

Bellaterra: 2nd May, 2018
File: **17/14442-971 M3 Part 2**
Petitioner's reference: **ALUCOIL, S.A.**
Poligono Industrial Bayas
C/ Ircio, Parc. R72-R77
09200 Miranda de Ebro
(Burgos)



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

Description of the modification: The point 2.3. Field of application has been modified.

The present report supersedes the test report number 17/14442-971 M2 Part 2 dated on 20th November, 2017. It is responsibility of the client to replace the original and all the copies.

CLASSIFICATION REPORT

1. - CHARACTERISTICS OF THE PRODUCT

Commercial reference of the product: LARSON A2

Composite panel composed of two aluminium sheets bonded by means of a A2 core, lacquered by both external faces, the product has a total thickness of 4 mm.

The product is composed of 7 layers:

- Layer 1: HQPE paint with a superficial density of 70 g/m² and dried extract of 47.5 g/m² and grey colour.

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- Layer 2: Aluminium with a thickness of 0.5 mm, density of 2720 kg/m³, superficial density of 1.36 kg/m², grey colour and smooth surface.
- Layer 3: Adhesive with a thickness of 0.05 mm, density of 938 kg/m³, superficial density of 4.69·10⁻² kg/m², transparent colour and smooth surface.
- Layer 4: A2 core with a thickness of 3 mm, density of 1.800 kg/m³, superficial density of 5.4 kg/m², white colour and smooth surface.
- Layer 5: Adhesive with a thickness of 0.05 mm, density of 938 kg/m³, superficial density of 4.69·10⁻² kg/m², transparent colour and smooth surface.
- Layer 6: Aluminium with a thickness of 0.5 mm, density of 2720 kg/m³, superficial density of 1.36 kg/m², grey colour and smooth surface.
- Layer 7: Greenish primer with a thickness of 1 µm and superficial density of 0.8 g/m².

Fixing system: The sample was fixed with screws and metallic anchors to calcium silicate board according to UNE-EN 13238:2011.

Installation system: Vertical riveted.

Larson A2® panels, machined to their final dimensions, are riveted to vertical omega-shaped aluminium profiles (LCH-1). These profiles are fixed to the building through punctual brackets (LCH-2) that can have different dimensions to balance the building construction tolerances.

Manufacturer: ALUCOIL, S.A. Address: P. I. Bayas, C/ Ircio, Parc. R72-R77 – 09200 MIRANDA DE EBRO (Burgos).

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

Name of Laboratory	Applus – LGAI
Name of Petitioner	ALUCOIL, S.A.
Test Report Number	17/14442-971 M2 Part 1
Testing method	UNE-EN ISO 1716:20111 UNE-EN 13823:2012+A1:2016

2.2- Results of the Tests

Test Method	RESULTS			
	CRITERIA CLASS A2	Nº TESTS	AVERAGE	COMPLIANCE
UNE-EN ISO 1716:20111	PCS ≤ 4.0 MJ/m ² (1)	12	1.91 MJ/m ²	YES
	PCS ≤ 3.0 MJ/kg (3)		0.00 MJ/kg	YES
	PCS ≤ 4.0 MJ/m ² (2)		2.08 MJ/m ²	YES
	PCS ≤ 3.0 MJ/kg (3)		1.74 MJ/kg	YES
	PCS ≤ 4.0 MJ/m ² (1)		0.15 MJ/m ²	YES
	PCS ≤ 3.0 MJ/kg (4)		0.69 MJ/kg	YES
UNE-EN 13823:2012 +A1:2016	FIGRA _{0.2 MJ} ≤ 120 W/s	3	0.00	YES
	LFS < edge of the sample	3	< to edge	YES
	THR _{600s} ≤ 7.5 MJ	3	0.29	YES
	CRITERIA subclass 's1'	Nº TESTS	AVERAGE	COMPLIANCE
	SMOGRA ≤ 30 m ² /s ²	3	0.00	YES
	TSP _{600s} ≤ 50 m ²	3	29.94	YES
	CRITERIA subclass 'd0'	Nº TESTS	AVERAGE	COMPLIANCE
Fall of droplets/particles in flames within 600 s	3	NO	YES	

- (1) Non substantial external component
- (2) Non substantial internal component
- (3) Substantial component
- (4) Product as a whole

CLASSIFICATION

The product, LARSON A2, related to its fire reaction behaviour, is classified as:

Fire Behaviour	-	s	Smoke Production	1	,	d	Drops in flames	0
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: METAL MATERIAL (aluminium, steel and stainless steel and copper)

After performing the test with the aluminium sheets and considering that:

- The four components are not combustible and classified as A1 in accordance with the European Commission 96/603/CE
- Melting point of aluminium is approx. 660 °C
- Melting point of steel is approx. 1400 °C
- Melting point of stainless steel is approx. 1400 °C
- Melting point of copper is approx. 1085°C.

it can be concluded by extension that the LARSON A2 products with the four metal materials can be included in the same Euroclass.

- Variable parameter 2: PAINT FINISHING

Products with the commercial reference LARSON A2 are manufactured with different kind of paint finishing.

After performing the study on report 16/12641-1471 of the three paint finishing in existence (HQPE, PVDF 2L COASTAL and PVDF 3L COASTAL) and having determined which one is the most unfavourable (HQPE), the test was completed over that finishing. The obtained results are valid for all of these mentioned paint finishing.

- Variable parameter 3: SUBSTRATE

After performing the test with the product fixed on calcium silicate with 11 ± 2 mm in thickness and 870 ± 50 kg/m³ in density, the obtained results are valid for substrates of classes A1 and A2-s1,d0, according to standard UNE-EN 13238:2011.

- Variable parameter 4: FIXING SYSTEM

The products with the commercial reference LARSON A2, are manufactured with different types of fixing system.

After carrying out the most unfavorable fixing system tests, by extension, it is concluded that LARSON A2 product for both fixing systems:

Vertical riveted
Cassette system

They are included with the same euroclass.

Study carried out in the reports with file number 16/12641-1552 issued on September 29, 2016 and file number 18/16240-82 issued on January 18, 2018.

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

Architectural facades.

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. (APPLUS)

Responsible of Reaction to Fire
LGAI Technological Center S.A.(APPLUS)

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

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 with.

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
