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Title:

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

Notified Body No:

0833

Product Name:

"ALPOLIC™ A1, ALPOLIC™ NC"

Report No:

WF 423155

Issue No:

2

Prepared for:

Mitsubishi Chemical Corporation,
1-1 Marunouchi 1 Chome,
Chiyoda-ku,
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Japan

Date:

24th February 2020

1. Introduction

This classification report defines the classification assigned to "ALPOLIC™ A1, ALPOLIC™ NC", an Aluminium composite panel, in line with the procedures given in EN 13501-1:2018.

2. Details of classified product

2.1 General

The product, "ALPOLIC™ A1, ALPOLIC™ NC", an Aluminium composite panel, is defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

2.2 Product description

The product, "ALPOLIC™ A1, ALPOLIC™ NC", is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		Aluminium composite panel (cassette)
Product reference of composite		"ALPOLIC™ A1, ALPOLIC™ NC"
Colour reference of composite		Any
Thickness of composite		4mm
Weight per unit area of composite		8.6kg/m^2
Thickness of cassette		42.72mm (determined by Warringtonfire)
Weight per unit area of cassette		18.83kg/m^2 (determined by Warringtonfire)
Top coat (test face)	Product reference	**See Note 1 below**
	Generic type	Fluorocarbon coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	"Clear"
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application thickness	**See Note 1 below**
	Application rate	30.8g /m^2
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**
Base coat	Product reference	**See Note 1 below**
	Generic type	Fluorocarbon coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	Any
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application rate	47.3g/m^2 (Sparkling White) 40.5g/m^2 (Sparkling Black) 36.5g/m^2 (Sparkling Red)
	Application thickness	**See Note 1 below**
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**

Primer coat	Product reference	**See Note 1 below**
	Generic type	Polyester coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	"White"
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application thickness	**See Note 1 below**
	Application rate	11.6g/m^2
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**
Aluminium	Product reference	**See Note 1 below**
	Generic type	Aluminium
	Name of manufacturer	**See Note 1 below**
	Thickness	0.5mm
	Weight per unit area	1.355kg/m^2
	Flame retardant details	The aluminium is inherently flame retardant
Corrosion control coat	Product reference	**See Note 1 below**
	Generic type	Epoxy coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	"Yellow Green"
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application thickness	**See Note 1 below**
	Application rate	10.3g/m^2
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**
Adhesive	Product reference	**See Note 1 below**
	Generic type	Thermoplastic resin
	Name of manufacturer	**See Note 1 below**
	Colour reference	"Clear"
	Thickness	**See Note 1 below**
	Weight per unit area	24.4g/m^2
	Flame retardant details	**See Note 2 below**
Core	Product reference	**See Note 1 below**
	Generic type	Non combustible core
	Name of manufacturer	"ALPOLIC™ NC core"
	Thickness	3mm
	Weight per unit area	5.9kg/m^2
	Colour reference	"White"
	Trade name of flame retardant	**See Note 1 below**
	Generic type of flame retardant	Inorganic filler
	Amount of flame retardant	**See Note 1 below**

Adhesive	Product reference	**See Note 1 below**
	Generic type	Thermoplastic resin
	Name of manufacturer	**See Note 1 below**
	Colour reference	"Clear"
	Thickness	**See Note 1 below**
	Weight per unit area	24.4g/m^2
	Flame retardant details	**See Note 2 below**
Corrosion control coat	Product reference	**See Note 1 below**
	Generic type	Epoxy coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	"Yellow Green"
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application thickness	**See Note 1 below**
	Application rate	10.3g/m^2
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**
Aluminium	Product reference	**See Note 1 below**
	Generic type	Aluminium
	Name of manufacturer	**See Note 1 below**
	Thickness	0.5mm
	Weight per unit area	1.355kg/m^2
	Flame retardant details	The aluminium is inherently flame retardant
Primer coat	Product reference	**See Note 1 below**
	Generic type	Polyester coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	"White"
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application thickness	**See Note 1 below**
	Application rate	11.6g/m^2
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**
Base coat (Optional)	Product reference	**See Note 1 below**
	Generic type	Fluorocarbon coating
	Name of manufacturer	**See Note 1 below**
	Colour reference	Any
	Number of coats	One
	Specific gravity	**See Note 1 below**
	Application rate	47.3g/m^2 (Sparkling White) 40.5g/m^2 (Sparkling Black) 36.5g/m^2 (Sparkling Red)
	Application thickness	**See Note 1 below**
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**

Top coat (reverse face) (Optional)	Product reference	**See Note 1 below**
	Generic type	Fluorocarbon coating
	Name of manufacturer	
	Colour reference	"Clear"
	Number of coats	**See Note 1 below**
	Specific gravity	**See Note 1 below**
	Application thickness	**See Note 1 below**
	Application rate	30.8g/m^2
	Application method	Coil coated
	Curing process	Oven cure
	Flame retardant details	**See Note 2 below**
Mounting and fixing details		A calcium silicate substrate was butted up against the reverse face of the cassette.
Joint details		The specimens incorporated vertical and horizontal joints as detailed in EN 13823
Brief description of manufacturing process		**See Note 1 below**

