

ALUCOPANEL®



# Technical Data Sheet

**FR**

# ALUCOPANEL® FR

## COMPOSITION

**ALUCOPANEL® FR** is composed of two sheets of High Grade 3105 aluminum alloy H16 temper with 0.50 mm thickness on Top (Coated with high quality PVDF paint comes in various finishes such as Solid Colors & Metallic colors) & bottom (primer coated) that is sandwiched with mineral filled / flame retardant core material, thus

**ALUCOPANEL® FR** achieved limited combustible reaction to fire classification “Class B -s1, d0” when tested in accordance to European Standard EN 13501-1, this product is suitable for 23-meter below building as low-rise, Mid-rise, Industrials, Warehouse and for a non-crowded structures as mandatory requirement in U.A.E as per Latest Edition of U.A.E Fire & Life Safety Guidelines.

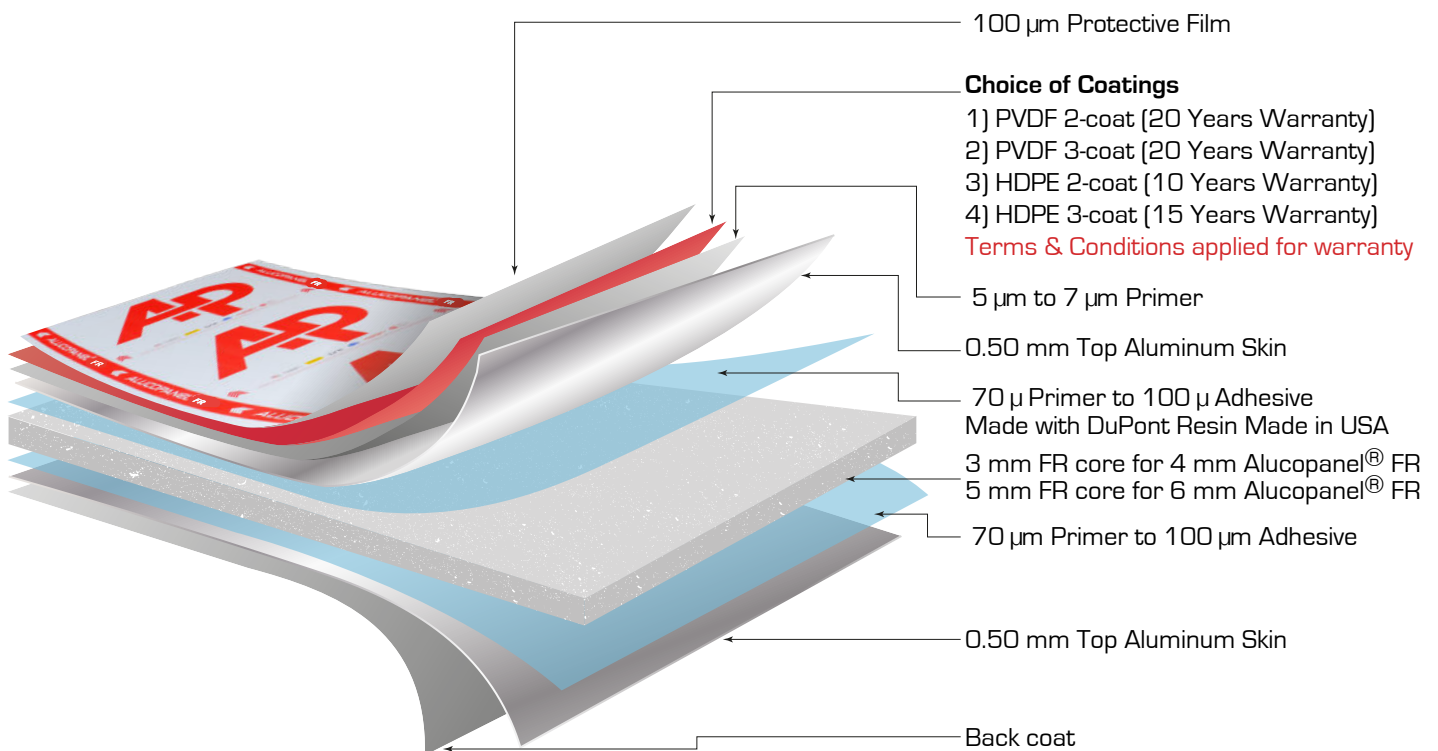
### **THICKNESS:**

4 mm  
6 mm

### **PANEL WEIGHT:**

7.0 to 7.8 Kgs/m<sup>2</sup>,  
10.0 to 10.8 Kgs/m<sup>2</sup>

## Composition of ALUCOPANEL® FR



## COMPLIANCE WITH LATEST EDITION OF UAE FIRE & LIFE SAFETY GUIDELINES

Latest Edition of UAE Fire & Life Safety Guidelines has clearly defined Fire test requirements on products, which are as follows:

