

Wallshell Thermal Panoply™

INSTALLATION MANUAL - v6.2

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THE SOURCE OF MANGNIFICENCE™

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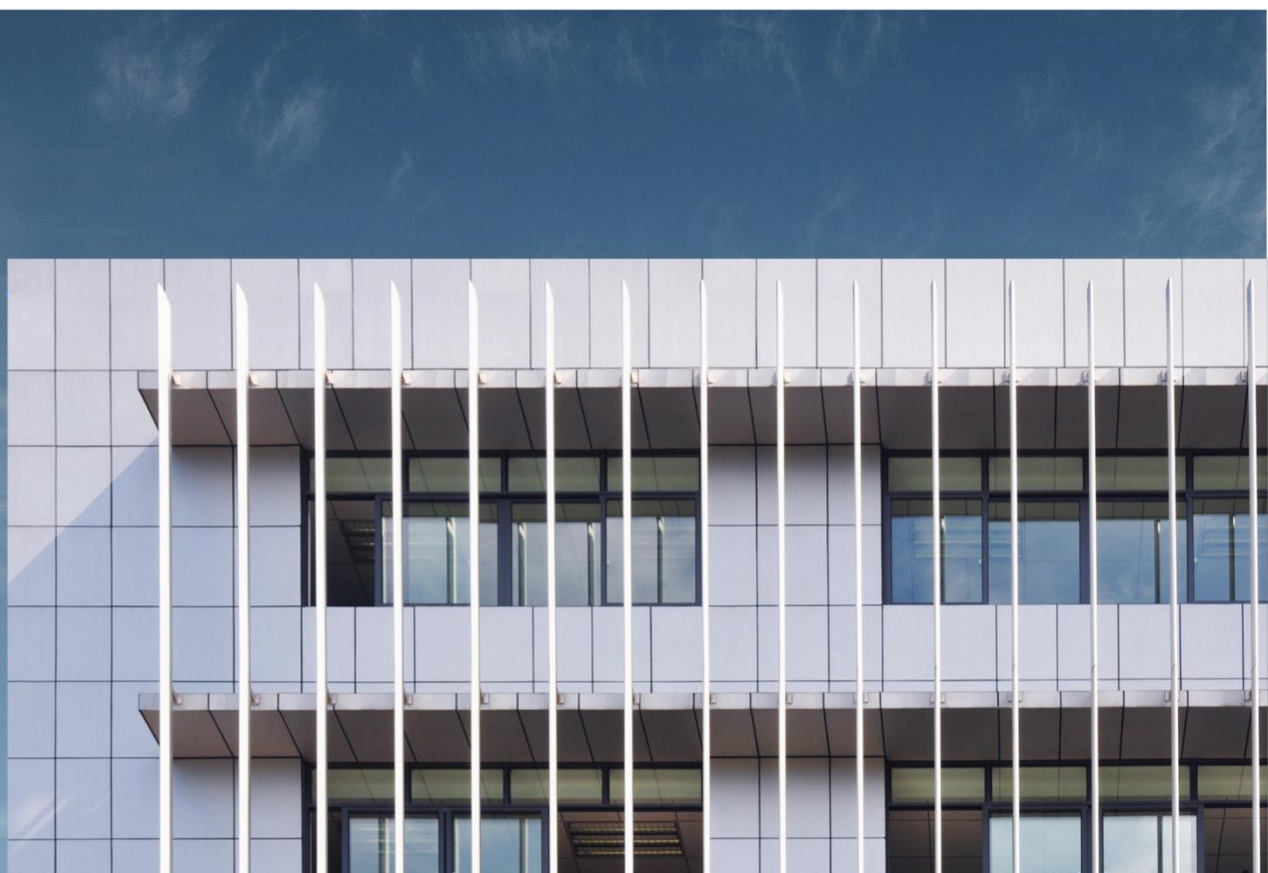
Introduction

About Wallshell Thermal Panoply™

Thermal Panoply™ is a composite panel system that creatively combines our distinctly powder coated fiber cement board together with class A fire resistant insulation material, i.e. mineral wool, for the purpose of reducing energy consumption, increasing the insulation value of the wall system and improving the performance and appearance of the exterior wall cladding.

