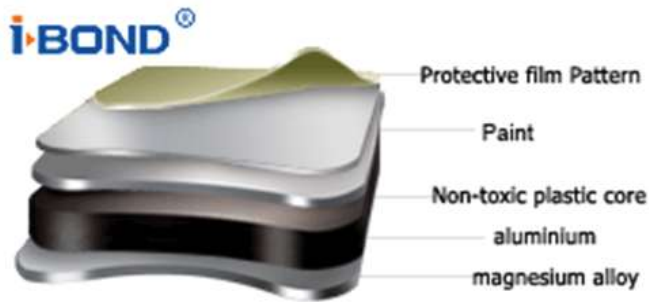


XcellBond™

i-BOND Aluminum Composite Panel

Product Information



XCELLBOND i-Bond aluminum composite panel is a kind of new-fashioned composite material through serial processing, with the paint coating aluminum sheet as the surface after surface preparation and the high pressure low density polyethylene compound as the core layer, the conformation of which has excellent acid, alkali and corrosion resistance to be the most preferred material for modern curtain wall decoration and interior design.

Raw Material Product Specifications

Base material of aluminum panel: high strength aluminum coils

PE core: non-toxic low density polyethylene

Surface coating: fluorocarbon coating

Thickness: 3-6mm; 4mm is recommended

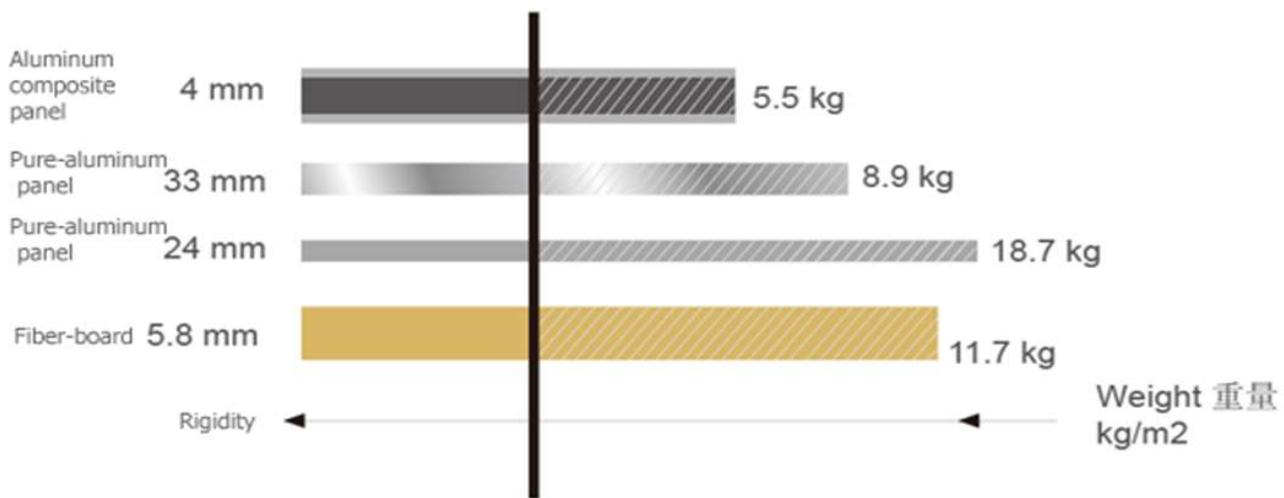
Width: 1000-2000mm; 1220mm, 1250mm and 1500mm are recommended

