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Testing. Advising. Assuring.

**Title:**

CLASSIFICATION OF  
REACTION TO FIRE  
PERFORMANCE  
IN ACCORDANCE WITH  
EN 13501-1:2007+A1: 2009.

**Notified Body No:**

0833

**Product Name:**

**Report No:**

195123

**Issue No:**

1

**Prepared for:**

Alubond Europe d.o.o,  
Aluminium Composite Panels  
Skadarska 73  
26000 Pancevo  
Serbia.

**Date:**

14<sup>th</sup> July 2010

## 1. Introduction

This classification report defines the classification assigned to “Alubond FR A2”, a coated aluminium composite panel, in accordance with the procedures given in EN 13501-1:2007+A1:2009.

## 2. Details of classified product

### 2.1 General

The product, “Alubond FR A2”, a coated aluminium composite panel, is defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

### 2.2 Product description

The product, “Alubond FR A2”, a coated aluminium composite panel, is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		Coated aluminium composite panel with a flame retardant grade core
Product reference of composite		“Alubond FR A2”
Colour reference of composite		“Grey”
Name of manufacturer of composite		Alubond Europe d.o.o.
Thickness of composite		4mm (stated by sponsor)
Weight per unit area of composite		8kg/m <sup>2</sup> (stated by sponsor)
Top coat product (test face)	Product reference	“Polyvinylidene fluoride (PVDF) Coating”
	Generic type	Polyvinylidene fluoride (PVDF)
	Name of manufacturer	<b>See Note 1 below</b>
	Colour reference	“Silver”
	Number of coats	One
	Specific gravity	1.6-1.8 (dry)
	Application rate (per coat)	0.07kg/m <sup>2</sup>
	Application thickness (per coat)	0.02mm
	Application method	Coil coating
	Curing process	30 seconds at 250°C
Flame retardant details		<b>See Note 2 below</b>
Primer	Product reference	“Primer”
	Generic type	Solvent based paint
	Name of manufacturer	<b>See Note 1 below</b>
	Colour reference	“White/Grey”
	Number of coats	One
	Specific gravity	1.42 (dry)
	Application rate (per coat)	0.02kg/m <sup>2</sup>
	Application thickness (per coat)	0.007mm
	Application method	Coil coating
	Curing process	30 seconds at 240°C
Flame retardant details		<b>See Note 2 below</b>

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Aluminium	Product reference	"Aluminium Coil"
	Generic type	Aluminium
	Name of manufacturer	<b>See Note 1 below</b>
	Thickness	0.5mm
	Weight per unit area	1.35kg/m <sup>2</sup>
	Density	2.7kg/m <sup>3</sup>
	Flame retardant details	The component is inherently flame retardant
	Pre-treatment details	Each face of the aluminium was coated with chromic acid to a thickness of 0.008mm before being cured at a temperature of between 120 and 150°C
Adhesive	Product reference	"Bonding film"
	Generic type	Low density polyethylene (LDPE) film
	Name of manufacturer	<b>See Note 1 below</b>
	Thickness	0.005mm
	Weight per unit area	0.093kg/m <sup>2</sup>
	Application method	Heat lamination
	Flame retardant details	<b>See Note 2 below</b>
Core	Product reference	"FR Core A2 Level"
	Detailed description / composition details	Aluminium hydroxide, magnesium hydroxide, calcium carbonate, glass fibre
	Name of manufacturer	<b>See Note 3 below</b>
	Thickness	3mm
	Weight per unit area	5.4kg/m <sup>2</sup>
	Density	1.7kg/m <sup>3</sup>
	Flame retardant details	<b>See Note 3 below</b>
Adhesive	Product reference	"Bonding film"
	Generic type	Low density polyethylene (LDPE) film
	Name of manufacturer	<b>See Note 1 below</b>
	Thickness	0.005mm
	Weight per unit area	0.093kg/m <sup>2</sup>
	Application method	Heat lamination
	Flame retardant details	<b>See Note 2 below</b>
Aluminium	Product reference	"Aluminium Coil"
	Generic type	Aluminium
	Name of manufacturer	<b>See Note 1 below</b>
	Thickness	0.5mm
	Weight per unit area	1.35kg/m <sup>2</sup>
	Density	2.7kg/m <sup>3</sup>
	Flame retardant details	The component is inherently flame retardant
	Pre-treatment details	Each face of the aluminium was coated with chromic acid to a thickness of 0.008mm before being cured at a temperature of between 120 and 150°C

