



| SEOUL OFFICE |

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| FACTORY |

351, Chungyong-Ri, Samsung-Myun, Eumsung-Gun, Chungcheongbuk-Do, Korea

*Make Your Style*

[www.alcopanel.com](http://www.alcopanel.com)

Upgrade your life through Alcopanel...

Our goal is to create products and services  
that contribute to a rising quality of life

# Greetings

## >Welcome to ALCOPANEL

Since being established in 1990, ALCOPANEL has been dedicated to create products of the highest quality using the latest technology and strict quality control. We are a leading manufacturer specialized in Alcopanel, a aluminum composite panel. Our goal is creating the beauties of the city and giving satisfaction to our customers.

We promise we will devote ourselves to the creation of finer values with our customers.



Moving Forward through

# Quality & Technology

ALCOPANEL is highly recommended for external wall cladding for buildings and it has been used in marine and automobile industries.

In addition to the above, it is also ideal for interior finishing design requirements.

## HISTORY SINCE 1990

- Apr. 1990 Dae-A Industrial Co., Ltd was established
- Oct. 1990 Completion of factory
- Oct. 1990 Started the first production of ALCOPANEL with 1 set of multi-processor (annual production capacity : 500,000m<sup>2</sup>)
- Mar. 1993 Commenced the first export of ALCOPANEL to South east Asia
- Oct. 1993 Commenced the first export of ALCOPANEL to China
- Oct. 1995 Expanded annual production capacity to 800,000m<sup>2</sup> by upgrading production facilities
- July. 1998 Selected as a promising manufacturer by KIST
- Aug. 1998 Allowed to use Q mark by KOTRIC
- Jan. 1999 Alcopanel being certified by the standard of ISO 9002
- May. 1999 Selected as Advanced technology company by SMBA
- Apr. 2000 Alcopanel being certified by the standard of ISO 9002
- Aug. 2000 Allowed to use Certificate by the Ministry of China Construction
- Sep. 2000 Alcopanel Fire Retardant Products being developed
- Oct. 2000 Alcopanel being certified by CEBTP(France)
- July. 2001 Allowed to use KS Mark[KS F 4737] by KSA
- Dec. 2001 Alcopanel being certified by the standard of ISO 9002
- Aug. 2002 Passed the fire of FR test at Southwest Research Institute in USA
- Nov. 2002 Establish Sencond factory in the Eumsung of ChungCheong Buk-Do
- Nov. 2002 The name of company, DAE-A Industrial CO.,LTD being changed to ALCOPANEL Co.,LTD
- Nov. 2003 Alcopanel being certified by Ministry of Public Works, Kuwait
- Dec. 2003 Alcopanel being certified by the standard of ISO 9001
- Mar. 2004 Alcopanel being certified by the standard of ISO 14001:2000
- Apr. 2006 Alcopanel being certified by the standard of ISO 14001:2004
- Aug. 2006 Alcopanel being certified by the Technical & Test Institute for Construction, Czech Republic
- Oct. 2006 Alcopanel FR being certified by Artiael 2-9 of Building Standard Law, Japan
- Feb. 2007 Alcopanel FR being certified by 108-2 Building Standard Law, Japan
- Oct. 2008 ALCOPANEL ZN[ZINC Composite Panel] being developed
- Dec. 2008 ALCOPANEL SS[Stainless Steel Composite Panel] being developed
- Jul. 2009 ALCOPANEL being certified by DIN4102, Germany

