



TITANBOND

A.C.C.P I N N O V A T I O N
ALUMINUM CORRUGATED COMPOSITE PANEL

First Edition



Why is Aluminum corrugated composite panels so popular



Lightweight

The aluminum corrugated core composite aluminum plate has a unit area of 5kg/m², so the construction time is shortened during construction, which is very effective. Light weight and reduced building exposure load can extend the life of the building.



Processability

Easy to process and install: easy to process, can be cut, punched, bent, can be made into shaped flat plate, curved plate.



Environmental protection

Aluminum corrugated core composite aluminum plate is easy to clean, easy to maintain, non-toxic, no toxic gas release, and complex environmental protection requirements.



Sound insulation

Since the core plate is a corrugated arc type, a curved surface reflection is generated on the sound wave, and the acoustic wave coupling between the panel and the back plate is eliminated, and the sound insulation performance can be improved by more than 35 db.



Decorative

The aluminum corrugated core composite aluminum plate combines the functions and aesthetics perfectly, solves the shortcomings of the aluminum veneer, makes the appearance more vivid, and greatly enhances the decorative appearance of the building.



Excellent durability

Aluminum corrugated core composite aluminum sheet has stable and durable bonding performance. Because of tensile strength, compressive strength, 180 degree peeling strength is higher than that of honeycomb panel, it has ultra-high surface flatness and easy processing, shortening construction engineering time during construction. To the cost savings. Rich in color, easy to clean and maintain, corrosion resistant, strong anti-fouling ability, durable and no discoloration.



Economical

Light weight, economical, 6mm thick, specific gravity of 4.3kg / m². Because the heavy load of the face material is small, the structural support keel can be reduced and more economical.



Thermal insulation

The core of the aluminum corrugated core composite aluminum plate is water corrugated, forming an air passage between the panel and the back plate, which is the best product for thermal insulation. Under the action of solar radiation, the air in the channel warms up and carries away heat, which has thermal insulation properties.

In the cold area, the upper and lower ends of the corrugated passage are sealed, and the hot spot rate is minimized due to the characteristics of the closed mechanical structure of the body. Under the sunlight, the stored heat energy reduces the loss of indoor heating heat, and has the heat preservation performance.



Fire resistance

Aluminum corrugated core composite aluminum plate is made of aluminum alloy, has good fireproof performance, fire rating is A2 grade non-combustible products.

Not Only Strong

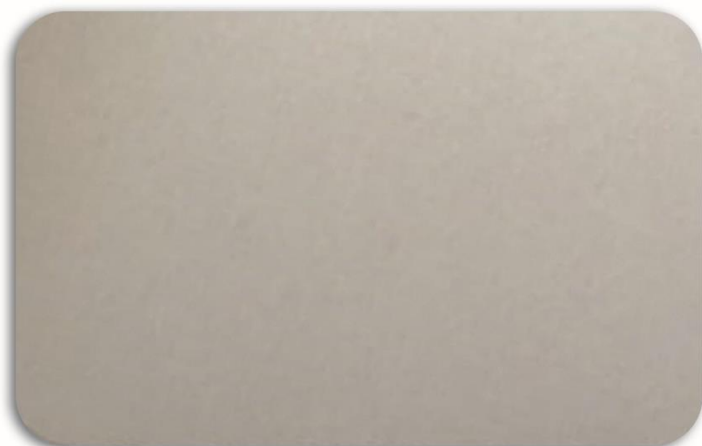
Titan Bond was designed to address the fire safety requirements of architectural projects while still giving an ultra modern look to colors textures and patterns, Titan Bond adds a touch of elegance to every installed surface

A.C.C.P sheets can be customized for your design and color requirements.

Greener Planet

A.C.C.P is composed of corrugated metal core sandwiched between aluminum sheets thus helps in conserving valuable resources of the nature and makes titan bond an environment friendly product.

