

# larson®



**Composite panels for architectural envelopes**

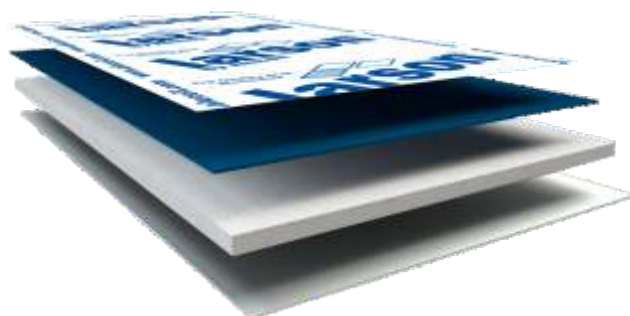


**Alucoil®**

Grupo Alibérico

# larson® FR

Fire class architectural **B-s1, d0** according EN 13501-1



1. Protective film
2. **Coated aluminium**
3. Mineral FR Core
4. **Aluminium with protection primer**



**larson® FR** aluminium composite panel, is a high-tech product for architectural façade cladding. It is formed with two aluminium sheets, 5005 alloy, bonded by a mineral fire retardant (FR) core. **Alucoil®** has developed a core that delays panel combustion which allows this material to achieve **B-s1, d0** classification, according to the EN 13501-1 standard.

## Panel features

	<b>larson® FR</b>
<b>Panel thickness</b>	3 / 4 / 6 (mm)
<b>Panel weight</b>	6,14 / 7,78 / 11,06 (kg/m <sup>2</sup> )
<b>Aluminium thickness</b>	0,5 (mm)
<b>Moment of inertia (I)</b>	1583 / 3070 / 8630 (mm <sup>4</sup> /m)
<b>Rigidity (EI)</b>	1108 / 2150 / 6041 (kNcm <sup>2</sup> /m)
<b>Standard width</b>	1000 - 1250 - 1500 (mm)
<b>Min. / max. length</b>	2000 - 8000 (mm)
<b>Core</b>	MINERAL FIRE RETARDANT
<b>Reaction to fire test</b>	<b>B-s1, d0<sup>(2)</sup></b> EN 13501-1 BS 8414-1 <sup>(3)</sup> Full scale test NFPA 285 <sup>(4)</sup> Full scale test

## Aluminium features

<b>Modulus of elasticity (E)</b>	70000 (N/mm <sup>2</sup> )
<b>Ultimate tensile strength (R<sub>m</sub>)</b>	125 < R <sub>m</sub> < 185 (N/mm <sup>2</sup> )
<b>Elasticity limit (R<sub>p0,2</sub>)</b>	> 80 (N/mm <sup>2</sup> )
<b>Elongation (A)</b>	> 3 (%)
<b>Standard aluminium alloy</b>	5005 <sup>(1)</sup> EN 573-3
<b>Aluminium thermal expansion</b>	2,3 mm/m Δ100°C
<b>Coated surface</b>	a) <b>PVdF 2L Coastal</b> 31μ b) <b>NEW fluorlac®</b> Feve Lumiflon 25μ c) <b>DG5</b> High Durable Polyester: <b>DG5 2L Coastal</b> 35μ & <b>DG5 3L Coastal</b> 55μ

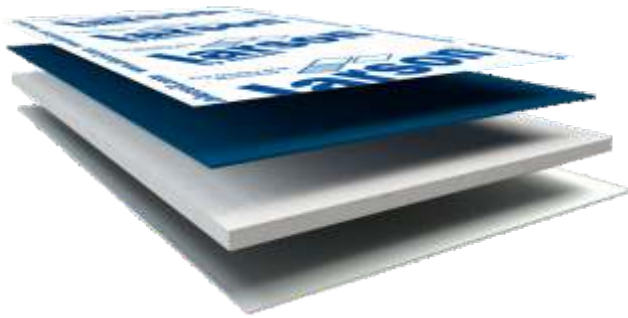
<sup>(1)</sup>Other alloys available. Alunatural finishes - alloy 3000. <sup>(2)</sup>Alucoil®'s vertical riveted & 45mm cassette installation systems. <sup>(3)</sup>Details of tested constructive system appear in Tecnalia's 070717-002A report.

<sup>(4)</sup>Details of tested constructive system appear in Intertek's 102936114SAT-004B report. Extended technical data sheet available upon request.