▶ Alice Lane, South Africa



**ALCOPANEL** is making strong efforts to maintain its leading position in the international market.

► Mortgage Bank of Uruguay, Uruguay

## FOR BEAUTIFUL ENVIRONMENT

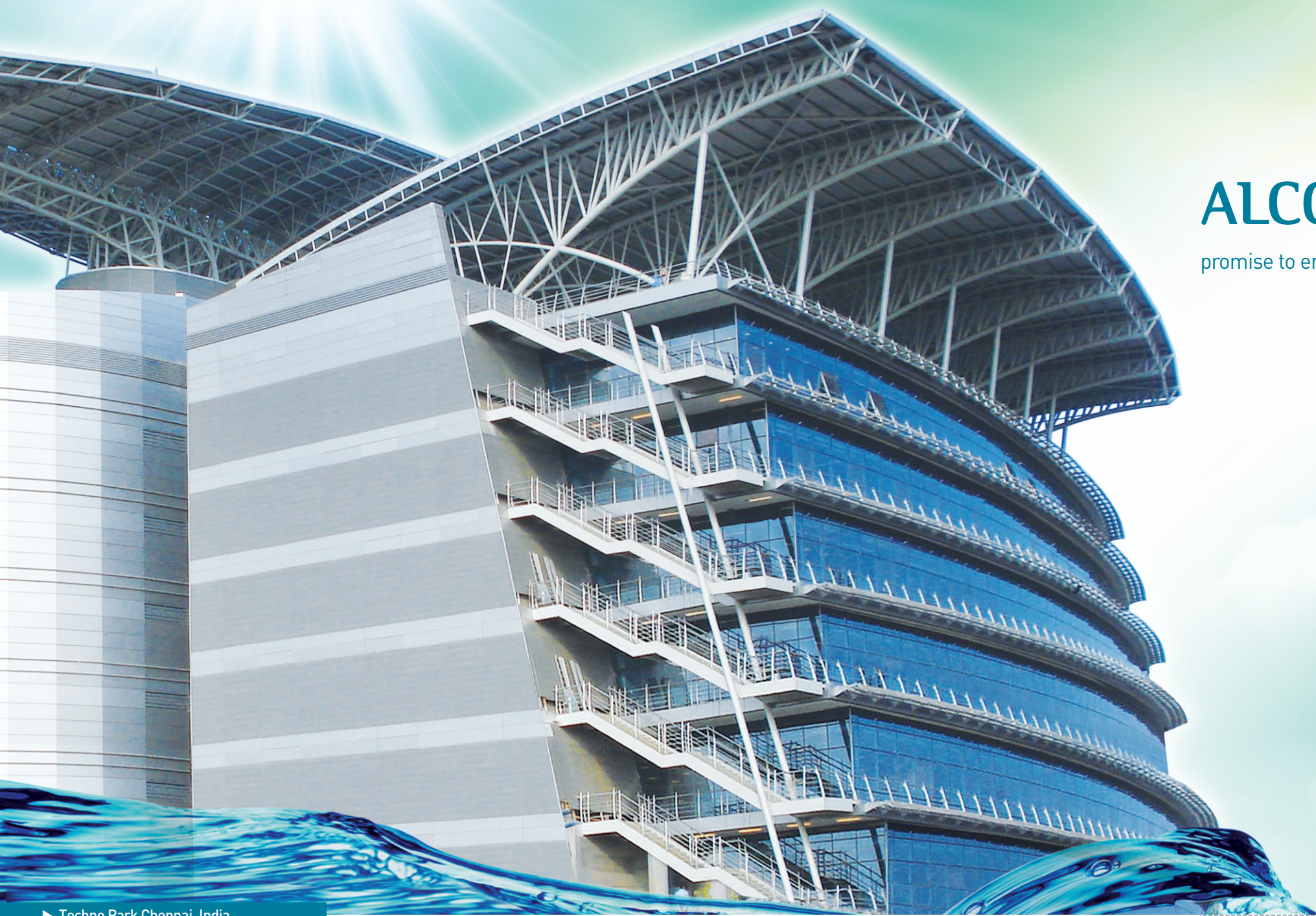
Two things, inspiration and innovation are bases of successful products. When these two intangible elements are combined with good design and manufacturing excellence, the result can be a product which is revolutionary.



Bank of Indonesia (BIDAKARA), Indonesia



Qualcomm Headquarters, U.S.A



▶ Techno Park Chennai, India

**ALCOPANEL's** specific functions and designs promise to enhance dignities of buildings.



> HIVEC, Japan



> Saha Sports Club, Qatar

## THE BEAUTY OF BUILDING

ALCOPANEL combined with designers' imagination makes impossible work possible.





# Easy ALCOPANEL fabrication enhances the beauty of building.

► Abudhabi Airport, U.A.E

## FOR ARCHITECTURAL DESIGN

ALCOPANEL is available in a range of standard coil coated colours in PVDF finishes.

These full strength and high performance coatings have been especially selected for architectural cladding applications.



> Park Royal Tower, Iran



> Green Power, Vietnam



## Feel the Changes being made by ALCOPANEL

*Creating a better tomorrow with advanced technology and spirit of creativity and challenge.*

- 13\_ ALCOPANEL
- 14\_ ALCOPANEL PE
- 15\_ ALCOPANEL FR
- 16\_ ALCOPANEL ZN & SS
- 17\_ ALCOPANEL Processing Method & Certificates
- 18\_ ALCOPANEL in Oceania
- 19\_ ALCOPANEL in Middle East
- 20\_ ALCOPANEL in Asia
- 21\_ ALCOPANEL in America & Europe & China
- 22\_ ALCOPANEL in Korea

### Features

#### Excellent Color Uniformity

Roll coating system which is applied to ALCOPANEL provides the best quality of color uniformity by high technology.

#### Lightness and Rigidity

Weight of ALCOPANEL with a specific gravity of 1.2 to 1.5 is a half of that of solid aluminium sheet with equivalent rigidity.

#### Superior Flatness

ALCOPANEL provides the greatest flatness of the panel free from distortion and deflection.

#### Corrosion Resistance and Weatherability

Superior corrosion resistance is provided by the best surface treatment and not affected by temperature condition from -50°C to +80°C.

#### Superior Fabrication

Fabrication works, cutting, bending, curving, grooving, routing and other process, are easily accomplished with aluminium and wooden working machines.

