



 **ALUPANEL***XTSERIES*
architectural cladding series

Architectural Design Solutions

 **MULTIPANELUK**^{LTD}
a multitude of applications

ALUPANELXTSERIES

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ALUPANELXTSERIES

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Introduction

Multipanel UK - An internationally recognised brand providing pioneering solutions to the Architectural, Building and Construction markets.

The ALUPANEL XT SERIES encompasses two slightly different cladding products, ALUPANEL XT and ALUPANEL XTFR

ALUPANEL XT has a polyethylene core sandwiched with two 0.50mm aluminium sheets, suitable for exterior cladding applications.

ALUPANEL XTFR has been specifically designed to be used in

architectural applications requiring a strong, resistant, fire proof material. It's made with a fire resistant mineral core, and holds the industry recognised B fire rating. Built around this core are again two sheets of 0.50mm aluminium, using a sophisticated laminating process.

Both options are face coated in Polyvinylidene Difluoride (PVDF) - Kynar 500, which is highly resistant to corrosive atmospheric conditions, solvents, acids, UV, heat, and low smoke exposure.

A specialist NANO coating is also

available to provide further protection against dirt, grease and graffiti.

The reverse of the panel is coated in a polyester (PE) primer finish which prevents any contact between the aluminium and the atmosphere, further protecting it against corrosion.

ALUPANEL XT SERIES can be used in the following applications:

- Architectural Applications
- Rainscreen Walling
- External Facades
- Wall Cladding
- Roofing
- Tunnel Linings
- Canopies



Make the ALUPANEL XT SERIES your Architectural Design Solution.

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ALUPANEL XT SERIES

NANO, BBA & Wind Loads

NANO Technology

"NANO technology is the engineering of functional systems at the molecular scale".

A thin transparent layer of NANO coating is applied on top of the standard PVDF coating and provides advanced, highly effective protection against atmospheric dirt and graffiti.

The panel coating is able to clean itself after a rain shower due to the special molecular structure of the paint. The low coating tension makes it very hard for dirt or grease to stick to the

surface, and any rainfall can assist the self-cleaning of the panel.

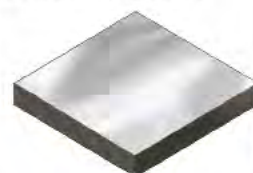
Maintenance and cleaning costs will be dramatically reduced, and the panel will remain clean and free from dirt.

NANO technology is:-

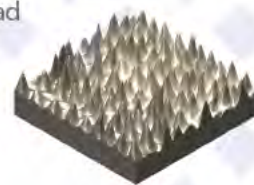
- Anti-Acid
- Anti-Moisture
- UV-Resistant
- Weather-Resistant
- Self-Cleaning
- High Gloss
- Anti-Graffiti
- Anti-Scratch
- Easy-Clean
- Anti-Abrasion
- Anti-Salt
- Anti-Alkali

Under the Microscope

Impression of NANO coating under the microscope. A smooth finish that prevents dirt, oil or grime to stick to the panel.



A finish without NANO properties could lead to a small build up of dirt, oil and grime.



BBA Certification

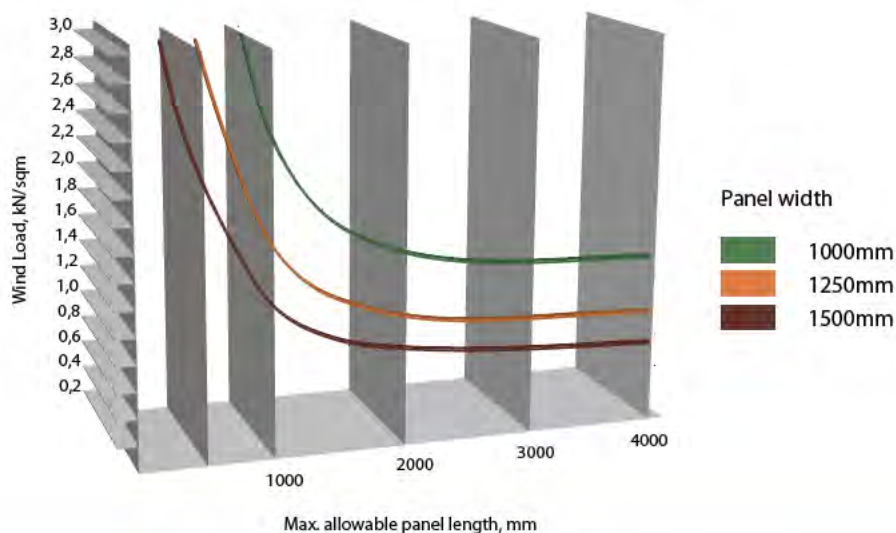
The ALUPANEL XT SERIES has been granted full BBA certification (British Board of Agreement) for use in the construction industry as cladding panels. The products were assessed under the following factors:-

- Practicability of installation
- Strength and stability
- Behaviour in reaction to fire
- Air and water penetration
- Maintenance
- Durability



Wind Load & Panel Size Chart

Alupanel XT 4mm



Some benefits...

Weight vs Rigidity

The ALUPANEL XT SERIES is light!

At equal rigidity of the materials shown, ALUPANEL XTFR and ALUPANEL XT are the lightest per m²!

The incredible flatness, strength and stiffness of the ALUPANEL XT SERIES coupled with the outstanding weight advantages enables each panel to be used in almost any architectural/construction application, creating a strong and rigid structure.



Noise Reduction

The ALUPANEL XT SERIES is ideal for applications requiring a sound proof element.

These good noise dampening properties make the XT SERIES perfect for residential applications where inhabitants can benefit from a 26dB noise reduction.

These properties also make ALUPANEL XTFR and ALUPANEL XT very good solutions for applications such as transport interiors, casing for high noise industrial equipment and many others where sound isolation is necessary.