- 1) EN 1-13501
- 2) ASTM E84
- 3) ASTM D1929

From the above-mentioned fire testing standards, EN 1-13501 is the main fire test which is very lengthy and stringent as in this particular test, not only ACP as a product being tested but all components of ACP goes through the testing which starts from the testing of calorific value of coating applied, aluminum skin, adhesive film, flame retardant core material etc and only after passing all the test, aluminum composite material gets its classification which are based on 3 criteria:

- 1) Contribution to fire with results going from A to D
- 2) Smoke opacity from s1 to s3
- 3) Droplets from d0 to d2

Below chart for more understanding of reaction to fire classification in accordance to EN 13501-1:

Latest Edition of UAE Fire & Life Safety Guidelines	Classification	Smoke opacity	Droplet	
1. Super High-rise building 2. High-rise building 3. Malls 4. Theme Parks 5. Schools 6. Hospitals 7. Assembly	<b>A1</b>	s1	d0	<b>Zero combustion</b> non-combustible products
	<b>A2</b>	s1	d0	
		s2	d1	
		s3	d1	
8. Low-rise building 9. Mid-rise building 10. Warehouse 11. Industrial	<b>B</b>	s1	d0	<b>Limited contribution</b> Hardly combustible products
		s2	d1	
		s3	d2	
not allowed	<b>C</b>	s1	d0	<b>Moderate Contribution</b> Moderately combustible products
not allowed		s2	d1	
		s3	d2	
not allowed	<b>D</b>	s1	d0	Moderately combustible products
		s2	d1	
		s3	d2	

As far as ASTM E84 fire test requirements are concerned, 4 mm and 6 mm **ALUCOPANEL® FR** have gone through the test & certification requirements and passed as Class A for its surface burning characteristics.

With regards to ASTM D1929 fire test requirements are concerned 4 mm & 6 mm **ALUCOPANEL® FR** is having self & flash ignition temperature of **896°F (480°C)** as composite panel and **1058°F (570°C)** for its 3 mm and 5 mm Core material itself that is in compliance with Latest Edition of UAE Fire & Life Safety Guidelines which mandates to have self & flash ignition temperature of minimum 343°C, hence **ALUCOPANEL® FR** and its core are much more greater then required.

After going through fire test requirements on **ALUCOPANEL® FR** products, we have developed several Closed-Joint Façade Systems that are all tested and certified in accordance to NFPA 285. Please get in touch with our Technical Team for the specification and drawing of assemblies which are listed with UAE Civil Defence.

## **DIMENSION**

**ALUCOPANEL® FR** is available in various dimensions however standard panel size is 4 mm X 1250 mm X 3200 mm

Other custom sizes can be produced upon request:

<b>Dimension</b>	<b>Unit</b>	<b>Standard</b>	<b>Non Standard</b>
Width	mm	1250	1000 mm and 1500 mm
Length	mm	3200	≤ 6000
Thickness	mm	4	6

## **TOLERANCES**

Dimensional / Standard Size (Rounded)

Thickness: ± 0.20 mm

Width: ± 2.0 mm

Length: ± 2.0 mm

Squareness: 5 mm maximum

Color Difference Between batches: ≤ ΔE 2.0 in accordance to ISO 7724-3 (EN 1396:1996)

### **IMPORTANT NOTE**

- 1) Above color amples displayed are for reference only, before ordering please double check the color of actual material.
- 2) To avoid possible reflection differences, it is imperative to install the panels in the same direction as marked on protective film.
- 3) Please order the total requirements for one particular building in a single order, for metallic and solid colors, an optical change of color shade may occur due to the metallic particles of these lacquers.

**Tolerance in Quantity:** +/- 2% Subject to Production run

## PHYSICAL PROPERTIES

Name	Unit	Thickness	
		4 mm	6 mm
Density	g/cm <sup>3</sup>	1.95	1.80
Weight	kg/m <sup>2</sup>	7.0 to 7.8	10.0 to 10.8

## BENDING LIMIT

**ALUCOPANEL® FR** can be bent in a Press Break or 3-roll bending machine. Kindly share the design requirement with our Technical Team and we will guide you on bending limit.

