



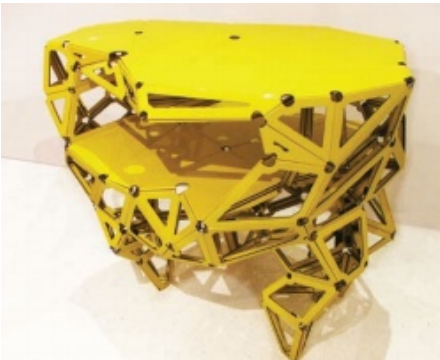
ALUPANEL

aluminium composite panel

Display
Design
Solutions

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Alupanel is a decorative Aluminium Composite Panel with 1001 uses!

Alupanel – An internationally recognised product providing pioneering solutions to the sign, advertising and construction markets.

In a highly crowded business environment it is vital to get noticed. From eye catching signage, innovative point of sale displays to highly effective way finding solutions, there is only one all round solution – Alupanel.

A premium quality composite panel, Alupanel features two 0.30mm aluminium sheets, sandwiching a polyethylene core.

Available in one of the widest colour ranges on the market, all standard PE colours come with a 5 year guarantee for internal and external applications*.

Please see application pages for more details.

*Brushed and Mirror finishes have a 5 year guarantee for INTERNAL application only.

Alupanel can be used in the following applications:

- ❖ Sign Making and Out of Home Media
- ❖ Shop Fitting and Design
- ❖ Manufacture of Point of Sale Displays
- ❖ Exhibition Stand Designs
- ❖ Way finding Solutions
- ❖ Partitioning, Wall Linings and Suspended Ceilings
- ❖ Industrial Applications



This list of uses is by no means complete or exhaustible!

Make Alupanel your Display Design Solution.



10 Reasons to use Alupanel

- 1 Incredibly rigid with an impressive weight advantage
- 2 Dimensionally Stable. Minimal Expansion and Contraction rates*
- 3 High quality, fully certified product.
- 4 High UV Resistance**
- 5 5 Year product guarantee***
- 6 Incredibly flat, smooth surface
- 7 Simple to cut, router, fold and bend!
- 8 One of the largest colour ranges on the market, available globally
- 9 Suitable for digital printing, screen printing, vinyl application and painting
- 10 The most competitively priced, high quality ACP on the market

* Please see technical specification for contraction rates

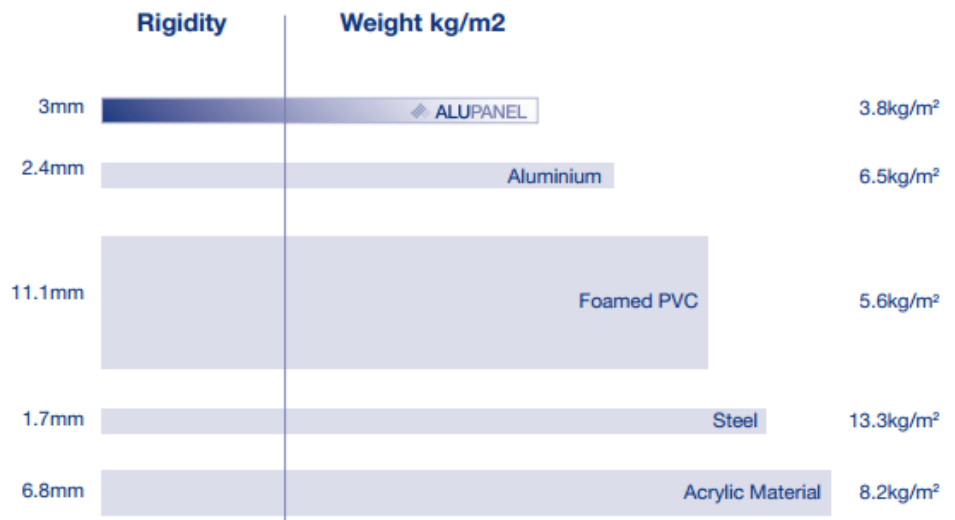
** Please refer to Installation Guidelines for UV Resistance

*** Internal guarantee only for Mirror/Brushed finishes

Weight vs Rigidity

ALUPANEL is light!

At equal rigidity of the materials shown, ALUPANEL is the lightest per M2!



