



TECNICAL DATA SHEETS FAZAH BOND FR ACP ACCORDING TO ASTM E 84

PRODUCT COMPOSITION

Two sheets of aluminium Alloy 3003/1100 series with 0.5/0.4 mm thickness on top coated with paints & bottom side coated are sandwiched with Fire resistance minerals as a core material formed in a continuous co-extrusion proses with Dupont adhesives. The core material is free of voids and air and does not contain formed insulation materials.

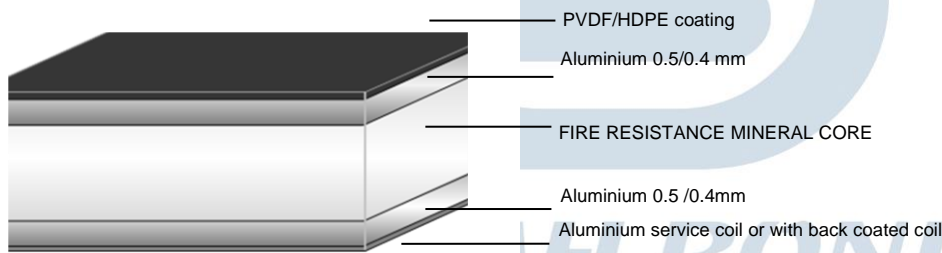
THICKNESS

4 MM

PANEL WEIGHT

7.5 KGS/M2

FAZAH BOND FR -ACP is basically composed of the following materials:



STANDARD COMPOSITION

PRODUCT	TOTAL PANEL THICKNESS (MM)	COMPONENT THICKNESS (MM)			ALUMINIUM GRADE	CORE MATERIAL
		TOP ALUMINIUM SKIN	CORE FR	BOTTOM ALUMINIUM' SKIN		
FAZAHBOND FIRE RESISTANCE (FR) ACP	4 MM	PVDF/HDPE COATED ALU COIL	0.4 MM FR CORE	POLYESTER COATED ALU COIL	ALLOY AA 3003/1100 SERIES	FR MINERAL CORE

PRODUCT DIMENSION

Fazah bond FR panel is available in various dimensions however our standard panel size

4MM*1250*5600 MM

DIMENSION	UNIT	STANDARD	SIZE AVAILABLE
WIDTH	MM	1250	1250 - 1560
LENGTH	MM	5600	UP TO 6000
THICKNESS	MM	4	4 - 6

TOLERANCES

Dimensional / Standard Size

Thickness -	4 MM ± 0.20 MM
WIDTH	± 2.0 MM
LENGTH	± 2.0 MM
Panel bow	Maximum 0.8 % of any 1828 mm
Square	3 MM

- Maximum deviation from panel flatness shall be 1/8 in 5.0 on panel in any direction for assembled unit (Non-accumulative – no Oil Canning)
- Panel Dimensions: Field fabrication shall be allowed where necessary, but shall be kept to an absolute minimum. All fabrication shall be done under controlled shop conditions when possible.
- Panel lines, breaks and angles shall be sharp, true and surfaces free from warp and buckle.

PHYSICAL PROPERTIES Bond Integrity.

- Excellent peeling strength at low process temperature
- Constant peeling strength and excellent Adhesive durability
- Peel strength: 120 N /cm as manufactured.

PHYSICAL PROPERTIES	UNIT	TEST METHOD	TYPICAL VALAUE
DENSITY	g/cm ³	ASTM D 792	1.35 – 1.45
MFI (190 C .216 KG)	g/10 min	ASTM D 1238	0.4 – 1.2

FIRE & SMOKE TEST PROPERTIES	UNIT	TEST METHOD	TYPICAL VALUE
Limited Oxygen Index	%	ASTM - 2863	26 - 32
Composition heat	MJ/Kg	ISO 1716	18 - 22
PCS value of final ACP	MJ/Kg	ISO 1716	9 - 12
Halogen content	%	IEC 60754-1	0
Smoke Density	-	IEC 61034	PASS

