

larson®

Metal panels for architectural envelopes



Alucoil®

Grupo Alibérico

larson® FR



1. Protective film
2. **Aluminium**
3. Mineral FR Core
4. **Aluminium**



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

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.

larson® has the widest range of coated finishes in the market from the highest quality in liquid PVdF 70% Kynar 500 2 layers with COASTAL PRIMER 31µ or 3 layers 37µ.

Panel features

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

Aluminium features

Modulus of elasticity (E)	70000 (N/mm ²)
Ultimate tensile strength (R_m)	125 < R _m < 185 (N/mm ²)
Elasticity limit (R_{p0,2})	>80 (N/mm ²)
Elongation (A)	>3 (%)
Aluminium alloy	5005 ⁽¹⁾ EN 573-3
Aluminium thermal expansion	2,3 mm/m Δ100°C
Coated surface	a) PVdF 70% kynar 500 2 layers COASTAL PRIMER 31µ b) PVdF 70% kynar 500 3 layers 37µ

⁽¹⁾Alunatural finishes - alloy 3000. ⁽²⁾**Alucoil®**'s vertical riveted & 45mm cassette installation systems. ⁽³⁾Details of tested constructive system appear in Tecnalia's 070717-002A report. ⁽⁴⁾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



1. Protective film
2. **Aluminium**
3. Mineral A2 Core
4. **Aluminium**

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

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

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

Aluminium features

Modulus of elasticity (E)	70000 (N/mm ²)
Ultimate tensile strength (R_m)	125 < R _m < 185 (N/mm ²)
Elasticity limit (R_{p0,2})	>80 (N/mm ²)
Elongation (A)	>3 (%)
Aluminium alloy	5005 ⁽¹⁾ EN 573-3
Aluminium thermal expansion	2,3 mm/m Δ100°C
Coated surface	a) PVdF 70% kynar 500 2 layers COASTAL PRIMER 31μ b) PVdF 70% kynar 500 3 layers 37μ

⁽¹⁾Alunatural finishes - alloy 3000. ⁽²⁾Alucoil®'s vertical riveted & 45mm cassette installation systems. ⁽³⁾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 calculations or projects.

larson® Metals

Stainless Steel composite panel
Copper composite panel
Brass composite panel
Zinc composite panel



1. Protective film
2. **Metal**
3. Mineral A2/FR core
4. **Metal**

Product	Metal sheets	Standard surface finish	Fire reaction classification
larson® A2 Metals	Stainless steel	AISI 316ext / AISI 304int	Class A2-s1, d0 ⁽³⁾ EN 13501-1
	Copper	Natural Copper Cu-DHP	
	Brass	Natural Brass CuZn30/CW505L	
	Zinc	Zinc Zn 99,995	
larson® FR Metals	Stainless steel	AISI 316ext / AISI 304int	Class B-s1, d0 ⁽³⁾ EN 13501-1
	Copper	Natural Copper Cu-DHP	
	Brass	Natural Brass CuZn30/CW505L	
	Zinc ⁽⁴⁾	Zinc Zn 99,995	

⁽³⁾ Alucoil's vertical riveted & 45mm cassette installation systems. ⁽⁴⁾ Product not specifically tested. Same FR core composition as larson® FR 405 (3 mm of FR core), classified B-s1, d0 according to EN 13501-1 for Alucoil® vertical riveted & 45 mm cassette installation systems.

Dimensional characteristics	Panel thickness (tolerance -0/+0,2mm)	Metal thickness External / Internal	Panel weight (kg/m ²)	Standard width (tolerance -0/+2,5mm)
larson® A2/FR Metals stainless steel	4 mm	0,23 ⁽¹⁾ / 0,23 mm	A2: 10,12 kg/m ² FR: 9,62 kg/m ²	1000, 1200, 1250 mm
larson® A2/FR Metals copper	4 mm	0,3 / 0,3 mm	A2: 11,57 kg/m ² FR: 11,09 kg/m ²	1000, 1250 mm
larson® A2/FR Metals brass	4 mm	0,5 / 0,5 mm	A2: 13,99 kg/m ² FR: 13,58 kg/m ²	1000 mm
larson® A2/FR Metals zinc	4 mm	0,5 / 0,5mm	A2: 12,69 kg/m ² FR: 12,28 kg/m ²	1000 mm

⁽¹⁾The external sheet thickness of the Stainless Steel Brilliant BA AISI 316 is 0,25mm. Length min./max. (tolerance -0/+20mm): 2000/8000mm

Mechanical characteristics	Moment of inertia (I)	Rigididy (EI)	Modulus (W)	T-Bend routed panel (min. recommended)
larson® A2/FR Metals stainless steel	1446 mm ⁴ /m	2981 kNcm ² /m	723 mm ³ /m	≥2
larson® A2/FR Metals copper	2017 mm ⁴ /m	2662 kNcm ² /m	1008 mm ³ /m	≥2
larson® A2/FR Metals brass	3070 mm ⁴ /m	3748 kNcm ² /m	1535 mm ³ /m	≥2
larson® A2/FR Metals zinc	2790 mm ⁴ /m	2511 kNcm ² /m	1595 mm ³ /m	≥2

External metal sheet features	Stainless steel	Copper	Brass	Zinc
Alloy	AISI 316	Cu-DHP EN 1172	CuZn 30/CW505L	Z1(>99,995) EN 988
Ultimate tensile strength (R _m)	>550 (N/mm ²)	240<R _m <300 (N/mm ²)	290<R _m <400 (N/mm ²)	>150 (N/mm ²)
Yield strength (R _{p0,2})	>200 (N/mm ²)	>140 (N/mm ²)	<200 (N/mm ²)	>100 (N/mm ²)
Elongation (A)	>20 %	>8 %	>36 %	>35 %
Modulus of elasticity (E)	200000 (N/mm ²)	132000 (N/mm ²)	110000 (N/mm ²)	90000 (N/mm ²)
Thermal expansion (α)	1,6 (mm/m Δ100°C)	1,7 (mm/m Δ100°C)	2 (mm/m Δ100°C)	2,2 (mm/m Δ100°C)
Density (ρ)	8000 (kg/m ³)	8900 (kg/m ³)	8600 (kg/m ³)	7200 (kg/m ³)

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.

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 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

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



2



3



4



5



6



7

Paint against graffiti Fastclean

COATING APPLIED OVER PANEL - DIRT REPELLENT ON FAÇADES - WATER PROOF PROPERTIES

Fastclean is the solution for every architect and project which wants to protect a building against graffiti and pollutants such as dust and dirt build-up. **Fastclean** is a PVdF 3 coat paint utilizing a special 12-15µ thick FEVE clear coat (Fluoroethylene / Vinyl Ether) with special additives which provide "easy to clean" properties.

HOTELS

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



HOUSING

Torre Bolueta (Bilbao, Spain)
Architect: VARQUITECTOS



AIRPORTS

Marrakech-Menara (Morocco)



PVDF 2 layers with COASTAL PRIMER is our standard liquid paint. COSTAL PRIMER is a special primer treatment for aggressive environments with a total thickness of 31 microns applied in combination with a PVDF Kynar 500 70%. COASTAL PRIMER is a special coating resulting from 17 years of experience and innovation in the manufacture of aluminium composite and honeycomb panels with projects supplied in over 50 countries. It's applied over the full range of PVdF 2 layer system standard colours, and optional in other finishes.



Alucoil® Design

Grupo Alibérico

Endless Architectural Design Possibilities



www.alucoildesign.com

larson®



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