Sign Making & Shop Fitting

Sign Making + Out of Home Media

Due to the outstanding flatness and formability of Alupanel, it lends itself extremely well to the manufacture of signs. Direct digital print and vinyl application will both adhere brilliantly to the panel due to its extreme smoothness and high quality PE paint finish. This also makes it perfect for the more traditional screen printing and hand painting methods.

With one of the highest gloss levels in the industry, Alupanel exudes quality in every aspect.

The availability of over 17 colours and 16 special finishes, as standard, increases the possibilities of corporate colour matching, but it doesn't end there! We can match almost any RAL or Pantone Colour*, to create perfect colour matched panels.

*MOQ applies to colour matching.

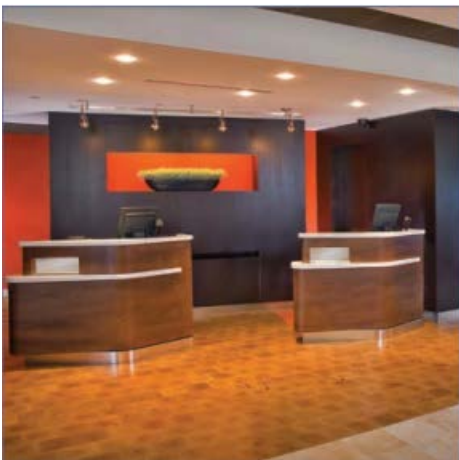


Shop Fitting

Alupanel is the ideal solution for creating cost effective, quality finishes for offices, shops and professional retail environments.

The ability to machine, form and cut Alupanel provides almost endless solutions and possibilities to the shop fitting market. Alupanel can even be cut on site, without the requirement of heavy machinery – saving time and cost during installation.

Perfect for reception areas and counter tops, cubicles and partitioning, wall linings, cladding, feature bulkheads and even kitchen splash backs.



Internal Partitioning & POS

Internal Partitioning

Alupanel can be used for office partitioning, creating high quality temporary or permanent partitions, in many colours and finishes.

Our interior aluminium cladding system allows easy on site construction of partitioning, and is available as a complete system.



Internal Partitioning

The unique qualities and range of finishes means Alupanel is an ideal solution for quality POS display manufacture.

The sign manufacturing capability, described overleaf, combined with the lightweight nature of the product and the ease of machining and forming, means that this is an excellent product for this application.



Exhibition Stands & Industrial Applications

Transport and Industrial Applications

Alupanel is commonly used in Transport and industrial applications, from wall linings in trains and buses, to internal and external linings of articulated and commercial vehicles. It is also widely used in flooring.

