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Reaction to fire classification report

Issuing laboratory: Warringtonfire Testing and Certification Limited

Classification standard:	EN 13501-1: 2018
Report owner(s):	Specialist Building Products t/a Ecodek
Product(s):	"Adek" systems
Report number:	533363
Version:	1

Warringtonfire Testing and Certification Limited , accredited for compliance with ISO/IEC 17025:2017 – Testing

egolf

Quality management

Version	Date	Summary of amendments including reasons		
1	20 February 2024	Description	Initial issue	
			Prepared by	Authorised by
		Name	Michael Walford	Stacey Deeming
		Signature		
			*Signed for and on behalf of Warringtonfire Testing and Certification Limited	

Contents

1. Introduction

This classification report defines the classification assigned to "Adek" systems, 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 report owner listed in Table 1.

Table 1 Report owner details

Entity	Address
Report owner	
Specialist Building Products t/a Ecodek	Unit 1 Bridge Business Centre, Ash Road South, Wrexham Industrial Estate, Wrexham, LL13 9UG, United Kingdom

2. Details of classified product

2.1 General

The product(s), "Adek" systems, are defined as being suitable for construction applications excluding floorings and linear pipe thermal insulation.

2.2 Product description

The product(s), "Adek" systems, are described in Table 2 and in the test reports listed in Section 3.1.

Table 2 Product description

Item	Detail
General description	Powder coated aluminium decking profile which was tested over powder coated aluminium battens
Product reference	"Adek 147 x 20mm Comfort Grip" "Adek 147 x 20mm Enhanced Grip" "Adek 295 x 20mm Comfort Grip" "Adek 295 x 20mm Enhanced Grip" "Adek 147 x 30mm Comfort Grip" "Adek 147 x 30mm Enhanced Grip" "Adek 295 x 30mm Comfort Grip" "Adek 295 x 30mm Enhanced Grip"
Name of manufacturer	Specialist Building Products t/a EcoDek

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Item		Detail
Coating	Generic type	Polyester powder coating
	Product reference	"D1036 (texture 20)"
	Name of manufacturer	Akzo Nobel
	Colour	Anthracite Grey
	Colour reference	"RAL7016 SL316G"
	Number of coats	Single coat
	Application thickness	80 ± 20 µm
	Application rate	0.145 kg/m^2
	Density	1.45 g/cm^3
	Application method	Spray applied
	Curing process	Heat cured (170 - 190°C)
	Flame retardant details	**See Note 1 below**
Aluminium	Generic type	Aluminium
	Product reference	"Alloy grade 6063 T6"
	Name of manufacturer	Cortizo
	Thickness	1.75 and 2.5mm
	Weight per unit area (as per order of Product references)	9.56 and 10.04 kg/m^2 10.74 kg/m^2 12.25 kg/m^2 12.92 kg/m^2 10.79 kg/m^2 11.97 kg/m^2 14.01 kg/m^2 14.36 kg/m^2
	Colour reference	RAL7016 – Anthracite Grey
	Flame retardant details	**See Note 1 below**
Mounting and fixing details		A 50mm ventilated cavity was situated between the reverse face of the specimens and the fibre cement board substrate as defined in EN 13238: 2010, provided by powder coated aluminium battens as described below

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Item			Detail
Powder Coated Aluminium Battens	Powder Coating	Generic type	Interpon D Powder coating
		Product reference	"D1036 (texture 20)"
		Name of manufacturer	Akzo Nobel
		Number of coats	One
		Application thickness	80 ± 20 microns
		Weight per unit area	1.45 g/cm^3
		Application method	Spray applied
		Curing process	Heat cured (170 – 190 °C)
		Flame retardant details	See Note 1 below
	Aluminium	Generic type	Aluminium
		Product reference	"Alloy grade 6063 T6"
		Name of manufacturer	Cortizo
		Wall thickness	3.00mm
		Weight per unit length	1.16 kg/m
		Weight per unit area	10.04 kg/m^2
		Flame retardant details	See Note 1 below
Substrate		Generic type	Fibre cement board
		Product reference	"NT D4 604"
		Name of manufacturer	Scheerders van de Kerkhove (SVK)
		Thickness	8mm
		Density	1800 kg/m^3
Joint details		Joint type	Vertical joints
		Position of horizontal joint from bottom edge of the specimen	Not applicable
		Position of vertical joint from the corner line, measured when mounted ready for testing	200mm
		Depth of joint	18.30mm
		Width of joint	1.25mm
Brief description of manufacturing process			Billet aluminium extruded through die blocks

