

# System Laboratories UK LTD

## Classification Report

**Fire classification of construction products and building elements - Part 5: Classification using data from external fire exposure to roofs tests**

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Report Number 1742  
Issue C  
Prepared for Ryno Ltd.  
Date 23/09/2025

Issue	Date	Notes
A	01/09/2025	First issue
B	23/09/2025	Correction of density of core and trade name in clause 1
C	23/09/2025	Correction of the substructure


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## 1. Introduction

This classification report defines the classification assigned to TerraSmart Vitrified Composite Decking System, in accordance with the procedures given in EN 13501-5: 2016.

# EXTERNAL EXPOSURE TO FIRE CLASSIFICATION REPORT IN ACCORDANCE WITH EN 13501-5: 2016 test 4

Sponsor:	Ryno Ltd.
Prepared for:	Ryno Ltd.
Place of manufacture:	Castle Point, Castle Way, Ellon, Aberdeenshire, AB41 9RG, UK
CAB Number:	N/A
Classification report No.:	1742-C
Date of issue	23/09/2025

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## 2. Details of classified product

### 2.1. General

Classification according to EN 13501-5:2016 of TerraSmart Vitrified Composite Decking System.

### 2.2. Traceability

The test sample was supplied by the sponsor. System Laboratories UK LTD was not involved in the sampling process and therefore cannot comment upon the relationship between the samples supplied for the test and the products supplied to the market.

### 2.3. Sample details

Test sponsor	Ryno Ltd. Castle Point Castle Way Ellon Aberdeenshire AB41 9RG UK
Place of manufacture	As above
Trade name	TerraSmart Vitrified Composite Decking System
Sample description (as provided by sponsor)	TerraSmart Vitrified Composite Decking System installed on DS aluminium Joists on RDA-C adjustable pedestals. The Vitrified Composite Decking System was built on, but not fixed to, a mock roof build up featuring insulation and a waterproofed plywood deck.

### Product data (as provided by sponsor)

Generic type of product	Vitrified Composite Decking System
Nominal thickness	210 mm
Density of core	285 kg/m <sup>3</sup> - Vitrified Composite Decking
Mass per unit area	55 - 65 kg/m <sup>2</sup>
Colour	Brazilian Walnut
Test face	Vitrified Composite Decking boards
Flame retardant added, or organic content limited during production	No flame retardant added

### Substrate and ventilation conditioned

Substrate	TerraSmart Vitrified Composite Decking System installed on DS aluminium Joists on RDA-C adjustable pedestals. The Vitrified Composite Decking System was built on, but not fixed to, a mock roof build up featuring insulaion and a waterproofed plywood deck.
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## 2.4. Detailed product description

The roof/roof covering comprises, top to bottom.

Vitrified Composite Decking	Type of product/layer	Vitrified Composite Decking
	Product/layer reference	Vitrified Composite
	Thickness	26 mm
	Colour	Brazilian Walnut
	Construction form	Extruded ceramic material deckboards, indirectly mechanically fixed to DS substructure using hidden VCT clip and DSB30 decking screw system between boards
EPDM gasket	Type of product/layer	EPDM gasket
	Product/layer reference	Self adhesive EPDM strip
	Thickness	1 mm
	Colour	Black
	Construction form	Placed onto DS joist substructure beneath boards and adhered via self-adhesive backing

Substructure	Type of product/layer	Substructure
	Product/layer reference	DS25 aluminium joist and RDA-5C pedestals mechanically fixed together with PHS13 screws
	Thickness	180 mm
	Colour	Mill finished aluminium/zinc-nickel electroplated steel
	Construction form	Substructure mechanically fixed together, and loose laid onto waterproofed insulated roof build up
Insulation	Type of product/layer	Insulation
	Product/layer reference	Euro Class E fire rated XPS insulation
	Thickness	50 mm
	Colour	Grey
	Construction form	Loose laid onto waterproofing layer
Waterproofing layer	Type of product/layer	Waterproofing layer
	Product/layer reference	Bituminous Felt Membrane
	Thickness	5 mm
	Colour	Black
	Construction form	Loose laid onto 18mm OSB backing board

### 3. Reports and results in support of this classification

#### 3.1. Reports

Name of laboratory	Name of test sponsor	Test report No.	Test method/field of application
System Laboratories UK	Ryno Ltd.	1677-A	CEN/TS 1187:2012 - test 4

### 3.2. Results

Test Conditions	
Test Pitch:	0°
Deck:	18 mm OSB Board
Supporting structure:	DS aluminium joists and RDA pedestals mechanically fixed together with PHS13 screws

Stage:	Parameter	Number of tests	Results	
			Continuous parameter mean	Compliance with class
				B <sub>ROOF</sub> (t <sub>4</sub> )
Preliminary test (Stage 1)	Burn time (s)	1	0 min	< 5 min Burning of sample <b>Compliant</b>
	Flame Spread distance (mm)	1	0 mm	< 380 mm across region of burning <b>Compliant</b>
	Penetration (Y/N)	1	N	No penetration <b>Compliant</b>
Penetration test (Stage 2):	Penetration time (min)	3	No penetration	No penetration <b>Compliant</b>



## 4. Classification and field of application

### 4.1. Reference of classification

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

### 4.2. Classification

The roof/roof covering TerraSmart Vitrified Composite Decking System, in relation to its external fire performance is classified:

External fire performance classification:	<b>B<sub>ROOF</sub>(t4)</b>
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### 4.3. Field of application

This classification is valid for the following product and mounting and fixing parameters:

Pitches	No variation allowed
Decks	No variation allowed
Substrates	No variation allowed
Supporting structure	No variation allowed
Mass per unit area	No variation allowed
Density	No variation allowed
Thickness	No variation allowed
Colour	No variation allowed

## 5. Limitations

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

The laboratory has played no part in sampling of the product.

## 6. References

EN 13501-5:2016 - Fire classification of construction products and building elements

CEN/TS 1187:2012 (t4) - Test methods for external fire exposure to roofs

**-End of Report-**