#### Maintenance

Kynar 500®-based PVDF coating system provides a strong chemical proofness. By wiping pollutant such as smoke, exhaust gas and dust with a synthetic detergent sponge, the surface of ALCOPANEL can be maintained with unique color.

#### Product Tolerance

Width : - 0 / + 2mm  
 Length : - 0 / + 4mm  
 Thickness : ± 0.2mm for 3mm 4mm, ± 0.3mm for 6mm  
 Bow : Maximum 0.5% of the length and / or width  
 Squareness : Maximum 5mm  
 Surface Defect : The surface shall not have any irregularities such as roughness, buckling and other imperfections with our specification of visual inspection result.

ALCOPANEL is usually supplied with protective film on panel surface.

### Characteristic

#### Mechanical Properties of Cover sheet (0.5mm Aluminium / A3003-H16)

Density : 2.72kg/cm<sup>3</sup>  
 Tensile Strength : Rm ≥ 140N/mm<sup>2</sup>  
 0.2% Proof Stress : Rp0.2 ≥ 100N/mm<sup>2</sup>  
 Elongation(50mm) : A50 ≥ 1%

#### Properties of Painted Finish

ALCOPANEL is available with Kynar 500®-based fluorocarbon coating to meet following criteria :

Film Property	Test Method	Comments
Color Retention	ASTM D-2244-93	ΔE5 Less
Gloss Retention	ASTM D-523-89	
Chalking	ASTM D-4214-89	8unit
60° Gloss	ASTM D-523-89	20-30
Pencil Hardness	ASTM D-3363-92a	H-F
Formability(T-bend)	ASTM D-1737-62	1T No crack
Adhesion:		
Dry	ASTM D-3359, Method 8	No change
Wet	37.8°C, 24hrs	
Boiling Water	100°C, 20min	
Reverselmpact-Crosshatch	NCCA 11-5	No adhesion
Abrasion Resistance	ASTM D-968-93(Falling Sand)	No change
Salt Spray Resistance:		
100% Salt Fog	ASTM B117-90	
35°C		
3,000hrs		
Humidity Resistance:		
100% RH	ASTM B2247-94	No adhesion
35°C		
3,000hrs		
Chemical Resistance:		
HCL	ASTM D-1308-87	No change
H <sub>2</sub> SO <sub>4</sub>	ASTM D-1308-87	
Mortar	AAMA 605.2-90	
Detergent	ASTM D-2248-93	

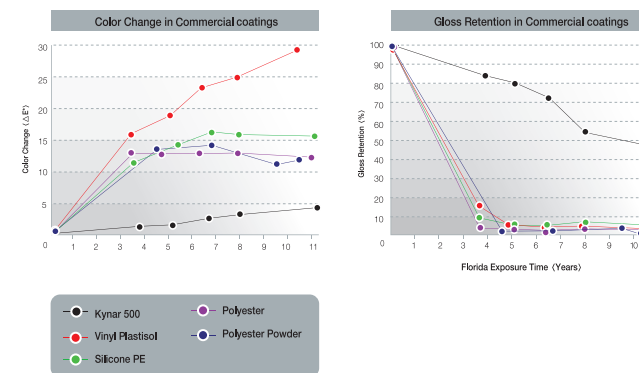
### Specification

#### Surface Treatment

ALCOPANEL is available with Kynar 500®-based PVDF coating, including standard colors and custom colors upon request. (Refer to color charts.)

Note : Custom colors are required minimum quantity.  
 Polyester paint finish is also available.

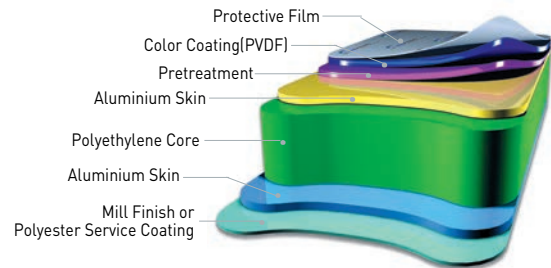
#### Color Change and Gloss Retention of Kynar 500®



### Structure

ALCOPANEL is a aluminium composite panel consisting of two aluminium sheets(A3003-H16 or H14) and anti-toxic polyethylene.

Anti-toxic polyethylene  
2mm, 3mm and 5mm



### Standard Panel Size

Product Range	Specification	
ALCOPANEL	Thickness	3,4 and 6mm
Anti-toxic polyethylene core	Width	1020mm 1250mm 1575mm
	Length	Max. 8000mm

Note : ALCOPANEL silver 107 is not available in 1575mm width.  
Custom width also can be available between 900mm and 1575mm,  
but Minimum quantity is required. Please contact to our office.

### Airborne Sound Transmission (ASTM E-4130)

ALCOPANEL has a larger sound transmission loss comparing with other material of the same weight(steel, aluminium, plywood,etc). The typical result of actual measurement is shown in Fig.1.