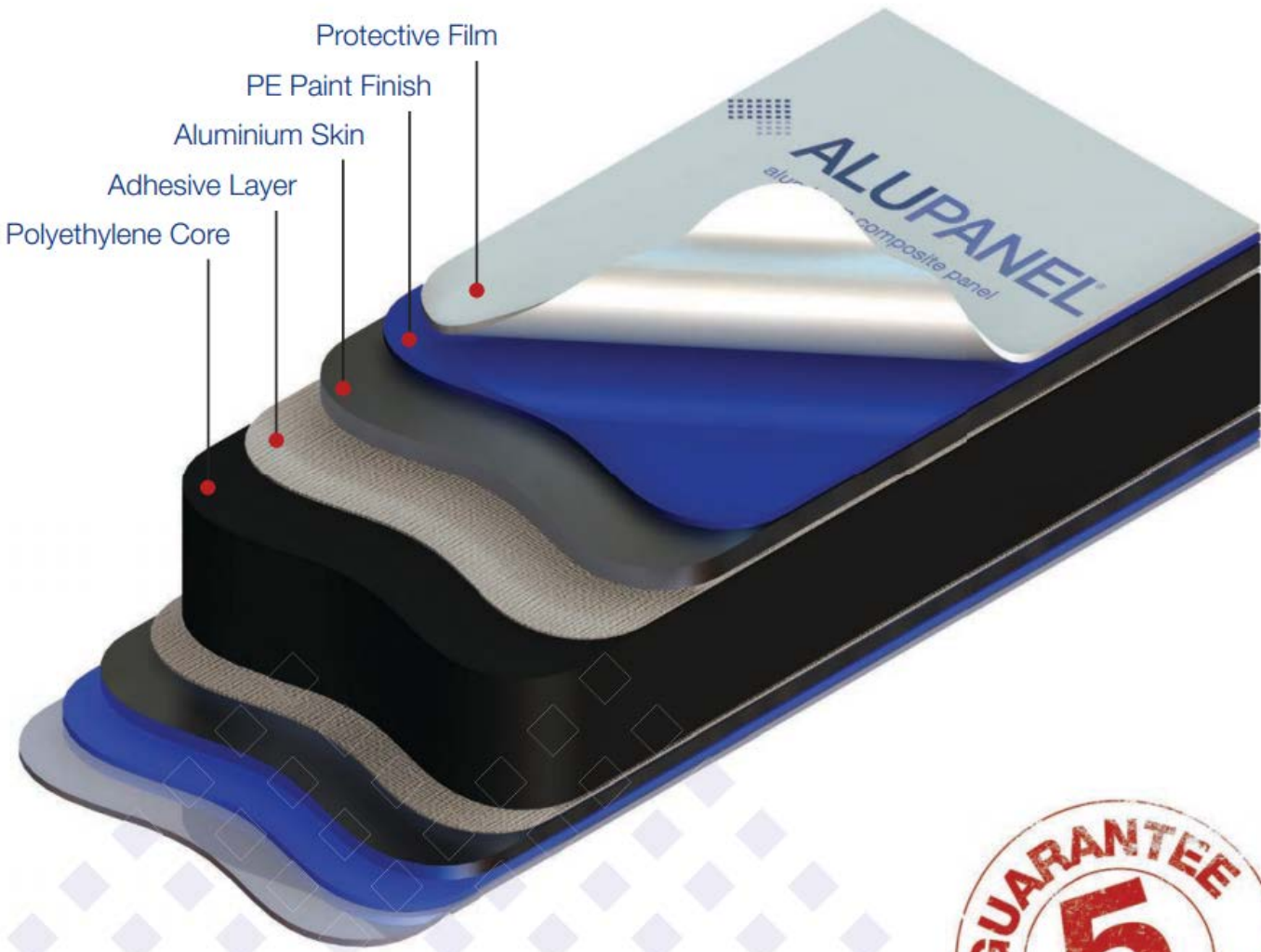


Exhibition Stand Design

At exhibition and Trade fairs, it is an even greater challenge to stand out from the crowd of large, innovative exhibition stands. Alupanel gives you the unique opportunity to do just this, with a panel that will create a solid and hard wearing structure that can be moved from location to location. With plenty of colours and finishes available and the potential to create outstanding 3D structures, Alupanel will be sure to get you noticed.



Alupanel Product Composition



Processing Techniques - One

Sawing & Cutting



Circular Saw:

Trapezoidal / flat tooth blade. Flat teeth chamfered at 45°C, Carbide tipped.

Saw blade diameter:

300mm.

Number of teeth:

72 for cutting up to 5 panels, 96 for single cuts avoiding burrs.

Saw blade diameter:

250mm.

Number of teeth:

60 for cutting up to 5 panels, 80 for single cuts to avoid burrs.

Tooth Thickness: 3.2mm

Clearance Angle: 15°

Rake Angle: 10° Positive

Hot Air Welding



A polyethylene welding rod is available for use with an electric hot air welding set.

Bending with a Panel

Folder

Use a folding table. Minimum inside radius = $40xt$ (t = panel thickness).



Routing



Alupanel can easily be folded by hand if a 'V' shaped groove is milled on the rear of the panel. This can be done using a conventional router (available from your local DIY store) or CNC milling machine. A minimum of 0.30mm Polyethylene should be left on the back layer when routing to avoid sharp corners or paint chipping.

Sharp tools must be used in order to avoid damaging the edge of the material.

Cutting Speed:

3000 – 5000 m/min

Feed Speed:

20 – 25m/min



Processing Techniques - Two

Bending with a 3 roller panel bender



3-roller panel bender is recommended for bending large internal diameters.

Clamping and Bolting



3mm & 4mm Alupanel can be clamped with a serrated corner joint and butt sections. When bolting, $e=2D$ is the formula to use to calculate the distance of fixing to the end of the panel. For external use please refer to our thermal expansion document.

Shearing



Use a standard guillotine for this purpose.

Ensure the top cover sheet is inserted properly.

Spray Painting and Coating



Standard air drying painting acrylic or two part polyurethane coatings are suitable.

Drilling



Alupanel is easily drilled – For best results, use drill bits specifically designed for drilling aluminium and plastic. For large holes, a drill bit with a locating point is required.