Titan Bond is acceptable for all green building projects, eco-friendly and fully recyclable



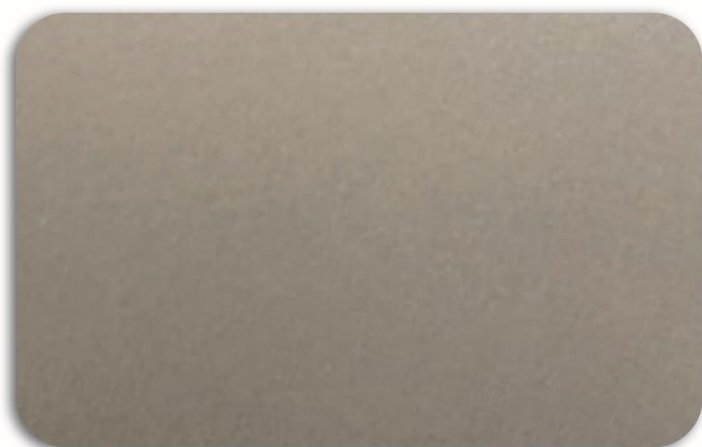
Shining Silver

TB 101



White Silver

TB 103



Gray

TB 102



Champagne Flash Silver

TB 104

Applications For aluminum corrugated composite panel

- curtain walls
- interior wall ,ceiling, partition
- bulkheads of carriage, shipping ,railways and aeroboat
- interior application
- external wall



Fire Testing Report

Remark

PCS-Gross Heat Of Combustion (MJ/KG Or MJ/M²)
 FIGRA-Fire Growth Rate Index Used For Classification Purposes (W/S)
 For Class A2 And Class D FIGRA=FIGRA_{02MJ}
 For Class C And Class D FIGRA=FIGRA_{02MJ}
 LFS-Lateral Flame Spread (M)
 THR_{500s} - Total heat Released Within 600 S(MJ)
 SMOGRA-Smoke Growth Rate (m²/s²)
 THR_{500s} - Total Smoke Production Within 600 S(M²)

Classification

According To The Test Result The Classification For
 The Panel Is GB 8624 A (A2-S1,D0)

Test Criteria

Flame Retardant Board And High Flame Retardant
 Board Shall Comply With The Below Requirement

Item		Requirement	
		Flame Retardant	High Flame Retardant
Core Gross Heat Combustion / (MJ/KG)		≤15	≤15
Bourd Combustion Preformance Level		A2	
Board Combustion	Smogra	s1	
Performance Additional Information/Classification	Burning Droplets/ Particles Grades	d0	

Conclusion

According To The Test Result,The Submitted Sample Comply
 With The Flammability Requirement Of GB/T 2016-22412
 Clause 5.6

Statement

The Test Result Release To Behaviour Of the Test Specimens
 Of A Product Under The Particluar Conditions Of The Test
 Are Not Intended To Be The Solo Criterion For Assessing
 The Potential Fire Hazarad Of The Product In use

Warning

Thus Classification Report Does Not Represent Type Approval
 Or Certification Of The Product