Some of the information that appears in the catalogue could be estimated or extrapolated. Please request with Alucoil®'s technical department to confirm exact values to be used in specific calculations or projects.

# larson® A2

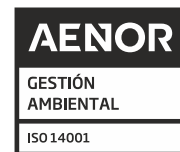
Fire class architectural **A2-s1, d0** according EN 13501-1



1. Protective film
2. Coated aluminium
3. Mineral A2 Core
4. Aluminium with protection primer



ER-0726/2011



GA-2011/0356



**larson® A2** is the new aluminium composite panel developed by **Alucoil**'s R&D department for architectural cladding. This panel has been developed to be used in those countries whose regulations prevent the use of other types of composite panels which don't achieve the A2-s1, d0 fire class.

## Panel features

	<b>larson® A2</b>
<b>Panel thickness</b>	4 (mm)
<b>Panel weight</b>	8,25 (kg/m <sup>2</sup> )
<b>Aluminium thickness</b>	0,5 (mm)
<b>Moment of inertia (I)</b>	3070 (mm <sup>4</sup> /m)
<b>Rigidity (EI)</b>	2150 (kNcm <sup>2</sup> /m)
<b>Standard width</b>	1250 - 1500 (mm)
<b>Min. / max. length</b>	2000 - 8000 (mm)
<b>Core</b>	MINERAL A2
<b>Reaction to fire test</b>	<b>A2-s1, d0</b> <sup>(2)</sup> EN 13501-1 BS 8414-2 <sup>(3)</sup> Full scale test

## Aluminium features

<b>Modulus of elasticity (E)</b>	70000 (N/mm <sup>2</sup> )
<b>Ultimate tensile strength (R<sub>m</sub>)</b>	125 < R <sub>m</sub> < 185 (N/mm <sup>2</sup> )
<b>Elasticity limit (R<sub>p0,2</sub>)</b>	> 80 (N/mm <sup>2</sup> )
<b>Elongation (A)</b>	> 3 (%)
<b>Standard aluminium alloy</b>	5005 <sup>(1)</sup> EN 573-3
<b>Aluminium thermal expansion</b>	2,3 mm/m Δ100°C
<b>Coated surface</b>	a) <b>PVdF 2L Coastal</b> 31μ b) <b>NEW fluorlac®</b> Feve Lumiflon 25μ c) <b>DG5 High Durable Polyester: DG5 2L Coastal</b> 35μ & <b>DG5 3L Coastal</b> 55μ

<sup>(1)</sup>Other alloys available. Alunatural finishes - alloy 3000. <sup>(2)</sup>Alucoil®'s vertical riveted & 45mm cassette installation systems. <sup>(3)</sup>Cassette installation system. Some of the information that appears in the catalogue could be estimated or extrapolated. Please request with Alucoil®'s technical department to confirm exact values to be used in specific

# Coating possibilities

**PVDF (Polyvinylidene Fluoride).** Coating based on PVDF resins (Kynar and Hylar as main brands) with extraordinary performance.

Nominal paint thickness:

- a) **PVDF 2L Coastal:** 31  $\mu$  approx.
  - Gloss levels from 20 to 40 g.u.
  - Excellent colour stability, almost no chalking and very good chemical resistance.
  - Great protection against weathering, UV radiation and atmospheric contaminants.
  - Outstanding flexibility for profiling, bending and roll forming.
  - Recommended for demanding environments like industrial and coastal areas, airports, etc.

**DG5 (High Durable Polyester).** Coating based on HDP resins.

Nominal paint thickness:

- a) **DG5 2L Coastal:** 35  $\mu$  approx, (depending on the colour)
- b) **DG5 3L Coastal:** 55  $\mu$  approx, (depending on the colour)
- c) **DG5:** 25  $\mu$  approx.
  - Gloss levels from 10 to 90 g.u.
  - Outstanding protection against weathering, UV radiation and atmospheric contaminants.
  - Excellent hardness and flexibility for profiling, bending and roll forming.

**PUR/PA (Polyurethane/Polyimide).** Coating based on polyurethane resins.

- Very flexible and good formability.
- Good chemical resistance.
- Outstanding scratch resistance and high abrasion resistance.
- Good substrate adhesion: also used in primer systems.