Top Advantages

- Formable
Extremely versatile and easily formable. Can be folded by routing the reverse of the material to form cassettes, or can be bent with the use of specialised equipment.
- Strong and Flat
A high quality core and strict QC procedures ensure the panels are completely flat.
- 20 year guarantee
ALUPANEL XTFR and ALUPANEL XT are available with a guarantee of up to 20 years.

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ALUPANELXTSERIES

Applications One

Rainscreen Walls

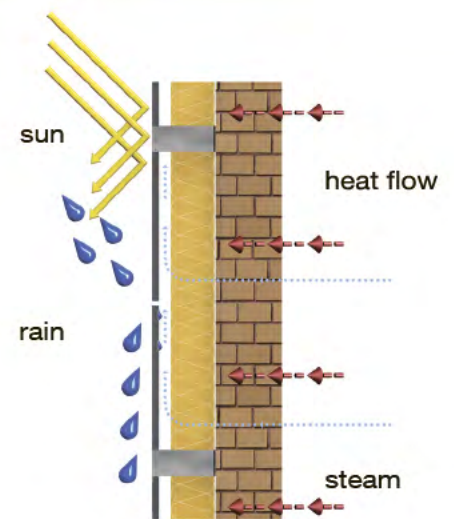
The **ALUPANELXTSERIES** is the perfect choice for rainscreen projects as each product combines impressive weight advantages, outstanding rigidity, easy fabrication, a wide colour range and offers high resistance against atmospheric conditions.

Any water that penetrates travels down the reverse of the panel without touching any insulator or bearing structures. Air is able to move freely

which dries out the wall and allows steam/condensation to escape.

The **XTSERIES** also creates a thermal barrier for improved temperature control of the interior of the building.

Combined with our L1 & L2 fixing systems, it provides a complete solution for attractive, hardwearing rainscreen walls.



Applications

Two

Corporate Identity

The **ALUPANELXTSERIES** is ideal for providing a consistent, professional finish on all corporate identity cladding/signage. The ability to match almost any RAL colour and the hardwearing, long lasting paint finish means your cladding/signage will look as good as new for years to come. Some outstanding attributes such as formability, weather resistance and rigidity mean our panels are the preferred choice time and time again.



Residential

It's hard in the design world to stand out from the crowd and create a structure that is unique and eye catching. Our extensive range of colours and finishes coupled with the ability to produce unique forms offer unlimited possibilities. A residential setting is also perfect for the inclusion of our NANO surface finish, offering exceptional protection from graffiti, dirt/grime build up and protection from atmospheric conditions.



Refurbishments

Many older structures are now beginning to suffer from our harsh atmospheric conditions, from cracked stonework to stained concrete. The most time efficient and cost effective renovation comes from cladding with the **ALUPANELXTSERIES**.

Our unique, extensive colour range can modernise any building and create a contemporary, new look.



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ALUPANELXTSERIES

Processing Techniques One

Sawing & Cutting



Circular Saw:
Trapezoidal/flat tooth carbide blade.
Flat teeth chamfered at 45°,

Saw blade diameter:
300mm

Number of teeth:
72 for 5 panels; 96 for single cuts

Saw blade diameter:
250mm

Number of teeth:
60 for 5 panels; 80 for single cuts

Tooth Thickness: 3.2mm
Clearance Angle: 15°
Rake Angle: 10° positive

Shearing



Use a standard guillotine for this purpose and ensure the top cover sheet is inserted properly.

Drilling



ALUPANELXTSERIES 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 mm/min

Feed Speed:
0.02 - 0.5mm / Revolution

Hole Size:
Screw width + 2mm

Hot Air Welding



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

Routing



ALUPANELXTSERIES 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.

Sharp tools must be used.

Cutting Speed:
3000 - 5000 mm/min

Feed Speed:
25 - 30 mm/min

Clamping & Bolting



4mm can be clamped with a serrated corner joint and butt sections.

Processing Techniques

Two

Bending with a 3 Roller Panel Bender



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

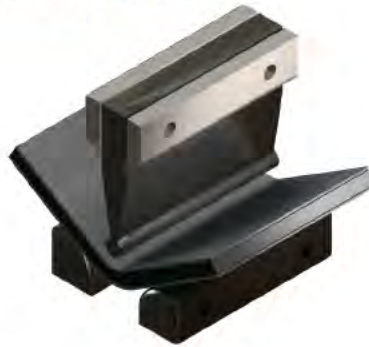
Riveting



ALUPANELXTSERIES can be riveted with standard equipment using rivets or blind rivets. For external use please refer to our Thermal Expansion document (available from your local sales manager/distributor).

Hole Size = Rivet Width +2mm

Bending with a Panel Folder



Use a folding table. Min inside radius $r=15xt$ (t =panel thickness).

Folding



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

Smoothing Edges

After cutting **ALUPANELXTFRA2** & **ALUPANELXT**, 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 installation, please refer to our Thermal Expansion document which details recommendations and instructions for panels that will be subject to temperature fluctuations.