7 reasons that make Titan Bond the best choice



anti-bacterial
product



Green
Product



highest level
of QC processes



color
consistency



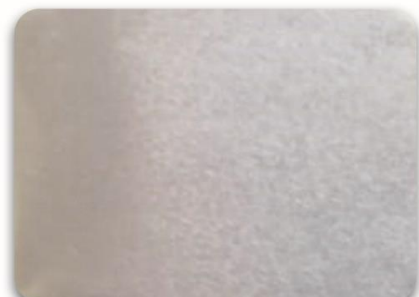
export
quality



an expert
team



a global
brand



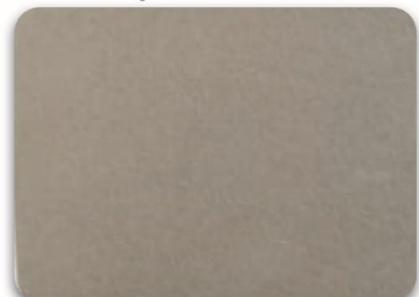
Silver Gray TB 001



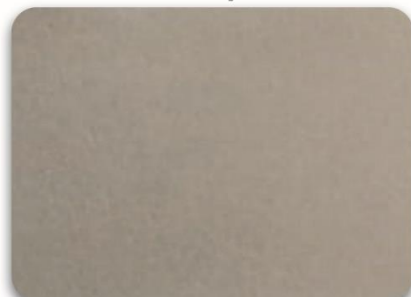
White Silver Gray TB 005



Black TB 009



Bright Silver TB 002



New Silver Gray TB 006



Black Silver TB 010



Light Champagne TB 003



Tinge Champagne Silver TB 007



Plumbago TB 011



Champagne Silver TB 004



Champagne TB 008



Dark Silver TB 012

Easy Fabrication Methods For ACCP



cutting



drilling



folding



slitting



routing



rolling

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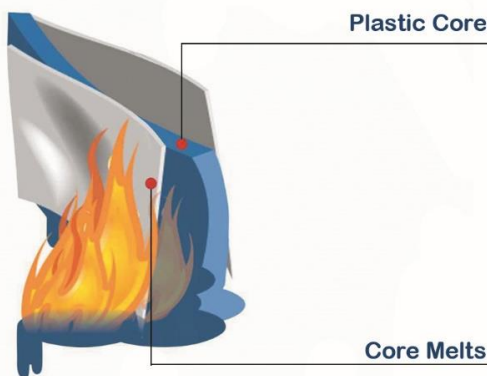
ACP Cladding Material

- Fire spreads upwards due to combustible core material of the ACP cladding thereby fueling the fire
- Panels upwards in the path of fire get consumed and fire spread rapidly
- Fire accelerates failure of nearby panels so flames race through the entire facade
- Flames enter the cavities between building and panels & seek oxygen & fuel

Ordinary Cladding

catch fire

Wood, hpl, wpc panels are made with aluminum outer layers and inner core layer with plastic, which burns easily



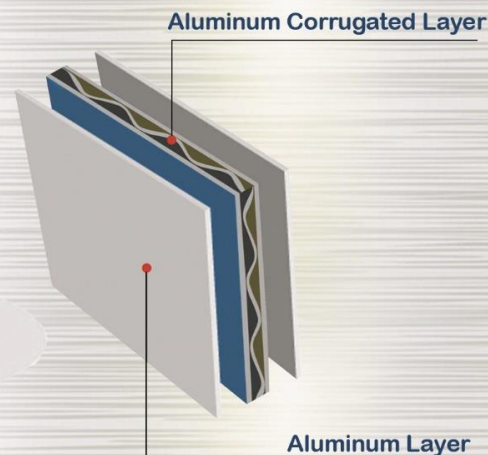
ACCP Cladding Material

- Fire spread is restricted as the core material is non-combustible mineral core
- The core material has no falling droplets to avoid further spread of fire and injury to people below
- The fuel supply is not available from the cladding which is the main source of fuel for secondary fires
- As the cladding does not fail it acts as a barrier to further supply of oxygen for the fire

Titan Bond

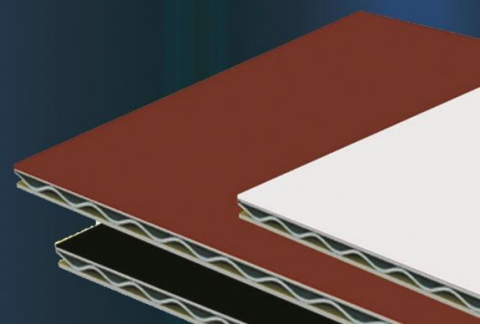
Doesn't catch fire

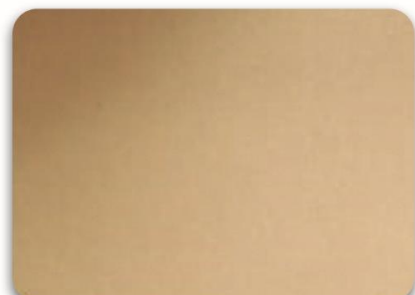
Aluminum corrugated composite panels are made with an aluminum outer layer & corrugated aluminum internal layers which don't burn due to the absence of fuels



