

# BRE Global Classification Report

**Classification of reaction to fire performance in accordance with EN 13501-1: 2018 on d+b facades powder coated aluminium rainscreen cassette system**

**Prepared for:** d+b facades UK Limited

**Date:** 03 March 2021

**Report Number:** Q101153-1001 Issue 2

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Prepared for:

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Date 03 March 2021

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## 1 Introduction

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This classification report defines the classification assigned to 'd+b facades powder coated aluminium rainscreen cassette system' in accordance with the procedures given in EN 13501-1: 2018<sup>1</sup>.

# BRE Global

## CLASSIFICATION OF REACTION TO FIRE IN ACCORDANCE WITH EN 13501-1: 2018

<b>Sponsor:</b>	d+b facades UK Limited, The Packway, Larkhill, Salisbury, Wiltshire, SP4 8PY, United Kingdom
<b>Prepared for:</b>	d+b facades UK Limited, The Packway, Larkhill, Salisbury, Wiltshire, SP4 8PY, United Kingdom
<b>Manufacturer:</b>	MSP, 1-9 Telford Road, East Lenziemill, Cumbernauld, G67 2AX, United Kingdom
<b>Place of Manufacture:</b>	Scotland, United Kingdom
<b>Prepared by:</b>	BRE Global, Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX, UK
<b>Notified Body No.:</b>	0832
<b>Product name:</b>	d+b facades powder coated aluminium rainscreen cassette system
<b>Classification report No.:</b>	Q101153-1001
<b>Issue number:</b>	Two
<b>Date of issue:</b>	03 March 2021

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## 2 Details of classified product

### 2.1 General

The product, 'd+b facades powder coated aluminium rainscreen cassette system', is defined by the test sponsor as a mechanically fixed external wall cladding panel in accordance with European Assessment Document 090062-00-0404<sup>2</sup>.

### 2.2 Product description

The product, 'd+b facades powder coated aluminium rainscreen cassette system', is described in section 2.2.2.

#### 2.2.1 Traceability

The test sample was supplied by the test sponsor. BRE Global was not involved in the sampling process and therefore cannot comment upon the relationship between the sample supplied for test and the product supplied to market. Note that the performance of products sampled from the field may not be representative of the product when initially placed on the market and installed. The results apply to the sample as received.

#### 2.2.2 Sample details

Unless otherwise stated all measurements are nominal.

Parameter	Details
Test sponsor	d+b facades UK Limited The Packway Larkhill Salisbury Wiltshire SP4 8PY United Kingdom
Manufacturer of sample	MSP 1-9 Telford Road East Lenziemill Cumbernauld G67 2AX United Kingdom
Place of manufacture	Scotland, United Kingdom
Trade name	d+b facades powder coated aluminium rainscreen cassette system
Sample reference	d+b facades powder coated aluminium rainscreen cassette system, Anodic Bronze Matt Y2214F
Sample description (as provided by test sponsor/manufacturer)	Polyester powder coating applied to an aluminium substrate. The test sponsor's product description is reproduced as Table A.1.
Description of sample (as received)	A nominal 3 mm-thick metal cassette system with a bronze coating on the front (test) face mounted onto a metal framework.



Parameter	Details
<b>Test sponsor's product data</b>	
Generic type of product	PPC aluminium cassette system
EAD 090062-00-0404 product family	Family G. The cladding elements are suspended on the subframe by means of a hook-on arrangement with slotted fixings.
Type of cladding fixings	Hook/slot profile and rails or other similar fixings
Nominal thickness (mm)	3
Nominal mass per unit area (kg/m <sup>2</sup> )	8.28 (calculated, max.)
Colour	Aluminium: Silver Coating: Anodic Bronze, Matt Mineral wool: Yellow/brown
Flame retardant treatment added, or organic content limited during production (yes/no)	No
European product standard, if applicable	EAD 090062-00-0404 <sup>2</sup>
<b>Sheet material</b>	
Generic type of product	Aluminium Alloy, 3103H14
Nominal density (kg/m <sup>3</sup> )	2730
Nominal mass per unit area (kg/m <sup>2</sup> )	8.19
Nominal thickness (mm)	3
Measured gross heat of combustion (MJ/kg)	0.0 (CWFT, deemed to satisfy)
<b>Coating</b>	
Generic type of product	Polyester powder coating
Manufacturer	AkzoNobel Powder Coatings
Trade name	Interpon 2525 Super Durable Powder (Anodic range)
Nominal density (kg/m <sup>3</sup> )	1200 – 1700 (dependant on colour)
Nominal mass per unit area (g/m <sup>2</sup> )	72 ± 20% (57.6 to 86.4), cured
Nominal thickness (µm)	36 to 54
Nominal gross heat of combustion (MJ/kg)	23.051
Nominal gross heat of combustion @ 72 g/m <sup>2</sup> ± 20 % (MJ/m <sup>2</sup> )	1.66 (1.33 - 1.99)
<b>Substrate and ventilation conditions</b>	
<b>Calcium silicate</b>	
Generic type	Calcium silicate
Trade name	Promatect H
Nominal thickness (mm)	12
Nominal density (kg/m <sup>3</sup> )	870 ± 50