## NEW fluorlac® Coating for larson® panels

FEVE LUMIFLON 2 LAYERS. Lumiflon fluoropolymer resins based coating with a nominal thickness of 25 $\mu$ , (depending on the colour).

### COLOURS:

- RAL & NCS colour charts with matt, satin and high gloss finishes.
- Matched colours.

### QUANTITIES:

- **Orders from 75 sqm.**
- Panel dimensions:
  - a) **larson® FR** (orders from 75 m<sup>2</sup> till 300 m<sup>2</sup>):
    - 1575x5000 mm / 1575x4000 mm
    - 1500x5000 mm / 1500x4000 mm / 1500x3200 mm
    - 1250x5000 mm / 1250x4000 mm / 1250x3200 mm
  - b) **larson® A2** (orders from 75 m<sup>2</sup> till 500 m<sup>2</sup>):
    - 1500x5000 mm / 1500x4000 mm
    - 1250x5000 mm / 1250x4000 mm

### SERVICES:

- Very short delivery times, **2-3 weeks.**
- One face coated with a protective film of 100 $\mu$  thick.

### Other characteristics:

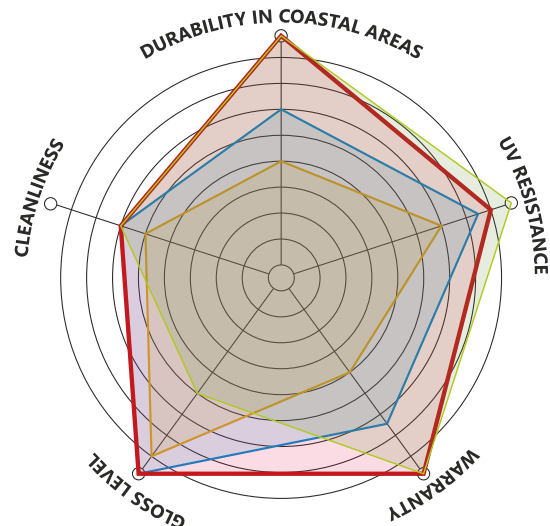
- Excellent weatherability and chemical resistance.
- High abrasion resistance.

PVDF COASTAL PRIMER 2L: 31 $\mu$

fluorlac® FEVE LUMIFLON 2L: 25 $\mu$

DG5 2L (HDP): 35 $\mu$

PUR/PA: 16 $\mu$  (alunatural finishes)



# larson® Metals

**larson® Metals** is the range of composite panels by **Alucoil®** in which the sheets of metal that form the panel can be stainless steel, copper, brass or zinc. These products transmit truth, they are ecological as there is no surface treatment and living because they allow the evolution of the metal with the usual flatness of **Alucoil®** panels.

# larson® Perforated

**We can guarantee the bond integrity for perforated applications**

The ability to perforate and warrant **larson® FR** metal composite panels is a reality, opening up design possibilities unimaginable until now with a plethora of perforation combinations at your disposal. Whether by CNC or Press processes, **Alucoil®** offers the possibility to utilize round, square, triangular, star, and many other shapes in different perforation sizes and patterns. As well as its use for wall cladding, the use of perforated composite panels for internal applications is a clear commitment to modern design. A warranty requires prior analysis of project specifics by **Alucoil®** in advance and is limited to panels manufactured in Miranda de Ebro, Spain.

High quality 5005 series aluminum alloy - Corrosion & resistant pretreatment - Exceptional bond strength (doubling the standard set forth by industry parameters for wall cladding) - Double sided coated panels - Perforated ceiling panels - Multiple perforation patterns



## Installation systems - Certifications

**larson®** can be easily machined, transformed, drilled, perforated or curved. Its strength by design does not however limit its breadth of design capabilities. **Alucoil®** offers several installation systems for composite panels recognized under the CE marking, being the first company in the world to obtain that designation. **Alucoil®** has five installation systems tested with **larson®** panels. LCH-1, LC-2 and LC-4/LC-6 are used to install cassette. The **riveted system** and the LC-9 (**glued**) are used to install panels without a returned system. Additionally, **Alucoil®** has several certifications worldwide such as ETA (European Technical Assessment – valid in 34 countries), EPD (Environmental Product Declaration), DIT, Avis Technique, LNEC, BBA, DIBt, VKF, Intertek North America.