- ▶ Airborne Sound Transmission loss Curve
- Test Specimen : ALCOPANEL 4mm
- Condition : Temperature 20°C, Humidity 70.0%RH
- Sound transmission Classification (STC Nos) : established by ASTM E-413

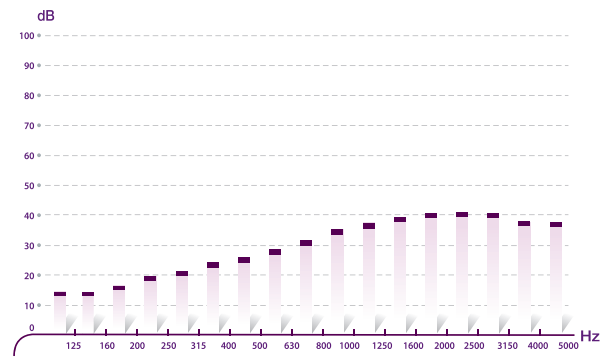


Fig.1. Sound Transmission Loss for 4mm ALCOPANEL

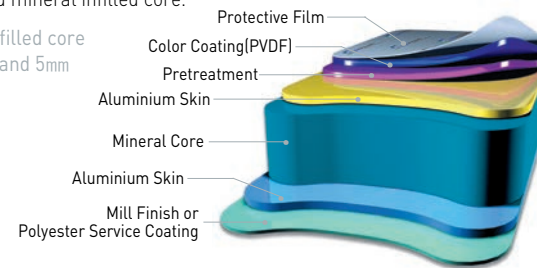
### Features

ALCOPANEL<sub>FR</sub> compounds are based on polyolefin and flame retardant which do not generate toxic gases, especially halogen gases, and have excellent low smoke properties. ALCOPANEL<sub>FR</sub> compounds offer an optimized balance between mechanical and flame retardant properties.

### Structure

ALCOPANEL<sub>FR</sub> is a aluminum composite panel consisting of two aluminium sheets and mineral infilled core.

Mineral infilled core  
2mm, 3mm and 5mm



### Standard Panel Size

Product Range	Specification	
ALCOPANEL <sub>FR</sub>	Thickness	3,4 and 6mm
Mineral infilled core	Width	1020mm 1250mm 1575mm
	Length	Max. 8000mm

Note : ALCOPANEL<sub>FR</sub> silver 107 is not available in 1575mm width.  
Custom width also can be available between 900mm and 1575mm,  
but Minimum quantity is required. Please contact to our office.

### Airborne Sound Transmission (ASTM E-413)

As shown in the Fig.1, ALCOPANEL<sub>FR</sub> has the better sound-insulating ability than others (Metal, pure Aluminum, Plywood, etc.) in the same weight and so is suitable for an interior & exterior material.

- ▶ Airborne Sound Transmission loss Curve
- Test Specimen : ALCOPANEL<sub>FR</sub> 4mm
- Condition : Temperature 19.8°C, Humidity 58.2%RH
- Sound transmission Classification (STC Nos) : established by ASTM E-413

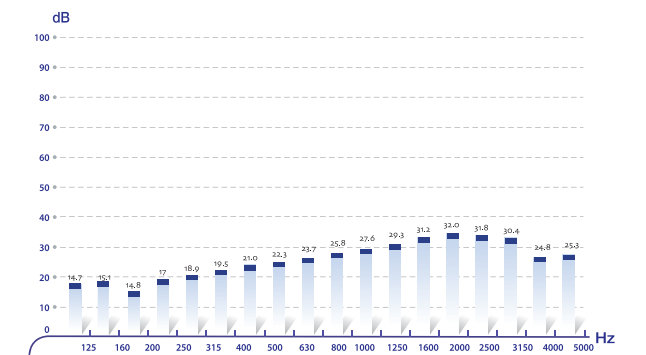


Fig.1. Sound Transmission Loss for 4mm ALCOPANEL<sub>FR</sub>

### General Properties of ALCOPANEL

Item	ASTM	Unit	4mm
Unit Weight		kg/m <sup>2</sup>	5.6
Tensile Strength	E8	kg/mm <sup>2</sup>	4.99
Yield Strength	E8	kg/mm <sup>2</sup>	3.91
Elongation	E8	%	7.3
Flexural Rigidity(20cm span)	C-393	kg/mm <sup>2</sup>	8.6
Flexural Elasticity		kg/mm <sup>2</sup>	3222
Thermal Expansion	D-696	10 <sup>-3</sup> /°C	25
Thermal Conductivity	D-976	Kcal/mhr°C	0.387
Deflection Temperature	D-648	°C	115°C
Bond Integrity			
Vertical Pull	C-297	N/mm <sup>2</sup>	12.37
Drum Peel	D-1781	mmN/mm	375.94
Flatwise Shear	D1002	N/mm <sup>2</sup>	8.55