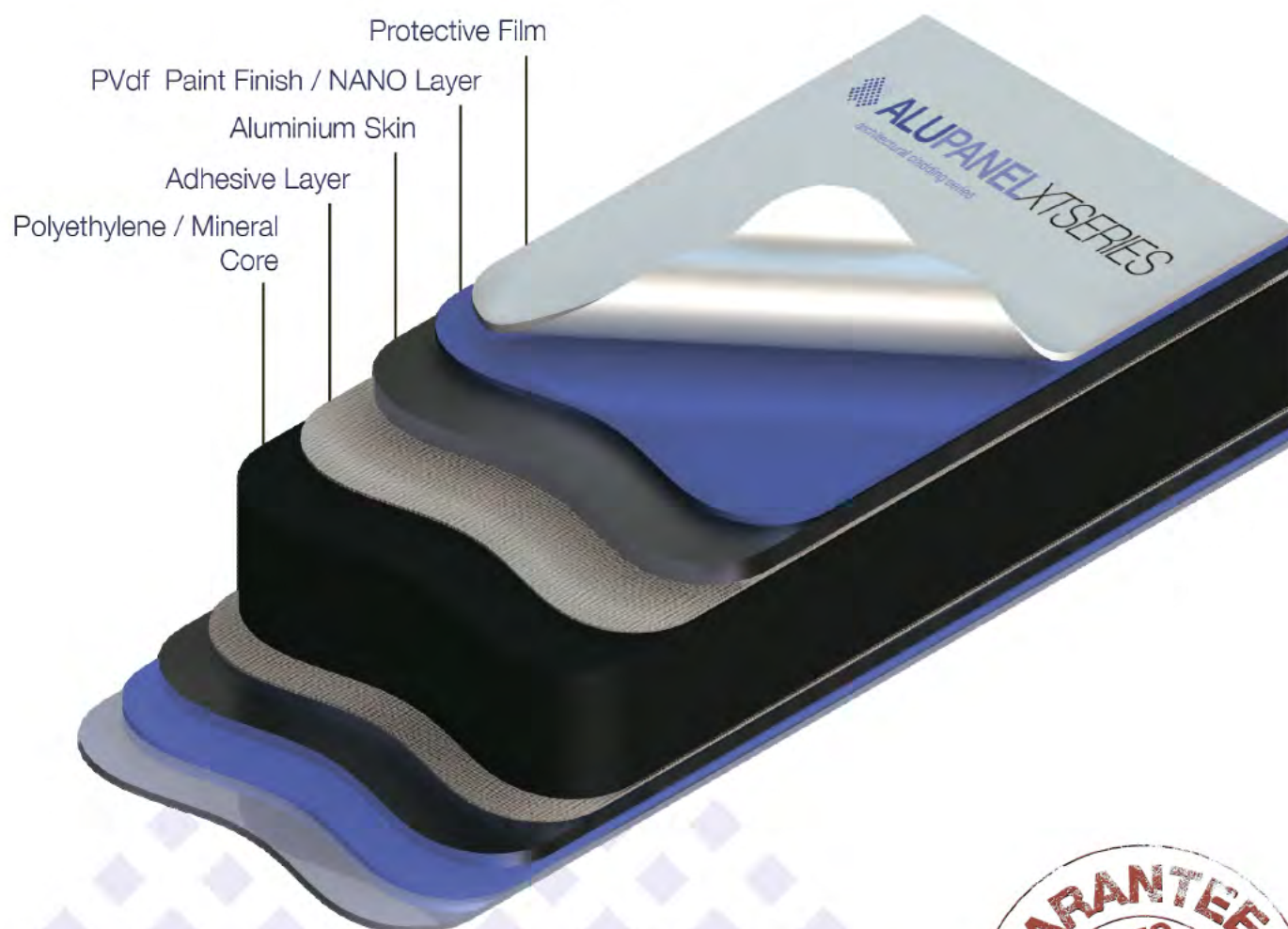
Directional Finish

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

Please refer to our installation/ fabrication manual before undertaking any of the above techniques.

ALUPANEL XT SERIES

Product Composition

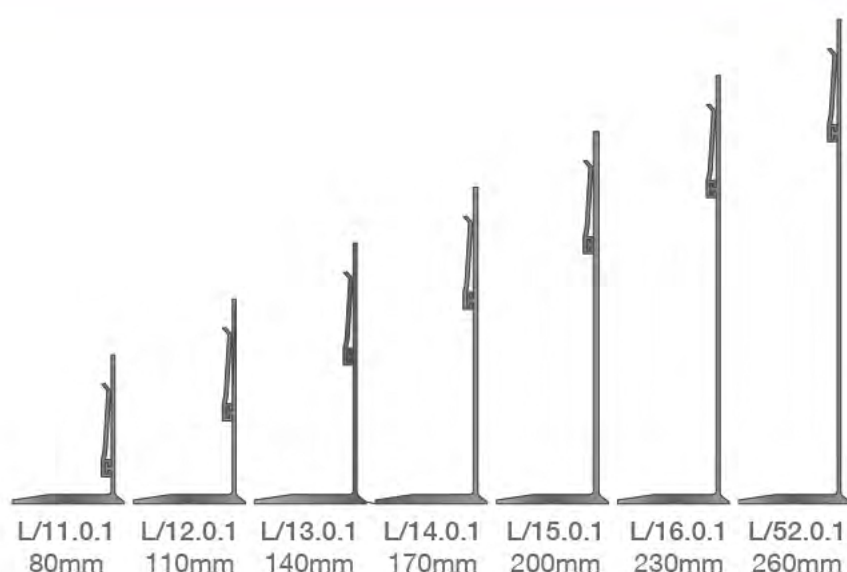


L1 & L2 Fixing Systems

System Elements



External Wall Bracket
(L1 & L2)



L/20.0.0
Carrier Profile
(L1 & L2)

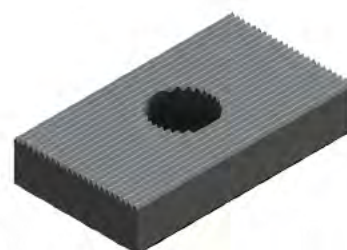


L/22.0.1
Slider Profile
(L1 only)



L/21.0.1
Fixing Tube
(L1 only)

L/23.0.1
Enforcing
Washer
(L1 & L2)



L/59.0.0
Bracket
Insulator
(L1 & L2)



ALUPANELXTSERIES

L1 Fixing System

L1 & L2 Systems

L1 and L2 cladding systems have been designed for the installation of **ALUPANELXT** / **XTFRA2** panels onto exterior walls.

