

# TECHNICAL MANUAL

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# COMPANY PROFILE

## INTRODUCTION

EUROBOND aluminium composite panel is brought by EURO PANEL PRODUCTS PVT. LTD., that solely manufactures, markets and continuously develops new aluminium composite panels and other metal composite panels.

The company has invested in state-of-the-art technology for its plant, which has the capacity of producing 10,000 sq. meter ACP a day. The modern technology allows the company to use coils thickness from 0.04mm to 1mm and ACP thickness from 1 mm to 6 mm. The company has flexible line to produce width from 5 feet to 3 feet and standard length available as ready stock of 8 feet, 10 feet and 12 feet and other lengths available on request.

The use of alloy 3003 ensures excellent mechanical strength, good outdoor weathering and easy maintenance. EUROBOND panels comes in wide varieties of colour, designed, texture and finish. It significantly influences the appearance and efficiency of the buildings in construction industry in India & overseas.

EUROBOND will keep bringing innovative products for better architecture with economic cost and cooperation with its clients to create a modern and better world.

### OUR COLLECTION INCLUDED

- Pearlescent Coatings

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- Dual Anodised Coatings

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- Spectra Dual Coatings

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- Signage Series

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- Wooden Finishes

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- Brush Finish

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### OUR GRADE INCLUDES

- Aluminium Surface 3003 Alloy

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- Fire Retardant ACP(Exterior & Interior)

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- Copper Surface

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- Steel

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- Fully Bendable composite panel

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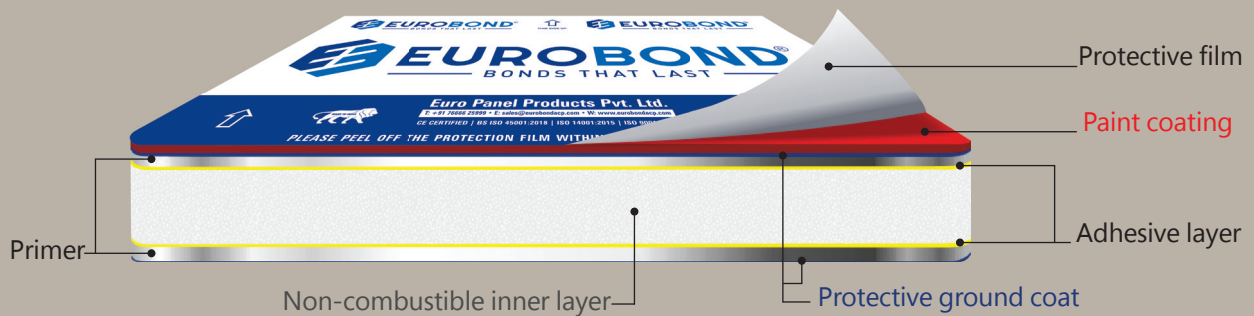


# What is the Aluminium Panel Sheet?

Aluminium Panel Sheets or Aluminium Composite Material is a cladding sheet material used ever increasingly by developers, designers and architects worldwide for various applications. The advantages of using this material over conventional cladding material like stone, tiles and paint are very good strength to weight ratio, low maintenance & better energy efficiency and working life of building.

Aluminium Panel sheets also known as Sandwich Panel consists of FR mineral or low density Polyethylene core sheet sandwiched between two aluminium skins. These Panels are very versatile and can be used in many applications. The entire panel consists of the following layers,

- **Top Aluminium Skin coated with versatile PVdF or PE coatings in attractive finishes**
- **Low Density Polyethylene Core or Flame retardant mineral core**
- **Bottom Aluminium Skin coated with wash coat**

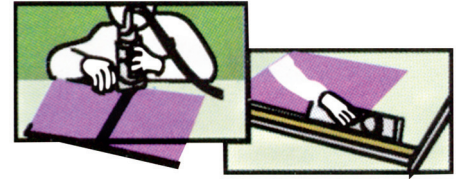




# FEATURES

## Easy Fabrication & Installation

Eurobond Aluminium Panels sheets are easy to fabricate & install, thanks to its light-weight. All cutting, drilling, slotting, side – folding and bending can be easily done by simple tools used for processing wood and metal. It can be used for both interior and exterior applications to enhance look and life of building. The processing such as cutting, panning, bending to arc and several configurations in right angle can be done by some simple woodworking tools. The coating layer is not to be scratched or damaged when its bent. Designer can also make the flexibility in the panel. The installation work is going to be easy and fast. For this reason, it saves the cost.



## Excellent Weather Resistance

EUROBOND Panels coated with fluoro-carbon (PVdF) KYNAR- 500® based coatings, which features very good corrosion resistance, alkali resistance, chalk resistance & ultraviolet light resistance. When exposed to the heat of tropical sunshine or the cold of freezing snowstorm, the panel never loses its colourful appearance. It can be used for 15 years without much fading, unlike paint to a building which fades after very few years.



## Any Colour & Even coating

EUROBOND panels high precision coating lines are used for coating aluminium skin and subsequent machine curing of coating ensures the best adhesion of paint on Aluminium surface, colours more evenly or uniformly, possible with any colours & multi colours. There is more space for customisation of colour with individual corporate identity. A smooth and even finish to the panel gives the building façade an elegant and clean look, which enhances value of the property as well as giving it a modern appeal.

A wide selection of standard colours and finishes are available and our ability to match RAL or PANTONE colours give the user an added advantage.



## High Peeling Strength

EUROBOND Panel sheets are manufactured under continuous thermal lamination process using DuPoint adhesive film, which has very high peeling strength and is an important parameter for long-term performance of the panel sheet in exterior & interior application as facade in buildings.

## Acoustic & Thermal Insulation

Compared to other material with the same weight like Steel, Solid Aluminium, Tiles and Plywood, Eurobond Aluminium Panel sheets has excellent sound transmission, loss of noise amplitude. Eurobond Aluminium Panel sheet isolates the exterior & interior temperatures and moisture allowing less heat from the outside to passed through the panels and enter the interior of the building.

## Easy maintenance

EUROBOND panels maintenance means cleaning only. The coating on aluminium surface in all cases need to protected and maintained clean against any environmental degeneration. The panel sheets need to be cleaned to keep it untidy in any way appropriate with natural means.

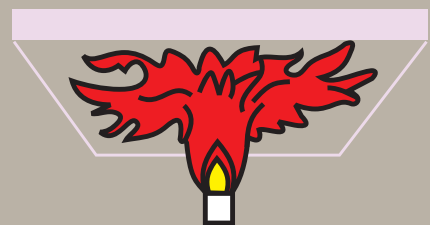
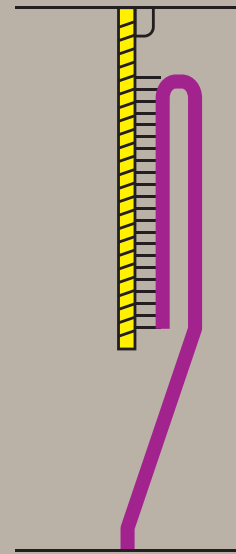
As EUROBOND panels does not attract dust or dirt or do not contaminant surface even if the surface is exposed outdoor pollution. Even though in some area where the pollution is very high, having a good self – cleaning capability with simple tap water and mild detergent cleans out the panel surface. Frequency depends upon how quickly it gets soiled or dusted. Simple tap water cleans the most dirt, if sticky, can use mild detergents diluted with water.

If any detergent or any additional cleaning agent used then it must follow with water rinsing of the surface and made dry using soft cotton cloths.

## Fire Resistant property

EUROBOND panels with Polyethylene(PE) core materials, do not have the fire resistance and are combustible in building fire scenario. So these sheets basically used for buildings less than 15 meters height with a caution for fire safety.

EUROBOND FR is fire resistant and made of Non-toxic mineral core materials. These panels are very difficult to combust or catch fire in real building fire. These panels upon forced flaming do not drip and do not produce toxic black fumes and provide sufficient escape time. So they are classed as fire safe materials under building fire safety rationale and are tested and FR rated in fire laboratory of international reputation. These EUROBOND FR panels can be used for cladding exterior and interior for high rise buildings along with compliances for fire safety of local norms.



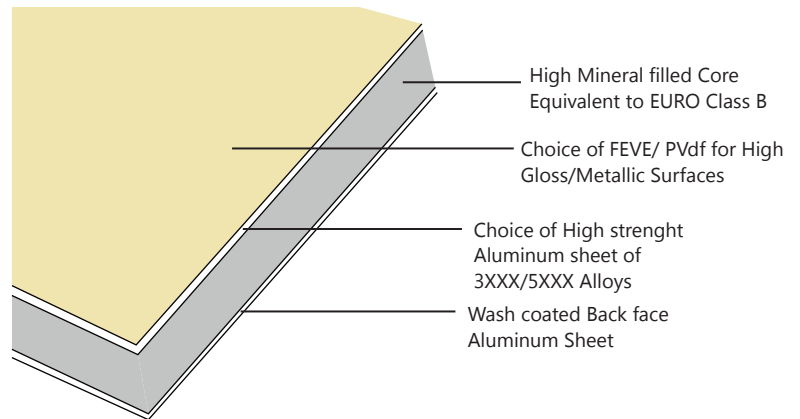
# PRODUCT INFORMATION

## What is Panel Composition?

EUROBOND Aluminium Panel sheet is sandwiched with top and bottom layers of aluminium sheets and in core with polyethylene or non-toxic mineral filled fire retardant materials. Outside surface of top Aluminium coil coated with flouro-carbon or Polyester (PE) coatings and outside of bottom Aluminium coil coated with wash coat paint.

