

Reaction to fire classification report

Issuing laboratory: Warringtonfire Testing and Certification Limited

Classification standard: EN 13501-1: 2018

Sponsor(s): Echo Facades Engineering Solutions Ltd.

Product(s): "Salamander Brick Slip System"

Report number: 546431

Version: 1

Quality management

Version	Date	Summary of amendments including reasons	
1	8 October 2024	Description	Initial issue
		Name	Prepared by
		Signature	Authorised by
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		*Signed for and on behalf of Warringtonfire Testing and Certification Limited	

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1. Introduction

This classification report defines the classification assigned to "Salamander Brick Slip System", in line with the procedures given in EN 13501-1: 2018.

Warringtonfire Testing and Certification Limited (Warringtonfire) issued the classification report at the request of the sponsor listed in Table 1.

Table 1 Sponsor details

Entity	Address
Sponsor	
Echo Facades Engineering Solutions Ltd.	Suite 401-402 Cumberland House, 80 Scrubs Lane, London, NW10 6RF, United Kingdom

2. Details of classified product

2.1 General

The product(s), "Salamander Brick Slip System", are defined as being suitable for construction applications excluding flooring applications and linear pipe thermal insulation applications.

The related harmonised European Assessment Document / UK Approval Document is EAD 090062-01-0404: 2021.

2.2 Product description

The product(s), "Salamander Brick Slip System", are described in Table 2 and in the test reports listed in Section 3.1.

Table 2 Product description

Item	Detail	
General description	BrickSlip Façade Rainscreen Cladding System	
Product reference of system	Salamander BrickSlip	
Name and address of manufacturer of system	Echo Facades Engineering Solutions Ltd.	
Weight per unit area of system	46 ±3 kg/m ² (Salamander Bricksip, Mortar, Profile)	
Brick Slip	Generic type	Clay fired brick slips
	Product reference	"Echo Salamander BrickSlip"
	Name of manufacturer	Echo Facades Engineering Solutions Ltd
	Colour reference	"Newbury Red brick slips"
	Colour	Red
	Dimensions	65 x 215 mm
	Thickness	20mm
	Weight per unit area	32 ± 1 kg/m ²
	Density	2300 ± 50 kg/m ³
Flame retardant details	See Note 1 below	

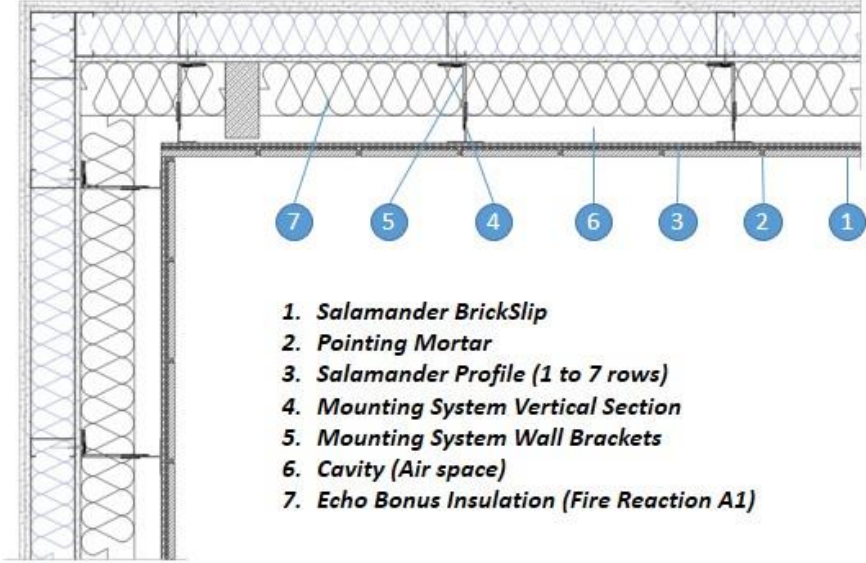
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Item	Detail	
Mortar	Generic type	Cement based adhesive
	Product reference	“Ultrascape Slipbond”
	Composition details	Water : Powder ratio is 0.26:1
	Name of manufacturer	Instarmac Group Plc
	Colour	Grey
	Number of coats	1
	Application thickness	3 – 20mm
	Application rate	4.5 – 30 kg/m ²
	Application method	Pointing
	Density	1.66 g/cm ³
	Curing process	Cured dry for 28 days
	Flame retardant details	See Note 1 below
BrickSlip Backing Profile	Generic type	Stainless Steel / Magnelis
	Product reference	“Salamander Profile”
	Name of manufacturer	Echo Facades Engineering Ltd.
	Colour reference	“Silvery White”
	Dimensions	Width – 75 to 525mm Length – 100mm to 6000mm
	Thickness	0.7 mm
	Weight per unit area	8.6 kg/m ²
	Density	7.85 g/cm ³
	Flame retardant details	See Note 2 below
Mounting system Vertical Section	Generic type	Vertical Rails – Aluminium
	Product reference	“T Rails / L Rails”
	Name of manufacturer	Nvelop
	Colour reference	“Silvery White”
	Dimensions	T Rail – 60 x 100mm L Rail – 40 x 60mm
	Thickness	2.2 mm
	Weight per unit area	5.94 kg/m ²
	Density	2.71 g/cm ³
	Flame retardant details	See Note 1 below