The L systems create a ventilated cavity between the cladding screen and the wall/insulation surface. A gap of 20-100mm enables air to freely circulate and subsequently vaporise any moisture, keeping the wall and insulation as dry as possible.

There are 2 different options available for fitting XT/XTFRA2. The first option – **L1**, is designed to be used with folded cassettes and features a

special hinge system to fix them to aluminium carriers. The second, **L2**, is designed to install flat panels on the wall using adhesives or mechanical fixings.

Each system consists of aluminium profiles and stainless steel fixings. The systems feature:

1. Easy regulation of distance from the wall
2. Invisible fixings
3. All aluminium profiles are anodized to improve corrosion resistance
4. Thermal expansions are taken

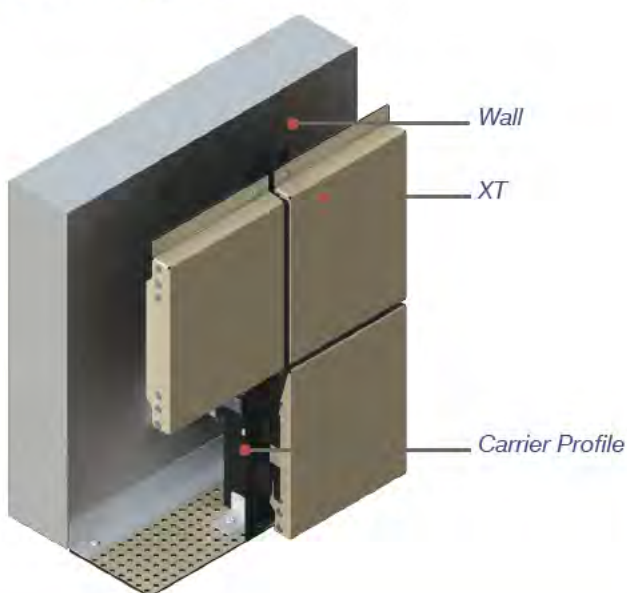
into consideration and are fully compensated

5. Quick, easy installation

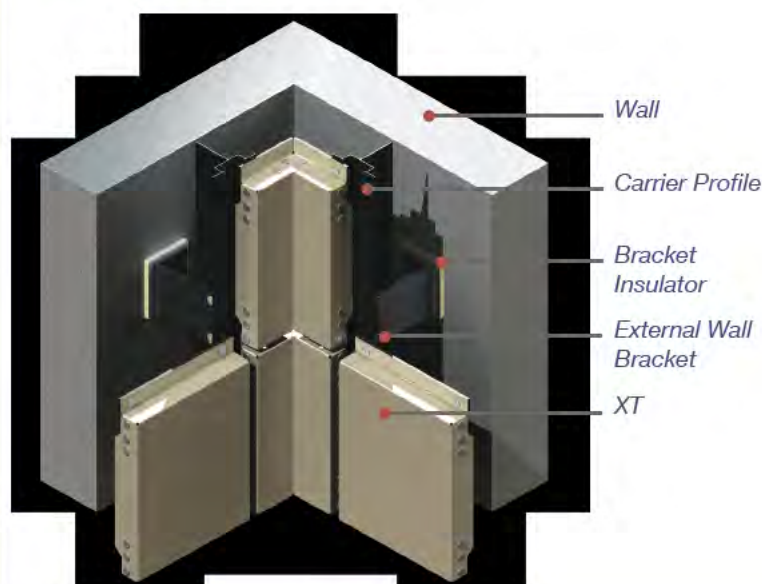
System Elements:

Wall brackets. These are available in the following range of heights: 80, 110, 140, 170, 200, 230, 260mm. This allows for a choice of insulation thicknesses to be used. The distance of the cladding from the wall can be adjusted within 30mm. Wall brackets are fixed to the wall using different types of dowels/screws.