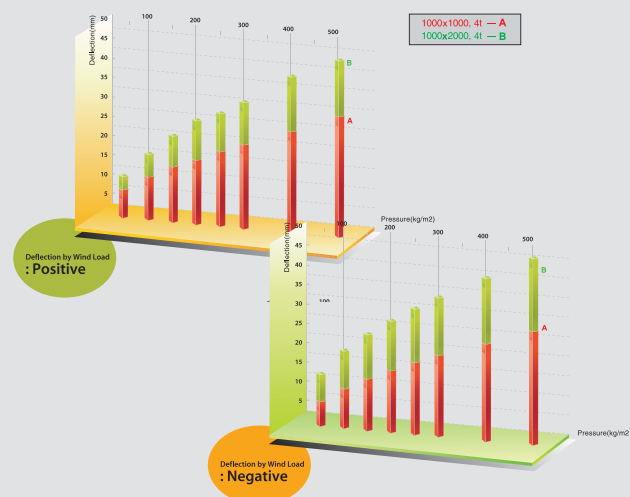
### Fire Behaviour

Country	Test Standard	Result & Classification
United Kingdom	BS 476 Part 6 BS 476 Part 7	Index 0 Class 1 Class 0

### Panel Strength Deflection (ASTM E-330)

The flexural strength of the panel is absolutely dependent on the aluminium skins. For this evaluation, the strength of aluminium skin(A3003-H16) is 17.0kg/mm<sup>2</sup>.

- ▶ Deflection Graph by Wind Load
- Test Specimen : ALCOPANEL 4mm
- Design load : 0-500kgf/m<sup>2</sup>, Positive & Negative pressure
- To inspect the structural performance, established by ASTM E-330



Please contact us for specific structural wind load data according to precise design requirements.

### General Properties of ALCOPANEL<sub>FR</sub>

Item	ASTM	Unit	4mm
Unit Weight		kg/m <sup>2</sup>	7.1
Tensile Strength	E8	kg/mm <sup>2</sup>	5.3
Yield Strength	E8	kg/mm <sup>2</sup>	4.4
Elongation	E8	%	4.1
Flexural Rigidity(20cm span)	C-393	kg/mm <sup>2</sup>	10
Flexural Elasticity		kg/mm <sup>2</sup>	3666
Thermal Expansion	D-696	10 <sup>-3</sup> /°C	25
Thermal Conductivity	D-976	Kcal/mhr°C	0.387
Deflection Temperature	D-648	°C	115°C
Bond Integrity			
Vertical Pull	C-297	N/mm <sup>2</sup>	5.9
Drum Peel	D-1781	mmN/mm	368.7
Flatwise Shear	D1002	N/mm <sup>2</sup>	6.84

### Fire Behaviour

Country	Test Standard	Result & Classification
USA	UBC 26-9, ASTM E119 ASTM E84	Pass Smoke Donsity 0 Flame spread 0
United Kingdom	BS 476 Part 6 BS 476 Part 7	index 0 Class 1 Class 0
Korea(south)	KS F 2271-1998 ASTM E 119 : 2005(2 Hours)	Pass Pass
JAPAN	108-2 of the Building Standards Law	Pass [Fire retardant test of non-combustible material related to approvals Under Article 2-9 of the Building Standard Law]

### Panel Strength Deflection (ASTM E-330)

As shown in the Fig. 2, ALCOPANEL<sub>FR</sub> has the better sound-insulating ability than others (Metal, pure Aluminum, Plywood, etc.) in the same weight and so is suitable for an interior & exterior material.

- ▶ Deflection Graph by Wind Load
- Test Specimen : ALCOPANEL<sub>FR</sub> 4mm
- Design load : 0-500kgf/m<sup>2</sup>, Positive & Negative pressure
- To inspect the structural performance, established by ASTM E-330

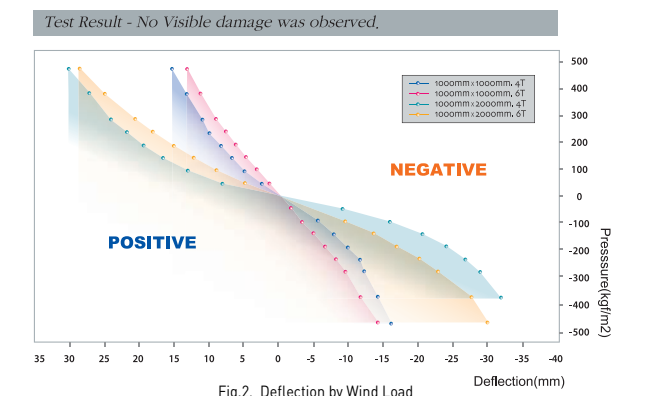


Fig.2. Deflection by Wind Load



## Features

### ALCOPANEL ZN - Zinc Composite Panel

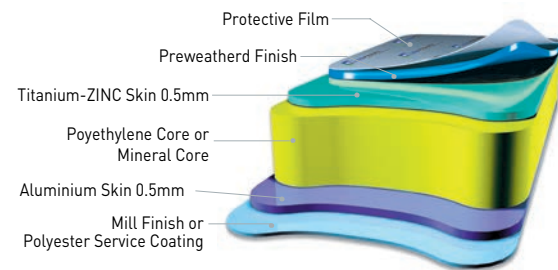
ALCOPANEL ZN is the best interior/exterior item for next generation consisting of two sheets of Titanium-ZINC (0.5mm) and aluminum sheet (0.5mm) with non-toxic polyethylene core or fire retardation mineral core.

