

Aluminium Profiles &
Composite Panel Catalogue



Sistem Alüminyum

Company Profile

Sistem Aluminium, has started to produce aluminum profiles in 1994, with a capacity of 800 tons with 1 press machine of 210 tons/month on 750 m2 area in Istanbul/Merter. The company had continued its production there until 1998 and then moved to its place in Istanbul/Hadımköy. With the new perspectives, our facility has been modernized with the conditions of modern time on its new place in Çorlu over an area of 330.000 m2 with 60.000 m2 of closed space and with the addition of new 2.750 tons press machine with capacity of 1.100 tons/month, it has increased the production capacity to 35.000 tons/year.

Sistem Aluminum is an integrated plant which includes all of the processes starting with mold production, continuing with extrusion production, electrostatic powder coating, wood siding, anodized coatings, mechanical process and composite panel production; all the way to final applications.



Our Die House supports our current production with CNC processing centers, modern branches and qualified staff. Mold production for special customer profiles is also executed here with modern equipment. It strengthens its place in the industry everyday with its range over 11.000 products. We also provide special color requests from our customers in addition to standard RAL colors, within our Static Powder Paint Facility with 7.000 tons of annual capacity. With our new Powder Coating unit becoming operational in Çorlu, we will be able to process profiles 8.000 mm in length. Together with the new anodizing facility becoming operational in Çorlu with the latest technology and where special color requests from our customers are studied, in addition to our Anodizing Facility that became operational in 2006, our annual capacity will be 24.000 tons/year. As an alternative surface coating, within our Wooden Transfer Coating department, which became operational in 2010, we can work on special colors and designs.

Together with the Machining Center, which became operational in 2010, we are able to conduct processes such as profile surface drilling, countersink drilling, unloading, CNC processes, precision cut, angled cut, punch drilling, drilling, cord etc.

Our company allocates a large part of its production capacity for exportation and also serves with the same quality in domestic markets. With this purpose, it has released curtain wall systems, isolated-nonisolated frames, sliding, skylight, steel reinforced facade, composite and stone faced sub-carrier systems, under the brand of ALUTECH SYSTEM SERIES, as a result of entirely their own efforts, technology and R & D activities. Systems presented to the industry have been tested with engineering tests at every stage and compliance with all accessories in European (EN) standards is provided. Our company, which is based on customer satisfaction as of the nature of its mission; adopted the principle of providing exceptional service with the profile designs that provide optimum solutions, with ease of installation with our details and with quality of materials and supply speed. Besides that, Aluminum Composite Panel (ALUTECHBOND), which is an irreplaceable part of facades, as it can respond to different designs and applications, is produced in our facility. For exterior and interior applications, different composite panels with the options of metallic color, matte color, and patterned colors are available and panels can be produced in the required measurements. With two production lines that have an annual capacity of 4.5 million m2, we are ready to offer the optimum solutions for your projects. ALUTECHBOND Aluminum Composite Panels can be used at temperatures ranging from -50oC to +80oC Our product is produced under the guarantee of SISTEM ALÜMİNYUM IND. AND TRA. INC. and has a warranty period of 20 years.

Our company, which aims to be permanent and improve continuously in Aluminum profile industry, is advancing at a rapid pace in achieving this objective with its quality system studies. Our company has certificates such as CE, TSI, EN, Gost-R, QUALICOAT for Static powder coating applications, QUALANOD for anodized coating applications, as well as ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 and ISO/IEC 27001 - Information Security Management System certificates. Besides, SISTEM ALUMINUM IND. And. TRA. INC. confirms that the chemicals in the materials provided to you within REACH and ROHS restrictions (heavy metals) are within legal limits. We are honored to provide technical service to our customers for all of our products with all kinds of engineering and architectural compliance.



Our Production Facilities

Our headquarters



We continue to work in our Head Office in İstanbul with our overseas and domestic sales, composite sales, R & D (research and development), Accounting, Finance and Marketing departments.

Corlu Facilities

Sistem Aluminyum continues its activities in Corlu with new investments since 2013. We reached to 4,000,000 m2 annual production capacity with the 2nd composite panel line in 2014.

Sistem Alüminyum is an integrated plant that includes die production, extrusion, electrostatic powder coating, wooden effect, anodizing, machining, composite panel production and final applications all under one roof. In our

fctory 35.000 tons/year Aluminium Profile, 7.200 tons/Electrostatic Powder coating, 30.000 ton/year Anodising and 4.000.000 m2/year Aluminium composite Panel production could be done.