Bottom Profile

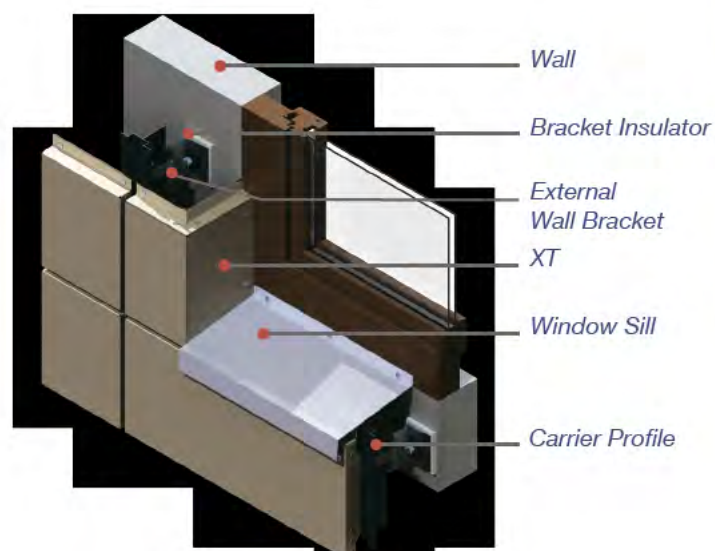


Internal Corner

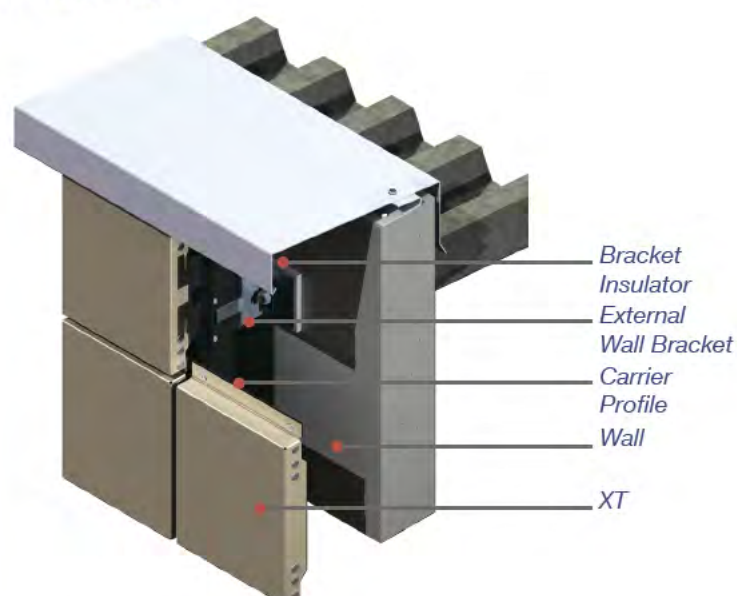


L1 Fixing System

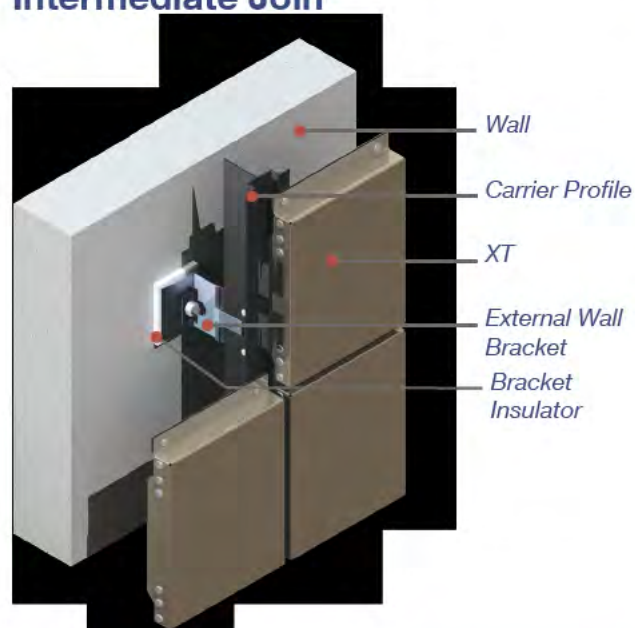
Window Joint



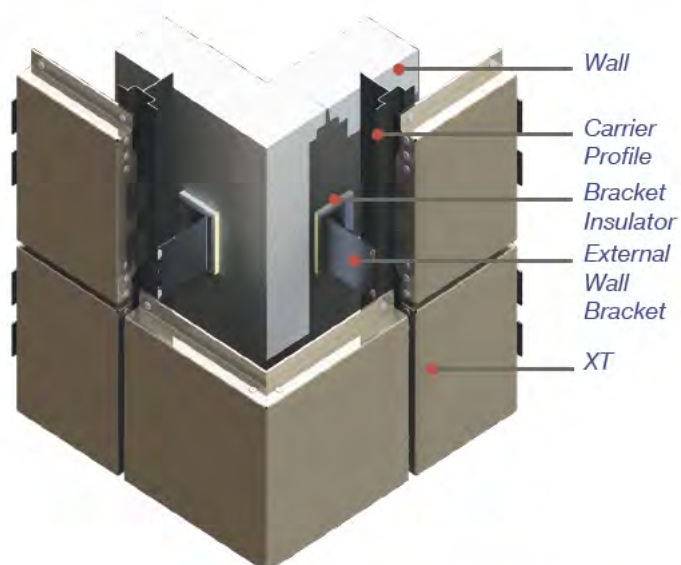
Capping



Intermediate Join



External Corner



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ALUPANELXTSERIES

L2 Fixing System

The exact choice of fixings will depend on the material of the wall and design loads and will be down to the discretion of the architect / installer.

Bracket insulator: These insulators are made of foamed PVC 8-12mm thick and serve to insulate the bracket from the wall to prevent a thermal bridge effect.

Carrier L/20.0.0: This is made of corrosive resistant aluminium and is protected by a 20 micron thick anodized layer with black pigment. The matt black surface reduces sun reflection and serves aesthetic

purposes, making the gap between the cassettes/panels look solid and contrasting to the panel surfaces. Carrier Y.1 is fixed to the wall brackets by rivets.

Slider L/22.0.1: This element is made of black anodized aluminium and works like a hinge on which the cassettes are installed. The position of the slider on the carrier can be easily adjusted due to the simple grub screw fixings made of stainless steel.

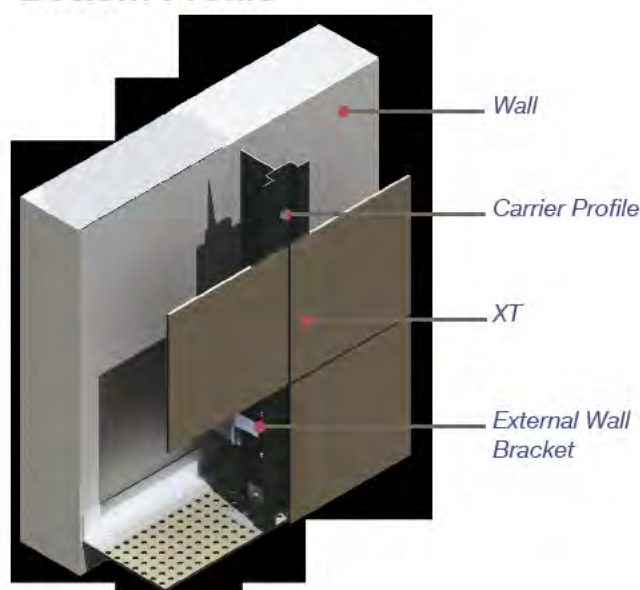
Cassette fixing tube L/21.0.1: This aluminium tube is fixed to the cassette by 3 rivets and is inserted

into the slot of the L/22.0.1 slider. Fixing the panels in the L2 system to the carriers can be done using rivets or double sided acrylic adhesive tapes.