Length: Maximum is up to 5800mm, 2440mm, 3050mm and 4050mm are recommended

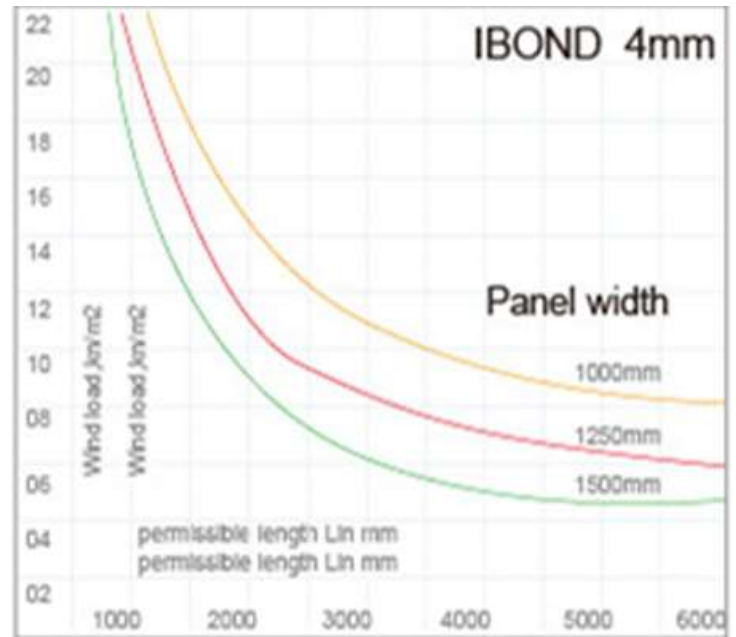
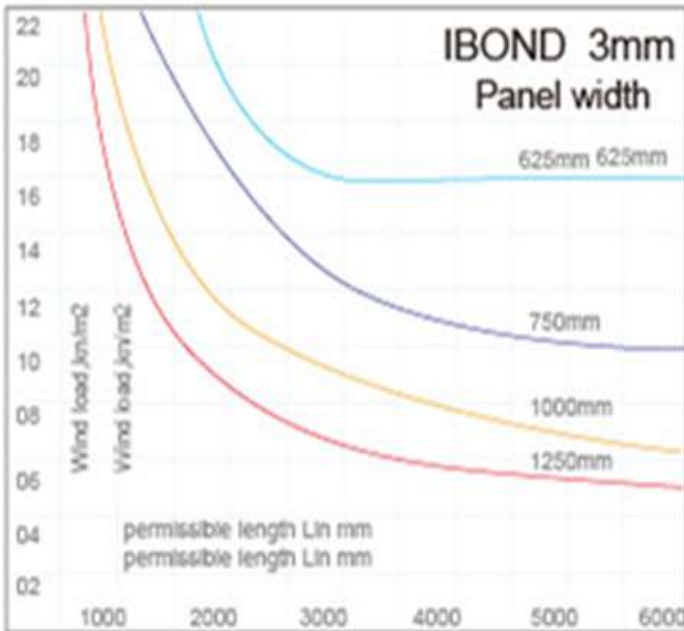
Thickness of aluminum sheet: 0.3-0.5m

Product Features

1. Weather resistance: the extra-strong weather and ultraviolet resistance and good acid and alkali resistance can stand test of severe environment. Long duration of color and gloss, service life can be over 15 years, applicable temperature: -40-+80; Peeling strength exceeds that of the national standard.
2. Economical: a variety of quality coatings are applied on the product, which allow no forming of dirt on the surface and affect in self-cleaning with natural rain water, free from expenses on maintenance of high rise large buildings.
3. Ease of application: aluminum composite panel is easy for cutting, cropping, ploughing, bending to arc, right angle and other shapes, fully satisfying the needs in decoration and design of various moulds.
4. Fire-resistance: the outer aluminum-foil layer of the aluminum composite panel can obstruct heat transmission at the initial stage of combustion to protect the polyethylene core, the fire-resistance of which meets the national standard.
5. light weight: the aluminum composite panel is compounded of aluminum alloy and quality plastics, with the weight lighter than other decorative materials, which reduces the dead load of the material for the convenience of construction and thus has considerably shorten the construction period.
6. comparison on thickness and weight under the same rigidity ibond compared with aluminum single



IBOND compared with aluminum single plate						
Comparison on thickness and weight under the same rigidity						
Rigidity	section modulus	thickness	weight	Aluminum single plate		
				Thickness	weight	
125 kn cm ² /m	1.25 cm ³ /m	3 mm	4.5 kg/m ²	2.7 mm	7.3 kg/m ²	
2400 kn cm ² /m	1.75 cm ³ /m	4 mm	5.5 kg/m ²	3.3 mm	8.9 kg/m ²	



7. wind load and permissible dimensions of the panel.

