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Bellaterra: 6<sup>th</sup> September, 2016  
File number: **16/12569-1549 Part 2**  
Reference of the petitioner: **ALUCOPANEL MIDDLE EAST L.L.C.**  
National Industries Complex  
**P.O. Box 18022, Dubai-UAE**



Nº 9/LE895

Activities marked with (\*)  
are not covered by the  
ENAC accreditation

**CLASSIFICATION REPORT**

**1- CHARACTERISTICS OF THE PRODUCT**

Commercial product reference: ALUCOPANEL U.S.A FR-A2

**SAMPLE 1**

The product has eight layers:

- Layer 1: Coating-Polyvinylidene fluoride paint (PVDF), with 0.02 mm (first coat)/0.01 mm (second coat) in thickness, 0.07 kg/m<sup>2</sup> in superficial density and bright silver colour.
- Layer 2: Primer coating-Solvent based paint (Polyester (PE) coating), with 0.007 mm in thickness, 0.02 kg/m<sup>2</sup> in superficial density and white/grey colour.
- Layer 3: Aluminium (Aluminium Alloy Skin 3105 grade), with 0.5 mm in thickness and 2.7 g/cm<sup>3</sup> in density.
- Layer 4: Adhesive film (Bonding film), with 70 microns in thickness and 0.920 g/cm<sup>3</sup> in density.
- Layer 5: Mineral filled/flame retardant inorganic A2 core (FR Mineral Core/FR-A2), with 3 mm in thickness, 1.8 g/cm<sup>3</sup> in density and light green colour.
- Layer 6: Adhesive film (Bonding film), with 70 microns in thickness and 0.920 g/cm<sup>3</sup> in density.
- Layer 7: Aluminium (Aluminium Alloy Skin 3105 grade), with 0.5 mm in thickness and 2.7 g/cm<sup>3</sup> in density.
- Layer 8: Primer coating-Solvent based paint (Polyester (PE) coating), with 0.007 mm in thickness, 0.02 kg/m<sup>2</sup> in superficial density and white/grey colour.

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## SAMPLE 2

The product has eight layers:

- Layer 1: Coating-Polyvinylidene fluoride paint (PVDF), with 0.02 mm (first coat)/0.01 mm (second coat) in thickness, 0.07 kg/m<sup>2</sup> in superficial density and bright silver colour.
- Layer 2: Primer coating-Solvent based paint (Polyester (PE) coating), with 0.007 mm in thickness, 0.02 kg/m<sup>2</sup> in superficial density and white/grey colour.
- Layer 3: Aluminium (Aluminium Alloy Skin 3105 grade), with 0.5 mm in thickness and 2.7 g/cm<sup>3</sup> in density.
- Layer 4: Adhesive film (Bonding film), with 70 microns in thickness and 0.920 g/cm<sup>3</sup> in density.
- Layer 5: Mineral filled/flammé retardant inorganic A2 core (FR Mineral Core/FR-A2), with 5 mm in thickness, 1.8 g/cm<sup>3</sup> in density and light green colour.
- Layer 6: Adhesive film (Bonding film), with 70 microns in thickness and 0.920 g/cm<sup>3</sup> in density.
- Layer 7: Aluminium (Aluminium Alloy Skin 3105 grade), with 0.5 mm in thickness and 2.7 g/cm<sup>3</sup> in density.
- Layer 8: Primer coating-Solvent based paint (Polyester (PE) coating), with 0.007 mm in thickness, 0.02 kg/m<sup>2</sup> in superficial density and white/grey colour.

Manufacturer: ALUCOPANEL MIDDLE EAST L.L.C. Address: National Industries Complex – P.O. Box 18022, Dubai – UAE

## **2- CLASSIFICATION AND DIRECT APPLICATION FIELD**

This classification has been made in compliance with the procedures provided in Standard UNE-EN 13501-1:2007+A1:2010: "Classification in terms of the behaviour to fire of construction products and building elements. Part 1: Classification made from the data gathered during fire reaction tests".

### **2.1- Test Reports**

<b>Name of Laboratory</b>	Applus – LGAI
<b>Name of Petitioner</b>	ALUCOPANEL MIDDLE EAST L.L.C.
<b>Test Report Number</b>	16/12569-1549 Part 1
<b>Testing method</b>	UNE-EN ISO 1716:2011 UNE-EN 13823:2012+A1:2016

**2.2- Results of the Tests**

Test Method	RESULTS – SAMPLE 1 – Thickness 4 mm				
	CRITERIA CLASS A2	Nº TESTS	MEAN VALUE	COMPLIANCE	
UNE-EN ISO 1716:2011	PCS ≤ 3.0 MJ/Kg <sup>(A)</sup>	M <sub>2</sub>	3	0.00	YES
		M <sub>4</sub>	3	1.31	
		M <sub>6</sub>	3	0.00	
	PCS ≤ 4.0 MJ/m <sup>2</sup> <sup>(B)</sup>	M <sub>1</sub>	3	1.73	
		M <sub>7</sub>	3	0.12	
	PCS ≤ 4.0 MJ/m <sup>2</sup> <sup>(C)</sup>	M <sub>3</sub>	3	2.90	
		M <sub>5</sub>	3	2.90	
PCS ≤ 3.0 MJ/Kg <sup>(D)</sup>	-	-	1.77		
UNE-EN 13823:2012 +A1:2016	FIGRA <sub>0,2 MJ</sub> ≤ 120 W/s	3	17.19	YES	
	LFS < edge of the sample	3	< to edge	YES	
	THR <sub>600s</sub> ≤ 7.5 MJ	3	1.65	YES	
	<b>CRITERIA subclass 's1'</b>	<b>Nº TESTS</b>	<b>MEAN VALUE</b>	<b>COMPLIANCE</b>	
	SMOGR <sub>A</sub> ≤ 30 m <sup>2</sup> /s <sup>2</sup>	3	0.96	YES	
	TSP <sub>600s</sub> ≤ 50 m <sup>2</sup>	3	31.99	YES	
	<b>CRITERIA subclass 'd0'</b>	<b>Nº TESTS</b>	<b>MEAN VALUE</b>	<b>COMPLIANCE</b>	
	Fall of droplets/particles in flames within 600 s	3	NO	YES	