Corlu Facilities



Russia Plant

Sistem Alüminyum continues its activies with investments in Russia, since 2006. In our Russia plant; built on 35000 m2 indoor area:









Aluminum Profile production capacity of 24000 ton/year Static Powder Coating plant with 11000 ton/year There is a billet casting plant with 24000 ton/year capacity Anodizing Plant with a capacity of 9000 ton/year



Aluminum Profiles



Sistem Aluminum Standard profiles



Sistem Aluminum windows and doors sections



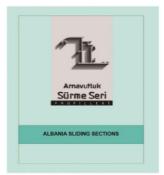
Sistem Aluminum Series C-60



Sistem Aluminum Sliding Sections



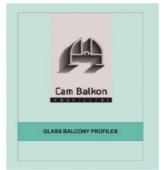
Sistem Aluminum
Cyprus sliding sections



Sistem Aluminum
Albania sliding sections



Sistem Aluminum Insect screen profiles



Sistem Aluminum
Glass balcony profiles



Sistem Aluminum
Window shade/blind profiles



Sistem Aluminum winsowsill profiles



Sistem Aluminum
Cases and shutter sections



Sistem Aluminum
Automatic door and shutter profiles



Sistem Aluminum
Hinge and accessory sections



Sistem Aluminum
Stand profiles



Sistem Aluminum Awning sections



Sistem Aluminum
Coachwork sections

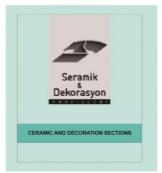




Sistem Aluminum Elevator profiles



Sistem Aluminum
Furniture profiles



Sistem Aluminum
Ceramic and decoration sections



Sistem Aluminum
Shower cabinet profiles



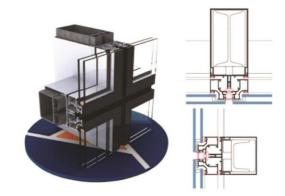
Sistem Aluminum
Other sections

Alutech System Series



Alutech System Series

Sistem Alüminyum is an integrated plant that includes die production, extrusion, electrostatic powder coating, wooden effect, anodizing, machining, composite panel production and final applications all under one roof. Majority of the production capacity is spared on export sales however our company shows the same attention to domestic sales as well. For this reason, with its own facilities, technology and R&D researches, it has launched curtain wall systems, insulated-noninsulated windows&doors, sliding profiles, skylight systems, steel reinfoced façade systems and composite panel vand rock carrier systems under the Alutech System Series. The systems presented to the market has been tested mechanically and chemically and in compliance with all Euro Norm (EU) accessories. Our company is based on customer satisfaction and aimed to provide privileged service to customers with



profil designs offering optimum solutions, details ensuring installation convenience and high quality products with fast service. .being produced in our factory.



www.alutech.com.tr



Aluminum Composite Panel



Aluminum Composite Panel General Properties

Aluminum composite panel is a construction material, which consists of low-density polyethylene between two aluminum sheets. It is a highly demanded construction material; as the top aluminium sheet is PDCF, which gives high surface durability in addition to the high sound and heat isolation the composit panel provides.

ALUTECHBOND; is an aesthetic, durable and easily maintained facade solution

ALUTECHBOND COMPOSITE PANEL APPLICATION AREAS

Indoor and Outdoor facade cladding

Shopping malls, hotels, exhibition and fair applications

Various restoration and decoration applications

Signboards and advertisement panels

Airports, train stations, bus terminal applications, indoor and outdoor applications for tunnel-metro stations

ALUTECHBOND COMPOSITE PANEL PROPERTIES

Durable, tough and light

A wide variety of colors and flexible application on projects

High sound and heat insulation

Easy production and application

High resistance against bad weather conditions

Easy maintenance and cleaning

Fast and easy application

Aesthetic and stylish look

Economical



www.alutechbond.com

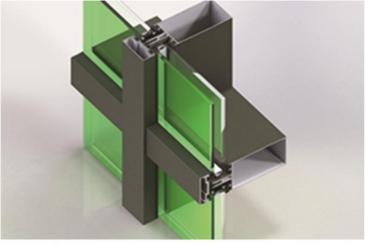


Facade Systems



Alutech System Series SYSTEM ALUMINYUM SAN. And TiC. Inc. Under the brand of ALUTECH SYSTEM SERIES under the brand name of ALUTECH SYSTEM SERIES as a result of its own possibilities, technology and AR-GE works, insulated and uninsulated joinery, sliding, skylight, steel reinforced facade, sun shaker, cotta system, culvert system, And compact coated sub-carrier systems to the market.