## Specification

- Aluminium Panel Sheet Thickness : 3mm, 4mm , 5mm & 6mm.
- Aluminium Foil Thickness : 0.50mm, 0.30mm, 0.25mm, 0.21mm
- Core Thickness : 2.5mm, 3mm, 3.5mm
- Width : 1220mm, 1570mm (Maximum)
- Length : 2440mm, 3050mm, 3660mm, or any length between 1500mm to 6100mm



### STANDARD SIZE

1220mm(Width) x 2440 mm(Length)

1220mm(Width) x 3050 mm(Length)

1220mm(Width) x 3660 mm(Length)

### NORMAL COLOURS

Non-standard sizes and special colours are available according to the customer's request.

## Application Scopes

Exterior of Multi-storey Apartment • Curtain Wall Industrial & Commercial Constructions • Wall Cladding • Hospitals • Fascias/ Soffits • Star Hotels • Column/ Beam Cover High- Tech Shopping Mall • Parapet Walls/ Copings • Institutes, Banks, Call Centre Furniture • Shops • Showrooms • Partitions • Convention Centres • Beam Wraps Canopies • Elevators • Signboards • Kitchen Units • Display Unit Spandrel Panels Shopfronts.



# Production Process

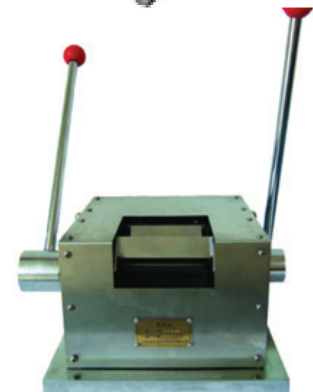
The raw materials used in "EUROBOND" panel production are aluminium sheet, (0.50mm, 0.30mm, 0.25mm and 0.21mm) of thickness in the form of coils, polyethelene and DuPont adhesive in film roll form. The molten thermoplastic is sandwiched between adhesive films under the two aluminium skins. The main three layers (two aluminium sheets and the core polyethelene and DuPont® adhesive films in between) are continuously press laminated within the set of rolls resulting a balanced EUROBOND panel sheet. The Panels produced by this manufacturing process do have very good peel strength and other properties same as any other top brands of ACP.

## EUROBOND FACTORY



# CENTRE OF QUALITY EXCELLENCE

EUROBOND places much emphasis on process control to achieve strict quality controlled production at all times as per ISO9001:2008 system. All the input raw materials and finish products are continuously checked and tested by advanced test equipment.



The laboratory tests include:  
 All kinds of peeling tests, 0°(Climing Drum), 180° Peeling Strength tests are carried out by Universal Testing Machine, Colour Difference, Boiling Water Resistance, Coating Thickness, Impact Resistance, Coating Adhesion Test, Pencil Hardness and other Coating tests guarantee first grade quality to EUROBOND.



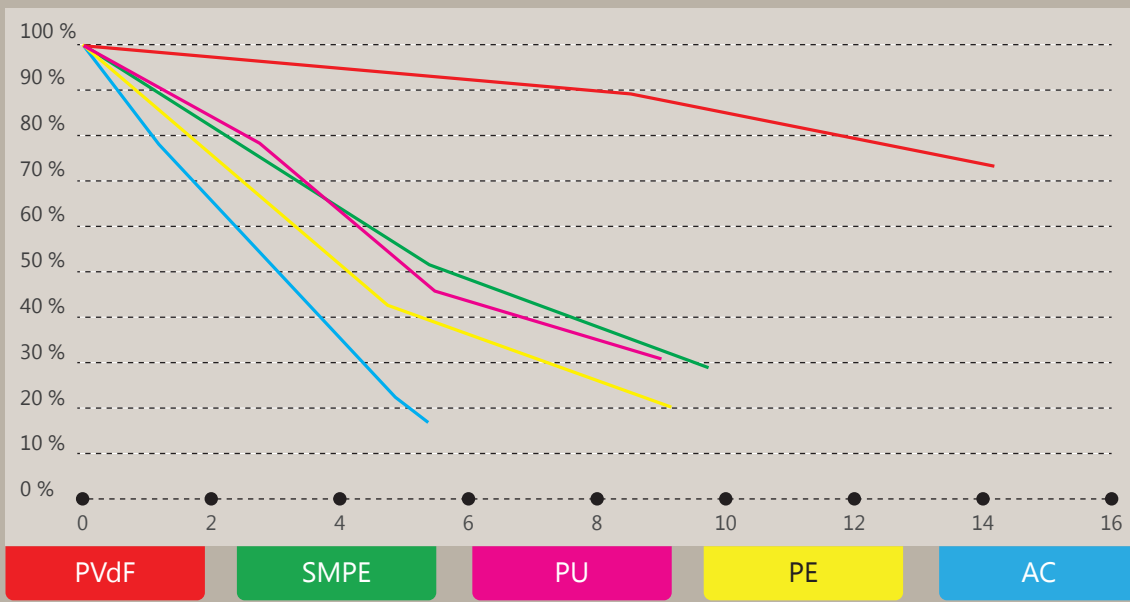
# COATING

## TYPE

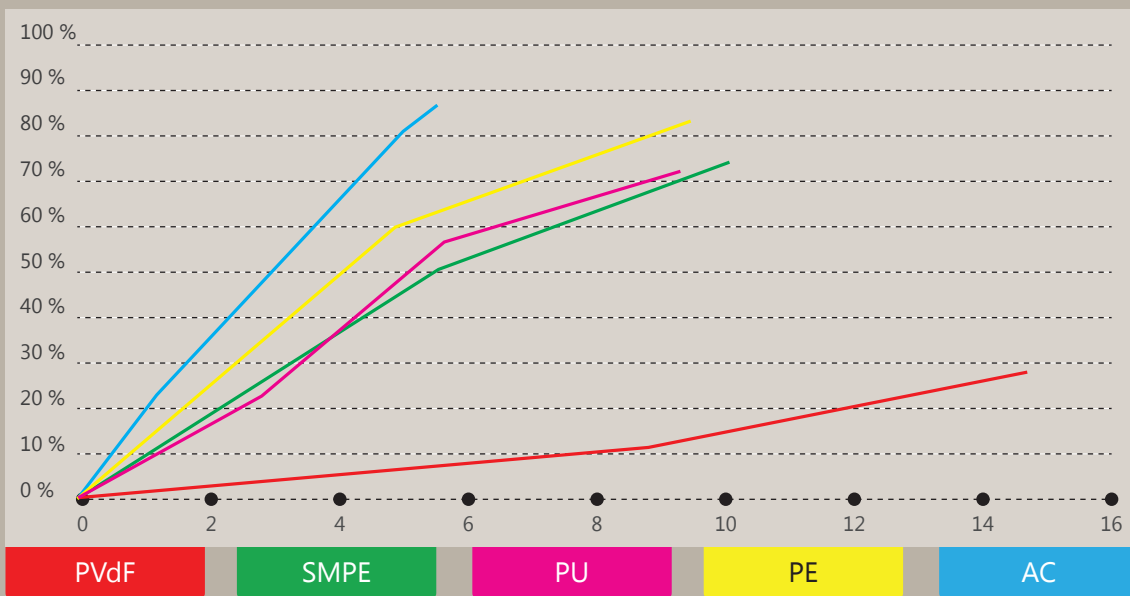
- Acryloyl (AC)
- Epoxy
- Polyester (PE)
- Silicon Modified Polyester (SMPE)
- Poly Urethane (PU)
- PVdF

There are various commercial coatings available mainly such as PolyVinyledene Fluoride (PVdF), Acrylic-based Paint(AC), Silicon Modified Polyester(SMPE) Paint, Polyester (PE) Paint, Epoxy Paint, Polyurethane(PU) Paint,etc.

PVdF & PE are the best performers among range of industrially applied coatings



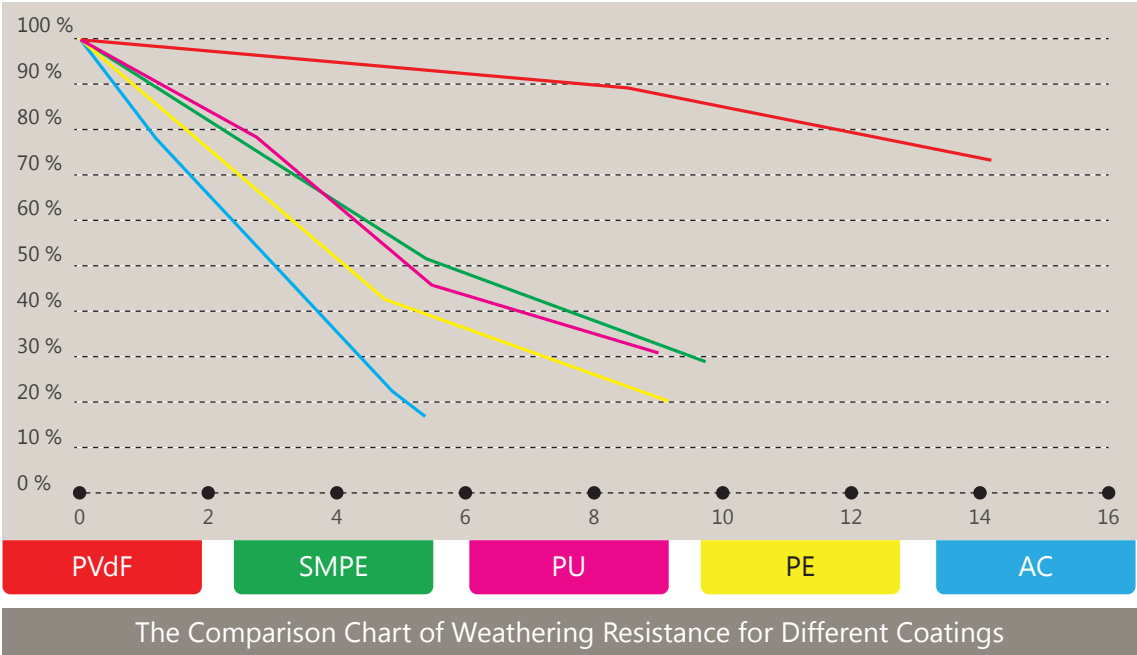
The Comparison Chart is Gloss Retention Ratio for Different Coatings