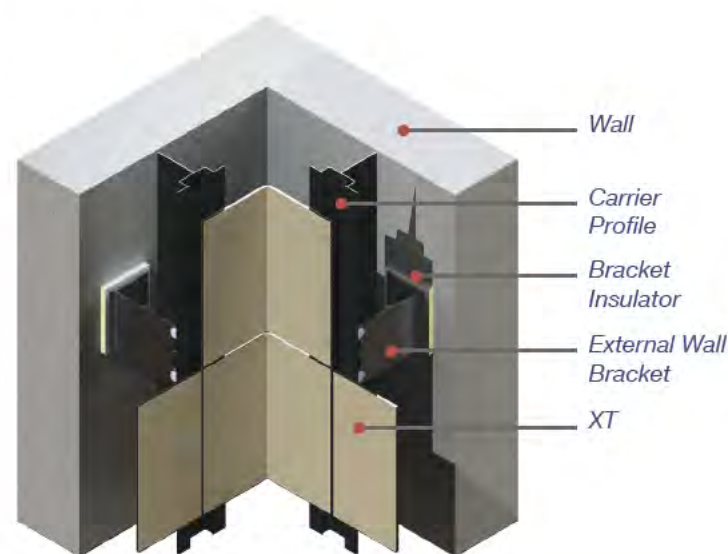
A thermal expansion coefficient of $2.4\text{mm/lm}/100^{\circ}\text{C}$ should always be taken into account. It can be compensated by the flexibility offered by the adhesive tapes, or by drilling the panel holes with a bigger diameter than the shaft of the rivet.

Please refer to the Alupanel fabrication/installation guide for more information.