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

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	Specialist Building Products t/a Ecodek	503663 (Issue 2)	13 May 2021	EN 13823: 2020
Warringtonfire	Specialist Building Products t/a Ecodek	537120	09 November 2023	EN 13823: 2020 + A1: 2022
Warringtonfire	Specialist Building Products t/a Ecodek	421075 (Issue 2)	13 November 2019	EN ISO 1716: 2018 (*)
Warringtonfire	Specialist Building Products t/a Ecodek	505367 (Issue 2)	13 May 2021	
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531867 (Issue 4)	15 May 2023	DIN 13823: 2023-04
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531868 (Issue 4)	15 May 2023	
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531869 (Issue 4)	15 May 2023	
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531870 (Issue 4)	15 May 2023	
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531871 (Issue 4)	15 May 2023	
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531872 (Issue 4)	16 May 2023	
Warringtonfire Frankfurt GmbH	Specialist Building Products t/a Ecodek	531873 (Issue 4)	15 May 2023	
Warringtonfire	Specialist Building Products t/a Ecodek	533364	-	CEN/TS 15117: 2005 EN 15725: 2010

(*) 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 A2 - s1, d0 can be found in Table 7.

Table 4 Test data

Test method Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
EN 13823: 2020 503663 (Issue 2)	FIGRA (THR(t) threshold of 0.2MJ)	3	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		14	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
EN 13823: 2020 + A1: 2022 537120	FIGRA (THR(t) threshold of 0.2MJ)	3	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.7	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		16	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
EN ISO 1716: 2018 421075 (Issue 2)	Average gross heat of combustion for NON-SUBSTANTIAL component (Coating), Q_{PCS} (MJ/m^2)	1 x 3	3.0	-
EN ISO 1716: 2018	Average gross heat of combustion for SUBSTANTIAL component (Aluminium), Q_{PCS} (MJ/kg)	-	0.0	-
EN ISO 1716: 2018	Average gross heat of combustion of worst case product (Coating and Aluminium), Q_{PCS} (MJ/kg)	-	0.3	-

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

3.2.2 Comparative test results used for the worst case determinations

The tables below detail the test data that has been used to determine the worst case for each product parameter.

Table 5 EN 13823

Product name Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
Project specification; "Adek 295 x 30mm, Comfort Grip"; 503663* (Issue 2)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		8	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
Project specification; "Adek 147 x 20mm, Enhanced Grip"; 531867 (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.4	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		38	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
Project specification; "Adek 147 x 20mm, Comfort Grip"; 531868** (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.2	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		5	-
	TSP_{600s} (m^2)		53	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant

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Product name Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
Project specification; "Adek 147 x 30mm, Enhanced Grip"; 531869 (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.3	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		27	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
Project specification; "Adek 147 x 30mm, Comfort Grip"; 531870 (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.5	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		35	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
Project specification; "Adek 295 x 20mm, Enhanced Grip"; 531871 (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.3	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		2	-
	TSP_{600s} (m^2)		32	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant

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Product name Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
Project specification; "Adek 295 x 20mm, Comfort Grip"; 531872 (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0.1	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		34	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant
Project specification; "Adek 295 x 30mm, Enhanced Grip"; 531873 (Issue 4)	FIGRA (THR(t) threshold of 0.2MJ)	1	0	-
	FIGRA (THR(t) threshold of 0.4MJ)		0	-
	THR_{600s} (MJ)		0	-
	LFS < edge of specimen		-	Compliant
	SMOGRA (m^2/s^2)		0	-
	TSP_{600s} (m^2)		26	-
	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s		-	Compliant
	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s		-	Compliant

(*) The results of this sample were re-used in the official test report No. 503663 (as test specimen 1).

