

GAJCladding U-Shield

INSTALLATION MANUAL - v6.3



GAJ CLADDING

FOCUSED FOR OVER 20 YEARS

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Introduction

About GAJCladding U-Shield

U-Shield panel system provides you with the GAJCladding unique top-quality fiber cement specific industry coating and finishes on fiber cement board that are ideal for high-end and aesthetic façade solutions, modern and designer arrangements, and top-level exterior architectures. The system uses hidden clips to attach the panels. Let yourself be inspired by our products and present your vision through our endless variations of this single material.

Advantages of GAJCladding U-Shield

- Maximum protection against weather
- Excellent longevity, 30 years of decoration life and 15 years of finish warranty
- Light weight and easy for on-site application, and easy installation in any climate
- Almost no maintenance is required.
- High quality panel finishes in strictly controlled environment assure no color fading or coat peeling off.
- High sustainability
- Noncombustible



Inspection, Proper Handling and Storage

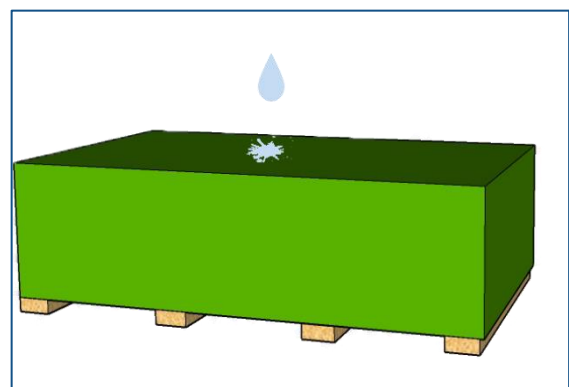
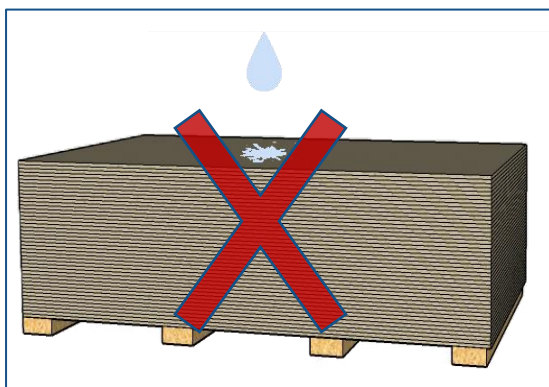
Product Inspection

Please carefully inspect all products before installation, whether they are damaged during transportation or have irregular surface products. Should you have a question or problem with your order, contact your local dealer or GAJCladding Customer Service.

Storage

GAJCladding Panels products are delivered with on the pallet. Hereafter the pallets should be kept under a roof, protected from rainfall, direct sunlight, and other weather influences. If the panel is stored outside, it should be protected with an additional waterproof covering. Any panel to be installed must be kept dry.

GAJCladding Panels must be stored on a flat and dry level surface on pallets or sleepers with a minimum distance of 30cm between the stacks on all sides, leaving the possibility of ventilation around the panels. Maximum 5 pallets in a stack at the warehouse and maximum 2 pallets in a stack on the building site. Each stack should not be more than 1000 mm high (40"). Use foam protection layer between the panels.



It is recommended to organize the pallets of the pre-cut and pre-drilled panels according to their sequences marked by the manufacturer or prefabricator in order to make the installation more efficient.

Proper Handling

Always lift panels off each other by two persons, and do NOT slide them over one another to avoid scratches and damages of the panel surface. To carry the panels, always lift up them vertically and handle their edges by two persons, avoid handling them with panel flat side from facing up or down, as this can result in cracks in the panel. Do NOT draw or drag a panel over or under the next panel, as this operation will cause scratches and damage on the surface. Please note that the damaged panels caused by such operation will not be in the manufacturer's warranty.

Forklift

Fork length must support the pallet entirely; if required, use fork extensions.