- (A) Substantial Component
- (B) Non Substantial External Component
- (C) Non Substantial Internal Component
- (D) Product as a whole

Test Method	RESULTS – SAMPLE 2 – Thickness 6 mm				
	CRITERIA CLASS A2	Nº TESTS	MEAN VALUE	COMPLIANCE	
UNE-EN ISO 1716:2011	PCS ≤ 3.0 MJ/Kg <sup>(A)</sup>	M <sub>2</sub>	3	0.00	YES
		M <sub>4</sub>	3	1.31	
		M <sub>6</sub>	3	0.00	
	PCS ≤ 4.0 MJ/m <sup>2</sup> <sup>(B)</sup>	M <sub>1</sub>	3	1.73	
		M <sub>7</sub>	3	1.31	
	PCS ≤ 4.0 MJ/m <sup>2</sup> <sup>(C)</sup>	M <sub>3</sub>	3	2.90	
		M <sub>5</sub>	3	2.90	
	PCS ≤ 3.0 MJ/Kg <sup>(D)</sup>	-	-	1.63	

UNE-EN 13823:2012 +A1:2016	FIGRA <sub>0.2 MJ</sub> ≤ 120 W/s	3	0.00	<b>YES</b>
	LFS < edge of the sample	3	< al borde	<b>YES</b>
	THR <sub>600s</sub> ≤ 7.5 MJ	3	0.29	<b>YES</b>
	<b>CRITERIA subclass 's1'</b>	<b>Nº TESTS</b>	<b>MEAN VALUE</b>	<b>COMPLIANCE</b>
	SMOGR <sub>A</sub> ≤ 30 m <sup>2</sup> /s <sup>2</sup>	3	0.00	<b>YES</b>
	TSP <sub>600s</sub> ≤ 50 m <sup>2</sup>	3	31.57	<b>YES</b>
	<b>CRITERIA subclass 'd0'</b>	<b>Nº TESTS</b>	<b>MEAN VALUE</b>	<b>COMPLIANCE</b>
	Fall of droplets/particles in flames within 600 s	3	NO	<b>YES</b>

- (A) Substantial Component
- (B) Non Substantial External Component
- (C) Non Substantial Internal Component
- (D) Product as a whole

### CLASSIFICATION

The product, ALUCOPANEL U.S.A FR-A2, related to their fire reaction behaviour, is classified as:

Fire Behaviour		Smoke Production		Drops in flames
A2	-	s	1	, d 0

#### Fire Reaction Classification: **CLASS A2-s1,d0**

**This classification is only valid for the final conditions of use described in the present report.**

### 2.3- Field of application (\*)

- This classification is valid for the following product parameters:

The classification is only valid for the product characteristics shown, and may extend to the following parameters:

- Variable parameter 1: SUBSTRATE

Having performed the tests with the product applied over the substrate of board of calcium silicate, with a density of 870 ± 50 kg/m<sup>3</sup>, a thickness of 11 ± 2 mm, the results are valid for substrates of final use of the classes A1 and A2-s1,d0, as it is indicated in the standard UNE EN 13238:2011.

- Variable parameter 2: AIR CHAMBER

Air chamber tested: 25 mm. The obtained results are also valid for smaller air chambers than the tested one, even without air chamber, because the presence of air chamber is considered the most unfavourable.

- Variable parameter 3: THICKNESS

Product with commercial reference: ALUCOPANEL U.S.A FR-A2 is manufactured in different thicknesses, with the thickness of the core layer as the variable parameter. After performing the test with the smallest thickness 4 mm and the greatest thickness 6 mm, noting that the results comply with the same classification, by extension it is concluded that:

The product range ALUCOPANEL U.S.A FR-A2 with a thickness between 4 mm and 6 mm, is included in the following Euroclass:

**Fire Reaction Classification: CLASS A2-s1,d0**  
**This classification is only valid for the final conditions of use described in the present report.**

- The classification is valid for the following final use applications:

Exterior façade architecture cladding of midrise and highrise towers. Interior wall, column and beam cladding. Ceiling application. Signage application.

## **2.4- Limitations**

This classification standard does not represent any type approval neither a product certification

Responsible of the fire laboratory  
LGAI Technological Center S.A.

Responsible Technician  
LGAI Technological Center S.A.

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The results refer exclusively to the samples tested at the time and under the conditions indicated.

The uncertainties expressed in this document pertain to the expanded uncertainty, which has been obtained by multiplying the typical measurement uncertainty by the coverage factor  $k=2$  which, for a regular distribution, corresponds to a coverage probability of approximately 95%.

**Applus+** guarantees that this task has been carried out in compliance with the requirements of our Quality and Sustainability System, and furthermore, that the contractual terms and legal regulations have been complied.

In the framework of our improvement programme, we would appreciate any comments you may deem appropriate. These should be addressed to the manager who signs this document, or to the Quality Director of Applus+, at the following address: [satisfaccion.cliente@applus.com](mailto:satisfaccion.cliente@applus.com)

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