Window Systems

WINDOW SYSTEMS









Sliding Systems

SLIDING SYSTEMS











Facade Coating Systems

FACADE COATING SYSTEMS













ALUTECHBOND COMPOSITE PANEL GENERAL FEATURES

Aluminium composite panel; is a construction material produced with the combination of two aluminium sheets and low-density polyethylene material. Aluminium sheet used at top surface is coated with PVDF which gives high surface durability to the panel. Composite panels provide high sound and heat insulation additional to its high surface durability which makes it a preferable product at construction industry.

ALUTECHBOND is an aesthetic, durable and easy care facade solution.

ALUTECHBOND COMPOSITE PANEL APPLICATION AREAS

- · Outer and inner facade applications
- · Shopping centers, hotels, exhibition and fair applications
- Varius restoration and decorative applications
- Sings and billboard applications
- Internal and external surfaces of tunnel metro stations, airports, train stations and bus terminals.

ALUTECHBOND COMPOSITE PANEL PROPERTIES

- Durable, strong and lightweight
- Process flexibility and applicability of a wide variety of colors.
- High sound and heat insuation
- · Easy manufacturing and processing
- · High resistance against hard environmental conditions
- Easy maintenance and cleaning
- · Quick and easy installation
- · Easthetic and elegant appearance
- Economic

COMPONENTS	SPECIFICATION
Aluminium sheet	EN AW 3005
Aluminium sheet outer surface	Pvdf / Kynar 500
Aluminium sheet inner surface	Primer protective coating
Intermediary filling material	Low-density polyethylene





ALUTECHBOND COMPOSITE PANEL DIMENSIONS

Standard Panel Size	4 mm x 1250 mm x 3200 mm
Panel Thickness	2 mm - 6 mm
Panel Length	max. 6000 mm
Panel Width	1000 mm - 1250 mm - 1500 mm

ALUTECHBOND COMPOSITE PANEL MECHANICAL FEATURES

Yield Strength	3,7 kg / mm ²
Tensile Strength	5,3 kg / mm ²
Elongation at Rupture	19,3 (I0 = 5,65 A0 ¹² - %)
Seperation	12,15 N / mm
Bending Strength	106 Mpa
Bending Elastic Modulus	9992 Mpa
Tensile Strength in High Temp	8,09 Mpa
Heat Transfer Coefficient	50°C / +80°C
Sound Insulation	24 dB

0.354 kN m²/m

0.177 kN m²/m

2,58 cm³/m

1,65 cm³/m

TOLERANCES OF ALUTECHBOND COMPOSITE PANEL

Panel Tehickness	±0,2 mm
Panel Length	-0 mm / + 4 mm
Panel Width	-0 mm / + 2 mm
Diagonal Difference	max. 3 mm

Curvature	
Panel Length; 900 mm - 1500 mm	max. 5 mm
Panel Boyu 1500 mm - 3000 mm	max. 7 mm
Panel Length; - 3000 mm	max. 10 mm

Weight	
Panel Tehickness; 3 mm	4,6 kg / m ²
Panel Tehickness; 4 mm	5,5 kg / m ²
Panel Tehickness; 6 mm	7,3 kg / m ²

ALUTECHBOND PVDF PAINT TEST RESULTS

Rigidity (4 mm)

Rigidity (3 mm)

Section Modulus (4 mm)

Section Modulus (3 mm)

Primer Paint Thickness	5 ± 2μm (ECCA T1-EN 13523-1)
Top Coat Paint Thickness	21 ± 2µm (ECCA T1-EN 13523-1)
Gloss (60°)	30 ± 5 (EN 13523-2)
Color Deviation	ΔE ≤ 1 (EN 13523-3)
Pencil Hardness	≥HB (EN 13523-4)
Pulse Test	No Cracking (EN 13523-5)
Cross-Strain Test	≤ GT1 (EN 13523-6)
T-Bending	1,5≤ T (EN 13523-7)
Salt Resistance (1000 sa)	No Difference (EN 13523-8)
Water Resistance (1000 sa)	No Review (EN 13523-9)
Accelerated Bad Weather Resistance	Gloss ≤10% (EN 13523-10)
Methyl - Eethyl - Ketone Resistance (MEK)	≤ 80 (ECCA T11)
Heat Resistance - (1/2 sa 60°)	No Difference (ECCA T13)
Arthritis Strength (500 sa)	-10% (EN 13523-14)
Acid Resistance (1000 sa)	Class 3 (EN 1396)
Moisture Resistance (1000 sa)	No Difference (ASTM D2247-68)



ALLOY PROPERTIES

Mechanical Properties:

Alloy	Hardness	Rm (Mpa ve N/mm²)	Rp 0.2 (Mpa ve N/mm²)	A (50) (%)
	H12	Min. 145	Min. 125	Min. 4
3005	H14	Min. 170	Min. 150	Min. 3
333	H16	Min. 180	Min. 170	Min. 2
	H18	Min. 220	Min. 200	Min. 1

All mechanical properties are "before painting" -values and might change after painting.