Basics

Panel Cutting

All GAJCladding U-Shield panels may be cut with a circular saw or a jigsaw equipped with a diamond tipped blade. The panel can be cut by a hand tool or a stationary device.

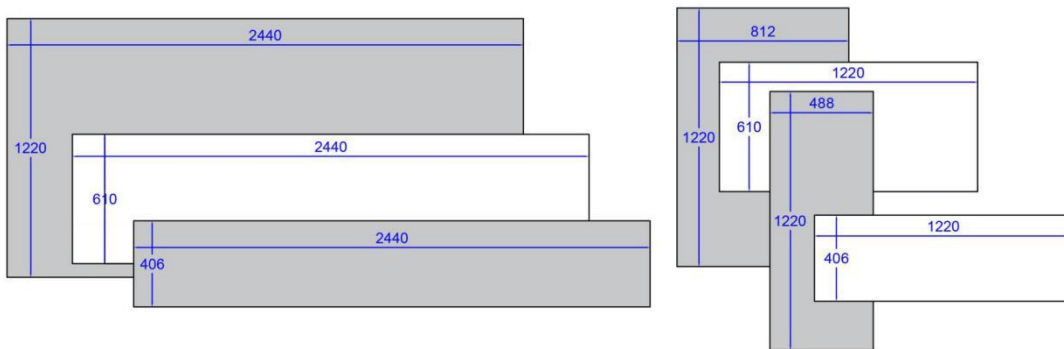
Note 1: When using fast running tools, dust exhaustion must be employed.

Note 2: When using hand tools, cut the panels backside up. When using stationary saw equipment, cut the panels front-side up (the saw blade must always attack the board from the front-side).

Note 3: One panel is cut at one time.

Note 4: Cutting depth should be beyond the panel thickness

Overview Panel Sizes



Panel Size (Length × Width)	Min. Number of Anchor*
488x1220	8
812x1220	8
1220x406	6
1220x610	6
2440x406	12
2440x610	12
2400x1220	24

All size measures in mm

* Just for information

Panel Technical Data

Properties		Text Value
Apparent Density		1.57g/cm ³
Carrier Board Water Absorption		24.9%
Water Absorption after Coating		0.2%
Wet Rate		0.15%
Flexural Strength (Equilibrium Conditioning))		23.2MPa
Flexural Strength (Wet Conditioning)		16.5MPa
100 Freeze-Thaw Cycles Resistance	Physical Observations	Pass
	Flexural Strength Retention Rate	84.5%
50 Soak/Dry Cycles Performance		91.2%
Falling Ball Impact		Pass (10J)
Non-Combustibility		Class A

Panel Drilling

The undercut anchor holes are drilled at the factory or locally. Using the extension hole drill to make undercut anchor holes. The diameter of drilling (D1) is 7.2 mm, and the diameter of extension hole (D2) is 9.1 mm.



Edge Treatment & Cleaning

After cutting the panel, the cut edges should be sanded and sealed with fiber cement edge sealant. This reduces the possibility of damage and improves panel edge performance.

Remove dust caused by panel cutting and drilling from the front side and backside of the panels with a soft brush/duster or a vacuum cleaner.

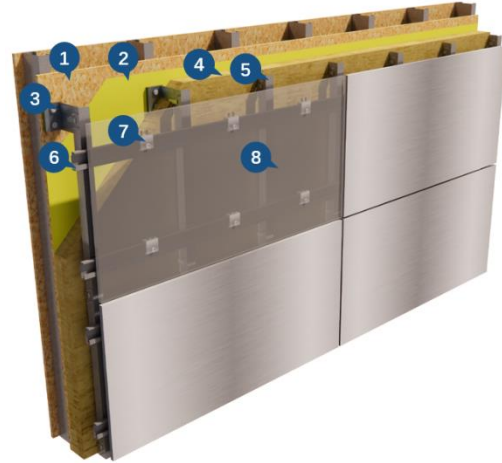
Apply GAJCladding Edge Sealant

Apply edge sealant simply run applicator along panel edges and holes. Ensure full coverage of edges and holes. Repeat this application if necessary.