Fire Can Be Extinguished
By Removing One Of The Fire Triangle

We are removing the fuel by having only metal core and no burnable plastic core thus breaking the fire triangle

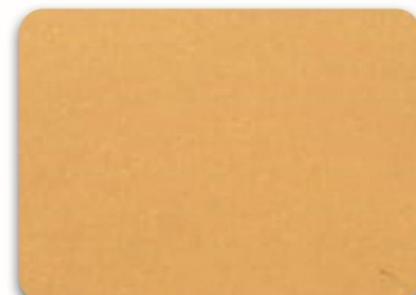




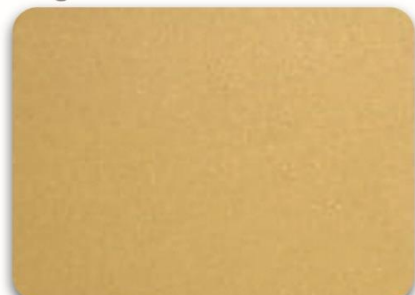
Tinge Brown Silver TB 013



Tin Gold TB 017



Golden Yellow TB 021



Faish Champagne Silver TB 014



Faish Gold Yellow TB 018



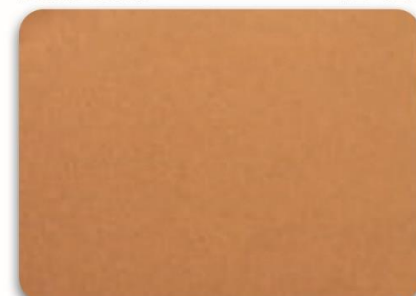
Rose Gold TB 022



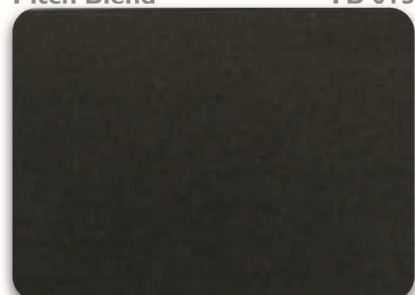
Pitch Blend TB 015



Gold TB 019



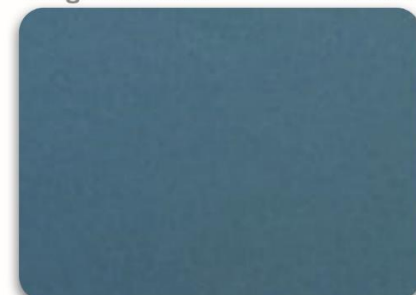
Tangerine Silver TB 023



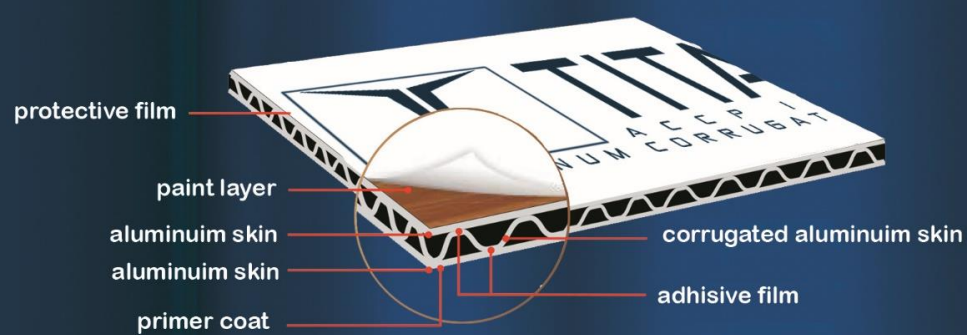
Dark Blue TB 016



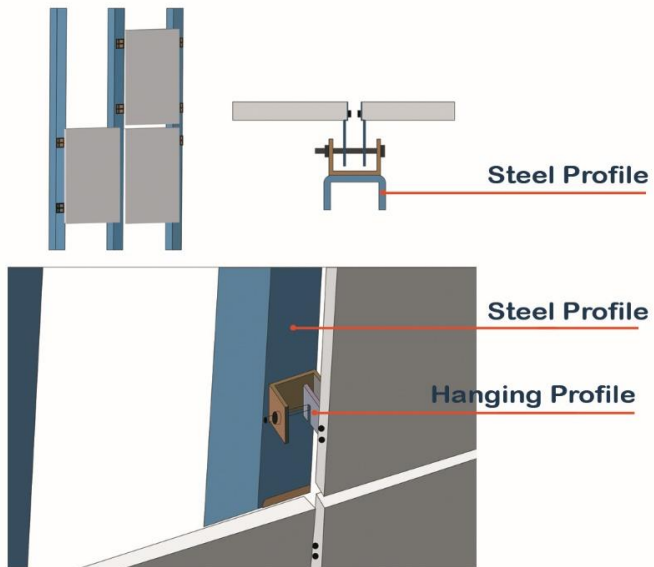
Faish Brown Silver TB 020



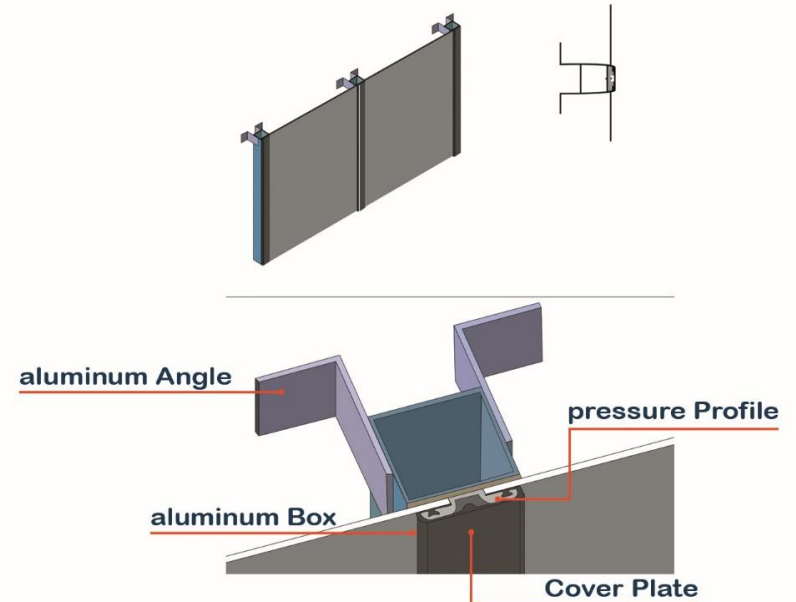