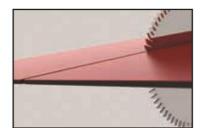
Chemical composition:

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other Each	Others Total
3005	0,6	0,7	0,3	1,0- 1,5	0,2- 0,6	0.10	0.25	0.10	0.05	0.15

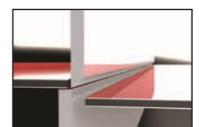
Figures are shown in % maximum, unless shown as a range.

PROCESSING METHODS

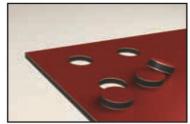
There is a wide variety of processing methods for composite panel. These methods can be processed with regular machines and it provides high quality and equivalent processing. Basic methods are mentioned below.



SAWING



SHEARING



P. BORING



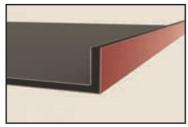
SCREWING



CLENCHING



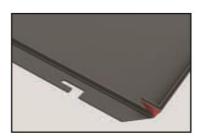
DRILLING



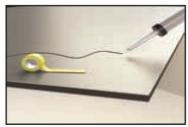
BENDING



PATCHING



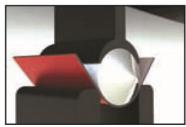
PUNCHING



STICKING



FOLDING



BENDING



CUTTING

Cutting process can be done by using a guillotine or saw. One of the most important points is choosing a carbide tipped saw in order to cut properly. By shearing, it is impossible to avoid 1 or 2 degrees of heaving at the edge of Composite Panels. In order to prevent surface defects and ridges, protective foil shouldn't be removed from the surface of Composite Panels and the cut pieces should be removed and environment should be cleaned. Cut edges can be smoothen by rubbing with sandpaper.

FOLDING

After the grooving, bending can be applied by using the suitable gauge. It is important that the composite panel is processed on a flat surface. Otherwise bending won't be along the determined axis. The bending radius should be between 2-3 mm in order to prevent cracks from happening. At the values below that, defects may be seen on the coating surface. During the bending process temperatur play a very important role and it shouldn't be below 10 °C. By every bending, grooves lengthen 0,5 - 1 mm. That's why in order to bend the panels correctly those lengthening measures should be taken into account. After the bending practice the correctness of angles and axes should be checked with the aid of suitable gauge. If necessary at the edges where bending process is applied, aluminium support profiles can be used. To prevent tearing and deformations on panels during grooving; groove angle, thickness and afterwards applied bending should be performed with care. For example to achieve an 90 degree angled bending 110 degree grooving can be performed. By end milling, applying the outer filling until 0,2-0,4 mm to the surface is very important for a suitable bending.

PUNCHING

The milling can be done with Punch Press. The ideal distance between the panel surface and mold has to be 0,1 mm and less. (2% of the panel thickness)

CLENCHING

Its possible to clench the composite panels to attach with other materials. The clench might be aluminium. The resistance of the connection points depends on the area where the hole is located. The connection holes' distance to the edge should be at least twice of the diameter. If it's necessary to use screws, it must be aluminium or stainless steel.

SCREWING

The screws during the installation of aluminium composite panels has to be aluminium or stainless. Connection holes' distance to the edge should be at least twice of the diamater. Otherwise tears can be seen on the hole parts.

DRILLING, FIXING AND PUNCHING

It is possible to make a hole by using a drill bit or punching machine. The important point is the distance of the location of the hole or punching area to the edge must be at least twice distance of the diameter of the hole.



STICKING

There are lots of materials avaliable to paste the composite panels. The suitable glue has to be choosen. The Glues which are not suitable for the surface may cause the oxidation and corruption on the surface in the future. it is necessary to follow the manufacturers advise during glue selection. The surface has to be cleaned, dirt, dust and waste must be removed from the environment. The pasting quality depends on the surface conditions compatibility. During the composite panels connection, the insulation should be done where necessary. The isolation elements used in such cases are expected to keep up with the necessary atmospheric conditions. Recomended sealant is neutral silicone.