Metal Support

System Components

1. Exterior Wall
2. Vapor Barrier & Waterproof
3. Brackets
4. Exterior Thermal Insulation
5. Vertical Rail
6. C-Profile Horizontal Rail
7. C-Profile Clip & Undercut
8. U-Shield Panel



Principle

1. Ventilated Cavity

The main function of the ventilated cavity is to discharge water and excess heat. Use the pressure difference between the bottom and the top to make the air circulate naturally.

Cladding Height	Min. Cavity
<6m	20mm
6~15m	25mm
15~25m	30mm
25~50m	40mm
50~75m	50mm
75~100m	75mm
>100m	100mm

2. Undercut

Undercut only consist of an anchor sleeve and a hexagon bolt.

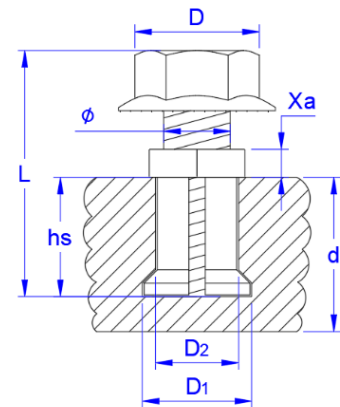
The anchor sleeve is expanded to its original dimension by inserting the screw to a controlled depth, so that the sleeve sits snugly against the undercut section of the hole in the U-shield panel.



Different thickness of panel (d) requires different anchoring depths of the undercut (hs)

\varnothing	L	D1	D2	hs
6	22	7.2	9.1	7
6	22	7.2	9.1	9
6	22	7.2	9.1	12
Anchoring Depth (hs)		Panel Thickness (d)		
7		10		
9		12		
12		15		

All measures in mm



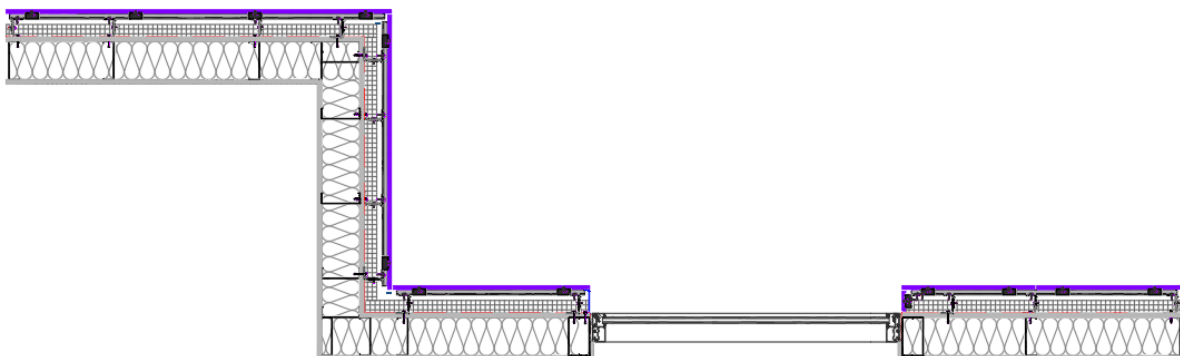
3. Clip

GAJCladding C-profile Clip and C-profile Rail are a set, they need to be used together.

For C-profile Clip, each clip only one threaded hole and one unthreaded hole.