The Comparison Chart of Colour Retention for Different Coatings



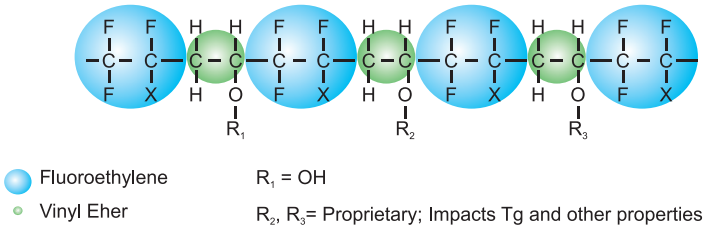
PVdF & PE are the best performers among range of industrially applied coatings



## Kynar – 500<sup>®</sup> PVdF Coating

Kynar – 500<sup>®</sup> base coating comprises

- PVdF Resin
- Polyester or Acrylic Modifiers
- Pigments
- Organic Solvents
- Additives



Kynar – 500<sup>®</sup> has following properties

- |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Resistance to Nuclear Radiation</li> <li>• Good Abrasion Resistance</li> <li>• High Purity</li> <li>• Good Moisture and Fungus Resistance</li> <li>• High Electrical Resistivity</li> <li>• Exceptional Weathering Resistance</li> </ul> | <ul style="list-style-type: none"> <li>• Resistance to UV Light</li> <li>• High Thermal &amp; Chemical Resistance</li> <li>• Low Surface Energy</li> <li>• Low Refractive Index</li> <li>• Low Coefficient of Friction</li> </ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Coating on Eurobond Exterior Panel Sheet

**PVdF** – Kynar 500® (70% min) which gives excellent weather resistance, ultraviolet rays resistance and gloss retention this provides better weatherability, washability, and chemical resistance.

## Technical Data of EUROBOND PVdF Coating, General Properties

Dry Film Property	Test Standards	Result
Color matching(Box)	ASTM D1729	Visually Matching
Gloss 60°	ASTM D523	20% to 75%
Dryfilm Thickness	ASTM D7091	25 (+3)µm
Toughness(T-Bend Test)	ASTM D4145	2T, No Cracking
Impact Resistance (Coating Peel off)	ASTM D2794	No Peel off
Pencil Hardness	ASTM D3363	HB to H(2H for Antiscratch)
Solvent resistance	ASTM D5402	No exposed Aluminum
Adhesive Force(Cross Hatch) – Dry	ASTM D3359	Passed
72Hrs under water	ASTM D3359	Passed
8Hrs boiling water	ASTM D3359	Passed
Falling sand abrasion Resistance	ASTM D968	Passed
Acid resistance	AAMA 2605	Passed
Alkali resistance	AAMA 2605	Passed
Mortar resistance	AAMA 2605	Passed

## Weatherability General Properties

Dry Film Property	Test Standards	Performance
Colour Retention	ASTM D2244	<b>Max. 5 units after 3000 hrs.</b>
Gloss Retention	ASTM D523	<b>70% after 3000 hrs.</b>
Chalk Resistance	ASTM D4214	<b>Max. 8 units after 3000 hrs.</b>
Salt – spray Resistance	ASTM B117	<b>3000hr - 35° C, No Blister</b>
Humidity Resistance	ASTM D2247	<b>3000hr - 35° C, No Blister</b>

# Protective Film

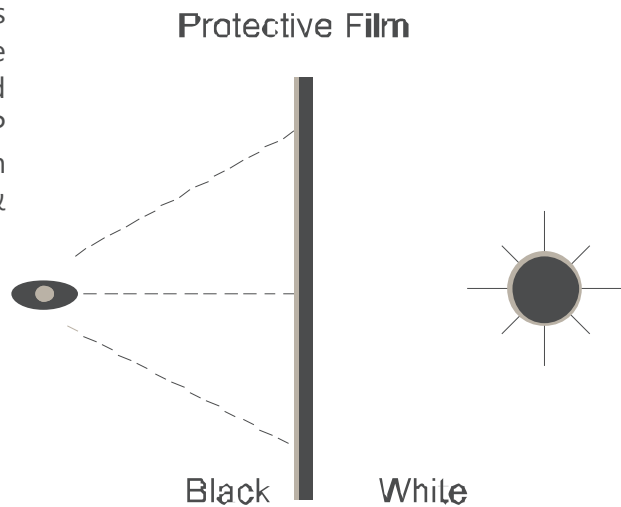
The Protective film protect panel when cutting, transiting, grooving and folding to avoid mechanical damage and contaminated surface. After finishing installation, protective film should be peeled off.



EUROBOND uses surface protective film with Film thickness > 0.08mm or 80 microns, black inner and milky white outer with printed. The black layer prevents ultraviolet degradation and white reflects ultraviolet radiation, for longer life of acrylic glue used.

## Glue Type: Modified Acrylic based glue

Though the film protects the glue for a limited period to avoid sticking on the Aluminum coated surface, it is always advisable to remove the protective film as soon as installation is completed and must be done within 45 days of exposure to outdoor. Beyond exposure limit the glue may stick to ACP surface along with degraded protective film which may pose difficulty in removal & cleaning.





## Adhesive film

EUROBOND panel sheets adopts high strength adhesive film patented by DuPont® Byneladhesive technology. This ensures product quality, reliability and liability of the supplier company all the time for EUROBOND products. This film specializes one side adheres to polar Aluminum surface and other surface adheres to non-polar LDPE surface facilitated by thermal lamination method.



## Core Materials

There are mainly two kinds of EUROBOND panel sheets based on the type of core materials:

- EUROBOND Panels – Polyethylene(PE) core
- EUROBOND FR Panels – Mineral (ATH / MDH) based core

Polyethylene core for EUROBOND Panel sheets are normally used for low-rise buildings having very low risk of fire or in building with adequate fire fighting controls. As the Polythene core panels sheets can catch fire and can be specified as per customer specification and demand.

When the panels sheets are made of mineral filled core, where the concentration of mineral not less than 70% (ATH and or MDH) along with binding polymers, then the panel becomes fire resistant due to the natural endothermic reaction (releases water upon fire or heating) to fire shown by the minerals. This make the panel very difficult to catch fire, even if exposed to larger fire it limits the fire by stopping propagation and suppressing smoke. This enables better fire management on the building affected limiting the losses due to fire. This is why the type of panels are also called fire retardant panels. These panels have wide application to any high rise or small building where fire is assessed as a fire risk building. Fire risk buildings are those which are very susceptible to risk of life and property, the buildings are called fire risk buildings. Such as common amenity buildings, hospitals, museums, theatres, residential buildings, hotels, schools, hostels, business buildings, malls etc., where EUROBOND always recommends EUROBOND FR only.

Fabrication of both EUROBOND panels and EUROBOND FR panels are identical except few differences such as, the unit weight of the EUROBOND FR is heavier than the conventional panels sheets and must be considered for calculating the correct size of the support system for the façade or ceiling at design stage.





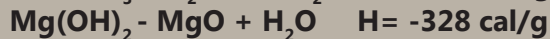
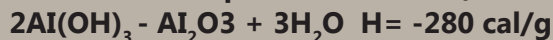
**Core Material of EUROBOND Panels**

EUROBOND Panels uses LDPE or Polyethylene core material which is mix of high quality extrusion – grade, LDPE and L- LDPE. These LDPE or Polyethylene are of next to virgin grade, possessing all the properties of virgin LDPE. It possesses excellent ease of processing or fabrication, chemical resistance and mechanical strengths. Polyethylene core for EUROBOND Panel sheets are normally used for low rise buildings height below 15 meters, shop front decoration, or buildings having very low risk of fire, etc., with adequate fire-fighting controls. As the Polythene core panels sheets are combustible, so can be specified as per customer specific requirements. Any liability such as maintaining adequate fire fighting arrangements, complying local and national building regulations, etc. related to fire safety of EUROBOND panels completely rests with the end customer who uses it.

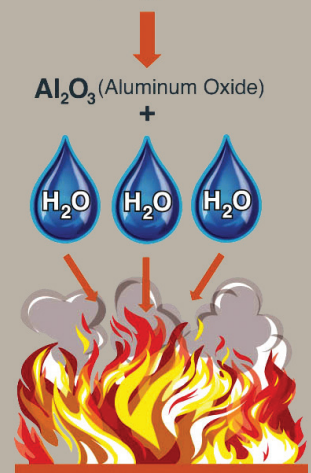
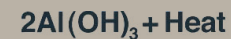
**Core Material of EUROBOND FR(Fire Retardant) Panels**

It is new, type core material which is independently developed by EUROBOND. When the panels sheets are made of mineral filled core, where the concentration of mineral not less than 70% ( ATH and or MDH) along with binding polymers, then the panel becomes fire resistant due to the natural endothermic reaction (releases water upon fire or heating) to fire shown by the minerals. It is an alloy of inorganic minerals, MDH and/or ATH, binding polymer as LDPE co-polymers and compatibilisers, resulting compound is with very high oxygen index. This make the panel very difficult to catch fire, even if exposed to larger fire it limits the fire by stopping propagation and suppressing smoke. This enables better fire management on the building affected limiting the losses due to fire. This is why the type of panels are also called fire retardant panels.