PATCHING

Hot air supply is a special production method used in difficult areas to montage and to merge multiple tracks . Welding process is made by applying the poliethylene continuously and flat, with temperature around 260 degrees . The polyethylene - which combines the panels - should be applied on the non-painted side homogenly and properly on the surface. It is necessary to consult to the manufacturer to prevent problems during the material and equipment use. The surface which requires further process should not be painted. The damages on the surfacecan be repaired by painting and pasting during the process and montage.

BENDING

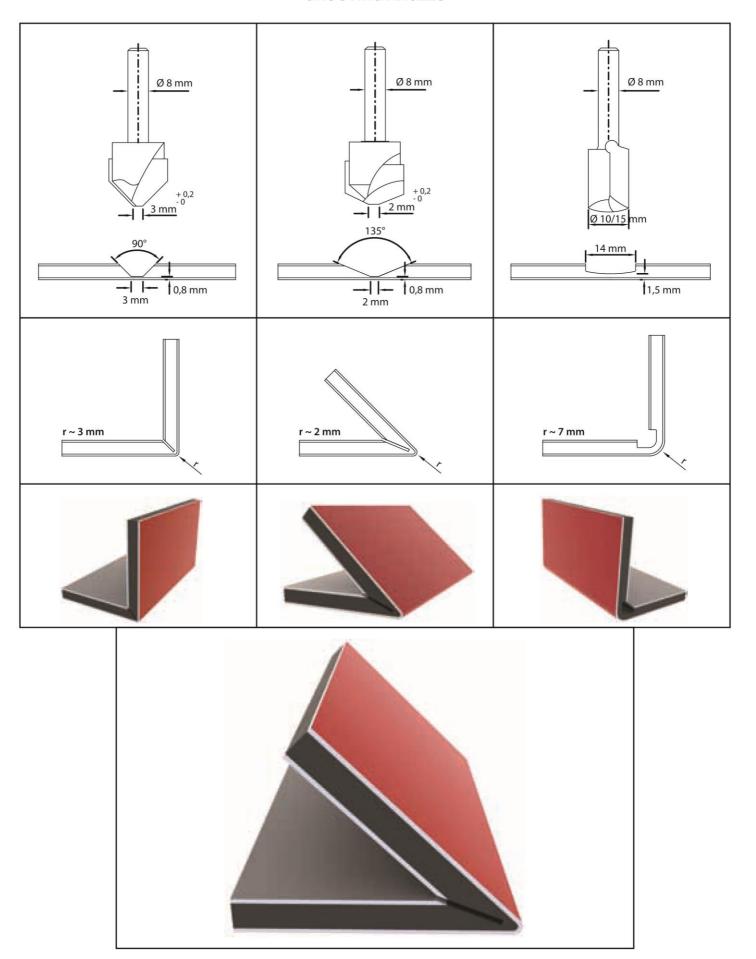
The desired values for bending process can be exerted to the composite panels. The important point before bending process is the panel thickness and the properties of composite panel filling material. If the bending process apply more than specified value, it causes metarial accumulation at the bending area. Therefore, the process should applied carefully. The bending value should be two and half times of the thickness of the composite panel.

ALUTECHBOND ON THE FACADE

Autechbond Aluminium Composite Panels are used on the facades of the buildings. There are many advantages. Alutechbond Aluminium Composite Panels provides sound and thermal isolation, easy and fast installation, flexible designs, light weight, and economical costs, which makes it highly prefered. It is lighter and provides better insulation than the solid sheets with same thickness. Alutechbond can be installed as casettes. According to Application sizes, wind load and static calculations must be made. If necessary panels must be supported by profiles. If there is no bulwark on the facade where Alutechbond Composite Panel is going to be installed, its better to insulate that area for the heat isolation of the building. Frame formed special Spandrel Panels should be used (produced from galvanized sheet and rockwool)



