

**Title:**

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

**Product Name:**

"FCLW36"

**Report No:**

WF 519938

**Issue No:**

1

**Prepared for:**

**Cladco Profiles Ltd**  
Beardown Road  
Exeter Road Industrial Estate  
Okehampton  
Devon  
EX20 1UA

**Date:**

13<sup>th</sup> February 2023

## 1. Introduction

This classification report defines the classification assigned to "FCLW36", a family of fibre cement external wall cladding products, in line with the procedures given in EN 13501-1: 2018.

## 2. Details of classified product

### 2.1 General

The products, "FCLW36", are defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

### 2.2 Product description

The products, "FCLW36", is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

Item		Detail
General description / generic type		Coated fibre cement external wall cladding
Product reference of overall composite		"FCLW36"
Thickness of overall composite		7.5mm (without timber battens (determined by Warringtonfire) 43mm with timber battens (determined by Warringtonfire)
Weight per unit area of overall composite (including battens)		16.80kg/m <sup>2</sup> (determined by Warringtonfire)
Coating (test face)	General description	Water soluble paint
	Product reference	"FCLWGG36", "FCLWWH36", "FCLWSG36"
	Number of coats	Three
	Weight per unit length	700g total in 3 coats per 3.66m length
	Colour reference	"RAL 7024" "RAL 9016" "RAL 7030"
	Colour	"Slate Grey", "White", "Sage Green"
	Flame retardant details	See Note 1 below

Continued on next page

Substrate	General description	Cement board
	Product reference	"FCLW36"
	Detailed composition	Cement 50%, Sand 40%, Pulp 9.95%
	Thickness	7.233mm
	Weight per unit area	11.91kg/m <sup>2</sup>
	Colour	Grey (observed by Warringtonfire)
	Flame retardant details	See Note 2 below
Mounting and fixing details		The specimens were mounted on timber battens as described below to create a 40mm ventilated cavity between the reverse face of the specimens and the calcium silicate substrate as defined in EN 13238:2010
Timber battens	General description	50mm x 38mm treated timber batten
	Product reference	"TIM502542"
	Detailed description	TIMBER batten/joist, Type A, Use Class 2 Green treated 50mm x 38mm, 4.8m long
	Name of supplier	Price & Pierce
	Thickness	50mm x 38mm
	Weight per unit area	16.86kg/m <sup>2</sup>
	Flame retardant details	See Note 2 below
Joint details		Vertical and horizontal joints were incorporated in the specimen
Specimen orientation		The specimens were tested in a horizontal orientation. The board dimensions are 3.66m x 210mm width and overlap for fitting at 20mm.
Brief description of manufacturing process		Pulp is added to sand and cement to form the board which is then left to air dry before being oven dried, then coated in 3 coatings of paint

Note 1: The sponsor was unwilling to provide this information.

Note 2: The sponsor was unable to provide this information.

### 3. Test reports/extended application reports & test results in support of classification

#### 3.1 Test reports/extended application reports

Name of Laboratory	Name of sponsor	Test reports/classification report Nos.	Test method / classification rules & date
Warringtonfire	Cladco Profiles Ltd	Formal: 514057 (Issue 2) Indicative: 507409 (Issue 2), 507412 (Issue 2)	EN 13823: 2020
Warringtonfire	Cladco Profiles Ltd	Formal: 522542 (Issue 2) Indicative: 523866 (Issue 2), 523867 (Issue 2)	EN ISO 11925-2:2020
Warringtonfire	Cladco Profiles Ltd	519939	BS EN 15725: 2010 & EN/TS 15117: 2005