## PERFORATION

**ALUCOPANEL® FR** can be perforated with high precision machineries but perforated areas are not recommended to bend. Kindly get concurrence with our Technical Team if you have perforation application and based on our approval only proceed for application else product warranty will be null and void.

## THERMAL CONDUCTIVITY

Compared to solid materials **ALUCOPANEL® FR** has a lower thermal conductivity the table below shows the thermal conductivity comparison of different materials.

MATERIAL	Thermal Conductivity (W/(mK))
4 mm ALUCOPANEL® FR	0.13
6 mm ALUCOPANEL® FR	0.10
4 mm to 25 mm Aluminum honeycomb composite panel	0.73 - 2.7
0.20 mm to 6 mm Solid Aluminum	190

**Note:** For U-value calculations of Wall Assemblies please get in touch with our Technical Team.

## COATING FINISHES

Aluminum Coil Alloy (3000 Series) are coated with based Polyvinylidene Fluoride (PVDF) utilizing with minimum 70% resin) or another kind of coating being applied are High Durable Polyester (HDPE) Coatings. These totally depend on color requirements by the client.

Metallic & Solid colors are normally Two (2) coat system consisting Primer & Polyvinylidene fluoride color coat; in conformance with the following general requirements of AAMA 2605. Please refer to the Technical approval by DCL – Dubai Municipality and associated Test reports.

Note: Custom color can be developed if required by Client / Consultant / Architect / Project Engineer.

## **SRI & LRV VALUES OF ALUCOPANEL® STANDARD COLORS**

Code	Color Name	SRI Solar Reflectance Index	LRV% Light Reflection value
M01	Bright Silver	69	59.6
M02	Champagne Gold	56	47.04
M03	Metallic Brass	64	44.01
M04	Matt Silver	59	50.88
M06	Jade Metallic	49	41.53
M07	Champagne Silver	57	48.6
M08	Metallic Bronze	51	43.82
M09	Metallic Gold	65	50.89
M10	Brushed Silver	82	74.34
M12	Rose Metallic	53	51.81
M13	Blue Metallic	45	34.17
M21	Raw Grey	13	17.68
M33	Smoke Silver	42	38.94
M43	Metallic Black	2	4.3
M70	Pearl White	87	75.99

Code	Color Name	SRI Solar Reflectance Index	LRV% Light Reflection value
S17	Pure Yellow	70	45.98
S18	Signal Red	48	12.46
S19	Sea Blue	15	9.7
S20	Dark Blue	6	7.26
S22	Rat Grey	8	15.19
S24	Natural Green	11	11.99
S25	White	77	66.96
S26	Apricot White	77	64.48
S27	Ivory White	72	64.42
S28	Pure White	84	71.94
S30	Coal Black	-2	4.93
S37	Burgundy	9	7.94
S40	Azure Blue	39	16.65
S41	Pure Orange	61	23.45
S42	Purple Blue	24	8.1
S81	Coffee Brown	4	7.46

\* Test Reports/Results were provided by Beckers Group -Becker Industrial Coatings LLC, available upon request.

## **INSTALLATION INSTRUCTION**

The Buyer MUST install the product as per the approved assembly drawing registered by Civil Defence, installer must not deviate any components/products unless written approval from Civil Defence.

Compliance: All relevant Fire Test Certifications / drawings are available in downloadable format at Sellers website: [www.alucopanel.net](http://www.alucopanel.net) , Main Consultant or Fire Consultant (if any) must submit Undertaking Letter as per the format issued by Civil Defence to obtain NOC prior to installation of products & its assemblies.

Technical Support: The seller provides Technical Training for proper installation of the assembly and guide installers to replicate the assembly same way it has been tested in fire, passed and approved by Civil Defence.

## **PRODUCT WARRANTY**

ALUCOPANEL® FR Aluminum Composite Panels manufactured by Alucopanel Middle East LLC will be warranted for a period of 20 Years, however warranty for Coating on top surface varies from 10 to 20 Years, please get in touch with our Technical Team and they will guide you with warranty period depending on coating type and coating thickness. We issue formal warranty documentation in the name of Client which will be endorsed by the regional agents or the company itself.