Attachment System

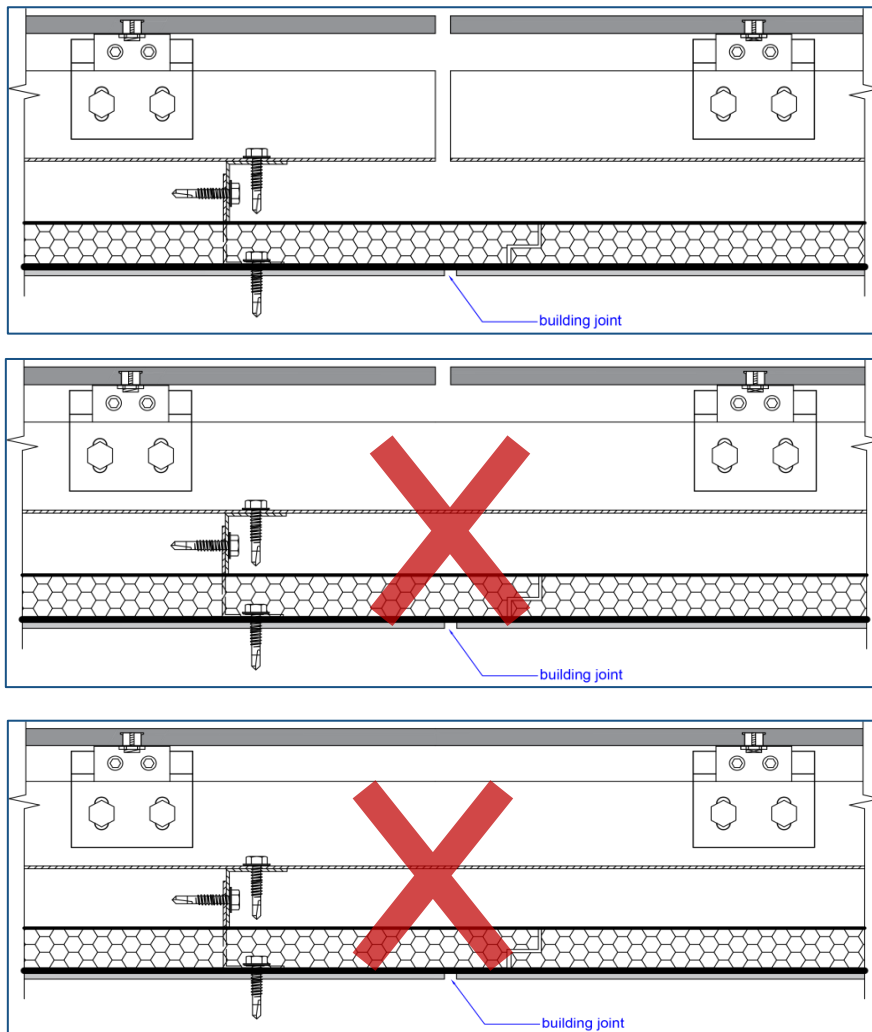


Secure the panel with undercut & clip, and use C-profile rail and L-profile Vertical Rail as metal frame. Use Fastener for anchoring profile rail.

Attention: Failure to use GAJCladding undercut & clip invalidates product warranty.

About Building Joint

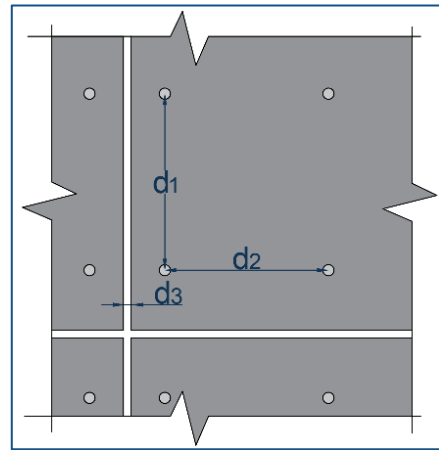
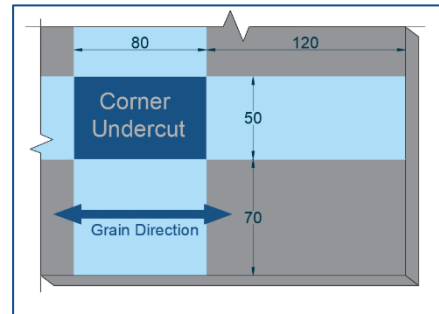
No panel or its supporting frame shall be installed across the building structural joints, and no panel shall be installed across its supporting frame along the frame's direction, vertically or horizontally.