Parameter	Details
Position	Behind mineral wool insulation
<b>Insulation</b>	
Generic type	Mineral wool (unfaced stone wool)
Trade name	Rockwool RWA45
Nominal thickness (mm)	50
Nominal density (kg/m <sup>3</sup> )	45
Thermal conductivity (W/mK)	0.035
Classification to EN 13501-1 <sup>3</sup>	A1
<b>Ventilation condition</b>	
Type of ventilation	Ventilated cavity
<b>Test information</b>	
Face to be tested	External coated front face
Orientation aspects	Only the front face was PPC coated
Test sponsor's sampling identification	Note 1
BRE Global sample number	E12934/E12940
Additional information	d+b facades rainscreen system is stated by the test sponsor to comprise a built up system of stainless steel anchors / alum brackets rails and panels (3 mm) c/w integral mineral wool insulation and cavity barriers.

Note 1: This information was not supplied by the test sponsor.

### 3 Reports & results in support of this classification

#### 3.1 Reports

Name of Laboratory	Name of test sponsor	Test reports Nos.	Test method/field of application rules
BRE Global	d+b facades UK Limited	Q101153-1000 Issue 2	EN 13823 <sup>3</sup>
Warringtonfire	AkzoNobel Powder Coatings	WF Classification Report No.419155	EN 13501-1 <sup>1</sup>
Warringtonfire	International Paint Limited	WF No.416460	EN ISO 1716 <sup>4</sup>



### 3.2 Results

Test method & test number	Parameter	No. test runs	Results	
			Continuous parameter - mean (m)	Compliance with parameters Criterion / Compliance status A1
<b>EN ISO 1716</b> Polyester powder coating of 'Super Durable PPC Aluminium' WF Classification Report No.419155 reported 22/10/2019	Q <sub>PCS</sub>	-	23.051 MJ/kg	- / -
	Q <sub>PCSSs</sub> @ 72 g/m <sup>2</sup> ± 20 % (MJ/m <sup>2</sup> )		1.99 MJ/m <sup>2</sup> (max.)	≤ 2.0 MJ/m <sup>2</sup> / Compliant
	Q <sub>PCSext</sub>		23.051 MJ/kg	- / -
	Q <sub>PCSext</sub> @ 72 g/m <sup>2</sup> ± 20 % (MJ/m <sup>2</sup> )		1.99 MJ/m <sup>2</sup> (max.)	≤ 2.0 MJ/m <sup>2</sup> / Compliant
<b>EN ISO 1716</b> Polyester powder coating WF No.416460 Tested: 18/07/2019 by: D. Roberts	Q <sub>PCS</sub> (Polyester Bronze Y2214F)	1 (ind.)	22.9960	- / -
<b>EN ISO 1716</b> Aluminium Alloy	Q <sub>PCS</sub> (Deemed to satisfy in accordance with test standard)	-	0 MJ/kg	≤ 2.0 MJ/kg / Compliant
	Q <sub>PCSSs</sub> (Deemed to satisfy in accordance with test standard)		0 MJ/m <sup>2</sup>	- / -
<b>EN ISO 1716</b> Whole product	Q <sub>PCS</sub>	-	1.99 MJ/kg	≤ 2.0 MJ/kg / Compliant
	Q <sub>PCSSs</sub> @ 8.28 kg/m <sup>2</sup>		0.24 MJ/m <sup>2</sup>	- / -
<b>EN ISO 1182</b> Aluminium decking	Deemed to satisfy class A1 without testing in accordance with Commission Decision 96/603/EC (OJ L 267 19.10.1966 p23) as amended by 2000/605/EC (OJ L 258 12.10.2000 p36) and 2003/424/EC (OJ L 144 12.6.2003 p9). Not testable in this apparatus, as the melting point of aluminium is lower than the average temperature of the furnace.			
<b>EN 13823</b> Q101153-1000 Tested: 06/08/2020 by C. Rock	FIGRA <sub>0.2MJ</sub>	3	0.00 W/s	≤ 20 W/s / Compliant
	FIGRA <sub>0.4MJ</sub>		0.00 W/s	-/-
	LFS		(-)	≤ edge of specimen / Compliant
	THR <sub>600s</sub>		0.49 MJ	≤ 4.0 MJ / Compliant
SMOGRA	-	0.00 m <sup>2</sup> /s <sup>2</sup>	≤ 30 m <sup>2</sup> /s <sup>2</sup> / Compliant	
TSP <sub>600s</sub>		21.42 m <sup>2</sup>	≤ 50 m <sup>2</sup> / Compliant	
Flaming droplets/particles ≤ 10s	-	Not observed	Flaming ≤ 10s / Compliant	
Flaming droplets/particles > 10s		Not observed	Flaming > 10s / Compliant	