Metalic Green TB 024



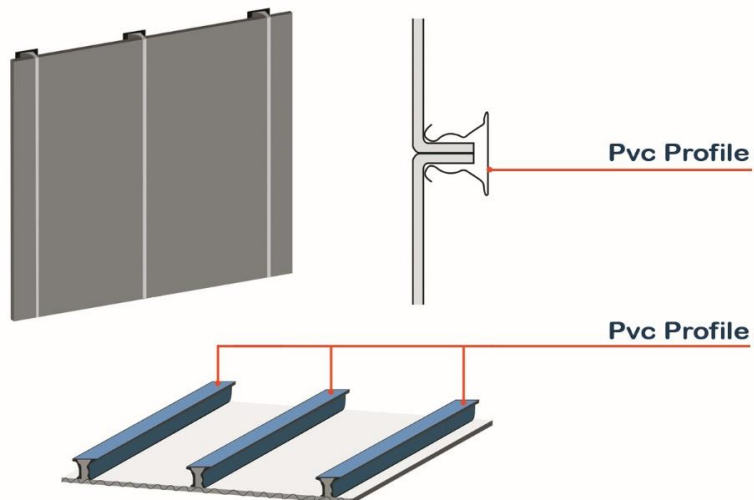
(1) Hanging Installation Way



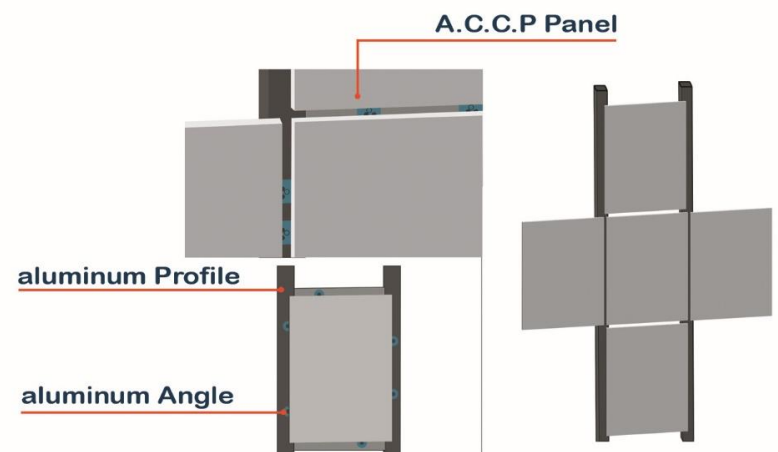
(2) Fasten Installation



(3) Retaining Groove

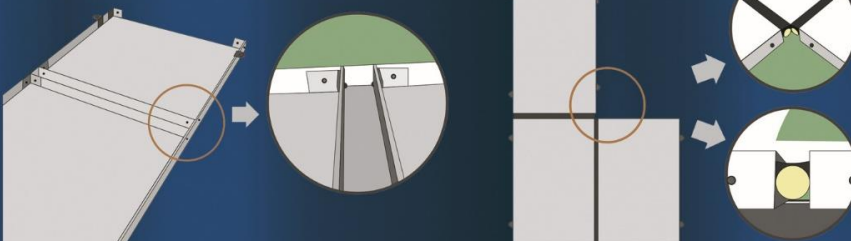


(4) Angle Hanging Installation

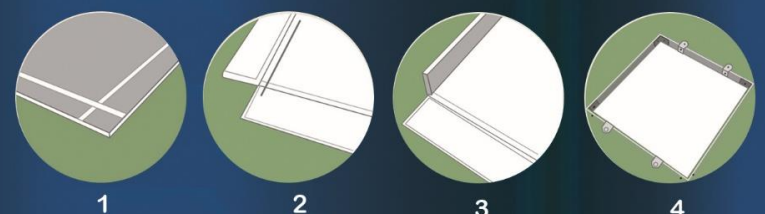


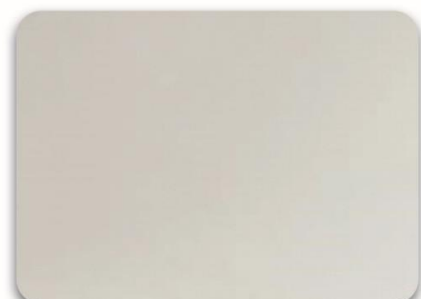
aluminum corrugated composite panel fixation