Installation

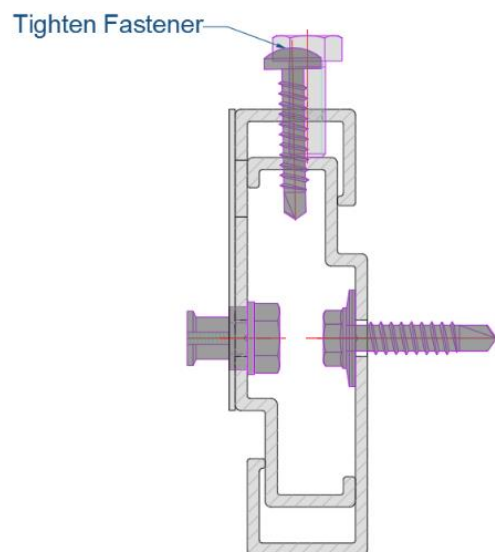
Anchor Layout

- Corner anchoring point area
Horizontally: 120 ~ 200 mm
Vertically: 70 ~ 120 mm
- Panel joints
 d_3 : 5~10 mm
- Distance between anchors
Horizontally (d_2): 200 ~ 450 mm
Vertically (d_1): 200 ~ 450 mm
- Holes in panel for undercut
Drilling \varnothing : 7.2mm
Extension hole \varnothing : 9.1 mm
- NOTE: When drilling or cutting occurs on project site, extra care and protection should be taken not to scratch the surface of the panel.



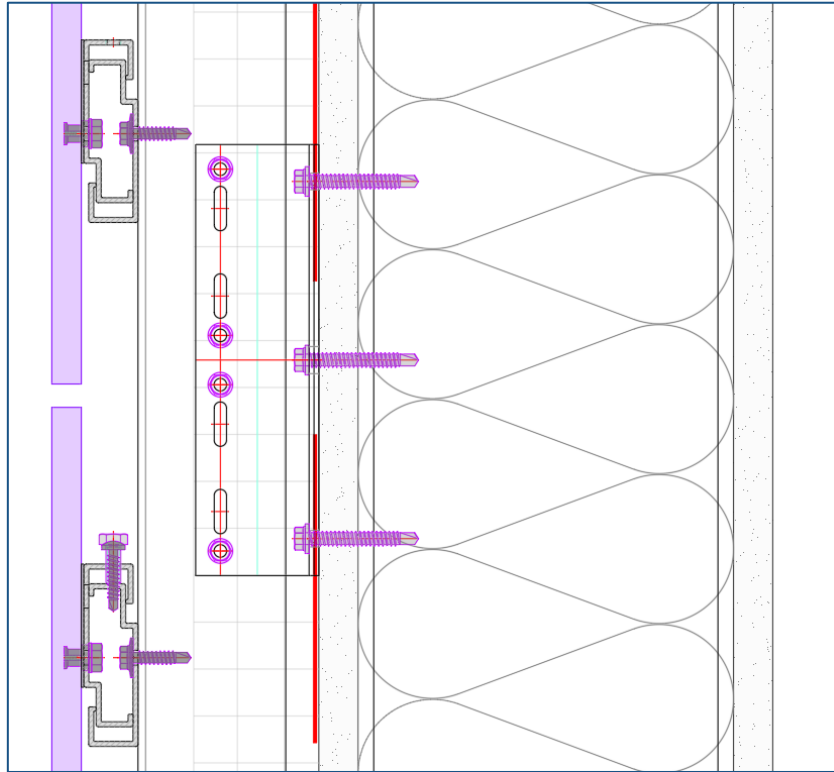
Tighten Fastener

Install one clip to rail locking fastener through unthreaded hole in hanger and fully through C-profile rail. Tighten fastener to "fix" facade panel position.