## 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, 'd+b facades powder coated aluminium rainscreen cassette system', in relation to reaction to fire behaviour is classified:

**A1**

The additional classification in relation to smoke production is:

-

The additional classification in relation to flaming droplets / particles is:

-

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

Fire Behaviour		Smoke Production		Flaming Droplets
A1	-	s	-	, d -

i.e. A1

**Reaction to fire classification: A1**

### 4.3 Field of application

This classification is valid for:

- i) Aluminium external wall cladding cassette.

And the following product and mounting and fixing parameters:

Parameter	Field of application
Composition	As tested. No variation in composition allowed.
Build-up and ordering of layers	As tested. No variation in build-up allowed.
Dimension of cladding elements	As tested. Valid for greater dimensions (height and width) of cladding elements than that tested.
Cladding fixings	Stainless steel anchors. Valid for a higher density of cladding fixings than that tested. Valid for the same type of cladding element fixed using either screws or rivets composed of the same material as that tested.
Type of sub-structure	Aluminium brackets rails, ventilated.
Air space behind panel	30 mm. Valid for air spaces $\geq$ 30 mm.



Parameter	Field of application
Insulation	30 kg/m <sup>3</sup> to 70 kg/m <sup>3</sup> mineral wool, Class A1I. Valid for all other greater thicknesses of mineral wool insulation layer with the same density and the same or better reaction to fire classification. Valid for the same type of panel used without insulation.
Breather membrane	None. No variation allowed.
<b>Metal substrate</b>	
Generic type	Aluminium Alloy.
Reference	3103H14
Nominal density	2.73 g/cm <sup>3</sup>
Nominal Thickness	3 mm.
Nominal mass per unit area	8.19 kg/m <sup>2</sup>
<b>Polyester Powder Coating</b>	
Generic type	Polyester powder coating. No variation allowed.
Product range	D2525 Super Durable Powder (Anodic range). No variation allowed.
Nominal density	As tested, no variation allowed.
Nominal Thickness	36 to 54 microns. Valid for coating thicknesses ≤ 54 microns.
Nominal mass per unit area	86.4 g/m <sup>2</sup> maximum. Valid for coatings with a mass per unit area ≤ 86.4 g/m <sup>2</sup> .
Colour of coating	Anodic Bronze, Matt. Valid for other colours of coating with a Q <sub>PCS</sub> ≤ 23.05 MJ/m <sup>2</sup> applied at a rate ≤ 86.4 g/m <sup>2</sup> with an equal or greater quantity of fire retardant additives.
Surface finish	As tested. No variation in finish allowed.
<b>Product orientation</b>	
Product orientation and geometry	Valid for cladding elements where the polyester coating is applied to the external front (test) face only.
Joints and exposed edges	Valid for folded metal corners only, as shown in Figures A.1 and A.2. Valid for exposed joints and edges. Valid for cladding elements with a 20 mm wide joint gap between panels. Valid for open horizontal joints closed by steel or aluminium profiles.

This classification is valid for the following end-use applications:

- i) Mounted as described above onto a masonry or concrete substrate with a density ≥ 653 kg/m<sup>3</sup> and a thickness ≥ 11 mm.

## 5 Limitations

This report is Issue 2 of BRE Global report Q101153-1001. At the request of the test sponsor, a correction has been made to the product name in this report. BRE Global report Q101153-1001 Issue 1, dated 29 September 2020, has been withdrawn with effect from the date of this report.



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

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking 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 manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures, or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence, the manufacturer has concluded that system 3 attestation is appropriate.

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

The information in section 2.2.2 of this report, other than that indicated otherwise, was supplied by the test sponsor and was not independently verified by BRE Global. The validity of the results is conditional on the accuracy of that data.

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## 6 References

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1. EN 13501-1: 2018. Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests. CEN, Rue de la Science 23, B-1040 Brussels. 2018.
2. European Assessment Document 090062-00-0404 Kits for external wall claddings mechanically fixed. EOTA. July 2018.
3. EN 13823: 2010 + A1: 2014. Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item'. CEN, Avenue Marnix 17, B-1000 Brussels. 2014.
4. EN ISO 1716: 2018. Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value). CEN, Avenue Marnix 17, B-1000 Brussels. 2018.