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Item	Detail	
Mounting system Wall Brackets	Generic type	Helping Hand Bracket – Aluminium/ Stainless steel
	Product reference	“Wall Bracket”
	Name of manufacturer	Nvelop
	Colour reference	“Silvery White”
	Cross section shape	L Shaped Bracket
	Thickness	Aluminium - 6mm Steel – 2.5mm
	Weight per unit area	Aluminium – 16.2 kg/m ² Steel – 19.6 kg/m ²
	Density	Aluminium - 2.71 g/cm ³ Steel – 7.85 g/cm ³
	Distance between fixings	Horizontally – 600mm Vertically – 1200mm
	Distance range to cladding element borders	47 to 342 mm
	Flame retardant details	See Note 1 below
Cavity	Depth	25 – 100mm
Insulation	Generic type	Mineral wool insulation
	Product reference	“Echo Bonus Stone Wool Gold Plus”
	Name of manufacturer	Echo Facades Engineering Solutions Ltd
	Detailed description / composition details	Thermal insulation material formed by melting of basalt stone at 1350°C - 1400°C into fibre – for thermal, sound and fire insulation product
	Dimensions	600 x 1200 mm
	Thickness	30 – 180mm
	Weight per unit area	3.3 – 19.8 kg/m ²
	Density	110 kg/m ³
	Generic type of resin	See Note 2 below
	Product reference of resin	See Note 2 below
	Amount of resin	See Note 2 below
	Generic type of oil	See Note 2 below
	Product reference of oil	See Note 2 below
	Amount of oil	See Note 2 below
Flame retardant details	See Note 1 below	
Brief description of manufacturing process		Autoclaved

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Item	Detail
Diagram of BrickSlip System	 <p>The diagram shows a cross-section of a brick slip system. It features a vertical wall on the left and a horizontal ceiling above. The system consists of several layers: Salamander BrickSlip (1), Pointing Mortar (2), Salamander Profile (3), Mounting System Vertical Section (4), Mounting System Wall Brackets (5), a Cavity (Air space) (6), and Echo Bonus Insulation (7). The insulation is shown as a dense, fibrous material. The mounting system includes brackets that secure the vertical section to the wall and the profile to the ceiling. The brick slips are laid in a staggered pattern on top of the pointing mortar.</p> <ol style="list-style-type: none">1. Salamander BrickSlip2. Pointing Mortar3. Salamander Profile (1 to 7 rows)4. Mounting System Vertical Section5. Mounting System Wall Brackets6. Cavity (Air space)7. Echo Bonus Insulation (Fire Reaction A1)

Note 1 – The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the component

Note 2 – The sponsor was unwilling to provide this information

3. Test reports and test results in support of classification

3.1 Test reports

Table 3 details the test reports that have been used in support of classification.

Table 3 Test reports

Name of laboratory	Name of sponsor(s)	Test report no.	Test date	Test and extended application standard
Warringtonfire	Echo Facades Engineering Solutions Ltd.	546424	12 August 2024	EN ISO 1716: 2018 (*)
Warringtonfire	Echo Facades Engineering Solutions Ltd.	538618	28 November 2023	
Warringtonfire	Echo Facades Engineering Solutions Ltd.	525554	29 November 2022	
Warringtonfire	Echo Facades Engineering Solutions Ltd.	546423	13 and 16 August 2024	EN ISO 1182: 2020
Warringtonfire	Echo Facades Engineering Solutions Ltd.	538617	30 November 2023	
Warringtonfire	Echo Facades Engineering Solutions Ltd.	525556	28 November 2022	

(*) As the test procedure for EN ISO 1716 remained identical for versions 2010 & 2018 and no substantial technical changes were noticed in the most recent version 2018, results obtained with the 2018 version can also be considered valid for classification purposes (where only the 2010 version is mentioned).