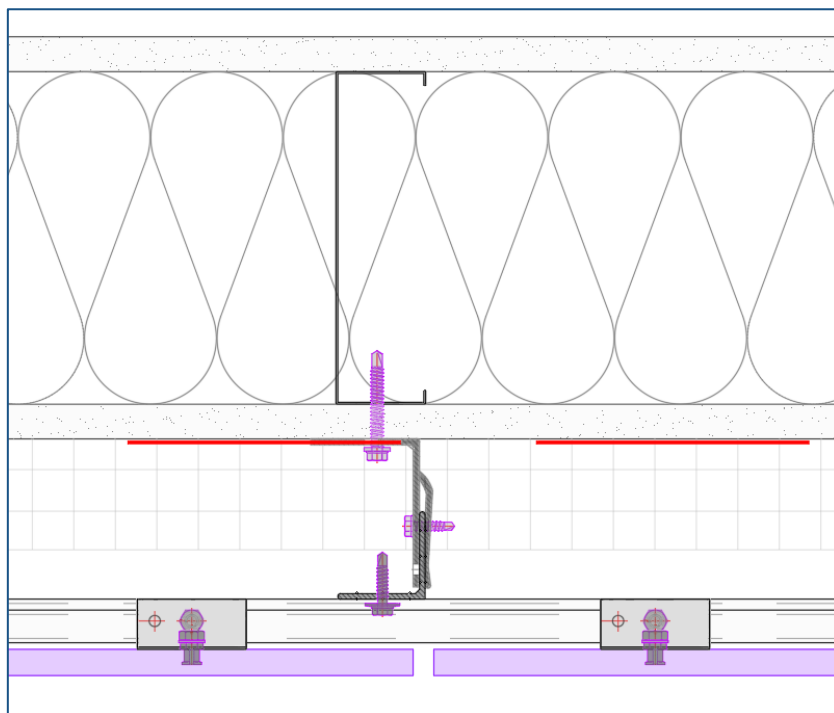


Special Locations

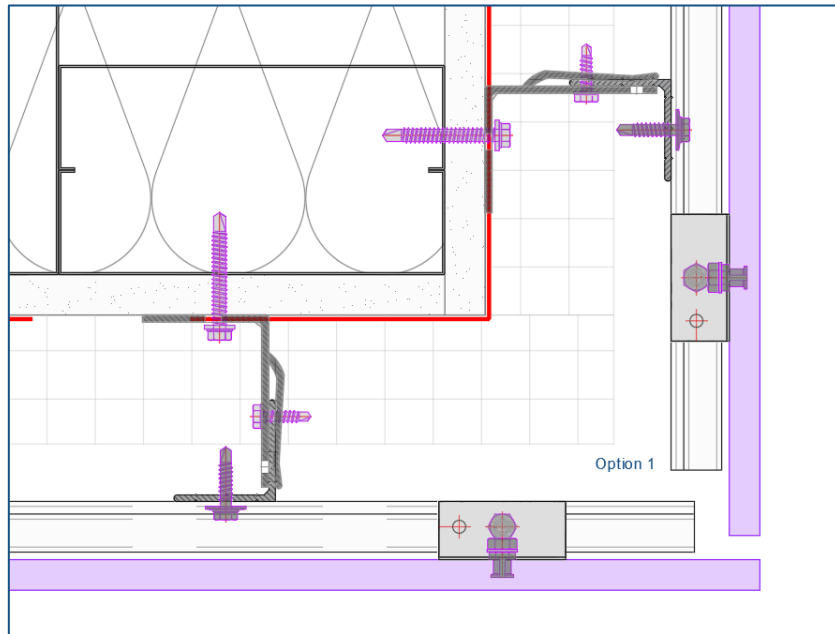
Horizontal Joint Detail:



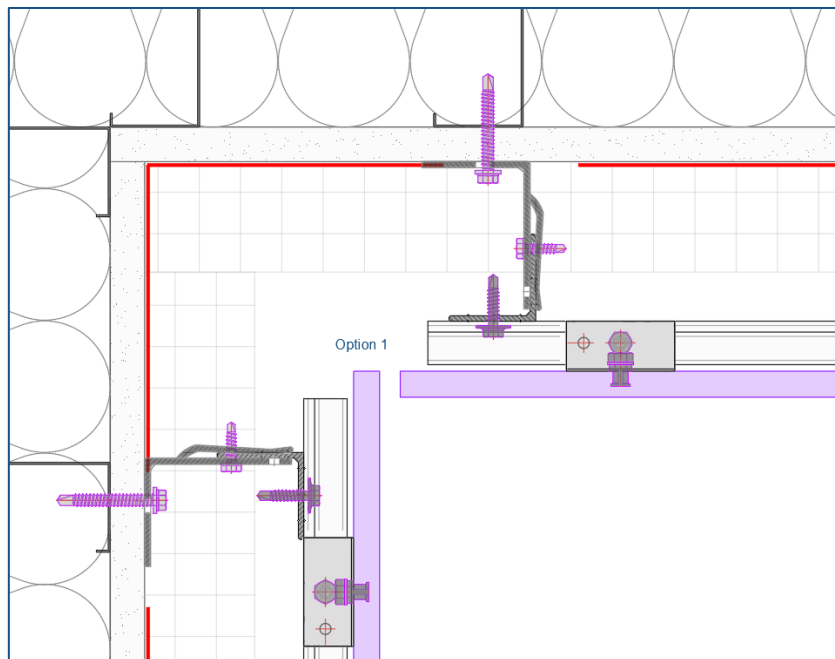
Vertical Joint Detail:



Outer Corner:



Inner Corner:



Remarks

Cleaning

There are two methods of cleaning panels, mechanical cleaning and chemical cleaning. In principle, perform the cleaning of the panel over the entire surface, because partial cleaning can result in color and tonal imbalance. Normal stains can be removed with a sponge and water. Warning High Pressure Cleaning is a rough treatment of panel. Use of a high-pressure cleaner may damage the surface. Therefore, high pressure cleaning is not recommended.

Impact by Pollution and Nature

Weather and nearby vegetation may affect the appearance of the panels. Take caution to avoid pollution, dust and leaves from trees, bushes and flowers to not impact the integrity of the panels. Excessive humidity, salts, or other chemical agents can corrode the panel and attack metal.

Special Information

THE INFORMATION OR DATA IN THIS SHEET SERVES TO ENSURE THE PRODUCT'S INTENDED PURPOSE OR ITS SUITABILITY FOR USE AND IS BASED ON OUR FINDINGS AND EXPERIENCE. NEVERTHELESS, USERS ARE RESPONSIBLE FOR ESTABLISHING THE SUITABILITY OF THE PRODUCT FOR ITS INTENDED USE. APPLICATIONS OTHER THAN THOSE EXPLICITLY MENTIONED IN THIS TECHNICAL DATA SHEET ARE ONLY PERMISSIBLE AFTER PRIOR CONSULTATION WITH CHONGQING GUANJIE QIZHONG BUILDING MATERIALS CO., LTD. WHERE NO APPROVAL IS GIVEN, SUCH APPLICATIONS ARE AT THE RISK OF THE USER. THIS APPLIES IN PARTICULAR WHEN THE PRODUCT IS USED IN COMBINATION WITH OTHER PRODUCTS. WHEN A NEW TECHNICAL DATA SHEET IS PUBLISHED, ALL PREVIOUS TECHNICAL DATA SHEETS ARE NO LONGER VALID. THE LATEST VERSION IS AVAILABLE ON THE INTERNET AT WWW.GAJCLADDING.COM.

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