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

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

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

3.1 Test reports.

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules & date
Warringtonfire	Mitsubishi Chemical Corporation	WF 419327, 419328, 419329, 419330, 419331, 419332, 419334, 419335	EN ISO 1716
Warringtonfire	Mitsubishi Chemical Corporation	WF 419761- ISSUE 3 WF 419762 - ISSUE 3	EN ISO 1716 Composite report
Warringtonfire	Mitsubishi Chemical Corporation	WF 422939 - ISSUE 2 (full) WF 422937, WF 422938 (indicative)	BS EN 13823
Warringtonfire	Mitsubishi Chemical Corporation	WF 417086	EN ISO 1182
Warringtonfire	Mitsubishi Chemical Corporation	WF 423088 – Issue 2	EN 15117

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - Max/ Mean (m)	Compliance with parameters
BS EN 13823	FIGRA $_{0.2MJ}$	3 (full) 1 (indic)	0.00 W/s (full) 0.00, 0.00 W/s (indicative)	Compliant
	FIGRA $_{0.4MJ}$		0.00 W/S (full) 0.00, 0.00 W/S (indicative)	Compliant
	THR $_{600s}$		0.38 MJ (full) 0.30, 0.34 MJ (indicative)	Compliant
	LFS		None (full) None (indicative)	Compliant
	SMOGRA		0.00 m^2s^2 (full) 0.00, 0.00 m^2s^2 (indicative)	Compliant
	TSP_{600s}		2.53 m^2 (full) 1.98, 6.31 m^2 (indicative)	Compliant
	Flaming droplets lasting > 10s		None (full) None (indicative)	Compliant
EN ISO 1716*	Top coating - PCS (b)	3	0.5955 MJ/m^2	Compliant
	Base coating – PCS (b)		0.6203 MJ/m^2 (Black) 0.5905 MJ/m^2 (White) 0.6380 MJ/m^2 (Red)	Compliant
	Primer coating- PCS (b)		0.2063 MJ/m^2	Compliant
	Aluminium - PCS (a)		Deemed to satisfy – (0.0000 MJ/kg)	Compliant
	Corrosion control coating – PCS (d)		0.1717 MJ/m^2	Compliant
	Adhesive – PCS (d)		1.1160 MJ/m^2	Compliant
	Core material – PCS (a)		0.5691 MJ/kg	Compliant
	Adhesive– PCS (d)		1.1160 MJ/m^2	Compliant
	Corrosion control coating– PCS (d)		0.1717 MJ/m^2	Compliant
	Aluminium - PCS (a)		Deemed to satisfy – (0.0000 MJ/kg)	Compliant
	Primer coating- PCS (b)		0.2063 MJ/m^2	Compliant
	Base coating – PCS (b)		0.6203 MJ/m^2 (Black) 0.5905 MJ/m^2 (White) 0.6380 MJ/m^2 (Red)	Compliant
	Top coating - PCS (b)		0.5955 MJ/m^2	Compliant
	Product as a Whole – PCS (e)	N/a	0.8643-0.9973 MJ/kg	Compliant

EN ISO 1182 - "ALPOLIC™ NC core"	Furnace thermocouple temperature rise	5	2.9 °C	Compliant
	Duration of sustained flaming (seconds)		None	Compliant
	Mass Loss (%)		33.96 %	Compliant
* Although the product does not demonstrate a PCS value of <2.0 MJ/kg for the external non-substantial components, they do demonstrate a total value of <2.0MJ/m^2. This is compliant with A1 Classification when used in conjunction with the A1 criteria for BS EN 13823 test performance, which is FIGRA <20 W/s, THR <4.0 MJ, LFS<End of specimen and s1 and d0 smoke and droplet criteria. The EN 1182 test on the "ALPOLIC™ NC core", the only substantial component that must demonstrate A1 performance by testing, proves the A1 Classification of the product.				

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.

4.2 Classification

The product, "ALPOLIC™ A1, ALPOLIC™ NC", an Aluminium composite panel, in relation to its reaction to fire behaviour is classified:

Reaction to fire classification: A1

4.3 Field of application

This classification is valid for the following end use applications:

i) Construction applications applied over any substrate with a minimum density of 870kg/m^3, having a minimum thickness of 11mm and a fire performance of A2-s1,d0 or better

ii) Air gap details – Any air gap size allowed between the back of the product and substrate

This classification is also valid for the following product parameters:

Base coat colour	Any variation allowed
Insulation thickness	Any variation allowed
Product composition	No further variation allowed
Product construction	No further variation allowed
Air gap details	Any air gap size allowed between panel and substrate
Joint details	Valid with and without vertical and horizontal joints

5. Limitations

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

SIGNED

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Euan Gardner
Certification Engineer
Technical Department

APPROVED

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Janet Murrell
Technical Manager
Technical Department
On behalf of **Warringtonfire**

ISSUE 2: Correction made to air gap allowance in field of application and product description. 19th May 2020. E Gardner.