The above diagram shows the wind load and the maximum length permitted under specific panel width. (no need to set the panel length of the reinforcing rib) Notice Permissible stress: 53 n/mm^2 (including safe factor) value applicable for the panel simply supported on four sides Please inquire our professional staff for other techniques on installation system.

8. Realization of design: unique colors and shapes can be made at customers' request to aluminum composite panel to realize the ingenious design and perfect decorative effects.

9. Environmental protection: good oxidation, no change on the surface layer, no pollution to the environment, resistance to contamination of the extraneous acid, solvent and detergent, making it not easy for them to stick to the surface.

10. color diversity: We offer more than 50 colors for the choice of our customers, and we also custom special colors at the request of our customers.

11. high strength: the alclad applied on the surface has a high strength which greatly enhances the strength of aluminum composite panel and thus can ensure the function of the curtain wall on wind resistance, quakeproof, anti-seep, lightning protection and impact resistance.

12. Flatness: the flatness of aluminum composite panel satisfies the demand for high visual effect on modern architectures.

FAQ

1. What is XCELLBOND iBond aluminum composite panel?

XCELLBOND iBond aluminum composite panel is short form for Aluminum composite panels, also known as aluminum composite materials or acm. It is a kind of new material, composed of laminate 2 color painted aluminum sheets with plastic cores, in the plate form and with the thickness from 2mm-7mm.

2. Why use XCELLBOND iBond aluminum composite panel?

XCELLBOND iBond aluminum composite panel is a new material for advertising and architecture, it has many features than traditional materials, it is solid, strong but light weight, it has multiple colors and good weather resistance, also it is easy to be fabricated into different shapes.

3. How to classify the XCELLBOND iBond aluminum composite panel and What is the application of iBond aluminum composite panels?

For advertising, XCELLBOND iBond aluminum composite panel could be used for substrate, printing board, indoor signs, billboard etc. For outdoor signage, XCELLBOND iBond aluminum composite panel could be used for big signs, towers, different shapes if needed, dealer's cladding etc.

For decorative, XCELLBOND iBond aluminum composite panel could be used as wall panels, frames in door and windows system, roofs and ceiling etc.

For architecture, XCELLBOND iBond aluminum composite panel could be used as curtain wall panels. There're also some new applications for XCELLBOND iBond aluminum composite panels just like exhibitions materials, decoration in trucks, trains, boat or metros, etc.

4. What is the normal thickness of your XCELLBOND iBond aluminum composite panel?

Normally thickness will be 3mm or 4mm, Thickness range is 2mm to 7mm

5. What is the normal thickness of the aluminum skin?

Normally thickness will be 0.21mm, 0.3mm, 0.4mm or 0.5mm

6. What is the normal size of your XCELLBOND iBond aluminum composite panel?

Normal width would be 1000mm, 1220mm, 1250mm, 1500mm, 1525mm and 2000mm

Not limited on length, depend on the package and transportation ways.

7. What is the weight of XCELLBOND iBond aluminum composite panel?

Normal iBond aluminum composite panel:

4mm with 0.5mm skin: 5.5kgs/sqm, 4mm with 0.4mm skin: 5.15kgs/sqm, 4mm with 0.3mm skin: 4.78kgs/sqm,

3mm with 0.3mm skin: 3.86kgs/sqm, 3mm with 0.25mm skin: 3.68kgs/sqm, 3mm with 0.21mm skin: 3.54kgs/sqm

6mm with 0.3mm skin: 6.65kgs/sqm, 6mm with 0.21mm skin: 6.33kgs/sqm.