**Thermal decompositon reaction (endothermic):**



- Take heat away from the flame
- Water vapors dilute volatile polymer decomposition products (fuel)
- Form protective metal oxide layer on polymer surface



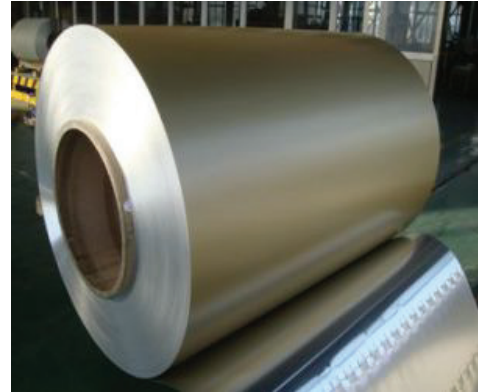
It possesses excellent weathering resistance and mechanical performance required in any ACP sheet. These panels have a wide range of applications to any high rise or small buildings which are assessed as fire-risk buildings. Fire risk buildings are those which are very susceptible to risk of life and property such as, common amenity buildings, hospitals, museums, theatres, residential buildings, hotels, schools, hostels, business buildings, malls etc., where EUROBOND always recommends EUROBOND FR only.



# Aluminium Alloy

Eurobond is using Aluminium Alloy 3003 – H16. The aluminium content for unalloyed aluminium not made by a refining process is the difference between 100% and the sum of all other analyzed metallic elements present in amount of 0.010% for more each, expressed to the second decimal before determining the sum.

We can also provide 1100 & 5000 series of Aluminium Alloy.



COMPONENT	Wt. %
Al	Min 99
Cu	0.05-0.2
Mn	Max 0.05
Other, each	Max 0.05
Other, total	Max 0.15
Si + Fe	Max 0.95
Zn	Max 0.1
Physical Properties	Metric
Density	2.71g/cc
Mechanical Properties	
Hardness, Brinell	44
Ultimate Tensile Strength	145 N/mm <sup>2</sup>
Tensile Yield Strength	120 N/mm <sup>2</sup>
Elongation at Break	7%
Thermal Properties	
Heat of Fusion	390J/g
Melting Point	643 – 657 °c

# Technical Data Sheet

<b>PANEL THICKNESS</b>	<b>UNITS</b>	<b>3 mm</b>	<b>4 mm</b>	<b>6 mm</b>
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## PANEL DIMENSION

1.1 Aluminium thickness	mm	0.25	0.50	0.50
1.2 EUROBOND Weight	Kg/m <sup>2</sup>	3.8	5.6	7.4
1.3 Max. Standard width	Mm	1220,1550		
1.4 Standard Length	mm	2440,3050,3660		

## PANEL DIMENSION TOLERANCES

2.1 Panel thickness	mm	±0.20
2.2 Panel width	mm	±2.0
2.3 Panel length	mm	-0, +4
2.4 Diagonal	mm	0.20 % of actual length

## MECHANICAL CHARACTERISTICS OF ALUMINIUM COVER SHEETS (0.50mm)

3.1 Tensile strength tolerances (Rm)	N/mm <sup>2</sup>	145		
3.2 Yield strength (Rp0.2)	N/mm <sup>2</sup>	120		
3.3 Elongation (AS)	%	7%		
3.4 Modulus of elasticity	N/mm <sup>2</sup>	70000		
3.5 Rigidity (E)	KN m <sup>2</sup>	0.11	0.25	0.60

<b>ALLOY</b>	<b>Al. H16 (3003)</b>
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## SURFACE PAINT CHARACTERISTICS

5.1 Visible Surface Layers	3 layers & 2 Layers PVdF 70% KYNAR - 500
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# Technical Data Sheet

PANEL THICKNESS	Units	3 mm	4 mm	6 mm
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## TEMPERATURE BEHAVIOR

6.1 Continuous use temperature	Ranges from - 50°C to + 80°C			
6.2 Linear thermal expansion (aluminium cover sheets )	2.4mm per Meter at 100°C			

## THERMAL INSULATION

7.1 Thermal insulation	W/m <sup>2</sup> K 0.29			
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## SOUND INSULATION

Average airborne Sound transmission loss	db	24	25	26
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## VISIBLE SURFACE PROTECTION

Surface cover with self-adhesive film, for protection against damage from minor handling and fabrication scratches on the panel sheets.	CAUTION! Film to be removed within <b>45 days</b> from installation, glue may leave traces on the top surface & even difficult to peel the film if delayed.			
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## DIRECTIONAL ARROWS FOR PLACING THE PANELS

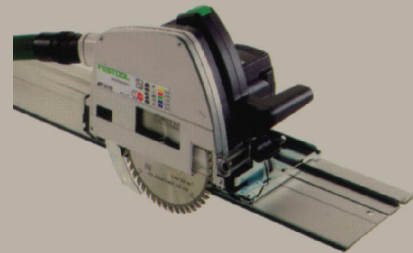
The directional arrows are printed on the protective film and at the back of for all of the panel	CAUTION! The placing and handling of the panels must <b>NECESSARILY</b> follow the arrow direction and is mandatory for metallic shades.			
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## Installation & Fabrication

The process of designing the façade is mainly subjected to geometric sizes of buildings & local wind load etc. The correct geometric size of each single panel depends upon the no of vertical and horizontal grid structure planned behind the façade. The material (Steel or Aluminium) and the size of the grid members decide the strength of the façade which is being designed as per wind load calculations mostly by façade designers or architects.

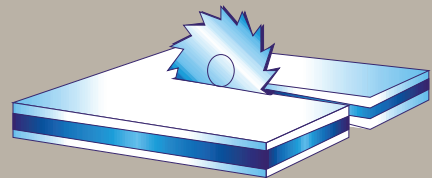
### Processing Method of EUROBOND panels

Ordinary Aluminium processing & woodworking machines and tools can be used for fabrication of the panel.



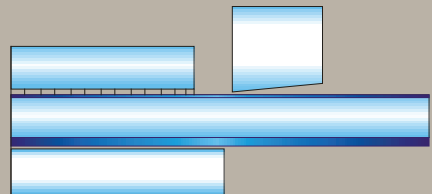
### Saw Cutting

Usually vertical panel saws, of good quality are being used. Even portable circular saw equipped with a system of guides can be used, so as to ensure straight line cutting.



### Shearing

Shear cutting can also be used for sizing a large quantity of EUROBOND Panels. Some shear drop may be observed at the cut edge.



### Grooving Hand Operated Router Machine

This tools consist for routers that are available in the market and are used for wood processing. If they are equipped with special routing bits-carbide tipped cutter- the hand operated router can be used for a limited number of processes. In this case, the Stability of the tool and the guide system considerably affect the quality of the routing. A special hand operated router is shown in figure.



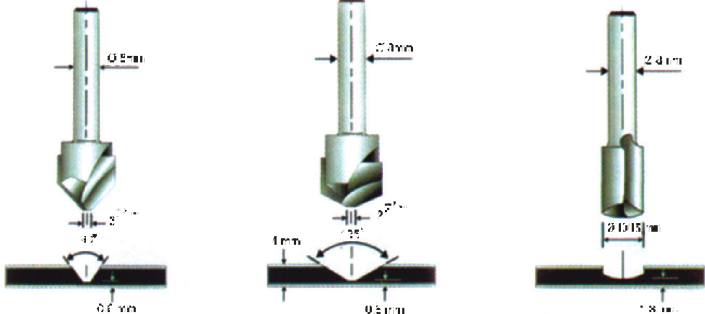
**CAUTION !!** To ensure proper routing/cutting the tool must be sharp enough to rough/cut without inducing heat on to the Panel sheet during routing/cutting process. Minor heat may not affect the panel quality, but excess heat generated may delaminate the skins on either side.



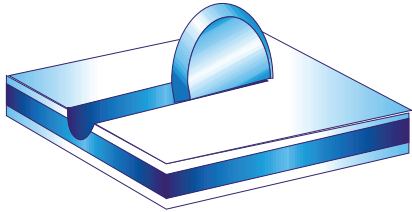
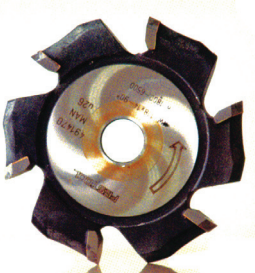
# Installation & Fabrication

## Circular routing blades and router bits

Several types of circular blades and router bits are shown in the figure, the supplier of vertical panel saw offer special circular blades for the routing process of composite aluminum panels



**CAUTION !!** Correct routing or grooving depth is that after the routing plastic must be left behind the top skin as thick as the top Aluminum skin. In circumstance top skin is exposed behind the bonding side.



## Bending

Bend the grooved EUROBOND panels with jig or clamp, or bend the portion in single stroke uniformly.