(**) The results of this indicative test are over the limits for s1. Due to the indicative test being performed according to DIN 13823: 2023-04 and the formal test being performed according to EN 13823: 2020 + A1: 2022, this test was not used in the formal test report 537120 (as test specimen 1), but is still stated in this report to record the original indicative result

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 "Adek 30" in relation to its reaction to fire behavior is classified as:

A2

The additional classification in relation to smoke production is:

s1

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

d0

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

Fire behaviour		Smoke production			Flaming droplets	
A2	-	s	1	,	d	0

Alternatively shown:

Reaction to fire classification: A2 - s1, d0

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 6.

Table 6 End-use applications

End use	Description	Origin
Substrate	Any substrate with a density equal to or greater than 1350 kg/m³, a minimum thickness of 6 mm and a fire performance of A2-s1, d0 or better (excluding paper faced gypsum plasterboard).	As per EN 13238: 2010, clause 5.3 and EGOLF recommendation 045-2018.
Airgap	Valid for an air gap of 50 mm created by powder coated aluminium battens as described in the product description	N/A
Joints	Vertical joints permitted	N/A
Orientation	Product mounted in a vertical orientation	N/A

This classification is valid for the following product parameters:

- Coating colour: No variation allowed
- Coating application thickness: No variation allowed
- Coating application rate: No variation allowed
- Coating density: No variation allowed
- Coating number of coats: No variation allowed
- Aluminium thickness: 1.75 and 2.5mm only
- Aluminium profile height: 20 and 30mm only
- Aluminium plank width: 147 and 295mm only
- Aluminium grip type: Comfort grip and Enhanced grip only
- Construction: No variation allowed
- Composition: No variation allowed

4.4 Fire performance parameters for A2 - s1, d0

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 7. The test results can be found in Section 3.2.

Table 7 Fire performance parameters for A2 - s1, d0

Test method	Parameter	Continuous parameters	Compliance with parameters
EN 13823: 2020 EN 13823: 2020 + A1: 2022 DIN 13823: 2023-04	FIGRA (THR(t) threshold of 0.2MJ)	$FIGRA_{0,2MJ}$ ≤ 120 W/s	-
	FIGRA (THR(t) threshold of 0.4MJ)	-	-
	THR_{600s} (MJ)	THR_{600s} ≤ 7,5 MJ	-
	Lateral flame spread to edge of test specimen?	-	LFS < edge of specimen
	SMOGRA (m^2/s^2)	SMOGRA ≤ 30m^2/s^2	-
	TSP_{600s} (m^2)	TSP_{600s} ≤ 50m^2	-
	Fall of flaming droplets/particles < 10s?	-	No flaming droplets/particles persisting shorter than 10 s in EN 13823 within 600s
	Fall of flaming droplets/particles > 10s?	-	No flaming droplets/particles persisting longer than 10 s in EN 13823 within 600s
EN ISO 1716: 2018	Average gross heat of combustion for substantial components of non-homogenous products, Q_{PCS} (MJ/kg)	PCS ≤ 3,0 MJ/kg	-
	Average gross heat of combustion per unit area for any external non-substantial component of non-homogenous products, Q_{PCS} (MJ/m^2)	PCS ≤ 4,0 MJ/m^2	-
	For the product as a whole, (MJ/kg)	PCS ≤ 3,0 MJ/kg	-

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

According to the information mentioned by the sponsor on the technical information sheet there was no harmonised product standard for UKCA or CE+UK(NI) marking available at the time the classification report for the tested material/product was drafted. When such a product standard is published, this report may be submitted again to the laboratory to evaluate the adequacy of the report for UKCA or CE+UK(NI) marking.

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.

The results stated in this classification report apply to the test specimens as received and/or specified in the referenced/supporting test reports. Any differences in composition, production process, thickness, density or colour of the product may significantly affect the performance and will therefore invalidate the application of the test and classification results to the variant product. It is recommended that any proposed variation to the tested configuration or product should be referred to the report owner. The report owner should then obtain appropriate documentary evidence of compliance from Warringtonfire or another accredited testing authority. The supplier of the product is responsible for ensuring that the product which is supplied for use is identical to the test specimens that were tested.

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