#### 3.2 Test results

Test method & test number	Parameter	No. tests	Report	Results	
				Continuous parameter - mean (m)	Compliance parameters
EN 13823	FIGRA <sub>0.2MJ</sub>	3	514057	18 W/s	-
		1	507409	12 W/s	-
		1	507412	15 W/s	-
	FIGRA <sub>0.4MJ</sub>	3	514057	18 W/s	-
		1	507409	12 W/s	-
		1	507412	15 W/s	-
	THR <sub>600s</sub>	3	514057	1.9 MJ	-
		1	507409	1.0 MJ	-
		1	507412	0.7 MJ	-
	LFS	3	514057	-	Compliant
		1	507409	-	Compliant
		1	507412	-	Compliant
	SMOGRA	3	514057	2 m <sup>2</sup> /s <sup>2</sup>	-
		1	507409	2 m <sup>2</sup> /s <sup>2</sup>	-
		1	507412	3 m <sup>2</sup> /s <sup>2</sup>	-
	TSP <sub>600s</sub>	3	514057	24 m <sup>2</sup>	-
		1	507409	6 m <sup>2</sup>	-
		1	507412	16 m <sup>2</sup>	-
	Fall of Flaming Droplet/Particle?	3	514057	-	Compliant
		1	507409	-	Compliant
		1	507412	-	Compliant
	Flaming of Fallen Particle Exceeding 10s?	3	514057	-	Compliant
		1	507409	-	Compliant
		1	507412	-	Compliant

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EN ISO 11925-2 (30s exposure - surface)	F <sub>s</sub>	6	522542	-	Compliant (Nil mm)
		2	523866	-	Compliant (Nil mm)
		6	523867	-	Compliant (Nil mm)
	Flaming droplets/ particles	6	522542	-	Compliant
		2	523866	-	Compliant
		6	523867	-	Compliant
EN ISO 11925-2 (30s exposure - edge)	F <sub>s</sub>	6	522542	-	Compliant (Nil mm)
		2	523866	-	Compliant (Nil mm)
		6	523867	-	Compliant (Nil mm)
	Flaming droplets/ particles	6	522542	-	Compliant
		2	523866	-	Compliant
		6	523867	-	Compliant

#### 4. Classification and field of application

##### 4.1 Reference of classification

This classification has been carried out in accordance with clause 8 of EN 13501-1: 2018, BS EN 15725: 2010 & EN/TS 15117: 2005.

##### 4.2 Classification

The products, "FCLW36", a family of fibre cement external wall cladding products, in relation to their reaction to fire behaviour are classified:

**B**

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 flooring and linear pipe thermal insulation is:

Fire Behaviour		Smoke Production				Flaming Droplets	
<b>B</b>	-	<b>s</b>	<b>1</b>	,	<b>d</b>	<b>0</b>	

**i.e. B – s1 , d0**

## Reaction to fire classification: B – s1, d0

### 4.3 Field of application

This classification is valid for the following end use applications:

i) Construction applications mounted on a timber frame to form a 40mm ventilated cavity over any substrate with a density equal to or greater than 652.5kg/m<sup>3</sup>, having a minimum thickness of 9mm and a fire performance of A2-s1,d0 or better (excluding paper faced gypsum plasterboard).

This classification is also valid for the following product parameters:

Product thickness	No variation allowed
Product weight per unit area	No variation allowed
Coating colour	Sage Green, White, Slate Grey
Coating application rate	700g per 3.66m length (total for 3 coats)
Plank dimensions	210mm width with an overlap for fitting at 20mm
Plank orientation	Mounted horizontally only
Product composition	No variation allowed
Product construction	No variation allowed
Joints	Horizontal and vertical allowed.

## 5. Limitations

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

### SIGNED



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### Claire Lawrence

Product Assessor  
Technical Department

### APPROVED



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### Stacey Deeming

Principal Product Assessor  
Technical Department  
on behalf of [Warringtonfire](#)

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**Title:**

EXTENDED APPLICATION REPORT IN  
ACCORDANCE WITH BS EN 15725: 2010  
& EN/TS 15117: 2005

**Product Names:**

"FCLW36"

**Report No:**

WF 519939

**Issue No:**

1

**Prepared for:**

**Cladco Profiles Ltd**  
Beardown Road  
Exeter Road Industrial Estate  
Okehampton  
Devon  
EX20 1UA

**Date:**

13<sup>th</sup> February 2023



## 1. Introduction

This report extends the field of application of test results obtained for "FCLW36", a family of fibre cement external wall cladding products. Extended application enables the prediction of fire performance, on the basis of one or more test results to the same test standards and enables the classification of product ranges and product families.

## 2. Details of Product Family

A product family is a group of products, which differ only in aspects that do not influence the properties required in the relevant product standard and, if relevant, end-use parameters, for which the reaction to fire performance remains unchanged (i.e. does not get worse).