Bottom Profile

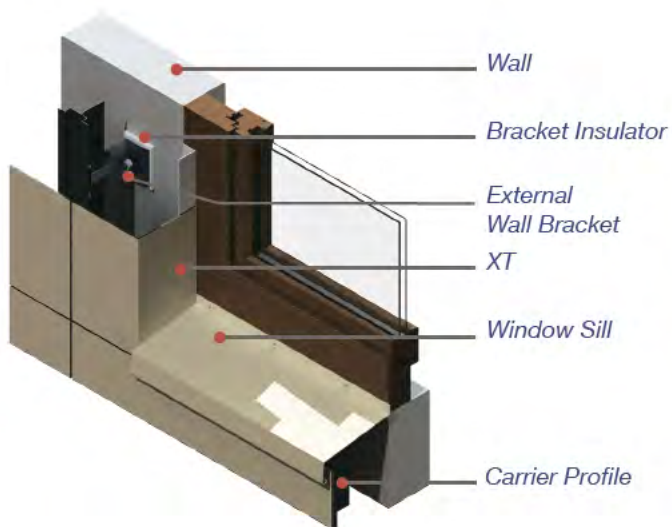


Internal Corner

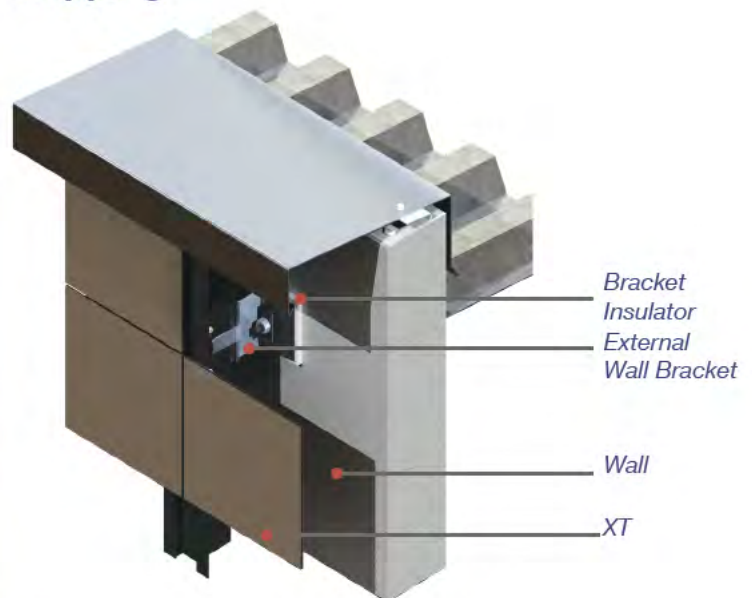


L2 Fixing System

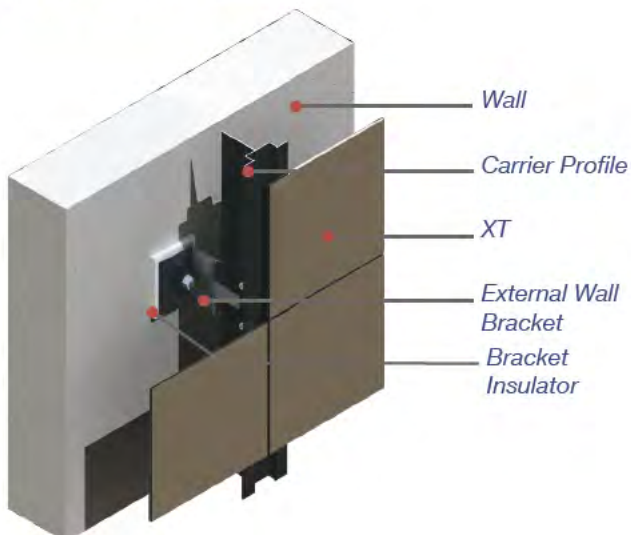
Window Joint



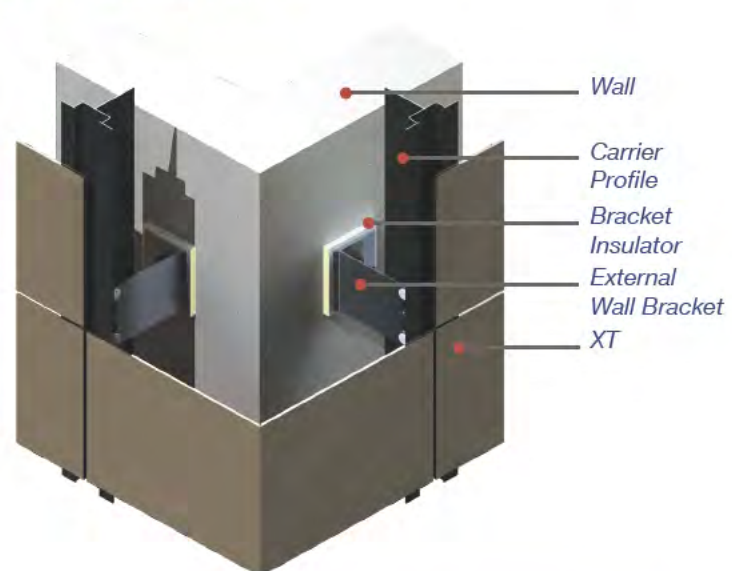
Capping



Intermediate Join



External Corner





Technical Specification

Panel Dimensions: XT&XTFRA2	
Panel Thickness (mm)	4
Aluminium Skin Thickness (mm)	0.50
Weight XT / XTFRA2 (Kg/m ²)	5.48 / 8.12
Standard Sizes (mm)	
1220 x 2440	*
1220 x 3050	*
1500 x 3050	*
1500 x 3200	*
1500 x 4050	*
2000 x 3050	*
2000 x 4050	*

Dimensional Tolerances: XT&XTFRA2	Standard Index	Test Value	Single Item Determination
Thickness (mm)	± 0.2mm	+ 0.02mm - +0.20mm	OK
Width (mm)	± 2mm	0mm - +0.4mm	OK
Length (mm)	± 3mm	0mm - +0.4mm	OK
Diagonal Windage (mm)	< 5mm	0.4mm	OK
Thermal Expansion	—	2.4mm/m @100 °C Temp Difference	—
Aluminium Thickness	—	As specified in EN485-4	—

Physical/Mechanical Properties: XT&XTFRA2			
Noise Reduction	—	26dB	--
Surface Pencil Hardness	>HB	2H	OK
Boiling Water Resistance	no abnormality	no abnormality	OK
Pollute Resistance	< 5%	2.56%	OK
Hydrochloric Acid Resistance	no change	no change	OK
Nitric Acid Resistance	no abnormality (▲ E < 5)	no abnormality (▲ E-0.28)	OK
Alkali Resistance	no abnormality (▲ E < 5)	no abnormality (▲ E-0.19)	OK
Oil Resistance	no change	no change	OK
Solvent Resistance	no base exposed	no base exposed	OK
Bending Strength	> 100MPa	166MPa	OK
Bending Elastic Modulus	> 2.0 x 10 ³ MPa	3.98 x 10 ³ MPa	OK
Penetrating Resistance	> 7.0kN	10.0kN	OK
Shearing Strength	> 22.0MPa	30.1MPa	OK
Heat Distortion Temperature	>95°C	100°C	OK

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
Mechanical Properties Tests: ASTM D792-2008, ASTM D903-2004, ASTM D732-2002, ASTM D790-2007, ASTM D696-2003, ASTM E8-2008	SH0811002-1R1	Intertek
Mechanical Properties, Durability	GZML05062101-01	SGS
BS476 Part 6 & Part 7 - CLASS 0	27942/08/04	BTTG
BS476 Part 6 & Part 7 - CLASS 0	GZML05110606	SGS
DIN4102 - B1	GP060700581-02	SGS
NFP 92-501 - M1	G030971 - CEMATE/1	LNE
EN13501-1:2007 - class B	304509	EXOVA

Recycling

Multipanel UK operate a recycling policy where full pallets of clean, de-nailed ALUPANEL XT/XTFR can 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.

Multipanel UK will 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 we do.

For further information on our Environmental & Recycling Policy please refer to our Environmental Brochure.

Warranty

All PVDF finishes come with a warranty of up to 20 years, depending on application, exposure to elements, temperature fluctuations and other variances. Please refer to our warranty conditions document available from your local sales manager.



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ALUPANELXTSERIES

Storage, Handling and Colours

Storage Instructions:

ALUPANELXT/XTFRA2 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 sheet with gloves, and strictly follow the instructions of your machining equipment manufacturer.

Protective Films:

The clear film 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 process the paint has a 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 ALUPANELXT Sheets:

Sheets 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. This will require two or more operatives.

Cleaning:

Regular cleaning should be undertaken as part of the guarantee conditions. Frequency of cleaning is subject to location of the building (coastal/heavy industry, etc.)

- 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 panels finish.
- 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 standard product.

If you have a requirement for a specific colour match, please contact your local sales manager or distributor to discuss your needs.