[Verify field of application by certification and product.](#)



ETA 14/0010 - **Alucoil®** Suspended Cassette  
 ETA 14/0010 - **Alucoil®** Riveted Boards  
 ETA 18/0712 - **larson® A2** composite panel



DOCUMENTO DE IDONEIDAD TÉCNICA Nº 405P/15  
**larson®** Suspended Cassettes  
**larson®** Riveted Boards

Manufactured by: **Alucoil®** S.A.U. - Product: **larson®**



QB 15-Built-up cladding products  
**larson®** Suspended Cassettes  
 Nº 64-79 & Nº142-153



2.2/14-1643\_V3 issued 16/12/2020  
 2.2/11-1469\_V3 issued 24/09/2020

## MONUMENTAL ARCHITECTURE



1. Cité des Civilisations du Vin (Bordeaux, France)  
Architect: X-TU
2. SPM (Nieuwkuijk, Holland)  
Architect: De Twee Snoeken te's-Hertogenbosch
3. EHPAD (Paris, France)  
Architect: TOA Architectures
4. Weybridge Business Park (Surrey, UK)  
Architect: Scott Brownrigg
5. Barco headquarters (Kortrijk, Belgium)  
Architect: Jaspers-Eyers Architects
6. Torre GAIA (Tarrasa, Spain)  
Architect: Mestura Arquitects
7. Ukrainian Catholic (Lviv, Ukraine)  
Architect: Behnisch Architekten



**NEW** [alucoilfacadedesign.com](http://alucoilfacadedesign.com)

It is a web app designed to create through simple tools unique and possible designs. In just a few steps the user can see how different geometric shapes, desired colour and height of the building will look like in their project, starting from scratch or using templates developed from existing buildings.

## HOTELS

1. Hotel D'agglomeration (Bayonne, France). Architect: Gardera-D
2. Marriot Hotel (Portsmouth, United Kingdom). Architect: Satellite Architects
3. Moxy Hotels in Germany (Oberding Munchen / Eschborn Frankfurt / Andreasstrasse Berlin)



## HOUSING

Torre Bolueta (Bilbao, Spain)  
Architect: VARQUITECTOS



## AIRPORTS

Marrakech-Menara (Morocco)



## [alucoildesign.com](http://alucoildesign.com)

**Alucoil®** has a website where the client can find more about projects that have been completed. It is a showroom for projects and available finishes, where you can consult the material, colour, year of construction and the architect of the project, as well as the exact location. In addition, it offers the client a virtual introduction to the range of finishes and colours available from **Alucoil®**, as well as the new developments that are constantly being made in the different paint qualities available.



# Alucoil® Design

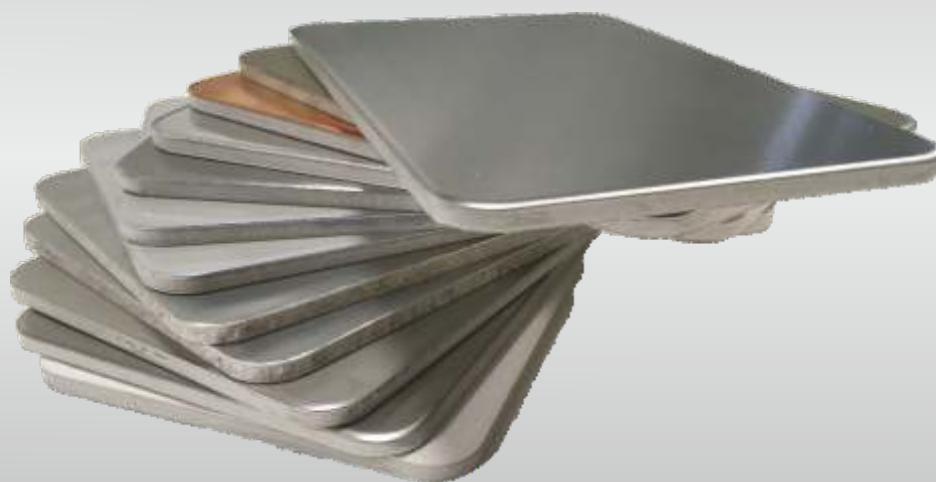
Grupo Alibérico

Endless Architectural Design Possibilities



[www.alucoildesign.com](http://www.alucoildesign.com)

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