Cutting Angle:

100° - 140° Helix angle: 30° - 50°

Cutting Speed:

50 – 300 m/min

Feed Speed:

0.02 – 0.5mm / Revolution

Hole Size:

Screw width + 2mm



Processing Techniques - Three

Riveting



Alupanel can be riveted with standard equipment using rivets or blind rivets.

For external use please refer to our thermal expansion document.

Hole Size = Rivet Width +2mm

Folding



Alupanel can easily be folded by slotting or routing a groove on the rear of the product, as described in the slotting and routing section.

Punching

Use a steel band tool on a punching base for 2mm and 3mm thickness.

Conventional punching machines are ideal for this process.

Digital & Screen

Printing

Alupanel is perfect for digital and screen printing due to its outstanding flatness.

Please pre-test a small patch to ensure ink suitability. Once protective film has been removed, the panel is ready for printing. Panels must be clean and free from grease.

Vinyl Application

Ensure panels are clean and free from grease. The smooth, flat surface combined with the dimensional stability ensures a long lasting finish. Vinyl can be applied either wet or dry.

Laminating

Alupanel can be laminated using a specialist machine, or by hand. The quality of the PE finish ensures a strong bond between the panel and laminating material. Panels must be clean and free from grease.

Gluing

Use standard metal/aluminium adhesives. Avoid contact with the Polyethylene core as some adhesives will attack it. Double sided tape designed for use with metal/aluminium can also be used.

Smoothing Edges

After cutting Alupanel, any rough edges may be removed using a file with a rasp like effect. Always file along the length of the cut edge.

Thermal Expansion

Before use, please refer to our thermal expansion document which details recommendations and instructions for panels that will be subject to temperature fluctuations.

Directional Finish

Alupanel has a directional finish (indicated by the arrows on the protective film) and must always be installed in the same direction.



Technical Details

Panel Dimensions					
Panel Thickness (mm)	2	3	4	6	8
Aluminium Skin Thickness (mm)	0.30				0.40
Weight (Kg/m ²)	2.9	3.8	4.75	6.6	8.79
Standard Sizes (mm)					
1000 x 2440	*	*			
1000 x 3050	*	*			
1220 x 2440	*	*	*	*	*
1220 x 3050		*			*
1500 x 3050	*	*	*		
1500 x 4050		*	*		
2000 x 3050		*	*		
2000 x 4050		*			

Dimensional Tolerances	
Thickness (mm)	-0 + 0.2
Width (mm)	± 2
Length (mm)	± 3
Diagonal (mm)	± 5
Thermal Expansion	2.4mm/m @100°C Temp Difference
Aluminium Thickness (mm)	± 0.02

Surface Properties	
Paint Thickness (micron)	20
Pencil Hardness	2H
Toughness of Coating	3T
Temperature Resistance	-50°C to +90°C
Impact Strength (Kg/cm ²)	50
Boiling Water Resistance	Boiling for 2hrs without change
Acid Resistance	Surface immersed in 2% HC1 for 24hrs without change
Alkali Resistance	Surface immersed in 2% NaHO for 24hrs without change
Oil Resistance	Surface immersed in 20# engine oil for 24hrs without change
Solvent Resistance	Cleaned 100 times with Dimethylbenzene without change
Cleaning Resistance	>1000 times without change
Peel Strength 180°	>5 Newton/mm

Product Properties					
Sound Absorption NRC	0.05				
Sound Attenuation Rw db	23	24	25	26	27
Water Absorption % by Volume	0.01				
Thermal Performance R Values	0.0047	0.0080	0.0113	0.0180	0.0246
Core Composition	LDPE				
Fire Performance	Class 1 BS476 PT7 Class 0 BS476 PT6				
Tensile Strength of Aluminium Layers	149MPa				



General Information

Certificates:

Certification		
TEST/CLASSIFICATION	CERTIFICATE NUMBER	TESTING ORGANISATION
ISO9001:2008	02509Q10102R2S	QMS
ISO14001:2004	04110E20070R0M	EIC
ISO140-3:1995	AU09114039-1 (R1)	Intertek
ISO4892-2:2006	AU09114039-1 (R1)	Intertek
EN438:2005	TC07/090020	UKTC
EN10002-1:2001	AU09114039-1 (R1)	Intertek
EN301:1993	AU09114039-1 (R1)	Intertek
EN13446:2002	AU09114039-1 (R1)	Intertek
EN1604:1997	AU09114039-1 (R1)	Intertek
EN13501-1:2002	AU09114039-1 (R1)	Intertek
EN319:1993	AU09114039-1 (R1)	Intertek
EN1602:1997	AU09114039-1 (R1)	Intertek
EN12664:2001	AU09114039-1 (R1)	Intertek
EN1186-3/1/14:2002	GZATR071200944CM	SGS
REACH	AU09114039-1 (R1)	Intertek
BS476 PART 6 & 7 (CLASS 1 & 0)	GZML05110606	SGS
M1	K091185	LNE
RoHS	SZHJ174957	Intertek
RoHS	101189-601135	Bureau Veritas (LCIE)
RoHS	SHAH00148327	Intertek