DEFLECTION TEMPERATURE

- Fazahbond FR is having an approximate deflection temperature of 130 C. This characteristic proves the property of panel to resist boiling water. The Fazahbond FR has a temperature stability of 40 C – to + 80 C and recommended heating temperature and duration for heating the panels as follows :

- ❖ Heating less than 30 minutes max temperature 90 C
- ❖ Heating more than 30 minutes max temperature 70 C

VIBRATION DAMPING

Fazahbond FR has best vibration damping effect that absorbs mechanical energy arises out of vibration to convert it into thermal energy.

MECHANICAL PROPERTIES

Mechanical properties of Aluminium Skin

We are using Alloys Series from 1100, 3003 and Temper H24 and H 16

MECHANICAL PROPERTY	UNIT	ALUMINIUM ALLOY 3003 / 1100
0.2 % PROOF STRESS	MPa	152
Flexural Elasticity	GPa	70

MECHANICAL PROPERTIES OF FAZAHBOND FR

Mechanical Property	unit	4 mm
Tensile Strength	MPa	50
0.2 % Proof Stress	MPa	45
Elongation	%	7.2
Flexural Elasticity	GPa	40
Flexural Rigidity E*1	kNmm ² /mm	138
Punching Shear Strength	N/mm ²	32.5

BENDING LIMIT

We can bend the FAZAHBOND FR in a press break or 3 roll bending machine. Normally the smallest radius which we can apply to bend the panel without wrinkles at the radial surface of panel is termed as the bend radius. In 3 rolls machine the bending diameter depends on the roll diameter, length and type of machine.

Minimum bending radius (Parallel in Press break Machine)

THICKNESS	FAZAH BOND FR
4 MM	100 MM

MATERIAL	Thermal Conductivity (W/(mK))
4 MM FAZAHBOND FR ACP	0.43
SOLID ALUMINIUM	205
STEEL	50.2
POLYURETHANE	0.02
GLASS WOOL	0.04
BRICK	0.28
CONCRETE	0.80
GYPSUM BOARD	0.13

HEAT TRANSMISSION

FAZAHBOND FR reduces the heat transfer from the outer air to the inner air, The air gap between the panel and the wall increases the thermal insulation. The heat transmission coefficient (U-Value) 4 mm ACP fixed wall system is given below.

Type of panel cladding	100 mm Air gap 115 mm Brick wall	75 mm Air gap 25 mm Rock wool 115 mm brick wall
4 MM FAZAHBOND FR ACP	1.50 W/m ² K	0.94 W/m ² K

COATING FINISH

Color

Generally we are manufacturing ACP with various options of color coating, basically we have four different types of colours such as, Solid, Metallic, Natural finishes (Wood, Mirror and Marbles) and Sparkling colours.

Custom colours as per customer requirement. (Minimum order quantity 1000 m²)

PANEL CORE

FAZAHBOND FR core is a fire safe material passed mandatory requirement of relevant internationally acceptable standards and is best suitable for external and internal uses.

Core of the panel are mainly composed of mineral which can resist fire however a small propagation of flame and restricts development of smoke.

PANEL STRENGTH

FAZAH BOND FR used for the external cladding must stand the wind load. This wind load will cause deflection of the panels and if the deflection is small the panel will not deform.

The permanent deformation of the panel is calculated by 0.2 % yield stress divided by the safety factor.

In the calculation we are assuming that the total strength of the panel is the strength of the aluminium skin.

If the calculated 2 % proof stress is greater than the permissible, normally the panel strength of the panel are

- Panel thickness, width and length
- Supporting condition
- Wind load

We are using the Aluminium Alloy 1100/3003 series for our Fr Aluminium skin 2 % proof stress is 152 MPa and suitable where the wind speed is 50m/sec.

The data in this leaflets are general information and Fazahbond has the right to change due to product changes, improvements and other factors as per ASTM – E 84 AND SASO- 2752