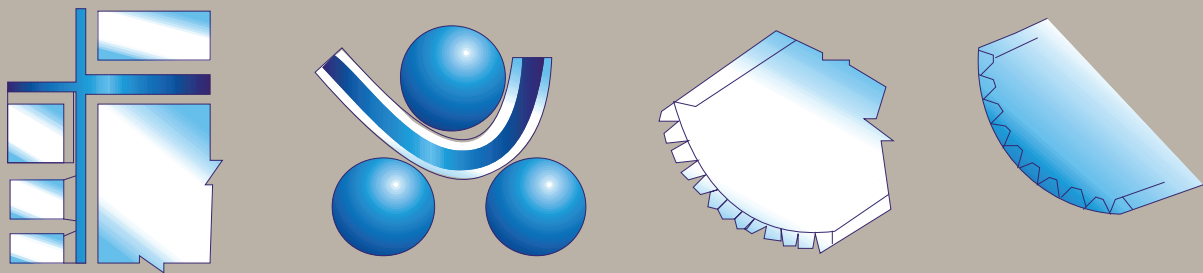


## Bending with Brake Press

While bending to the EUROBOND panels with press brake, use of top die having the desired radius with proper backing support.



# Installation & Fabrication



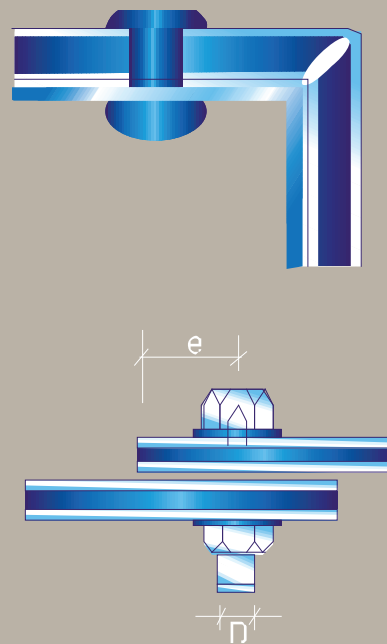
## Bending With 3- Roller Bender

EUROBOND Panels are bent in 3 – Roller bending machine for large size bending radius. Mostly the minimum bending radius would be 100mm beyond which the panel may crack.

CAUTION !!! 3 roller bending require protective film on either side, Rollers must be error-free and proper skilled person can achieve the desired bending requirement.

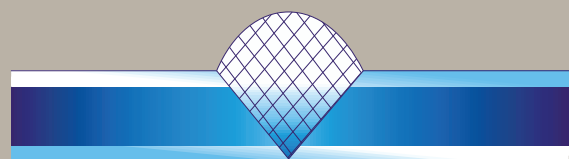
## Fastening / Riveting & Bolting

EUROBOND Panels can be fastened together or joined to aluminium extruded elements with blind rivets which are quite common to aluminium construction works. Use of either blind or pop rivets have advantages of reducing labor cost, for it enables work from one direction as shown in the figure, it also reduces the shock effect on the structure and lowers the potential for surface damage.



## Welding

EUROBOND Panels edges can be joined by welding the core with the help of Hot Jet Gun.



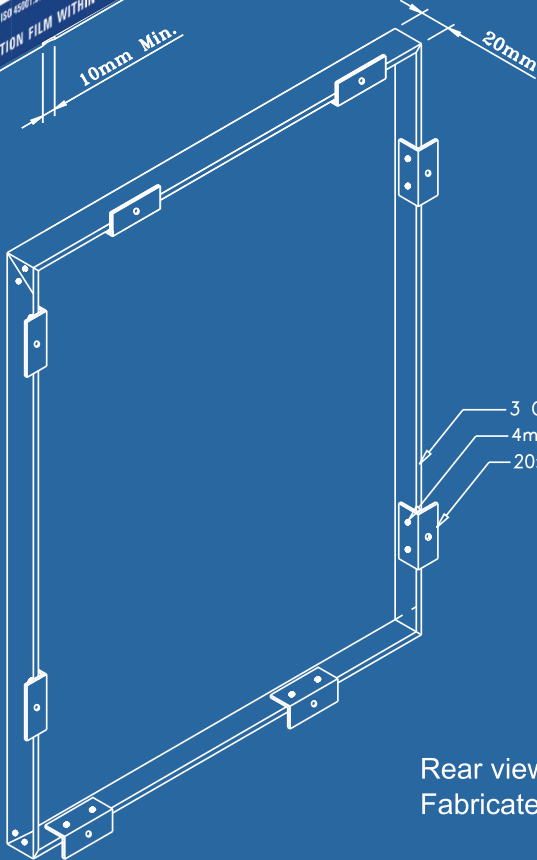
# Installation & Fabrication

## Installation Details Method 1:

- 4mm THK ALUMINIUM POP RIVET
- 20 x 20 x 20mm THK ALUMINIUM CLEAT
- 4mm THK EUROBOND Panel
- SILICON WITH BACKING ROD



Front view of EUROBOND Fabricated Panel



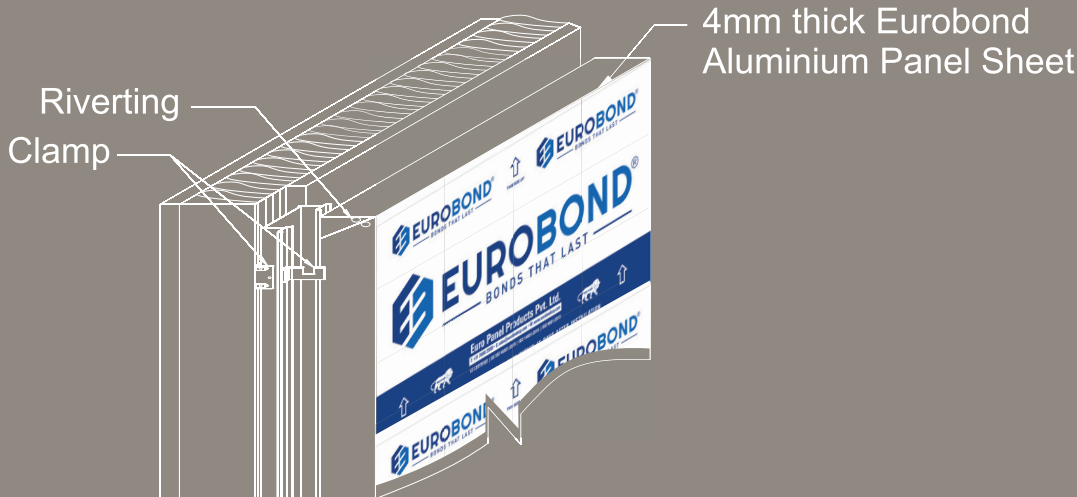
- 3 OR 4mm THK. EUROBOND
- 4mm THK. ALUMINIUM POP
- 20x20x2mm THK. ALUMINIUM

Rear view of EUROBOND Fabricated Panel

# Installation & Fabrication

## Method 2 & Method 3:

Cassette fixing for Eurobond Aluminium Panel Sheets, improved wind and damp proof properties. Convenient mobile fasteners.



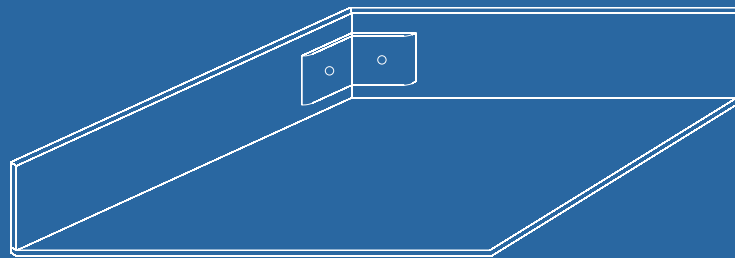
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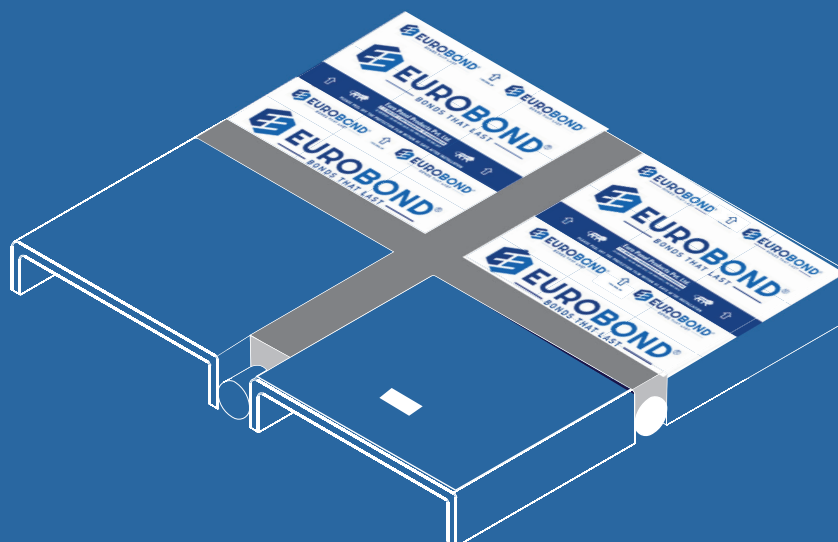
# Installation & Fabrication

## Rout and Returns (R&R) Formed Panel



Rout and Return fold can be done with a flat Eurobond Aluminium Panel Sheet. Typically, a continuous V - shaped routed groove is made around the entire panel perimeter at a distance of one inch from panel edges. Then the corners are removed and the edges are folded to create a one inch deep "panel". Then corners are reinforced with riveted aluminium angle clits to stiffen the panel unit.