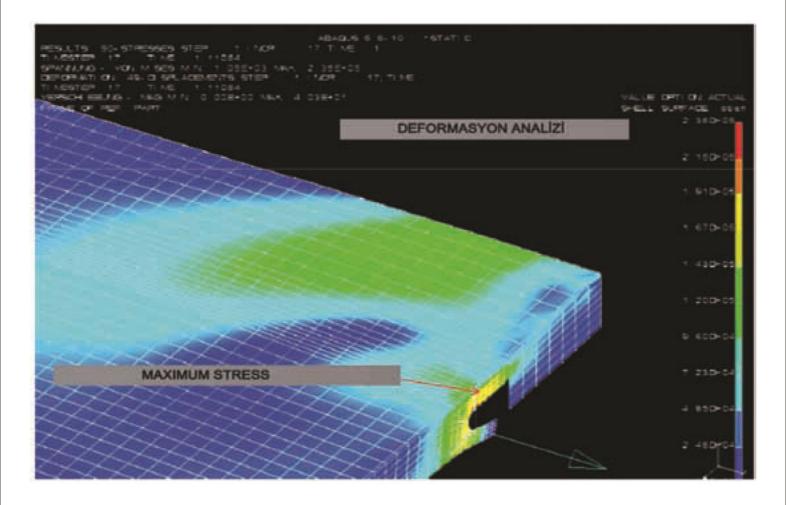
GROOVING ANGLES





No	CRITERIA
1	WIND LOAD
2	PANEL THICKNESS
3	SHEET THICKNESS & SAFETY TENSION
4	UNDER CONSTRUCTION
5	PANEL SIZES

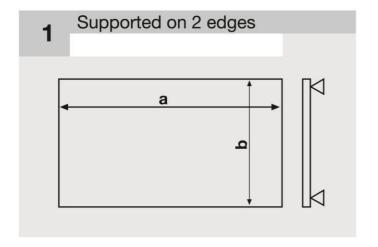
In the first phase of the project, the wind load, which may occur on the panel, has to be calculated according to the severity of the wind. Case of not achieving the required values, deformations may occour on the sub-construction of the composite panel.

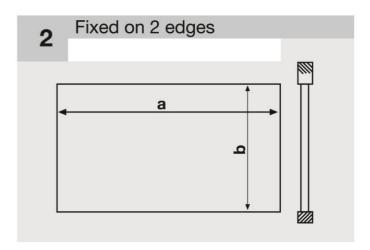


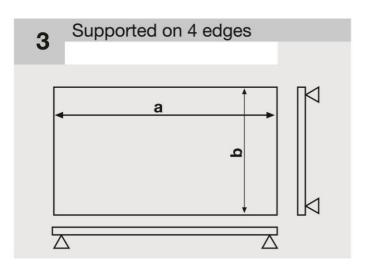
panel Composite Panels are montaged onto aluminium or steel sub-construction. Therefore it is not only the panel which is exposed to wind load. The sub-construction on which the panels have been montaged will be exposed as well. During the statical calculation of sub-construction allowed maximum stress should not be exceeded.

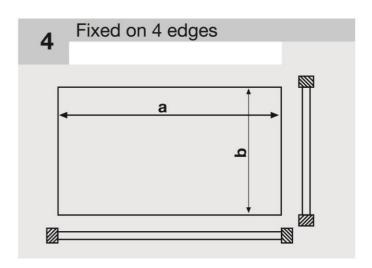


CALCULATING MAXIMUM STRESS ACTING ON THE SURFACE









1			Stress = 0	.75·w·b²/t²			
2	Stress = $0.5 \cdot \text{w} \cdot \text{b}^2 / \text{t}^2$						
3			Stress =	B·w·b²/t²			
a/b	1	1.2	1.4	1.6	1.8	2.0	3.0
В	0.2874	0.3762	0.4530	0.5172	0.5688	0.6102	0.7134
4	Stress = B·w·b²/t²						
a/b	1	1.2	1.4	1.6	1.8	2.0	>2.0
В	0.3078	0.3834	0.4356	0.4680	0.4872	0.4974	0.5000



CLEANNING OF ALUTECHBOND COMPOSITE PANELS

Alutechbond Composite Panels must be cleaned at least once a year with detergent. Water temperature must be less than 45 degrees and detergent PH degree must be between 5 - 8 to prevent any damages on the surface.

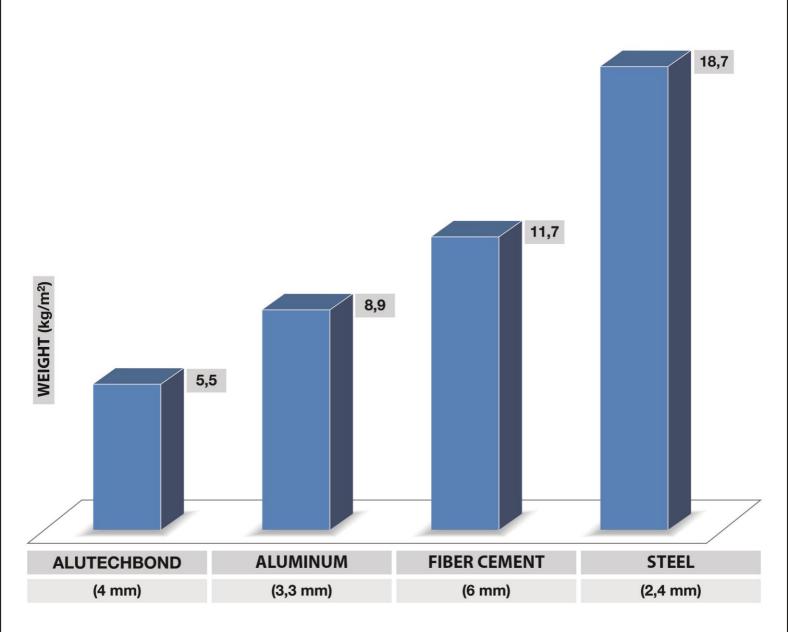
STIFFNESS OF ALUTECHBOND COMPOSITE PANELS