Step (1) : Grooving

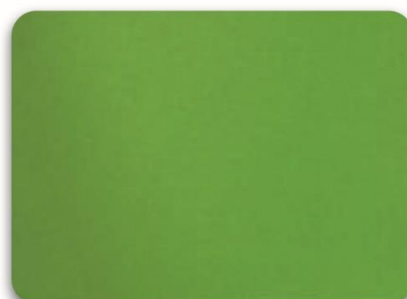


Step (2) : Bending

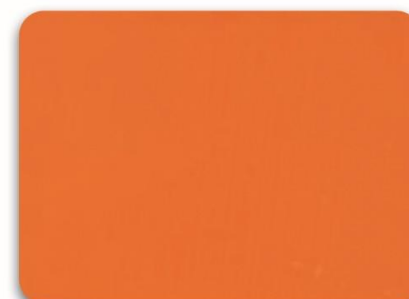




Pure White TB 201



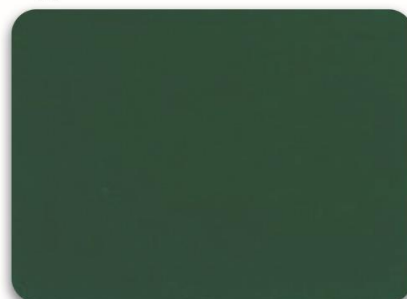
Apple Green TB 205



Orange TB 220



Cream White TB 202



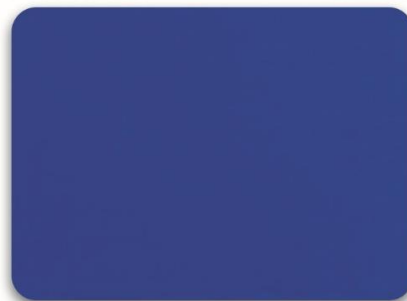
Post Green TB 206



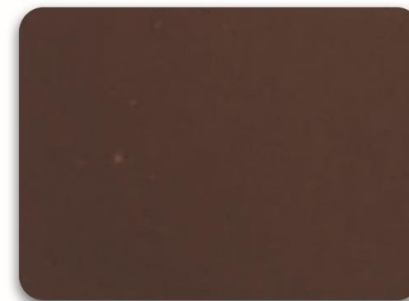
Scarlet TB 221



Ivory White TB 203



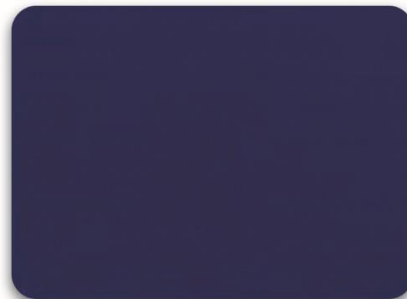
Sea Blue TB 210



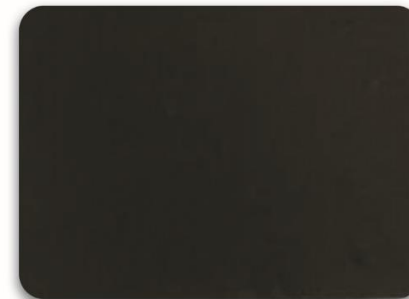
Brick Red TB 230



White Yellow TB 204



Dark Blue TB 211



Brown TB 235

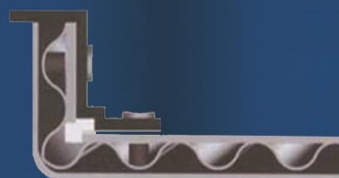
Operation For Aluminum Oorrugated Composite Panel



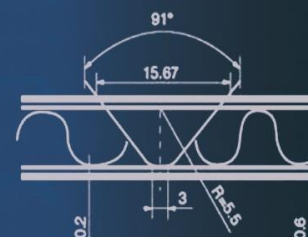
Cutting



Grooving



Shaping



Grooving Saw Shape



Grooving Detail



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Physical Properties ACCP PANEL

.SR. NO	TEST PARAMETERS	TEST METHODS	UNITS	RESULTS
1	Panel coating thickness	ASTM D 7091	um	25-27 (twoCoat)
2	Panel thickness	Visual	mm	4
3	Panel weight	Visual	Kg/m2	4.1
4	Panel density	ASTM D-1505	g/cm3	1
5	Tensile strength	ASTM E 8	MPa	50.6
6	proof stress 0.2%	ASTM E 8	MPa	45
7	elongation%	ASTM E 8	%	9.2
8	Peel strength top side	ASTM D 903	N/mm	8.5
9	Peel strength back side	ASTM D 903	N/mm	6.8
10	Flexure strength	ASTM D 790	MPa	65.8
11	Flexural modulus	ASTM D 790	MPa	14115
12	Punch shear test	ASTM D 732	N/mm2	20.5