3.2 Test results

3.2.1 Official test results used for the classification

Table 4 details the test results that have been used in support of classification. The fire performance parameters for class A1 can be found in Table 6.

Table 4 Test data

Test method Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
EN ISO 1716: 2018 546424	Average gross heat of combustion for SUBSTANTIAL component (Brick slip), Q _{PCS} (MJ/kg)	1 x 3	-0.1	-
EN ISO 1716: 2018 538618	Average gross heat of combustion for SUBSTANTIAL component (Mortar), Q _{PCS} (MJ/kg)	1 x 3	1.2	-
EN ISO 1716: 2018	Average gross heat of combustion for SUBSTANTIAL component (Brick Slip Backing Profile), Q _{PCS} (MJ/kg)	-	0	-
EN ISO 1716: 2018	Average gross heat of combustion for SUBSTANTIAL component (Vertical Rails), Q _{PCS} (MJ/kg)	-	0	-
EN ISO 1716: 2018	Average gross heat of combustion for SUBSTANTIAL component (Bracket), Q _{PCS} (MJ/kg)	-	0	-
EN ISO 1716: 2018 525554	Average gross heat of combustion for SUBSTANTIAL component (Thermal Insulation), Q _{PCS} (MJ/kg)	1 x 3	1.1	-
EN ISO 1716: 2018 Composite Calculation	Average gross heat of combustion, Q _{PCS} (MJ/kg)	-	0.5	-

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Test method Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
EN ISO 1182: 2020 546423	Mass loss (%)	5	6	-
	Duration of sustained flaming (s)		0	-
	Average furnace temperature rise, ΔT ($^{\circ}C$)		3	-
EN ISO 1182: 2020 538617	Mass loss (%)	5	12	-
	Duration of sustained flaming (s)		0	-
	Average furnace temperature rise, ΔT ($^{\circ}C$)		1	-
EN ISO 1182: 2020 525556	Mass loss (%)	5	4	-
	Duration of sustained flaming (s)		0	-
	Average furnace temperature rise, ΔT ($^{\circ}C$)		7	-

Note: '-' symbol confirms this parameter is not applicable.

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with EN 13501-1:2018.

4.2 Classification

The product "Salamander Brick Slip System" in relation to its reaction to fire behavior is classified as:

A1

The format of the reaction to fire classification for construction applications excluding flooring application and linear pipe thermal insulation applications products is:

Fire behaviour

A1

Alternatively shown:

Reaction to fire classification: A1

4.3 Field of application

The classification for the product described in Section 2.2 of this report is valid for end-use applications described in Table 5.

Table 5 End-use applications

End use	Description	Origin
Fixing method	Mechanically fixed only, using wall brackets as described in the product description	EAD 090062-01-0404
Orientation	Vertical and horizontal	EAD 090062-01-0404

This classification is valid for the following product parameters:

- Brick slip type: Any clay fired brick slip, classified as A1 without testing according to Decision 96/603/EC, in accordance with EAD 090062-01-0404
- Brick slip dimensions: 65 x 215mm (No variation allowed)
- Brick slip thickness: 20mm (No variation allowed)
- Brick slip weight per unit area: $32 \pm 1 \text{ kg/m}^2$ (No variation allowed)
- Brick slip density: $2300 \pm 50 \text{ kg/m}^3$ (No variation allowed)
- Mortar type: Cement based adhesive (No variation allowed)
- Mortar composition: Water: Powder ratio 0.26:1 (No variation allowed)
- Mortar colour: Grey (No variation allowed)
- Number of coats of mortar: One (No variation allowed)
- Mortar application thickness: 3 – 20mm (No further variation allowed)
- Mortar application rate: $4.5 - 30 \text{ kg/m}^2$ (No further variation allowed)
- Mortar application method: Pointing (No variation allowed)
- Mortar density: 1.66 g/cm^3 (No variation allowed)
- Mortar curing process: Cured dry for 28 days (No variation allowed)
- Backing profile type: Any steel, classified as A1 without testing according to Decision 96/603/EC, in accordance with EAD 090062-01-0404 or Magnelis coated steel, providing no oil surface treatment is used and it therefore meets the requirements of A1 without testing according to Decision 96/603/EC
- Backing profile dimensions: Width 75 - 525mm, Length 100 – 6000mm (No further variation allowed)
- Backing profile thickness: 0.7mm (No variation allowed)
- Backing profile weight per unit area: 8.6 kg/m^2 (No variation allowed)
- Backing profile density: 7.85 g/cm^3 (No variation allowed)

