 mm along the length. Tiles 2-3 layers deep. Slates were fixed with nails 3 per tile. 2) Black flexible fabric stapled on plywood 0.54 mm thick. 3) 7-ply ply wood, 18 mm thick. 4) Timber joists, 90 mm x 37 mm. Photographs of the sample are given in Appendix B.
Sample receipt date	05 July 2019

Test face	Tiled layer
Test format	The test was carried out in the sloping position.
Date of test	08 August 2019

3 Reports in support of classification

Name of Laboratory	Name of sponsor	Test report ref. no.	Test method
BRE Global	Davinci Roofscapes, LLC.	Q100903-1007	CEN/TS 1187: 2012 Test 4

4 Test results in support of classification

4.1 Test conditions:

Test pitch: Sloping

Deck: As product description, Section 2

Supporting structure: As product description, Section 2

4.2 Preliminary test (stage 1)

Parameter	Criteria				Test result	Compliance			
	Class $B_{ROOF}(t4)$	Class $C_{ROOF}(t4)$	Class $D_{ROOF}(t4)$	Class $E_{ROOF}(t4)$		Class $B_{ROOF}(t4)$	Class $C_{ROOF}(t4)$	Class $D_{ROOF}(t4)$	Class $E_{ROOF}(t4)$
Burn time	< 5 min	< 5 min	< 5 min	≥5 min	0:00 sec	Y	-	-	-
Flame spread distance	< 0,38m	< 0,38m	< 0,38m	No limit	0.0 mm	Y	-	-	-
Penetration	None	None	None	None	None	Y	-	-	-

4.3 Penetration test (stage 2)

Parameter	Criteria				Test results				Compliance			
	Class $B_{ROOF}(t4)$	Class $C_{ROOF}(t4)$	Class $D_{ROOF}(t4)$	Class $E_{ROOF}(t4)$	Specimen 1	Specimen 2	Specimen 3	Mean*	Class $B_{ROOF}(t4)$	Class $C_{ROOF}(t4)$	Class $D_{ROOF}(t4)$	Class $E_{ROOF}(t4)$
Penetration time	≥ 60 min	< 60 min ≥ 30 min	<30 min	< 30 min	≥ 60 min	60 min	60 min	60 min	Y	-	-	-
* If one or two of the specimens have not failed at one hour, a time of 60 min shall be used in calculating the mean time of penetration												

5 Classification and field of application

5.1 Reference of classification

This classification has been carried out in accordance with EN 13501-5: 2016.

5.2 Classification

The roof / roof covering “Davinci Slates and Shakes” (Brownstone P/N MWSL3FBBRO99N), as described in Section 2 above and Appendix A, in relation to its external fire performance is classified:

B_{ROOF}(t4)

5.3 Field of application

This classification is valid for the following conditions:

Range of pitches	10° < pitch ≤ 70°
Substrate / deck	As tested, no variation allowed
Product configuration	As tested, no variation allowed
Product composition	As tested, no variation allowed
Product application method	As tested, no variation allowed
Product thickness	As tested, no variation allowed
Product colour	As tested, no variation allowed
Supporting structure	As tested, no variation allowed

6 Limitations

This classification document does not represent type approval or certification of the product.

7 Reference

1 EN 13501-5: 2016 Fire classification of construction products and building elements – Part 5: Classification using data from external fire exposure to roofs tests. CEN, Avenue Marnlx 17, B-1000, Brussels, Belgium. 2016.

2 CEN/TS 1187: 2012 Test methods for external fire exposure to roofs. Test 4 – Two stage method incorporating burning brands, wind and supplementary radiant heat. CEN, Avenue Marnlx 17, B-1000, Brussels, Belgium. 2012.

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Appendix A Product description provided by the test sponsor

PRODUCT DEFINITION

Test sponsor: Davinci Roofscapes, LLC 13890 W 101 St., Lenexa, KS 66215 USA	
Trade name	Davinci Slates and Shakes
Product reference/number	Brownstone P/N MWSL3FBBRO99N
General description	Polymer roofing shingle
Manufacturer of the roofing product (company name and address)	Davinci Roofscapes, LLC 13890 W 101 St., Lenexa, KS 66215 USA
Place of manufacture	13890 W 101 St., Lenexa, KS 66215 USA
Test specimens assembled by (if not by roof product manufacturer)	Glenn Everest
Thickness (overall depth of roof structure tested)	140 mm
Mass per unit area (overall value for the roof structure tested)	30 kg/m^2
Flame retardant treatment added or organic content limited during production (yes/no), if yes give details	No
Harmonised EN product standard, and AVCP System No. if applicable	NA
Test face (Layer 1) - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Fire retardant (trade name, generic type, amount)	- Davinci Slate (Brownstone) - Davinci Roofscapes, LLC - Polymer - Tapered, 0.125” to 0.5” - 12.9 kg/m^2 - Brownstone Medium Grey - Nailing - None
Layer 2 - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Fire retardant (trade name, generic type, amount)	- Underlayment - Protect HR - Breather fabric - 0.5 mm - 145 g/m^2 - Black - Stapled - None

Test sponsor: Davinci Roofscapes, LLC 13890 W 101 St., Lenexa, KS 66215 USA		
Trade name		Davinci Slates and Shakes
Product reference/number		Brownstone P/N MWSL3FBBRO99N
Layer 3	- Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Fire retardant (trade name, generic type, amount)	- Plywood - Meyer Timber - 7-ply FRT plywood - 18 mm - 650 kg/m^3 - Wood - Nailed - ProStruct FR, surface coated to manufacturer's specifications
Layer 4	- Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Fire retardant (trade name, generic type, amount)	- Lumber joists - Commodity lumber - Spruce - 38mm x 89mm - 450 kg/m^3 - Wood - Nailed - None

Davinci Slate:

Length: 18-inch

Width: 6, 7, 9, 10, 12 inch

Overlap Vertical: 10-inch, leaving an 8-inch exposure

Overlap Horizontal: None. There is a 3/8-inch space horizontally between each slate

Appendix B Photographs of a test specimen

Front (Test face) 1 Brownstone pattern

Front 2 Brownstone pattern

Side 1

Side 2

Back

Report Ends