Alutechbond, which consists of two aluminium sheets 0,5 mm thickness and there between low density polyethylene, is as rigid as the other sheets which are heavier than them.

COLOR OPTIONS OF ALUTECHBOND COMPOSITE PANELS

Alutechbond provides elegant colors and atractive designs for your elite projects. Please check Alutechbond color chart for standart colors. Alutechbond panels can be produced by any RAL, Pantone color depending on request and quantity.

Please check Alutechbond color chart for colour and design options



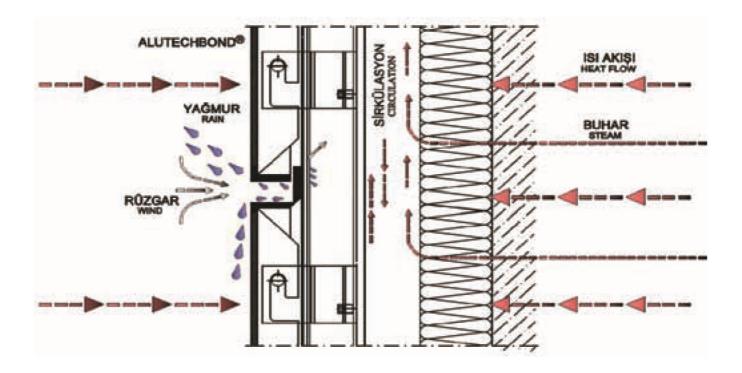


WATER PROOFING

There are two types of application methods. You can find details below; Application methods will be choosen accordingly to where the visual and functional requirements.

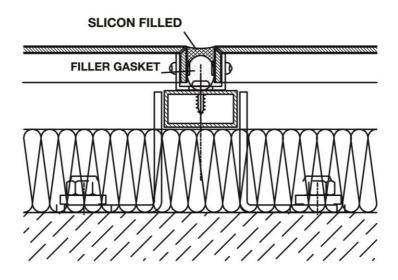
OPEN GROOVED SOLUTIONS

On the Composite Panel applications water transfer and stratification made by the composite panel bending form and the profiles used on the connection points. This system provides air circulation inside. The drops are dried with this circulation.



SLICON FILLED SOLUTIONS

Water insulation is performed by filling all the gaps with silicone which is visible from outside. The silicon must be suitable for environmental conditions.





ASSEMBLING DIRECTION OF METALLIC COLORS ON ALUTECHBOND COMPOSITE PANELS

Alutechbond Composite Panels are covered with protective film to prevent any damages during transportation and installation. These protective foils are providing high UV resistance and easy disassembling. Foils must be disassembled with 180 degree angles and disassembling must be done max in 30 days after installation. Otherwise if panels are exposed to direct sun light or rain, disassembling foils will be harder and panels are likely to be damaged. Until montage of profiles and during montage the foils must be kept attached on panels. Installation of composite panels must be on the same direction of arrows on the protective foils. Especially in metallic colors this is a very important issue during installation. If the panels are installed in different directions of arrows there will be a color tonality difference on panels.