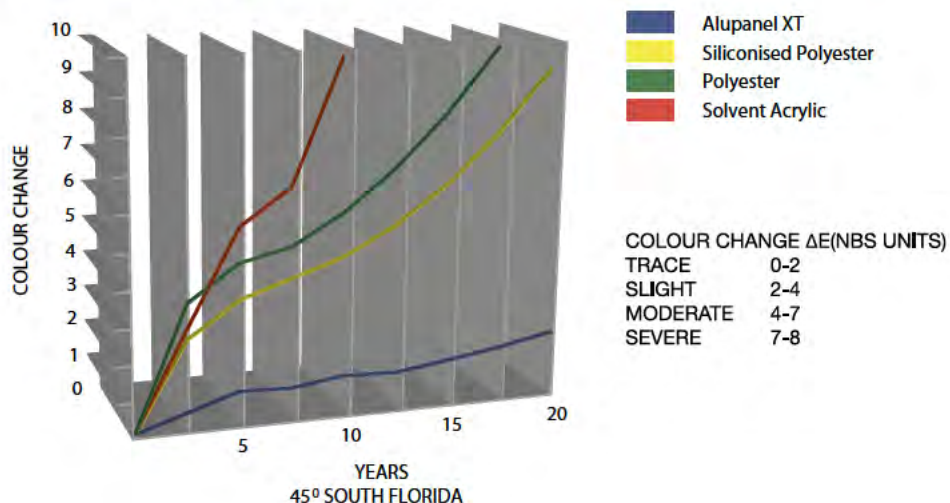


Useful Information

Why use the ALUPANEL XT SERIES?

- High quality polyethylene/mineral core
- BBA certified
- Industry recognised PVDF finish, internationally renowned as the best architectural coating
- Extremely cost effective
- One of the most recognised aluminium composite manufacturers in the world
- Extensive colour/finish range
- Multiple core options available

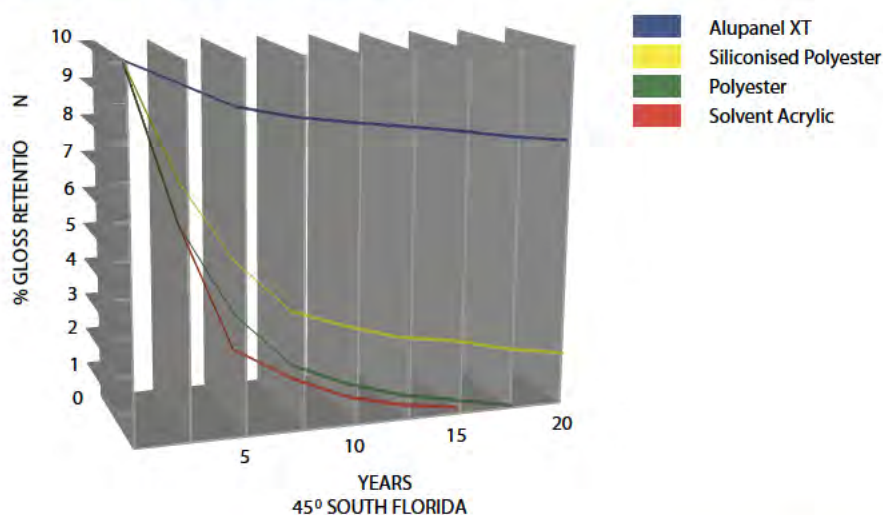
Colour Change Graph



Support

- Specialised technical support available
- Dedicated product and application advice from our industry professionals

Gloss Retention Graph





Colour Range One

Solid Colours



White
MP9010



White
MP9016



Magnolia White



Light Ivory
MP1015



Cathedral Grey
MP116



Graphite Grey
MP110



Granite Silver
MP115



Stone Blue
MP118



Royal Blue
MP117



Moss Green
MP121



Lemon Yellow
MP119



Orange
MP120

Colour Range Two

Solid Colours



Scarlet Red
MP122



Red
MP3001



Deep Red
MP123



Jet Black
MP124

Metallic Finishes



Argent
MP101



Silver
MP9006



Grey Silver
MP104



Blue Silver
MP131



Light Bronze
MP128



Medium Bronze
MP129



Gold Metallic
MP125



Brass Metallic
MP126

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ALUPANEL XT SERIES

Colour Range Three

Sparkling Finishes



Flash Black
MPF200



Flash Red
MPF201



Flash Blue
MPF202



Flash Light Blue
MPF203

Wood Finishes



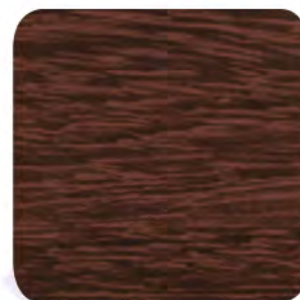
Light Oak
MPW301



Medium Oak
MPW302



Mahogany
MPW303



Beech
MPW304



Dark Walnut
MPW305

Colour Range Four

Brushed Finishes



Brushed Bronze Silver
MBP401



Brushed Silver
MBP402

Solid Colours

Our solid colours are created using a 2-coat process. We use Kynar 500 PVDF paints, recognised in the industry for outstanding performance.

Sparkling Finishes

Our sparkling finishes are made using a 3-coat process. The particles are suspended in the paint to produce an eye-catching, glittering finish.

* All colours shown are the closest representation to the actual colours as the printing process will allow. We recommend you obtain a sample before submitting an order.

Metallic Finishes

Our metallic finishes hold impressive aesthetic properties. Every finish is extremely vibrant, and have proved very popular in the industry.

Wood Finishes

Our wood finishes are created using a specialist paint roller, producing the true-to-life wood effect. As the effect is achieved using PVDF paint, we can still offer our impressive 20 year warranty.

** For a large quantity of panels we recommend that a bulk order is made sufficient for the entire job. This will ensure colour consistency. The XT SERIES are also directional products so please follow the direction arrows given on the material's protective film.

Brushed Finishes

Our brushed finishes are created on the base of natural brushed aluminium coils which are painted with 2 layers PVDF coating adding long time protection to the metal.



ALUPANELXTSERIES

architectural cladding series

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