## Rout and Return Joint Intersection



Rout and Return are then caulked and sealed with correct sealants as specified by architects to achieve proper sealing screen which prevent water/moisture penetration .

# Installation & Fabrication

## Fixing Accessories :

1



MB X65mm LONG ANCHOR BOLT

2



ALUMINIUM POP RIVET

3



M8X25mm LONG NUT & BOLT

4



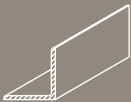
25mm LONG SCREW

5



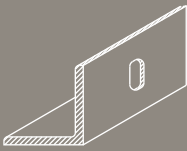
SEALANT WITH BACKING ROD

6



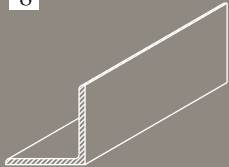
20x20x2mm THK. ALUMINIUM ANGLE

7

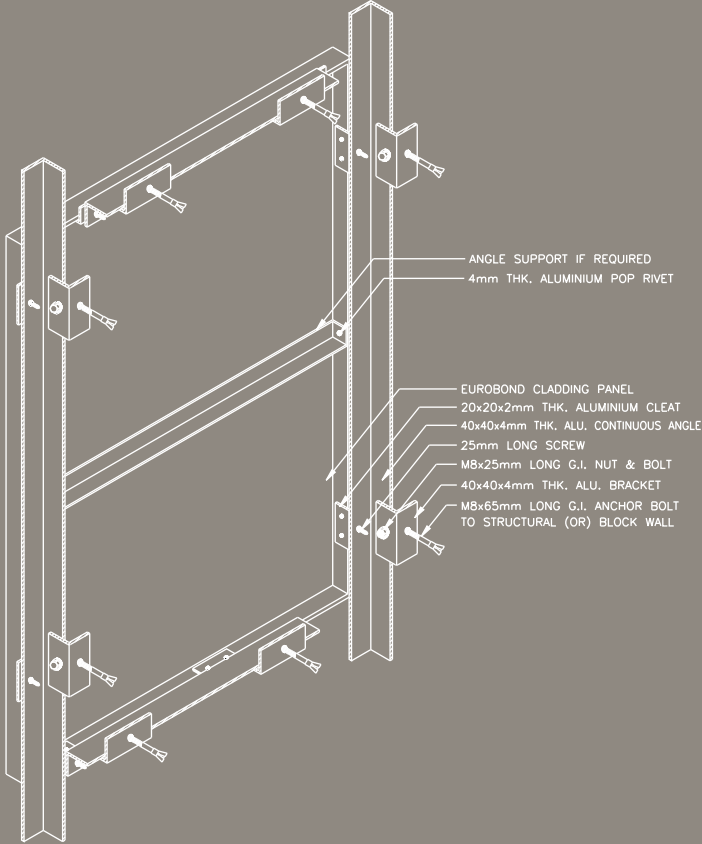


40X40 4MM THK X 100MM LONG ALUMINIUM CONTINUOUS ANGLE

8

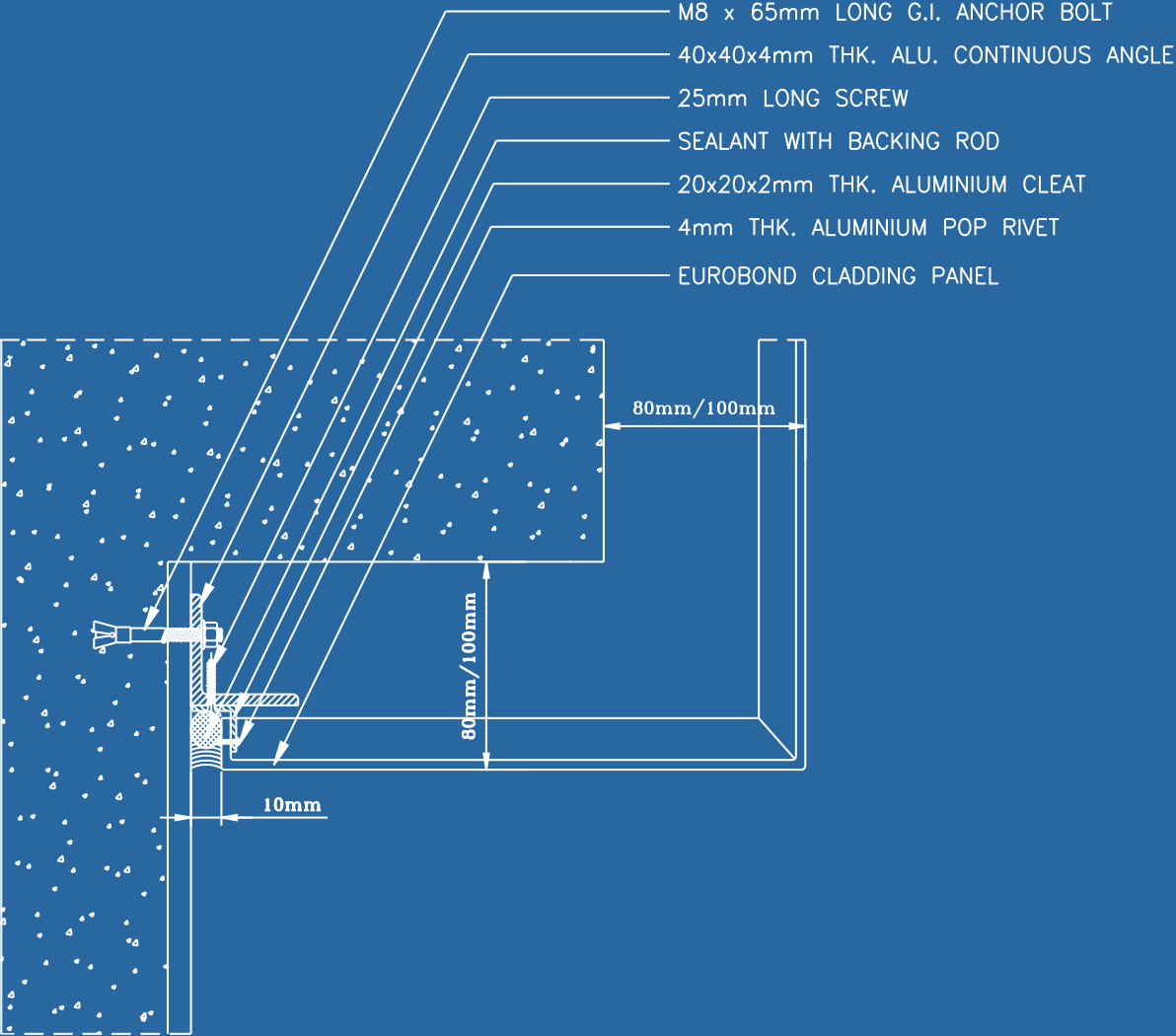


40x40x4mm THK. ALUMINIUM CONTINUOUS ANGLE



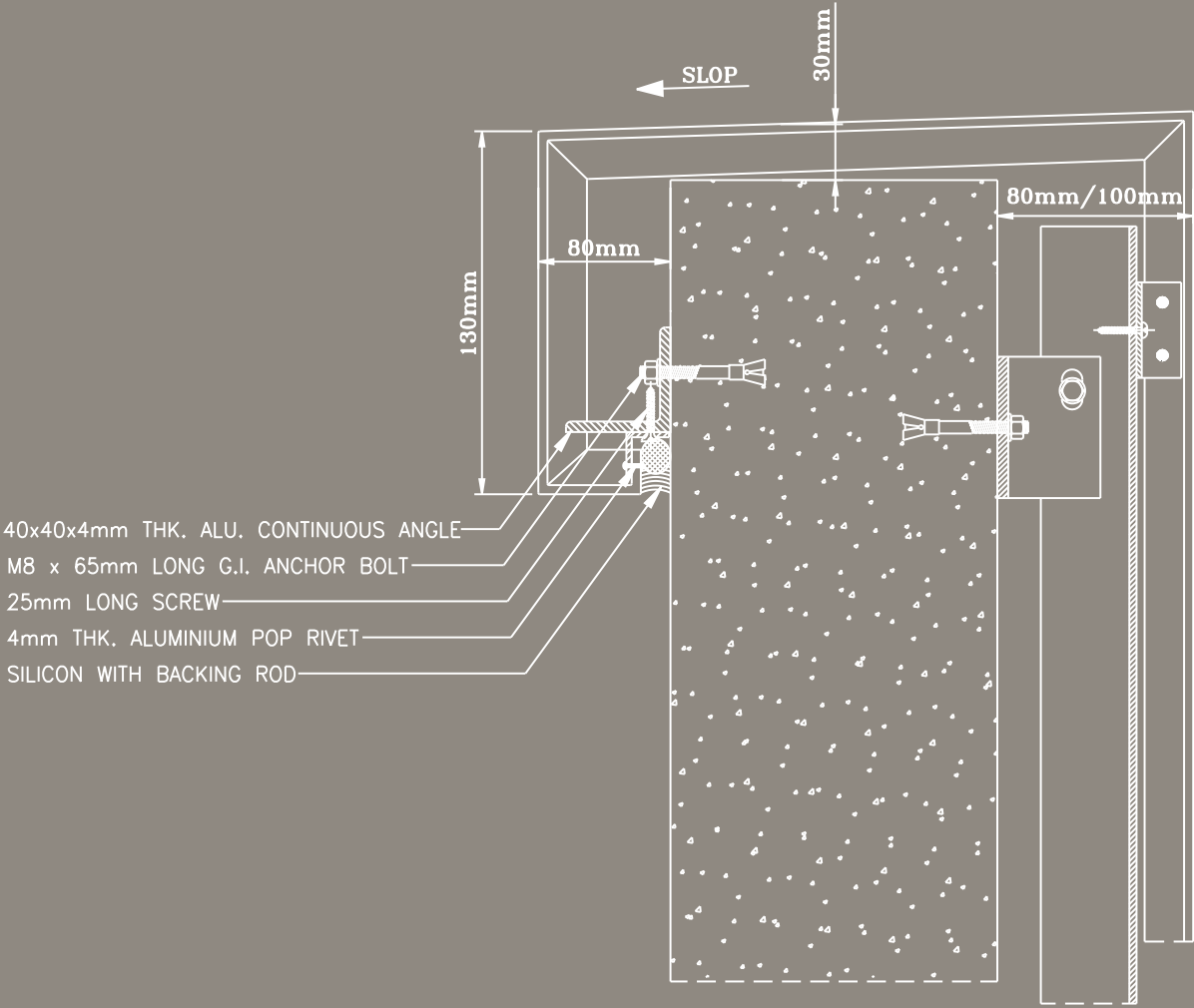
# Installation & Fabrication

## Cladding To Structural Wall Interface (Soffit)



# Installation & Fabrication

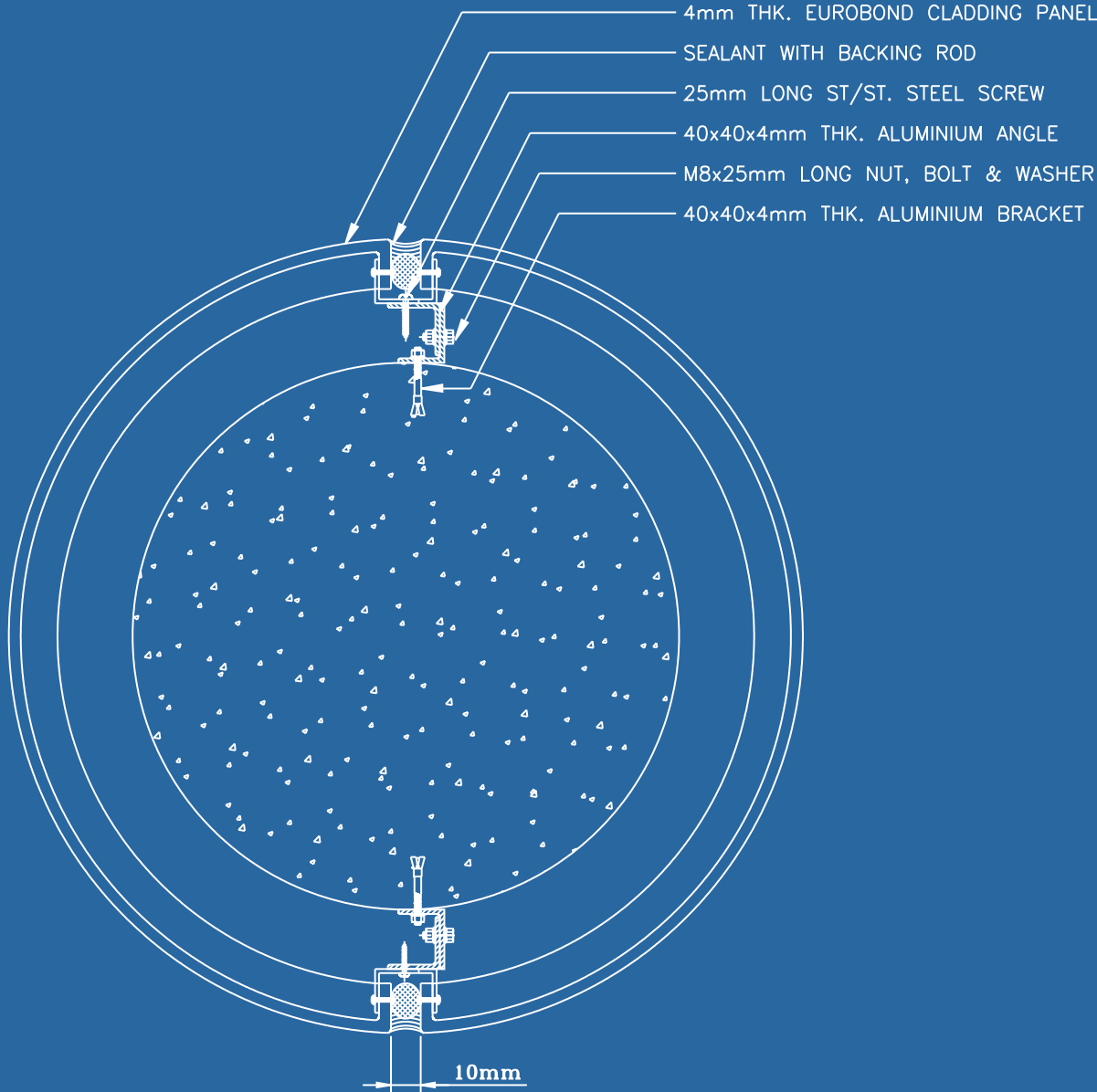
## Cladding Detail at Parapet Copping :