Advantages of Wallshell Thermal Panoply™

- Excellent longevity, 25 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 required
- High quality panel finish in strictly controlled environment, no cracks, paint or sealant problems
- High sustainability
- Non combustible
- Save 50% of the traditional application cost



Inspection, Proper Handling and Storage

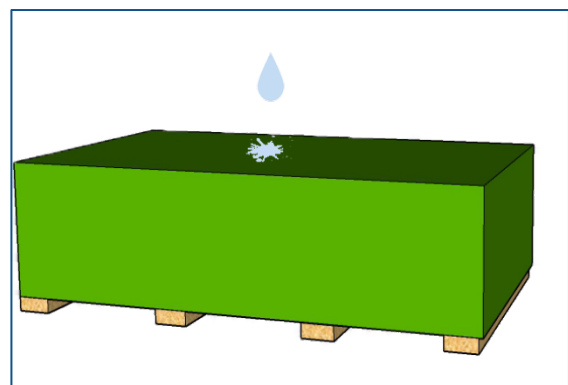
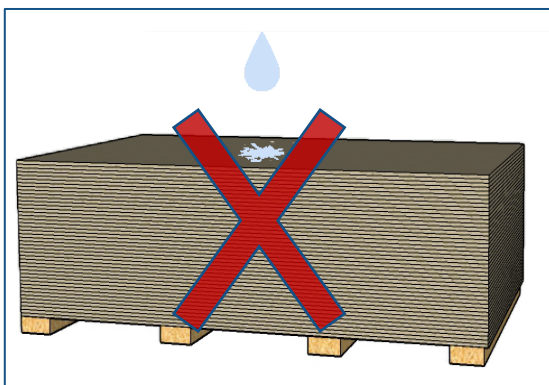
Product Inspection

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 Walpanel Customer Service.

Storage

Wallshell 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 panel is stored outside, it should be protected with an additional waterproof covering. Any material to be installed must be kept dry.

Wallshell 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 manufacturer or prefabricator in the 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 panel over the next panel, as this will cause scratches and damage on the surface. These actions will cause the damaged panel to be out of warranty.

Forklift

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



Basics

Panel Cutting

All Wallshell Thermal Panoply™ 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.

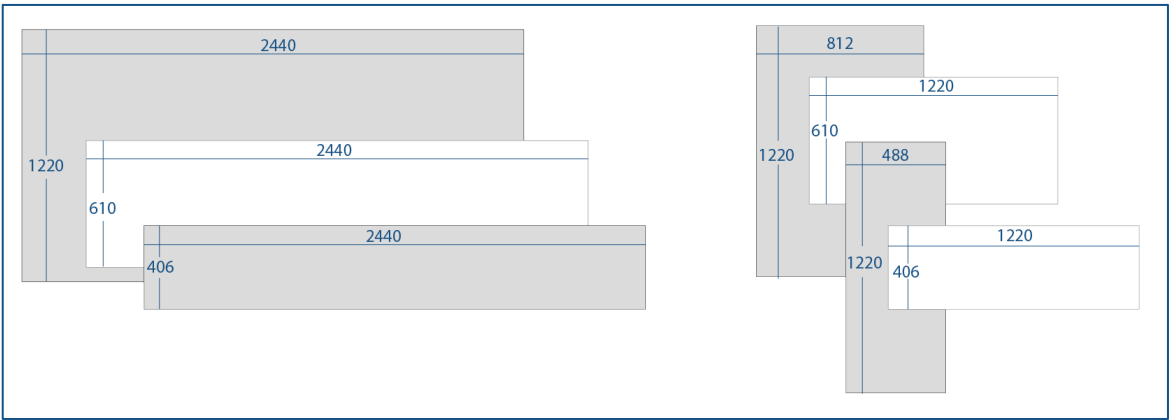
Note 1: When using fast running tools, dust exhaustion must be employed.

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 Size



Panel Size(Length×Width)	Min. Number of Anchor*	
	S	L
488x1220	N/A	6,8
812x1220	6	6,8,10,12
1220x406	6,8	4,6,8
1220x610	6,8,10	6,8,10
2400x406	8,10,12,14	N/A
2400x610	12,14,16	N/A
2400x1220*	8,10,12,14,16,20	6,8,10,12

All size measures in mm

* Should be cut on-site to meet the technical requirements.

Attention: S means slot channels across the panel grain direction.

L means slot channels along the panel grain direction.

The panel grain direction along long side of the standard panel.