Physical Properties Aliminum Skin

.SR. NO	TEST PARAMETERS	TEST METHODS	UNITS	RESULTS
1	Skin thickness Top coil thickness Bottom coil thickness	Visual	mm	0.50 0.50
2	Tensile strength Top coil thickness Bottom coil thickness	ASTM E 8	MPa	176.5 175.0
3	Elongation Top coil thickness Bottom coil thickness	ASTM E 8	%	7.65 6.98
4	proof stress 0.2% Top coil thickness Bottom coil thickness	ASTM E 8	MPa	170 165.5

Paint Finish & Test Properties

.SR. NO	TEST PARAMETERS	TEST METHODS	UNITS	RESULTS
1	Lacquering - PVDF	Chemicals		KYNAR 500 PVDF , passes
2	Taber abrasion test CS-17 wheels,1Kg load cycles 1000	ASTM D 4060	mg	4
3	(Adhesion (cross hatch dry wet (50 C, 20 min	ASTM D 3359	B	4.1
4	(Adhesion (cross hatch	ASTM D 3359	B	1
5	Hardness - pencil	ASTM D 3363	B/H	50.6
6	Water absorption test	ASTM D 570	%	45
7	Gloss at 60	ASTM D 523		9.2
8	Impact test (front & reverse)	ASTM D 2794	Joules	8.5
9	Bending strength	ASTM D 522		6.8

Acoustical Properties

.SR. NO	TEST PARAMETERS	TEST METHODS	UNITS	RESULTS
1	Sound absorption factor	ISO 354		0.05
2	Sound transmission loss	ASTM E90	d B	25

Thermal Properties

.SR. NO	TEST PARAMETERS	TEST METHODS	UNITS	RESULTS
1	Thermal resistance	ASTM C 1363	m2 K/W	0.24
2	Linear thermal expansion	ASTM d 696	mm/M C 100	2.4
3	Temperature resistance		C	C to 80 C 50(-)

Fire Properties

.SR. NO	TEST PARAMETERS	TEST METHODS	UNITS	RESULTS
1	Reaction to fire	EN 13501 -1		A2- s1, d0

Panel Dimension

Standerd Size	1250mm*2400mm	1250mm*3200mm	1250mm*3200mm
Panel Thickness	4mm	5mm	6mm
Skin Thickness	0.45 mm to 1 mm		

Fire Test To Building Material

building glass material		Designation
Class A	A 1	Non-Compositble Material
	A 2	Not Easily Flammable
Class B	B 1	Flammable
	B 2	Easily Flammable
	B 3	

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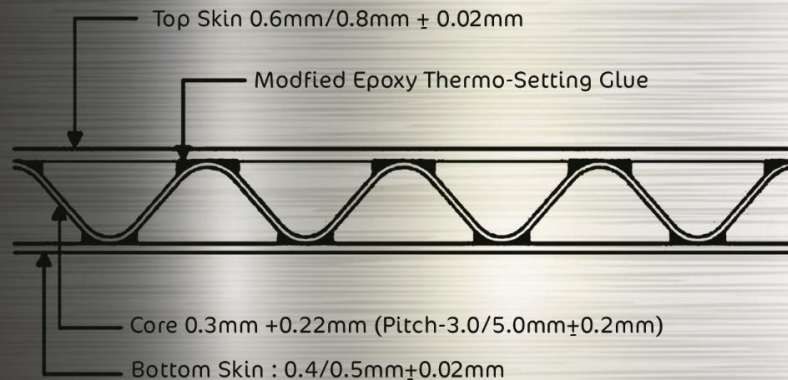
E-mail: info@empireegypt.com

www.empireegypt.com



What Is Titan Bond ACCP ?

Lightweight Aluminum Panel , Where a Cover Sheet Is Connected to a Corrugated Aluminium Sheet in a Continuous Manufacturing Process Material With Highly Anisotropic Stiffness Result in a very Simple Two-Dimensional Shaping



Advantage For aluminum corrugated composite panel



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protective film

clear coat

Top Coat

Primer

Aluminum Coil

Adhesives Layer

Aluminum Corrugated

Adhesives Layer

Aluminum Coil

service coating