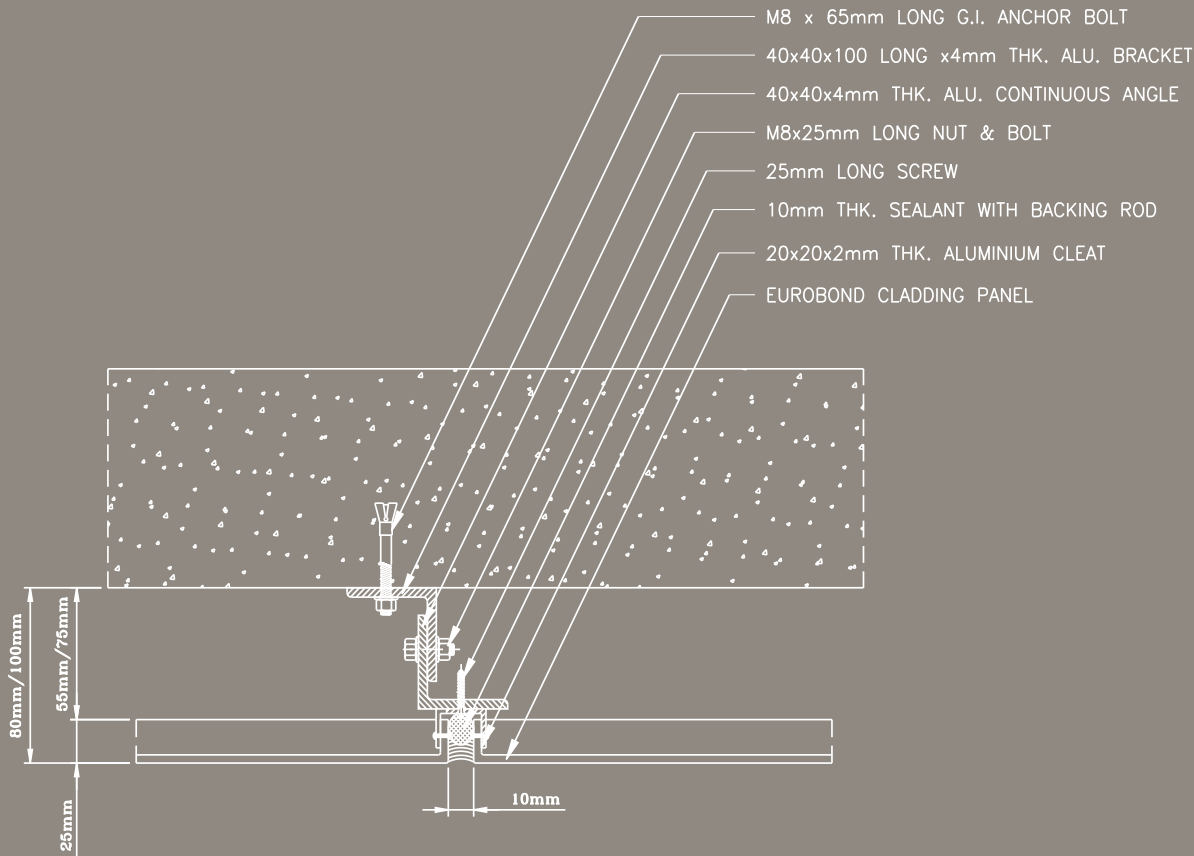
# Installation & Fabrication

## Cladding Detail of Circular Coloum:



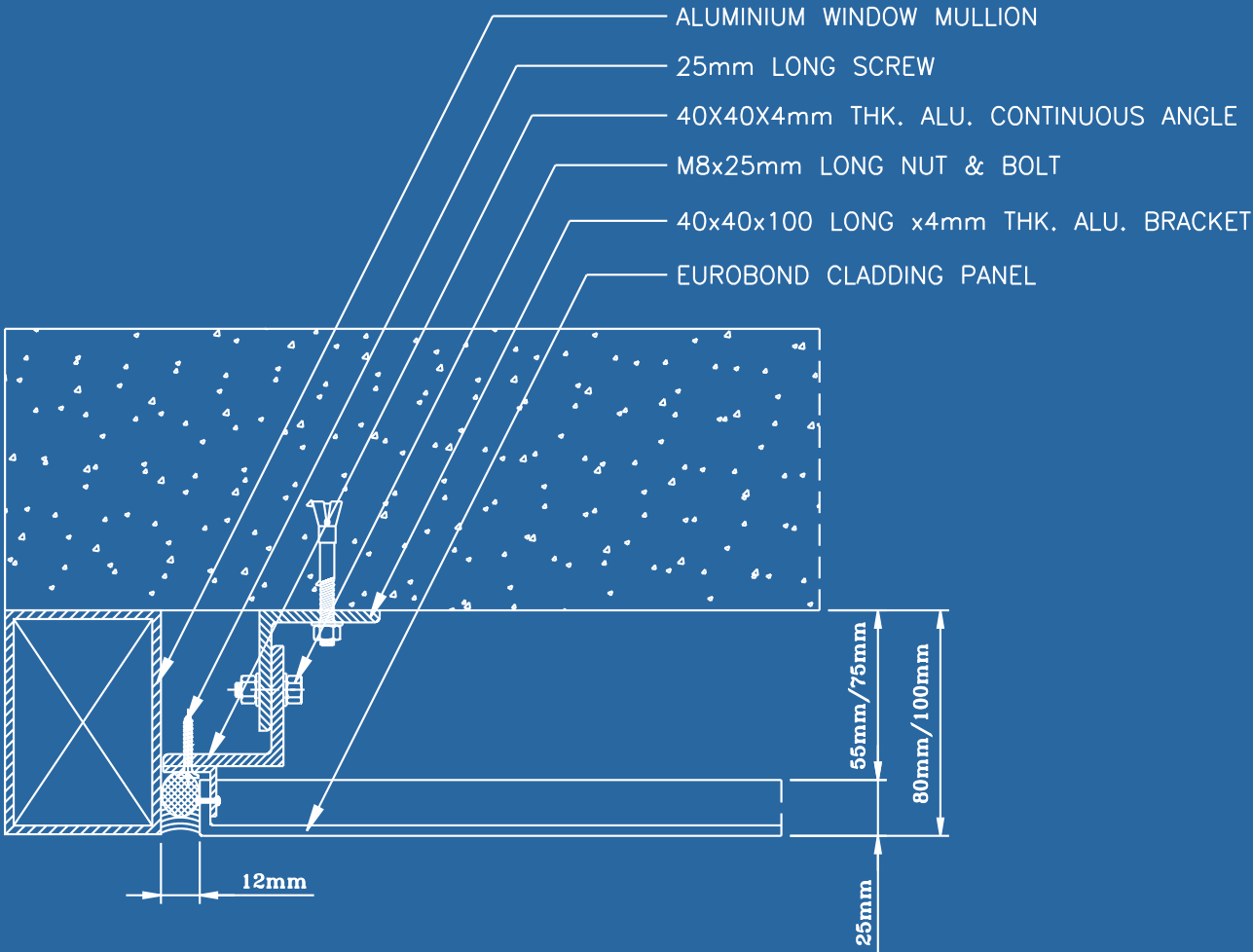
# Installation & Fabrication

## Cladding to Cladding Interface:



# Installation & Fabrication

## Cladding to Curtain Wall Interface :





# Cleaning Methods

## Scope

This manual is applicable to the cleaning and maintenance procedure for the external cladding of EUROBOND coated by PVdF.

Routine cleaning of the EUROBOND panel surface is recommended. It may be washed with solution of water and detergent, followed by clean water rinse. The frequency with which cleaning is to be carried out as per the degree of contamination.

Every cleaning operation must be followed by a through rinse of clean water to ensure the removal of all remnants of the cleaning agent. A final wipe down by means of a sponge, leather or wiper is necessary to avoid water stains

**CAUTION !!!Do not clean when sun – heated surface (above 40°C) to avoid rapid drying which may lead to stain formation on the APS.**

## General Notes

PVdF Coatings or any factory applied coatings SMP or Polyester or Acrylic resin or normal organic coatings on Aluminium will not attract dirt, however, the level of dirt or soil depends largely on the local atmospheric conditions where the building exists.

In heavily industrialized areas, coastal areas and the area where construction works are being carried out, it might be necessary to increase the cleaning frequency, not only for the sake of appearance but also for the purpose of removing the dirt and pollutants deposited on the panel surface.

Very often, rainfall is effective to remove dirt and to keep the external cladding clean. In areas of low rainfall, this effect may not be expected and the cleaning frequency might be increased. Even in the same building, the portions which are receiving direct sight and areas at lower level might be cleaned more frequently. And less obvious portions might be cleaned at some instances. These factors would determine the cleaning schedule.

In planning the actual cleaning schedule of external cladding, the schedule might be clubbed with cleaning operations for glass and painted aluminium components as well.

## Cleaning frequency

**Cleaning will be required more often in the following areas in general:**

- Areas of low rainfall
- Heavily industrialized areas
- The areas where construction works are being carried out.
- Foggy coastal regions with frequency cycles of condensation.

Building situated	Wash frequency
Rural area	1-2 times / year
Urban area	2 -3 times / year
Low rainfall and / coastal area	3-4 times / year
Heavily industrialized area	6 -8 times / year

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## Quick Guide to Cleaning Operation:

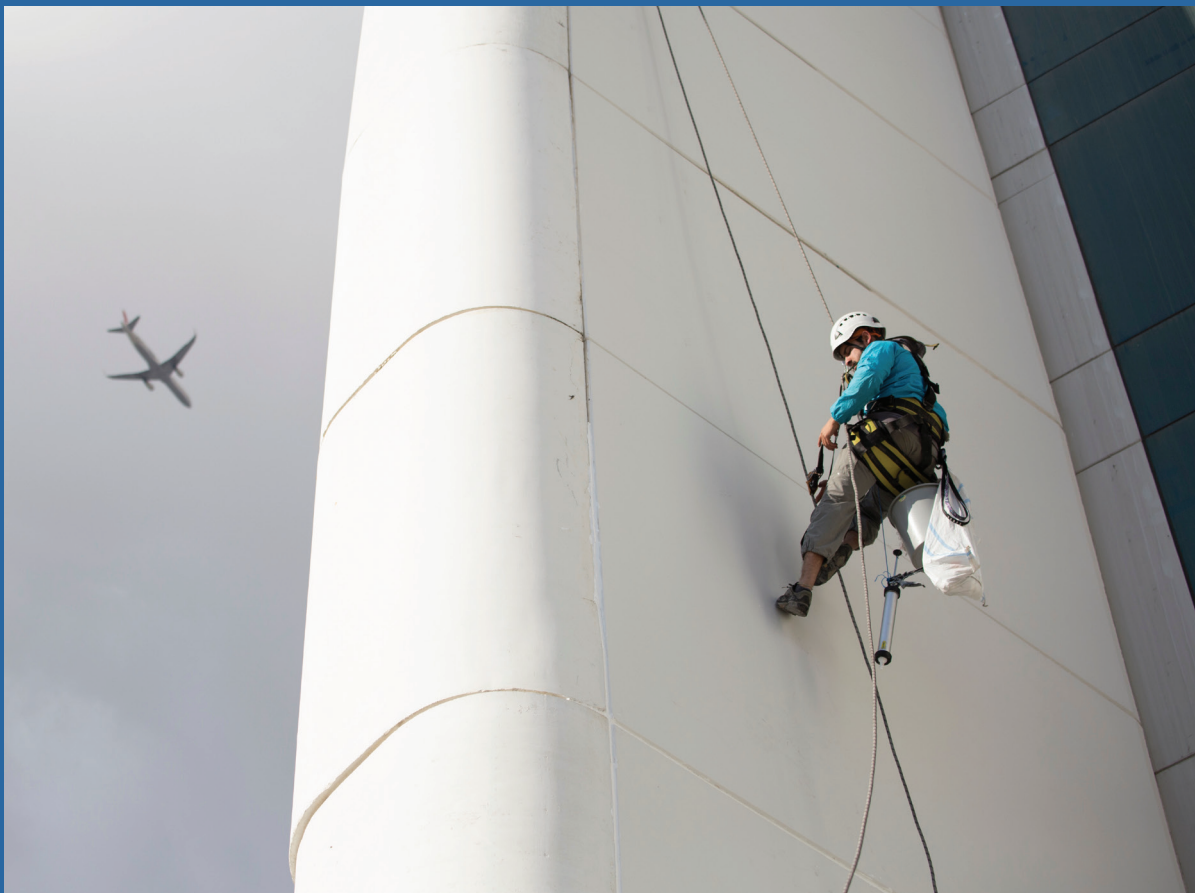
No generic method would be suitable for all kinds of panels soiled by the environment, a sample test patch cleaning can be done to determine cleaning agents.

1. Water spray rinsing and cleaning
2. Liquid or powder mild detergent mixed water spraying (if required)
3. Mild sweeping action with soft cloth and ensure all the time cloth must be clean and soft to ensure no scratches on the coated surface.
4. Again Water spray rinsing and cleaning to remove leftover detergents
5. Moping surface with wipers or soft cloth to dry to avoid the water stains on the surface

**Note1:** Specific stains do not go, especially pan-masala spits, they have to be patch tested and then cleaned stains one area after another.

**Note2:** Ensure the SPFs are removed within 45 days of installation, otherwise SPF will degrade and start breaking while removal, wasting a lot of time. And glue may stick on the surface which is much more difficult to remove.

**Note3:** To remove glue like substance use mild detergent along with kerosene (no petrol or Diesel) mix in ratio 50:50 then use soft cloth slowly to remove glue stains.





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