Edge Treatment & Cleaning

After panel cutting, the cut edges should be sanded and sealed with edge sealant to reduce 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 Wallshell Edge Sealant

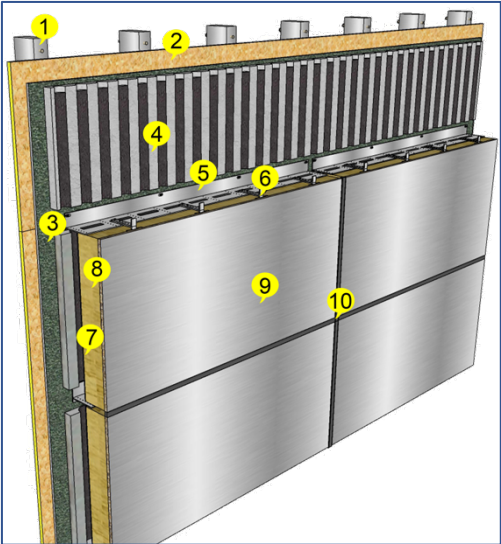
Apply edge sealant simply run applicator along panel edges and holes. Ensure full coverage of edges and holes. Repeat this application if necessary

All factory-cut and factory-drill Wallshell panel are impregnated with edge sealant at the factory. The Wallshell panel that have been cut and drill on site must apply Wallshell edge sealant.

Metal Support

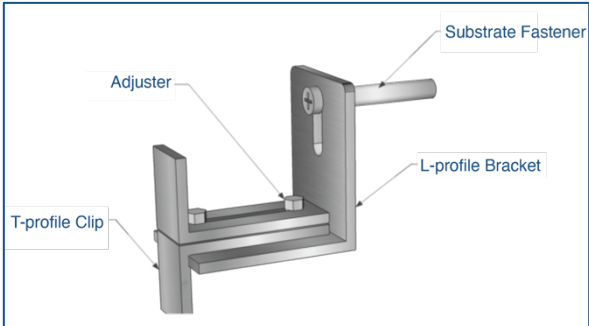
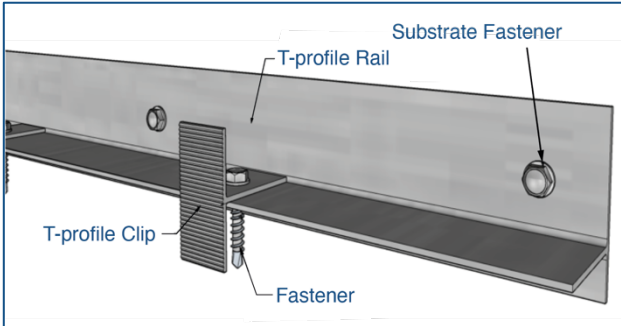
Main Components

- 1. Steel Studs
- 2. Sheathing
- 3. Vapor Barrier
- 4. Adhesive Drainage Plane
- 5. L-profile Supporting Rail
- 6. T-profile Clip
- 7. Panel Backer Board
- 8. Panel Built-in Insulation
- 9. Finish Panel
- 10. Panel Joint Sealant and Weep Tube



Principle

There are two different ways of support. The first one is depicted in the diagram above. The other way is mounted directly on the shear wall or on concrete. In this way, the T-profile rail are replaced directly with L-profile bracket and should to use adhesive mortar for anchoring.



Surfactant

Follow the table below to determine if the panel back and/or the substrate need to apply surfactant.

	Panel Back with Cement Membrane		Panel Back WITHOUT Cement Membrane	
	Panel Back	Substrate	Panel Back	Substrate
With Vapor Barrier on Substrate	NOT Applicable	NOT Applicable	Apply Surfactant	NOT Applicable
WITHOUT Vapor Barrier on Substrate	NOT Applicable	Apply Surfactant	Apply Surfactant	Apply Surfactant

Attention: The surfactant must thoroughly cover the panel back surface when applying a surfactant on the panel back. Wait for 4 hours until it becomes unsplit before going to the next step.