The product family for which extended application is to be used is "FCLW36", a family of fibre cement external wall cladding products. There is one product property which varies within this product family, colour. This property was assessed to determine its influence on the fire performance of the product when tested in accordance with EN 13823: 2020 and EN ISO 11925-2: 2020, and classified in accordance with EN 13501-1: 2018.

### 2.1 Product description

The product family, "FCLW36", a family of fibre cement external wall cladding products, is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

Item		Detail
General description / generic type		Coated fibre cement external wall cladding
Product reference of overall composite		"FCLW36"
Thickness of overall composite		7.5mm (without timber battens (determined by Warringtonfire) 43mm with timber battens (determined by Warringtonfire)
Weight per unit area of overall composite (including battens)		16.80kg/m <sup>2</sup> (determined by Warringtonfire)
Coating (test face)	General description	Water soluble paint
	Product reference	"FCLWGG36", "FCLWWH36", "FCLW36"
	Number of coats	Three
	Weight per unit length	700g total in 3 coats per 3.66m length
	Colour reference	"RAL 7024" "RAL 9016" "RAL 7030"
	Colour	"Slate Grey", "White", "Sage Green"
Flame retardant details		See Note 1 below

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Substrate	General description	Cement board
	Product reference	"FCLW36"
	Detailed composition	Cement 50%, Sand 40%, Pulp 9.95%
	Thickness	7.233mm
	Weight per unit area	11.91kg/m <sup>2</sup>
	Colour	Grey (observed by Warringtonfire)
	Flame retardant details	See Note 2 below
Mounting and fixing details		The specimens were mounted on timber battens as described below to create a 40mm ventilated cavity between the reverse face of the specimens and the calcium silicate substrate as defined in EN 13238:2010
Timber battens	General description	50mm x 38mm treated timber batten
	Product reference	"TIM502542"
	Detailed description	TIMBER batten/joist, Type A, Use Class 2 Green treated 50mm x 38mm, 4.8m long
	Name of supplier	Price & Pierce
	Thickness	50mm x 38mm
	Weight per unit area	16.86kg/m <sup>2</sup>
	Flame retardant details	See Note 2 below
Joint details		Vertical and horizontal joints were incorporated in the specimen
Specimen orientation		The specimens were tested in a horizontal orientation. The board dimensions are 3.66m x 210mm width and overlap for fitting at 20mm.
Brief description of manufacturing process		Pulp is added to sand and cement to form the board which is then left to air dry before being oven dried, then coated in 3 coatings of paint

Note 1: The sponsor was unwilling to provide this information.

Note 2: The sponsor was unable to provide this information.

### 3. Test reports / classification reports & test results in support of classification

#### 3.1 Test reports / classification reports

Name of Laboratory	Name of sponsor	Test reports/classification report Nos.	Test method / classification rules & date
Warringtonfire	Cladco Profiles Ltd	Formal: 514057 (Issue 2) Indicative: 507409 (Issue 2), 507412 (Issue 2)	EN 13823: 2020
Warringtonfire	Cladco Profiles Ltd	Formal: 522542 (Issue 2) Indicative: 523866 (Issue 2), 523867 (Issue 2)	EN ISO 11925-2:2020
Warringtonfire	Cladco Profiles Ltd	519938	EN 13501-1: 2018

#### 3.2 Test results

Test method & test number	Parameter	No. tests	Report	Results	
				Continuous parameter - mean (m)	Compliance parameters
EN 13823	FIGRA <sub>0.2MJ</sub>	3	514057	18 W/s	-
		1	507409	12 W/s	-
		1	507412	15 W/s	-
	FIGRA <sub>0.4MJ</sub>	3	514057	18 W/s	-
		1	507409	12 W/s	-
		1	507412	15 W/s	-
	THR <sub>600s</sub>	3	514057	1.9 MJ	-
		1	507409	1.0 MJ	-
		1	507412	0.7 MJ	-
	LFS	3	514057	-	Compliant
		1	507409	-	Compliant
		1	507412	-	Compliant
	SMOGRA	3	514057	2 m <sup>2</sup> /s <sup>2</sup>	-
		1	507409	2 m <sup>2</sup> /s <sup>2</sup>	-
		1	507412	3 m <sup>2</sup> /s <sup>2</sup>	-
	TSP <sub>600s</sub>	3	514057	24 m <sup>2</sup>	-
		1	507409	6 m <sup>2</sup>	-
		1	507412	16 m <sup>2</sup>	-
	Fall of Flaming Droplet/Particle?	3	514057	-	Compliant
		1	507409	-	Compliant
		1	507412	-	Compliant
	Flaming of Fallen Particle Exceeding 10s?	3	514057	-	Compliant
		1	507409	-	Compliant
		1	507412	-	Compliant