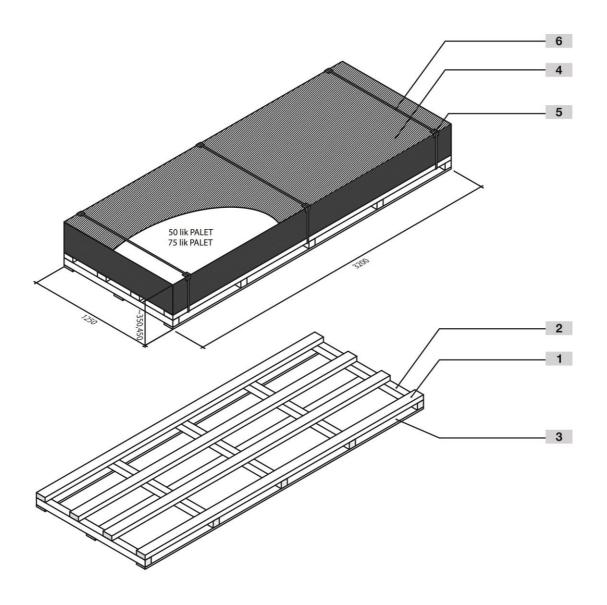




ALUTECHBOND COMPOSITE PANEL STORING, PACKAGING AND SHIPMENT

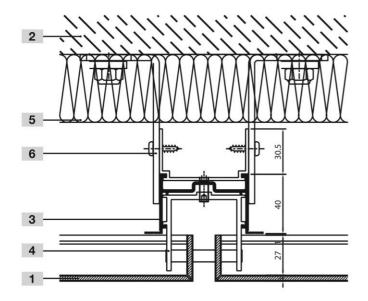
Composite Panels should be kept in well vantilated, dry and clean areas. To prevent damages of the paint on the surface should be used plastic brackets and cardboards. Ideal storage period is 6 months. 50 - 100 plates on one pallet. Panels with same size should packaged together. To have a clean and smooth surface on the panels they should be kept clean.

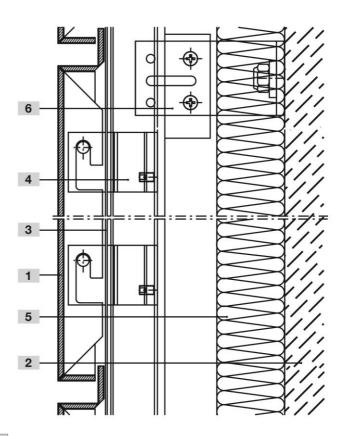
PALET MATERIAL							
No	DESCRIPTION	DIMENSIONS	QUANTITY				
1	WOOD WEDGE	50 x 100 x 3200 mm	4 piece				
2	WOOD WEDGE	70 x 70 x 1250 mm	5 piece				
3	WOOD WEDGE	20 x 100 x 3200 mm	3 piece				
4	CARDBOARD	1250 x 3200 x 4 mm	2 piece				
5	PLASTIC BRACKET	50 x 80 x 4 mm	6 piece				
6	POLY BAND	15 x 1 mm	3 piece				



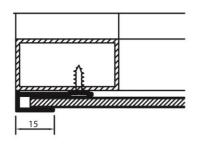


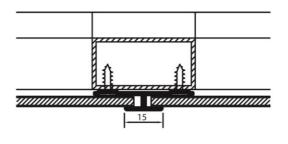
ALUTECH CARRIER SYSTEM FOR COMPOSITE PANEL

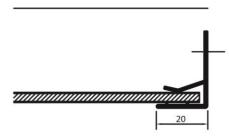




ALUTECH CARRIER SYSTEM MATERIALS				
No	DESCRIPTION			
1	ALUTECHBOD COMPOSITE PANEL			
2	CONCRETE WALL			
3	VERTICAL CARRIER PROFILE			
4	FIXING PROFILE			
5	ROCKWOOL			
6	GALVANIZED ANCHOR			

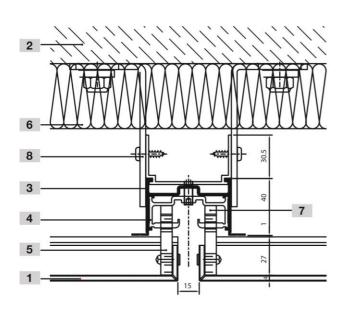


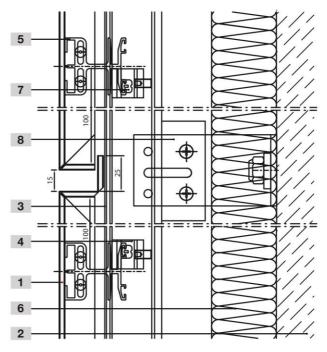






ALUTECH CARRIER SYSTEM FOR COMPOSITE PANEL





ALUTECH CARRIER SYSTEM MATERIALS				
No	DESCRIPTION			
1	ALUTECHBOD COMPOSITE PANEL	5	CONNECTION PROFILE	
2	CONCRETE WALL	6	ROCKWOOL	
3	VERTICAL CARRIER PROFILE	7	EPDM GASKET	
4	FIXING PROFILE	8	GALVANIZED ANCHOR	































ALUMINIUM COMPOSITE PANEL





ALUMINIUM COMPOSITE PANEL





CERTIFICATE