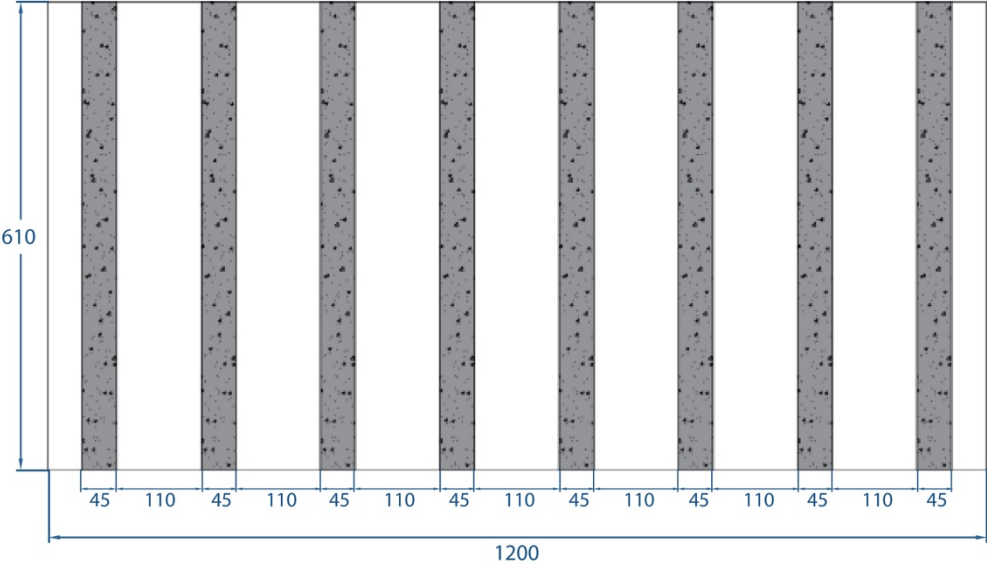
Mortar

Use Wallshell mortar the viscosity of the adhesive must be made with ratio of 5.5 - 6.5 Liter of clean potable water for each 25kg bag, and must wait for 15 minutes for the adhesive aging after it is made. Do not over water as this will degrade the performance.

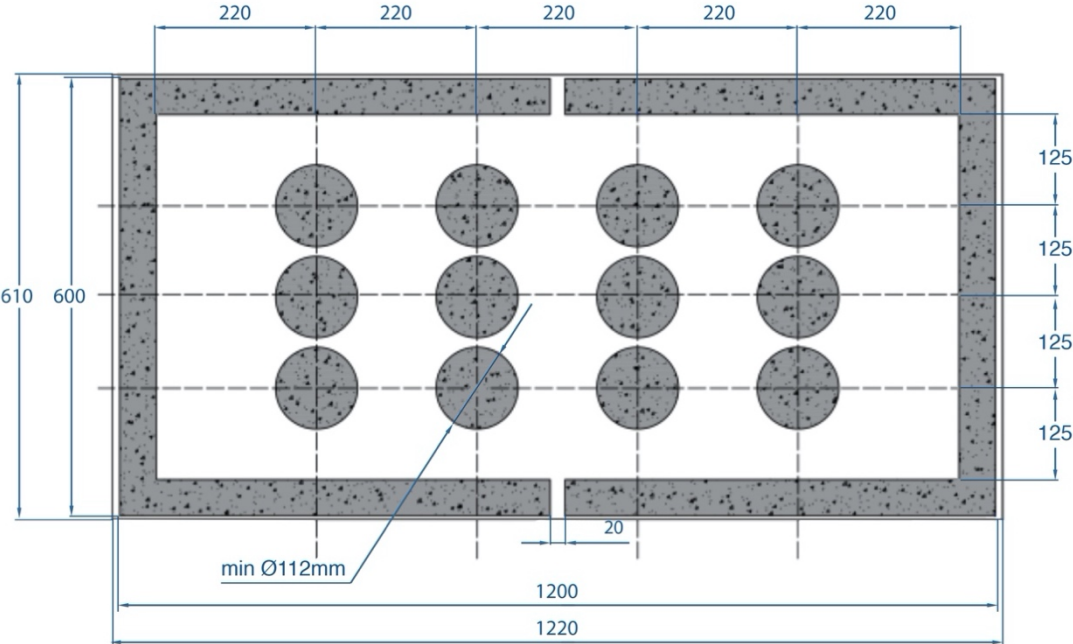
The adhering points shall be laid out evenly on the back of a panel, and the entire adhering area shall be equal or greater than 40% of the area of the panel.

There are two layouts of adhesion points. Take the panel which the size is 1220x610mm as an example.