Recycling

Bay Plastics Ltd operate a recycling policy where full pallets of clean, de-nailed ACM will be collected from site and returned to our factory, where they will be recycled back into our products or into products for other world markets. We operate in compliance with all applicable environmental legislation and hold all relevant certification for our products. We are dedicated to the reduction of toxic emissions and strive to work to best environmental practices in everything that we do.

Warranty

All Alupanel PE finishes come with a 5 year warranty for internal and external use. All Alupanel brushed and mirror finishes come with a 5 year warranty for internal use only.



Storage, Handling & Colours

Storage Instructions:

Alupanel should be stored in a clean, dry area. Before use, ensure panels are at a minimum temperature of 15°C. It is important that when sheets are not in use they are stored correctly. A protective layer between sheets is advised to prevent damage occurring and stacking on a level, horizontal surface is recommended.

Protective Equipment:

In all cases you should follow the safety practices of your workplace. However, we advise you to handle any sheets with gloves, and strictly follow the instructions of your machining equipment manufacturer.



Protective Films:

The clear film on both sides of the panel is a protective measure whilst the panel is being processed, transported and installed. This protective film should remain on the panel for the duration of the installation only. You must remove this film once the panel has been fixed and set in place. The gloss/matt finish is clearly marked on each side of the film. Due to the nature of the finishing product the paint has directional quality. Care must be taken when using multiple sheets to ensure that the panel is installed in the same direction. This can be done by following the direction of the printed arrows on the protective film.

Handling Alupanel:

Alupanel should be handled with care. If large sheet sizes must be handled it is recommended that a suitable number of staff should assist in the process. When removing panels from a pallet/stack never drag the panel, always lift clear above the remaining panels on the stack.

Protective Films:

Regular cleaning may be required depending on where the panel has been used.

- ❖ A moderate amount of pressure is all that's needed in order to clean the surface.
- ❖ It is important that you avoid any alkaline, acidic and abrasive cleaning products as this can have an adverse effect on the panel's polyester coating.
- ❖ When the panel has been cleaned you should rinse off with clean water and rub down with an absorbent cloth/leather to remove any residue left behind.

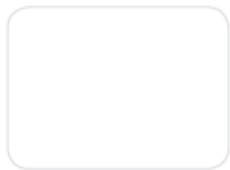
Colours:

We have the flexibility to provide a full range of non-standard colours to match almost any RAL and Pantone colour. Special orders will be subject to a minimum order quantity and a marginally longer lead time than a standard product.

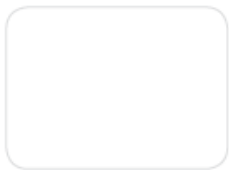


Standard Colour Range

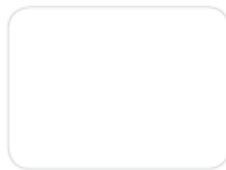
PE Finishes



Ultrawhite



Pure White 302



Platinum White 9016



Light Ivory 1015



Ultra Marine Blue 5002



Blue 5022



Green 6005



Traffic Green 6024



Traffic Yellow 1023



Orange 2004



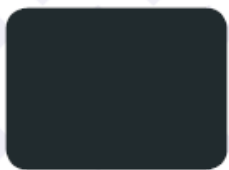
Traffic Red 3020



Burgundy Red 3004



Traffic Grey 7042



Anthracite Grey 7016

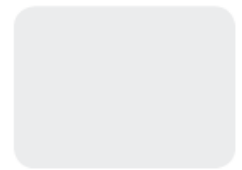


Chocolate 8011

Metallic Finishes



Silver 9006



Silver Mirror



Brushed Aluminium



Brushed Copper



Brushed Gold



Brushed Copper Gold



Gold Mirror



Bronze Metallic



Jet Black 9005



Brushed Black





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