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EN ISO 11925-2 (30s exposure - surface)	F <sub>s</sub>	6	522542	-	Compliant (Nil mm)
		2	523866	-	Compliant (Nil mm)
		6	523867	-	Compliant (Nil mm)
	Flaming droplets/ particles	6	522542	-	Compliant
		2	523866	-	Compliant
		6	523867	-	Compliant
EN ISO 11925-2 (30s exposure - edge)	F <sub>s</sub>	6	522542	-	Compliant (Nil mm)
		2	523866	-	Compliant (Nil mm)
		6	523867	-	Compliant (Nil mm)
	Flaming droplets/ particles	6	522542	-	Compliant
		2	523866	-	Compliant
		6	523867	-	Compliant

#### 4. Test results and field of application

##### 4.1 Definition of Limits of Extended Application

A total of one formal and two indicative tests were conducted in accordance with EN 13823 and two formal and one indicative tests were conducted in accordance with EN ISO 11925-2. In order to investigate the aforementioned variables, the assessment of this product family was conducted as follows:

##### EN 13823

- Indicative tests were conducted on the "Slate grey" coloured specimen and reported under WF 514057.
- Indicative tests were conducted on the "White" coloured specimen and reported under WF 507409.
- Indicative tests were conducted on the "Sage Green" coloured specimen and reported under WF 507412.

This determined that the performance of the "Slate grey" coloured specimen was worst overall, so the formal test was completed on this configuration and reported under WF 514057.

##### EN ISO 11925-2

- Indicative tests were conducted on the "Slate grey" coloured specimen and reported under WF 522542.
- Indicative tests were conducted on the "White" coloured specimen and reported under WF 523867.



- Indicative tests were conducted on the "Sage Green" coloured specimen and reported under WF 523866.

Formal tests were completed on the "Slate grey" and "White" coloured products and reported under WF 522542 and WF 523867.

#### **4.2 EN ISO 11925-2**

Indicative tests were conducted on the various coloured products, using surface and edge flame application. No flame spread from the point of flame application travelled further than 0mm. The maximum flame front recorded was 100% below the maximum value allowed for Class B, (EN 13501-1).

#### **4.3 EN 13823**

The SBI test measures the following fire parameters, Fire Growth Rate (FIGRA), Total Heat Release (THR600s), Smoke Growth Rate (SMOGRA) and Total Smoke Production (TSP600s).

These parameters were evaluated to assess what influence the product variations have on the fire performance of "FCLW36", a family of fibre cement external wall cladding products. This evidence is shown in Figures 1 and 2.

The highest FIGRA value was at least 85% below the maximum value allowed for Class B, (EN 13501-1). The highest THR600s value was at least 74.6% below the maximum value allowed for Class B, (EN 13501-1).

The measured results relating to smoke parameters, SMOGRA and TSP600s, also fall within the s1 criteria, with the highest smoke value being approximately 52% below the maximum allowed for s1, (EN 13501-1).

In no instance were flaming droplets/particles in evidence during the fire tests.

#### **4.4 Reference of extended application process**

This extended application process has been carried out in accordance with BS EN 15725: 2010 and EN/TS 15117: 2005.

#### **4.5 Extended Field of application**

This extended application is valid for the following end use applications:

i) Construction applications mounted on a timber frame to form a 40mm ventilated cavity over any substrate with a density equal to or greater than  $652.5\text{kg/m}^3$ , having a minimum thickness of 9mm and a fire performance of A2-s1,d0 or better (excluding paper faced gypsum plasterboard).