Alcopanel ZN has Titanium-ZINC surface and it is newly developed and quite different grade than other composite panels.

Alcopanel ZN combines beautifully with other materials, whether it is used in renovation or new construction, traditional or avant-garde designers. Alcopanel ZN is an elegant partner for many building envelope materials, blending with wood, glass, stone and other materials in complete harmony.

The natural light grey zinc has a textured, luminous quality that evokes the world of minerals. It enhances the appearance of the building from the very first day and for years to come. Alcopanel ZN has excellent durability surface more than 100 years and no discoloration can be found due to natural oxidation.

## Structure



### Specification of Alcopanel ZN

- 1) Surface : 0.5mm Titanium-ZINC pre-weathered finish, Blue-grey color
- 2) Core : Non-toxic polyethylene core or Fire retardation Mineral Core
- 3) Base : 0.5mm Aluminum Mill Finish or Polyester Service Coating

### Standard Measurement of Alcopanel ZN

- 1) Thickness : 4mm
- 2) Standard Width : 1,000mm
- 3) Length : Max. 4,000mm (In case of above 4,000mm, special discussion is required)

### Physical characteristics of Titanium-ZINC

Density	7.2 kg/dm <sup>3</sup>
Thermal expansion coefficient (parallel to the rolling direction)	0.022 mm/m/°C
Melting point	420 °C
Recrystallization point	300 °C
Heat conductivity	110 W/(m.K)
Electrical conductivity	17 MS/m
Danger of sparking	Non-sparking
Magnetic properties	Diamagnetic

## Features

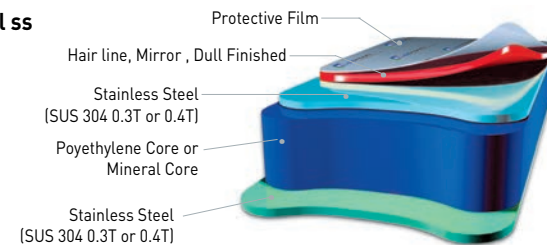
### ALCOPANEL ss - Stainless Steel Composite Panel

Alcopanel ss, is high-performance product from Alcopanel Co Ltd. consisting of two sheets of 0.3mm or 0.4mm anti-corrosion Stainless steel permanently bonded to each side of an extruded anti toxic PE core material or Fire Retardation Core.

Alcopanel ss has highly durability Stainless steel surface and it is newly developed and quite different grade than other composite panels.

## Structure

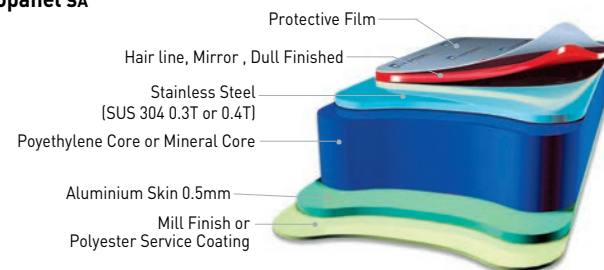
### Alcopanel ss



### Specification of Alcopanel ss

- 1) Surface : 0.3mm or 0.4mm SUS304 Stainless Steel
- 2) Surface Finish : Hairline/Mirror/Dull Finished
- 3) Core : Non-Toxic Polyethylene core or Fire Retardant Mineral Core
- 4) Base : 0.3mm or 0.4mm SUS304 Stainless Steel

### Alcopanel sa



### Specification of Alcopanel sa

- 1) Surface : 0.3mm or 0.4mm SUS304 Stainless Steel
- 2) Surface Finish : Hairline/Mirror/Dull Finished
- 3) Core : Non-Toxic Polyethylene core or Fire Retardant Mineral Core
- 4) Base : Mill Finish or Polyester Service Coating