1. For Plywood and Gypsum Substrate Sheathings:



2. For Concrete or Concrete Masonry Substrate sheathings:



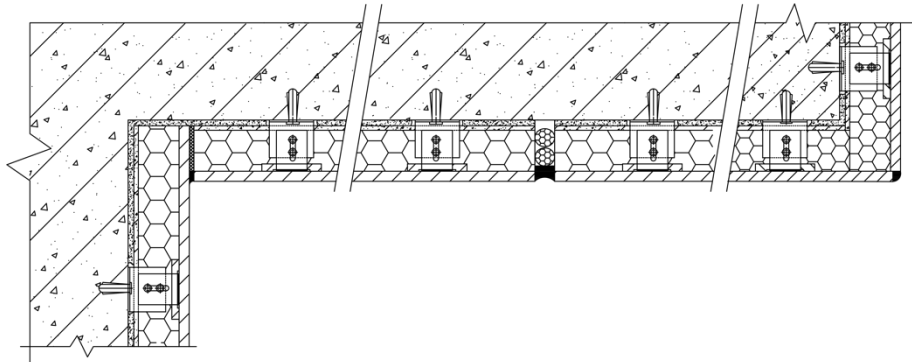
Apply adhesives on the adhering points on the back of the panel, place the panel to the substrate with even force, and adjust it to its precisely designed position with required flatness, before anchors are finally applied.

There shall be a designed space between each panel for the sealants or the joint mortar to be applied in.

For outer corners, the adhesives shall be applied at the joint of the two panels.

LT Anchoring System

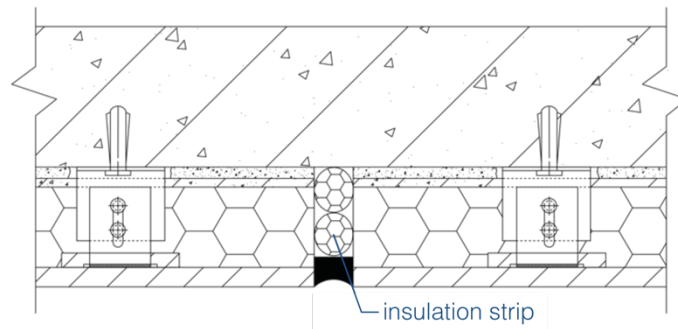
Secure the panel with L or T-profile clip, and use adjuster to fix clip on the L-profile bracket or use fastener to fix clip on the T-profile rail. For T-profile rail, use Self-drilling substrate fastener for anchoring it to metal framing. For L-profile bracket, use substrate fastener which with anchor sleeve for anchoring.



Attention: Failure to use Wallshell clip & rail or bracket invalidates product warranty.

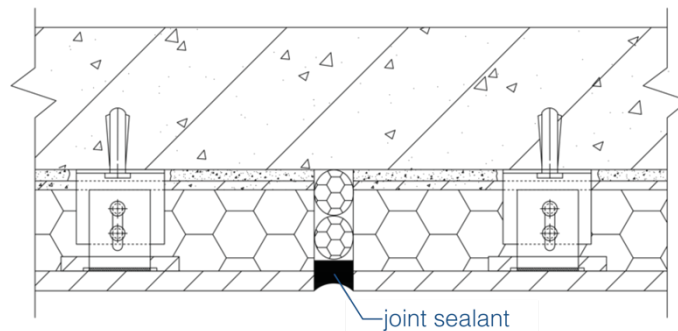
Accessories

Apply paper-tape and insulation strip before applying joint sealant. The recommended width of the paper-tape is 18 mm. The diameter of the insulation strip is 1.5-time of the width of panel joint.



After the application of insulation stripe, the depth of the panel joint left for the application of sealant shall be no less than 5 mm.

For outer corners, form it into a smoothly curved outward shape with the sealant by using special tools, and the sealant needs to cover 3 mm surface of the panel on each side of the corner; the same requirements apply on the inner corners, only the corner is smoothly curved inwardly.