2mm with 0.3mm skin: 3kgs/sqm, 2mm with 0.21mm skin: 2.6kgs/sqm

Fire-resistant iBond aluminum composite panel:

4mm with 0.5mm skin: 6.61kgs/sqm, 4mm with 0.4mm skin: 6.33kgs/sqm, 4mm with 0.3mm skin: 6.05kgs/sqm,

Panel Thickness	Unit	2mm	3mm	3mm
Thickness of Aluminium	mm	0.21	0.21	0.15
Aluminum thickness deviation	mm	±0.01	±0.01	±0.01
Weight	Kg/m ²	2.66	3.54	3.31
Tolerance in length	mm	- 0 / +2	- 0 / +2	- 0 / +2
Tolerance in width	mm	- 0 / +1.5	- 0 / +1.5	- 0 / +1.5
Tolerance in thickness	mm	±0.15	± 0.10	± 0.10
Horizontal flatness	mm	5	4	4
Longitudinal roughness	mm	6	6	6
Technical Properties				
Section Modulus W	cm ³ /m	1.25	1.68	1.73
Rigidity (Poisson's ratio $\mu = 0.3$) E.I	kNm ² /m	0.04	0.08	0.06
Alloy	ENAW	1100	1100	1100
Temper of Cover Sheets		H16/H18	H16/H18	H16/H18
Modulus of Elasticity	N/mm ²	70000	70000	70000
Tensile Strength of Aluminium	N/mm ²	Rm ≥ 175	Rm ≥ 175	Rm ≥ 145
0.2% Proof Stress	N/mm ²	Rp0.2 ≥ 120	Rp0.2 ≥ 120	Rp0.2 ≥ 90
Elongation	%	A50 ≥ 2	A50 ≥ 2	A50 ≥ 3
Linear Thermal Expansion	mm/m/oC	2.4 at 100°C Temp difference	2.4 at 100°C Temp difference	2.4 at 100°C Temp difference
Core				
Polyethylene, Typ LD-PE	g/cm ³	0.935	0.935	0.935
Surface		Coil Coating	Coil Coating	Coil Coating
Lacquering		PE	PE	PE
Thickness of coating	µm	≥16	≥16	≥16
Gloss (initial value)	%	20-100	20-100	20-100
Pencil Hardness		2H	2H	2H
Acoustical Properties				
Sound Absorption Factor α_s		0.05	0.05	0.05
Sound Transmission Loss RW	DB	23	25	25
Loss Factor α		0.0062	0.0072	0.0072
Thermal Properties				
Thermal Resistance R	m ² K/W	0.0036	0.0069	0.0069
Heat Transition Coefficient U	W/m K	5.98	5.65	5.65
Temperature Range	°C	-50 ~ + 80	- 50 ~ + 80	- 50 ~ + 80