### Standard Measurement of Alcopanel ss

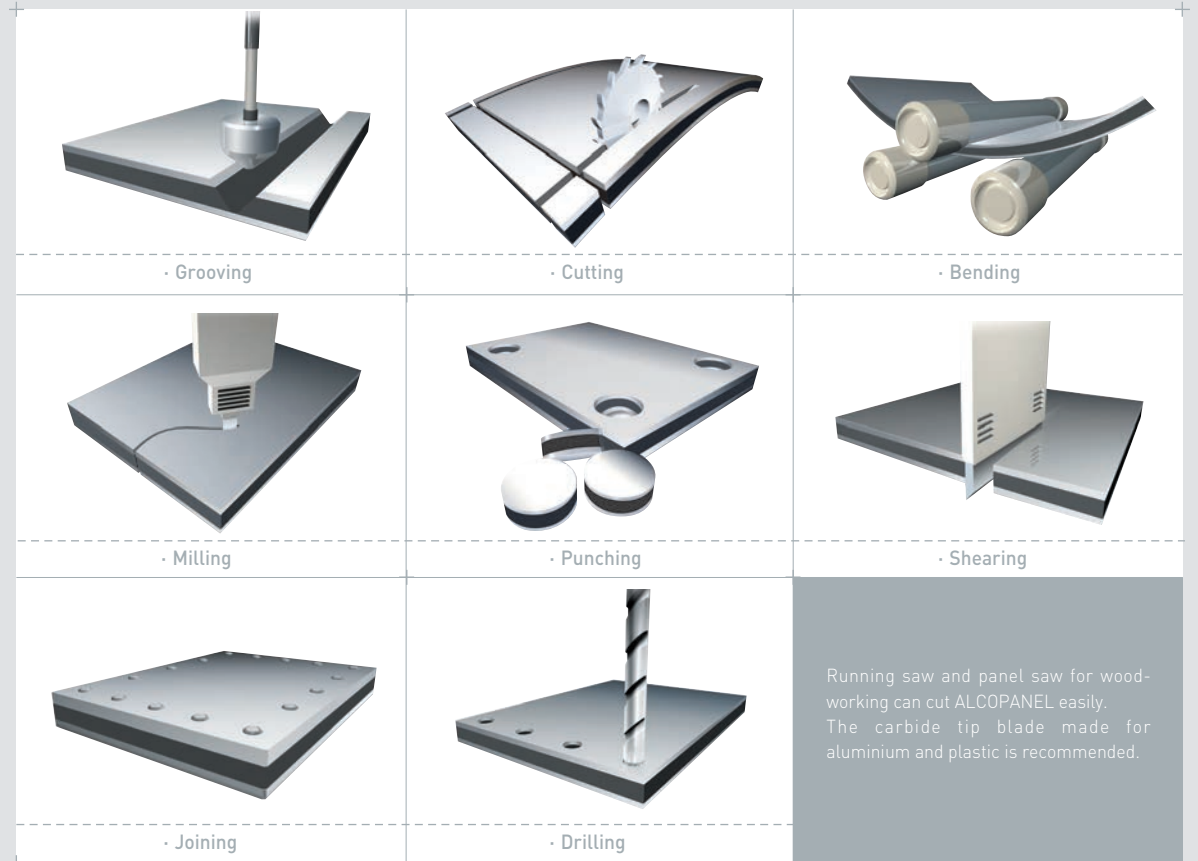
- 1) Thickness : 4mm
- 2) Standard Width : 1,000mm
- 3) Length : Max. 4,000mm (In case of above 4,000mm, special discussion is required)

### General Properties of Alcopanel ss

Density	8.16 kg/m <sup>3</sup>
Flexural Strength	≥ 130 MPa
Flexural Modulus	≥ 3.5 10 <sup>4</sup> MPa
Thermal Expansion	≤ 1.8X10 <sup>-5</sup> /°C
Shear Strength	≤ 68 MPa
Penetrating Resistance	≥ 20 kN
Same Rigidity as Stainless Steel	2.4mm

## Processing Method

Aluminium & wooden working machines can be used for fabrication of ALCOPANEL.



## Certificate of Alcopanel





ALCOPANEL is highly recommended for external wall cladding for buildings and it has been used in marine and automobile industries. In addition to the above, it is also ideal for interior finishing design requirements.

ALCOPANEL with its non-gimmick approach offers excellent value for money to customers.