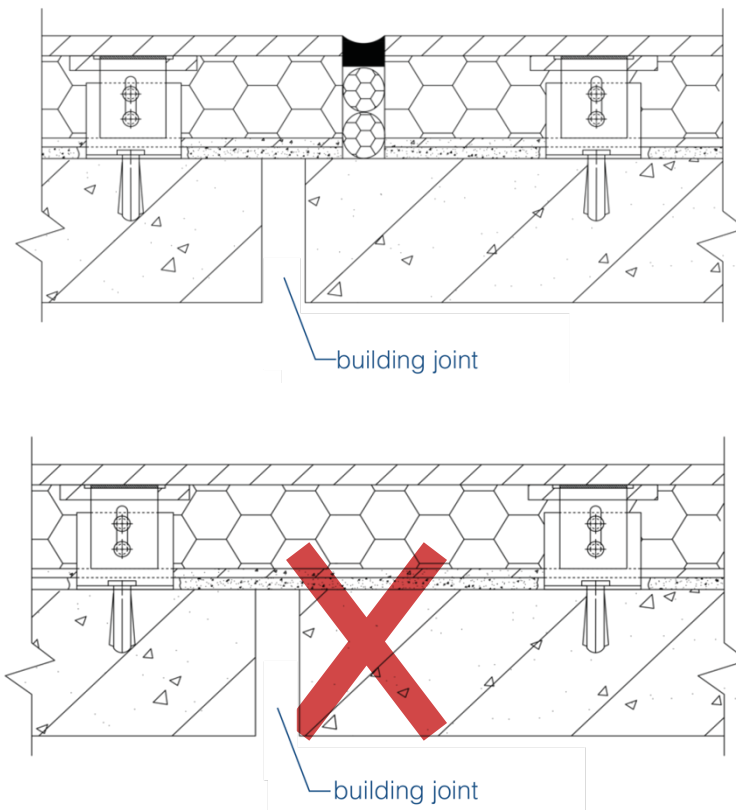


Apply an Weep Tube every 20 m² to 30 m².



About Building Joint

For the building structural joints, the panel must be not be fixing across or crossing over these joints.



Installation

Panel Joints

For rock wool thermal panoply panels must be less than 10 mm.

For XPS, EPS thermal panoply panels must be less than 7 mm.

Special Location

Figure 1: Outer Corner

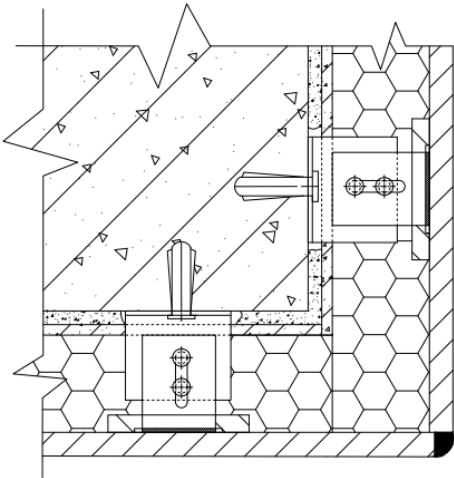


Figure 2: Inner Corner

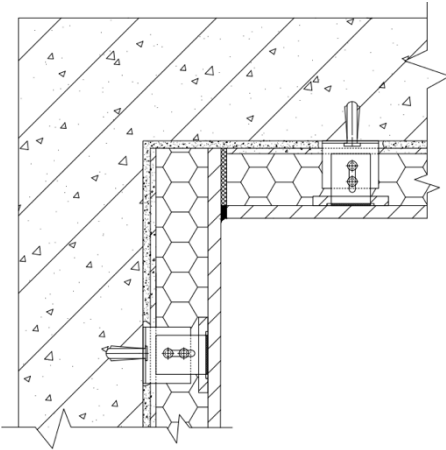
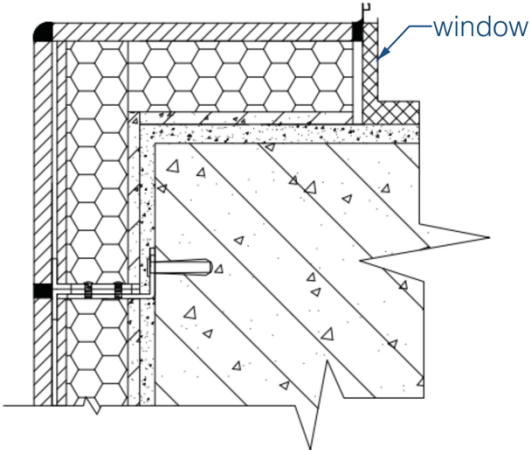


Figure 3: Window Jamb



Attention: Number of clips and brackets may increase correspondent to the size of the panel, with minimum 8 clips and brackets within each square meter. Actual number of minimum clips and brackets must be designed to comply with the building wind load requirements.

Remarks

Cleaning

There are two methods of cleaning panel, 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 WALPANEL, INC. 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.WALLSHELL.COM.

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