This extended application is also valid for the following product parameters:

Product thickness	No variation allowed
Product weight per unit area	No variation allowed
Coating colour	Sage Green, White, Slate Grey
Coating application rate	700g per 3.66m length (total for 3 coats)
Plank dimensions	210mm width with an overlap for fitting at 20mm
Plank orientation	Mounted horizontally only
Product composition	No variation allowed
Product construction	No variation allowed
Joints	Horizontal and vertical allowed.

All products as described in Section 2.1 and within the field of application as defined in Section 4.5 can be considered to obtain reaction to fire test results that comply with the following:

Test method	Parameter	Results	
		Continuous parameter Mean	Compliance parameter
<b>EN ISO 11925-2</b> Surface application	$F_s \leq 150\text{mm}$	-	Compliant
	Droplets / particles	-	Compliant for $d_0$
Edge application	$F_s \leq 150\text{mm}$	-	Compliant
	Droplets / particles	-	Compliant for $d_0$
<b>EN 13823</b>	FIGRA <sub>0.2MJ</sub> (W/s)	$\leq 120$	-
	FIGRA <sub>0.4MJ</sub> (W/s)	-	-
	THR <sub>600s</sub> (MJ)	$\leq 7.5$	-
	LFS	-	Compliant
	SMOGRA ( $\text{m}^2/\text{s}^2$ )	$\leq 30$	-
	TSP <sub>600s</sub> ( $\text{m}^2$ )	$\leq 50$	-
	Droplets / particles <10s	-	Compliant for $d_0$
	Droplets / particles >10s	-	Compliant for $d_0$
- Not applicable			



## 5. Limitations

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

### SIGNED



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### Claire Lawrence

Product Assessor  
Technical Department

### APPROVED



.....

### Stacey Deeming

Principal Product Assessor  
Technical Department  
on behalf of [Warringtonfire](#)

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Figure 1 - Effect of varying the product specification on FIGRA and TSP600s

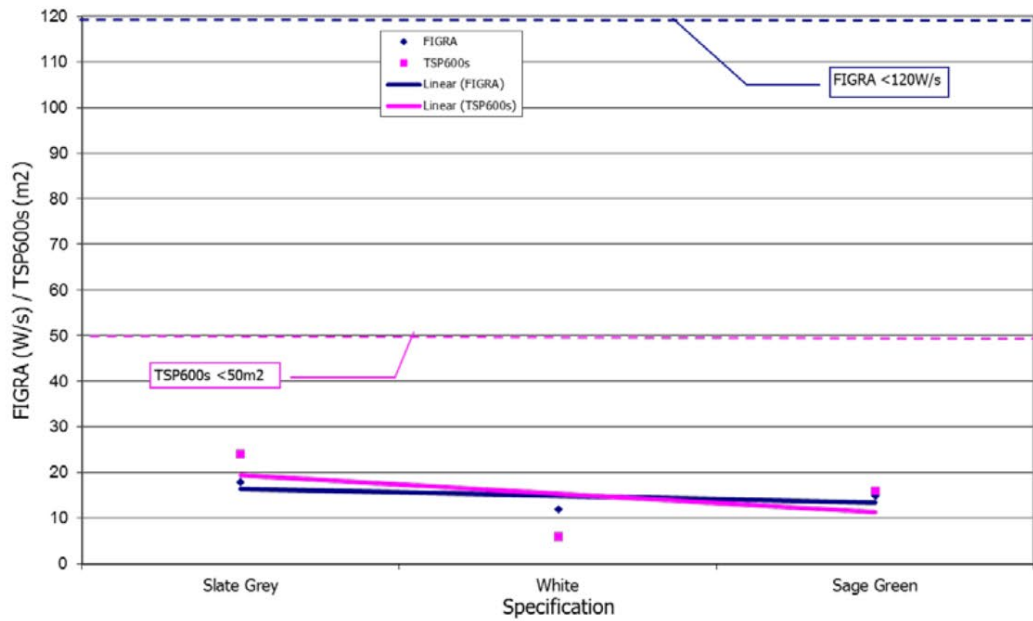


Figure 2 - Effect of varying the product specification on THR600s and SMOGRA