Panel Thickness	Standard	Unit	3mm	4mm	6mm
Thickness of Aluminium	DIN 1784	mm	0.5	0.5	0.5
Aluminum thickness deviation	DIN 1784	mm	±0.01	±0.01	±0.01
Weight		Kg/m ²	4.65	5.63	7.42
Tolerance in length	DIN 16927 / ISO 11833-1	mm	- 1 / +3	- 1 / +3	- 1 / +3
Tolerance in width	DIN 16927 / ISO 11833-1	mm	- 1 / +1.5	- 1 / +1.5	- 1 / +1.5
Tolerance in thickness	DIN 16927 / ISO 11833-1	mm	± 0.15	± 0.15	± 0.15
Horizontal flatness	DIN ISO 1101	mm	6	5	5
Longitudinal roughness	DIN ISO 1101	mm	7	6	6
Technical Properties					
Section Modulus W	DIN 53293	cm ³ /m	1.25	1.75	2.75
Rigidity (Poisson's ratio $\mu = 0.3$) E.J	DIN 53293	kNm ² /m	0.14	0.28	0.63
Alloy	EN 573-3	ENAW	1100		
Temper of Cover Sheets	EN 515		H16/H18		
Modulus of Elasticity	EN 1999 1-1	N/mm ²	70,000		
Tensile Strength of Aluminium	EN 485-2	N/mm ²	R _m ≥ 145		
0.2% Proof Stress	EN 485-2	N/mm ²	R _{p0.2} ≥ 100		
Elongation	EN 485-2	%	A ₆₀ ≥ 2		
Linear Thermal Expansion	EN 1999 1-1	mm/m°C	2.4 at 100°C Temp difference		
Core					
Polyethylene, Typ LD-PE		g/cm ³	0.935		
Surface			Coil Coating		
Lacquering			Fluorocarbon based (PVdF)		
Thickness of coating		µm	two coating: ≥26, three coating: ≥32		
Gloss (initial value)	ECCA T2	%	30 - 80		
Pencil Hardness	ECCA T4		H		
Acoustical Properties					
Sound Absorption Factor α_s	ISO 354		0.05		
Sound Transmission Loss R _w	ISO 717-1	DB	25	26	28
Loss Factor d	EN ISO 6721		0.0072	0.0087	0.0138
Thermal Properties					
Thermal Resistance R	DIN 52612	m ² /K/W	0.0069	0.0103	0.0172
Heat Transition Coefficient U	DIN 4108	W/m ² /K	5.65	5.54	5.34
Temperature Range		°C	-50...+80		

Technicalness and Warranty

1. What is the technology data of your XCELLBOND iBond aluminum composite panels?

Above is the technology data sheet of our XCELLBOND iBond aluminum composite panels.

2. What is the core materials inside of XCELLBOND iBond aluminum composite panel?

Virgin or recycled LDPE(low density polyethylene)

3. Do you have 3 series or 5 series Alloy for the aluminum skin?

Yes we have 3003 or 5005 alloy aluminum for skin

4. What is the bowl tolerance of your XCELLBOND iBond aluminum composite panel?

It is 5mm

5. What is the surface tension of your XCELLBOND iBond aluminum composite panel?

For normal PE coating iBond aluminum composite panel, surface tension would be around 38 dyne, for digital iBond aluminum composite panel, surface tension would be above 38 and reach 40 dyne.

6. Could we use XCELLBOND iBond aluminum composite panel for digital printing directly?

Yes, Digital XCELLBOND iBond aluminum composite panel could be printed directly without any treatment on surface.

7. Could you provide the installation draws of your XCELLBOND iBond aluminum composite panel?

Yes we have more than 2 types of installation draws. You could go to the download page and download our draws.

8. Which paint type do you recommended for exterior cladding use?

We recommend the PVDF, PVDF Nano, Chameron and FEVE coatings, either of these paints have very good performance on weather resistant.

9. Do you have a fire-resistant XCELLBOND iBond aluminum composite panel?

Yes we have fire-resistant iBond aluminum composite panels with fire-proof core materials inside, good performance for fire-resistant.

10. What your XCELLBOND iBond aluminum composite panel's fire-resistant level?

B1, B2 and the A2 level

11. Do you have a NANO-faced XCELLBOND iBond aluminum composite panel? What is the warranty of this iBond aluminum composite panel? iBond aluminum composite panel

Yes we have XCELLBOND iBond® NANO, with NANO technology, the surface is self-cleaning character.

The warranty for the Nano-feature is one year.

12. How long could the antibacterial effect sustained of your antibacterial XCELLBOND iBond aluminum composite panels?

It could be at least 2 years.

13. What is the warranties of your XCELLBOND iBond aluminum composite panels?

PE coating interior use: 8-10 years, some colors like white, silver can reach 10 years.

PE coating exterior use: 5 years

PVDF coating exterior use: 15 – 20 year.

FEVE coating exterior use: 10 years