- Vertical rail type: Any aluminium, classified as A1 without testing according to Decision 96/603/EC, in accordance with EAD 090062-01-0404
- Vertical rails dimension (T Rail): 60 x 100mm (No variation allowed)
- Vertical rails dimension (L Rail): 40 x 60mm (No variation allowed)
- Vertical rails thickness: 2.2mm (No variation allowed)
- Vertical rails weight per unit area: 5.94 kg/m² (No variation allowed)
- Vertical rails density 2.71 g/cm³ (No variation allowed)
- Wall bracket type: Any steel or aluminium, classified as A1 without testing according to Decision 96/603/EC, in accordance with EAD 090062-01-0404
- Wall brackets cross section shape: L shaped bracket (No variation allowed)
- Wall brackets thickness: Aluminium - 6mm, Steel - 2.5mm (No variation allowed)
- Wall brackets weight per unit area: Aluminium – 16.2 kg/m², Steel – 19/6 kg/m² (No variation allowed)
- Wall brackets density: Aluminium - 2.71 g/cm³, Steel – 7.85 g/cm³ (No variation allowed)
- Distance between fixings: Horizontally – 600mm, Vertically – 1200mm (No variation allowed)
- Distance range to cladding element borders: 47 to 342mm (No further variation allowed)
- Cavity depth: 25 – 100mm (No further variation allowed)
- Thermal insulation type: Mineral wool (No variation allowed)
- Thermal insulation product reference: “Echo Bonus Stone Wool Gold Plus” (No variation allowed)
- Thermal insulation dimensions: 600 x 1200mm (No variation allowed)
- Thermal insulation thickness: 30 – 180mm (No further variation allowed)
- Thermal insulation weight per unit area: 3.3 – 19.8 kg/m² (No further variation allowed)
- Thermal insulation density: 110 kg/m³ (No variation allowed)
- Construction: No variation allowed
- Composition: No variation allowed

4.4 Fire performance parameters for A1

All the products described in Section 2.2 and within the field of application defined in Section 4.3 comply with the fire performance parameters shown in Table 6. The test results can be found in Section 3.2.

Table 6 Fire performance parameters for A1

Test method	Parameter	Continuous parameters	Compliance with parameters
EN ISO 1716: 2018	Average gross heat of combustion for substantial components of non-homogenous products, Q_{PCS} (MJ/kg)	$PCS \leq 2,0$ MJ/kg	-
	For the product as a whole, (MJ/kg)	$PCS \leq 2,0$ MJ/kg	-
EN ISO 1182: 2020	Mass loss (%)	$\Delta m \leq 50$ %	-
	Duration of sustained flaming (s)	$t_f = 0$ s (i.e. no sustained flaming)	-
	Average furnace temperature rise, ΔT (°C)	$\Delta T \leq 30$ °C	-

Note: '-' symbol confirms this parameter is not applicable.

5. Restrictions

At the time the standard EN 13501-1: 2018 was published, no decision was made about the duration of validity of a classification report.

When this report is used to support UKCA marking under the Construction Products Regulation 2011 (retained EU law EUR 2011/305) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and/or 'CE+UK(NI)' marking for Northern Ireland under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011, the provisions of those regulations prevail over any conflicting provisions in the designated/harmonised standards and technical specifications.

6. Limitations

The classification assigned to the product in this report is appropriate to a Declaration of Performance (DoP) by the manufacturer within the context of System 3 of AVCP and UKCA marking under the Construction Products Regulation 2011 (retained EU law EUR 2011/305) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and/or 'CE+UK(NI)' marking for Northern Ireland under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011, laying down harmonised conditions for the marketing of construction products.

The test laboratory played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide evidence for the traceability of the samples tested.

7. Validity

This document is the original version of this classification report and is written in English. In case of doubt the original version prevails over a translation.

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The classification results relate to the behaviour of a product under the particular conditions of the test(s); they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use, nor can the classification results be extrapolated and applied to other products, or imply suitability for use in configurations not specifically detailed in the classification report. The classification is based on the information available to Warringtonfire at the time of the report. Should conflicting or contradictory evidence become available, Warringtonfire reserves the right to unconditionally withdraw the classification report forthwith upon giving written notice of the same.

Reports are statements of fact prepared in accordance with the referenced version of the standards stated in Section 3 of this report. Test, classification and extended application are based upon the information provided to Warringtonfire. Warringtonfire takes no responsibility for the accuracy or completeness of such information.

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