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Primer (service coat) (Reverse face)	Product reference	"Protect Coating"
	Generic type	Solvent based paint
	Name of manufacturer	<b>See Note 1 below</b>
	Colour reference	"White/Grey"
	Number of coats	One
	Specific gravity	1.42 (dry)
	Application rate (per coat)	0.02kg/m <sup>2</sup>
	Application thickness (per coat)	0.05mm
	Application method	Coil coating
	Curing process	30 seconds at 250°C
	Flame retardant details	<b>See Note 2 below</b>
	Brief description of manufacturing process	This is a coil coating process where paint is transferred to aluminium coil and later cured in ovens and dried online.

**Note 1:** The sponsor of the test has provided this information but at the specific request of the sponsor, these details have been omitted from the report and are instead held on the confidential file relating to this investigation.

**Note 2:** The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the component.

**Note 3:** The sponsor was unwilling 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
Exova warringtonfire	Alubond Europe d.o.o	WF 195067	EN 13823
Exova warringtonfire	Alubond Europe d.o.o	WF 195068, 195069, 195071, 195072,	EN ISO 1716
Exova warringtonfire	Alubond Europe d.o.o	WF 195355	EN ISO 1716 Composite summary report

### 3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance parameters
EN 13823	FIGRA <sub>0.2MJ</sub>	3	0.00	Compliant
	FIGRA <sub>0.4MJ</sub>		0.00	Compliant
	THR <sub>600s</sub>		0.32	Compliant
	LFS		None	Compliant
	SMOGRA		0.00	Compliant
	TSP <sub>600s</sub>		35.21	Compliant
EN ISO 1716	PVDF coating Top coat (b)	3	1.3569	Compliant
	Primer (b)	3	0.2647	Compliant
	Aluminium (a)	3	0.0000	Compliant
	Adhesive Film (d)	3	3.9778	Compliant
	Core (a)	3	1.5413	Compliant
	Adhesive Film (d)	3	3.9778	Compliant
	Aluminium (a)	3	0.0000	Compliant
	Service coat primer (b)	3	0.2647	Compliant
For the product as a whole PCS (e)	Summary result	2.1372	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 13501-1:2007+A1:2009.

### 4.2 Classification

The product, "Alubond FR A2", a coated aluminium composite panel, in relation to its reaction to fire behaviour is classified:

**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 products excluding flooring and linear pipe thermal insulation is:

Fire Behaviour		Smoke Production				Flaming Droplets	
A2	-	s	1	,	d	0	

i.e. A2 – s1 , d0

**Reaction to fire classification: A2-s1, d0**

#### 4.3 Field of application

This classification is valid for the following end use applications:

- i) Wall and ceiling applications
- ii) Construction applications mechanically installed without the presence of a substrate with a minimum air gap of 180mm.

This classification is also valid for the following product parameters:

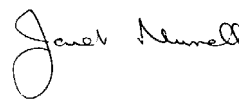
Product thickness	No variation allowed
Product weight per unit area	No variation allowed
Component thickness	No variation allowed
Component weight per unit area	No variation allowed
Product colour	No variation allowed
Product construction	No variation allowed
Product components	No variation allowed

**SIGNED**



.....  
**Matthew Dale**  
Certification Engineer

**APPROVED**



.....  
**Janet Murrell**  
Technical Manager  
For and on behalf of:  
**Exova Warringtonfire**

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