Asia



▶ Higasakiwa1, Japan

▶ Sekisui1, Japan



▶ KDS Group Corporate office, Bangladesh



▶ Trust Bank Ltd, Gulshan, Bangladesh



▶ Mimi Super Market\_ctg, Bangladesh



▶ Banglalink, Bangladesh



▶ Chennai Airtel, India



▶ Plaza Semanggi, Indonesia



▶ Batam Mall, Indonesia



▶ Meghna Daudkhandi Toll Plaza, Bangladesh



▶ Ruamchiwa Building, Thailand



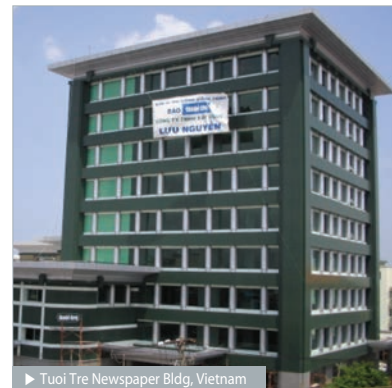
▶ WTC Mangga Dua, Indonesia



▶ Jaya Anchol, Indonesia



▶ BNS Center, Bangladesh



▶ Tuoi Tre Newspaper Bldg, Vietnam



▶ Cikarang Utama, Indonesia



▶ Linkway, Singapore



▶ Con Son Airport, Vietnam



▶ Camau Airport, Vietnam

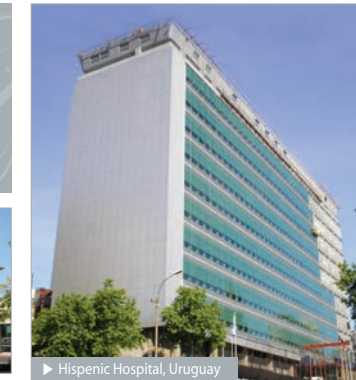


▶ Agribank, Vietnam

America



▶ Jack in the Box, U.S.A



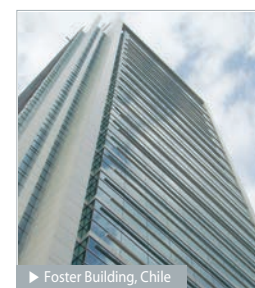
▶ Hispenic Hospital, Uruguay



▶ Office Bldg, Chile



▶ Palm Square Casino, U.S.A



▶ Foster Building, Chile



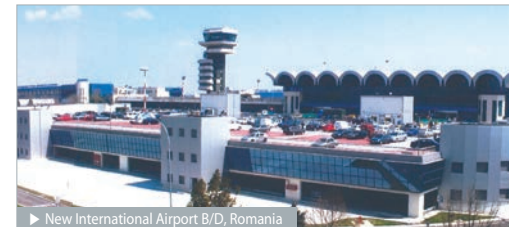
▶ Vida Tres, Chile



▶ Obras Bldg, Chile



▶ Stanislause B/D, Trinidad n Tobacco



▶ New International Airport B/D, Romania



▶ SEAT Auto Drive, Italy



Europe\_Russia



▶ EU Head Quater, Romania



▶ Auto Market Usato Fidato, Italy



▶ EU Head Quater, Romania



▶ Panorama Department Store, Russia

China



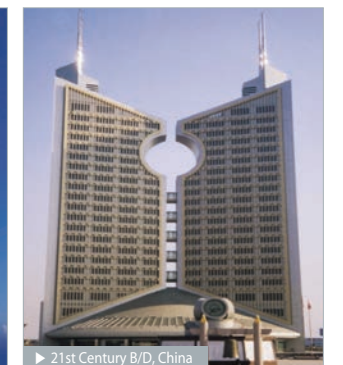
▶ Jiatong Univ, China



▶ Holiday Inn Qingdai, China



▶ Xingangao B/D, China



▶ 21st Century B/D, China

Korea



▶ Jeonbuk Univ, Korea



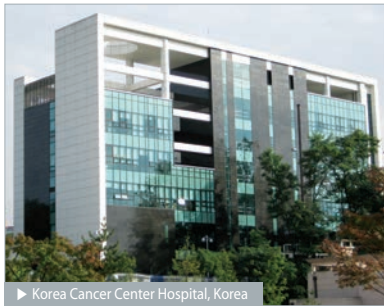
▶ Sherville officitel, Korea



▶ Winia Mando Office, Korea



▶ Gyungnam Jinju Cancer Center, Korea



▶ Korea Cancer Center Hospital, Korea



▶ Seoul Techno Park, Korea



▶ Hansol Officitel, Korea



▶ Verville, Korea



▶ Jump Milano, Korea



▶ World Cup Stadium, Korea



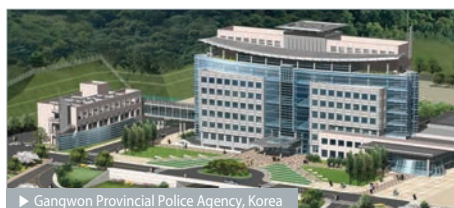
▶ Electro Land, Korea



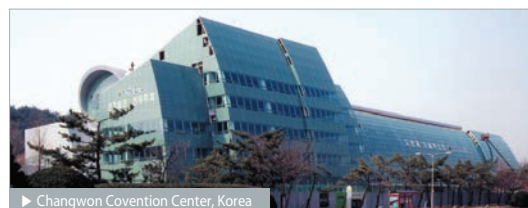
▶ SLC Co, Korea



▶ Dorasan Station, Korea



▶ Gangwon Provincial Police Agency, Korea



▶ Changwon Covention Center, Korea

# Overseas Networks

> Alcopanel is making inroads into over 40 foreign countries.



Alcopanel has been spreading throughout the World since 1990.

Alcopanel as Korea's number one Aluminium Composite Panel company is committed to become a major global manufacturer in building material business.

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