

The logo for Yardcom, featuring the word "YARDCOM" in a bold, sans-serif font. The letter "A" is stylized with a diagonal slash through it. The logo is positioned in the top left corner of a large rectangular area that has a background pattern of overlapping, light gray, rounded shapes on a slightly darker gray background.

**YARDCOM**

# **GREAT WALL CLADDING**

INSTALLATION INSTRUCTIONS

# Installation Instructions for Great Wall Cladding ( Aluminum Alloy Joist, Vertical Installation )

- **Key Point:** Before commencing construction and installation, please thoroughly review these installation instructions for the Great Wall Cladding.
- **Note:** 1. The installation diagrams and instructions provided in this guide serve as references only. The use of Yardcom product profiles must adhere to local laws, regulations, and building installation and construction standards.  
2. Users must assume all risks and responsibilities associated with the use of this guide on their own.

## Installation and Usage Tools:

Standard woodworking tools such as power saws (table and handheld), impact drills, and electric drills are required; our company commonly uses diamond saw blades.

## Installation Safety Precautions:

Operators must possess safety awareness, utilize safe and qualified construction equipment, wear appropriate protective gear, including cut-resistant gloves and dust masks.

## Profile Application Structure:

Yardcom product profiles should not be utilized independently for beams, columns, or other load-bearing structures; they must be combined with complementary profiles from load-bearing structures.

## Construction and Installation :

Before utilizing Yardcom product profiles, it is essential to create accurate on-site drawings to ensure proper profile coordination and precision in dimensions, thereby minimizing unnecessary material waste and labor downtime during construction.

## Storage Environment for Profiles:

Yardcom product profiles must be stored on a flat, hardened surface to prevent direct contact with the ground and to avoid prolonged exposure to damp or waterlogged areas, thereby reducing the risk of deformation.

## Environmental Adaptation for Profiles:

Before local installation and construction, Yardcom product profiles must be acclimated to the local environment for 48 hours to stabilize thermal expansion and contraction. This process ensures that the profiles are ready for use and helps prevent installation inaccuracies due to significant temperature differences between the origin and the installation site.

## Board Installation Foundation:

Yardcom wall cladding must not be directly affixed to the base surface; instead, keel systems should be utilized to facilitate proper drainage of rainwater within the panels and to maintain their dryness. The clearance between the wall cladding and the base surface should be 30 mm.

- **Attention:**When securing Yardcom wall cladding with visible nails, pre-drilled holes must be made. These holes should not be more than 1 mm smaller in diameter than the nail shank. Additionally, the distance from the nail locations to any edge of the wall cladding must be at least 10 mm.

**Table: Surface Temperature and Thermal Expansion Coefficient of Wood-Plastic Composite Profiles – Length Gap Guidance Parameters (mm)**

| Profile length (M) | Surface Temperature of Profiles During Installation /°C (Applicable to ambient temperatures that result in panel temperatures ranging from -30 to 60°C, with an allowable deviation of ±5°C) |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     |     |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|
|                    | -30                                                                                                                                                                                          | -20  | -10  | -5   | 0    | 5    | 10   | 15   | 20   | 25  | 30  | 35  | 40  | 45  | 50  | 55  | 60  |
| 0.5                | 1.9                                                                                                                                                                                          | 1.7  | 1.5  | 1.3  | 1.3  | 1.2  | 1.1  | 0.9  | 0.8  | 0.8 | 0.7 | 0.5 | 0.4 | 0.3 | 0.3 | 0.1 | 0.0 |
| 1                  | 3.8                                                                                                                                                                                          | 3.4  | 2.9  | 2.8  | 2.5  | 2.4  | 2.1  | 1.9  | 1.7  | 1.5 | 1.3 | 1.1 | 0.8 | 0.7 | 0.4 | 0.3 | 0.0 |
| 1.5                | 5.7                                                                                                                                                                                          | 5.0  | 4.5  | 4.1  | 3.8  | 3.4  | 3.2  | 2.9  | 2.5  | 2.2 | 1.9 | 1.6 | 1.3 | 0.9 | 0.7 | 0.3 | 0.0 |
| 2                  | 7.6                                                                                                                                                                                          | 6.7  | 5.9  | 5.5  | 5.0  | 4.6  | 4.2  | 3.8  | 3.4  | 2.9 | 2.5 | 2.1 | 1.7 | 1.3 | 0.8 | 0.4 | 0.0 |
| 2.5                | 9.5                                                                                                                                                                                          | 8.4  | 7.4  | 6.8  | 6.3  | 5.8  | 5.3  | 4.7  | 4.2  | 3.7 | 3.2 | 2.6 | 2.1 | 1.6 | 1.1 | 0.5 | 0.0 |
| 3                  | 11.3                                                                                                                                                                                         | 10.1 | 8.8  | 8.2  | 7.6  | 7.0  | 6.3  | 5.7  | 5.0  | 4.5 | 3.8 | 3.2 | 2.5 | 1.9 | 1.3 | 0.7 | 0.0 |
| 3.5                | 13.2                                                                                                                                                                                         | 11.8 | 10.3 | 9.6  | 8.8  | 8.1  | 7.4  | 6.6  | 5.9  | 5.1 | 4.5 | 3.7 | 2.9 | 2.2 | 1.5 | 0.8 | 0.0 |
| 4                  | 15.1                                                                                                                                                                                         | 13.4 | 11.8 | 10.9 | 10.1 | 9.2  | 8.4  | 7.6  | 6.7  | 5.9 | 5.0 | 4.2 | 3.4 | 2.5 | 1.7 | 0.8 | 0.0 |
| 4.5                | 17                                                                                                                                                                                           | 15.1 | 13.3 | 12.3 | 11.3 | 10.4 | 9.5  | 8.5  | 7.6  | 6.6 | 5.7 | 4.7 | 3.8 | 2.9 | 1.9 | 0.9 | 0.0 |
| 5                  | 18.9                                                                                                                                                                                         | 16.8 | 14.7 | 13.7 | 12.6 | 11.6 | 10.5 | 9.5  | 8.4  | 7.4 | 6.3 | 5.3 | 4.2 | 3.2 | 2.1 | 1.1 | 0.0 |
| 5.5                | 20.8                                                                                                                                                                                         | 18.5 | 16.2 | 15.0 | 13.9 | 12.7 | 11.6 | 10.4 | 9.2  | 8.1 | 7.0 | 5.8 | 4.6 | 3.4 | 2.4 | 1.2 | 0.0 |
| 6                  | 22.7                                                                                                                                                                                         | 20.2 | 17.6 | 16.4 | 15.1 | 13.9 | 12.6 | 11.3 | 10.1 | 8.8 | 7.6 | 6.3 | 5.0 | 3.8 | 2.5 | 1.3 | 0.0 |

### Additional Explanation:

1. The table above is derived from the linear expansion coefficients obtained through third-party material testing. As a reference guide, it indicates that for every 1m length of panel, a temperature change of 1°C results in an expansion or contraction of approximately 0.042mm.
2. The temperatures indicated in the table refer specifically to the surface temperatures of the profiles (sheets), not the ambient air temperature. It is recommended to measure these temperatures using a handheld infrared thermometer. The "gap" parameters provided in the table pertain to the linear distance between the ends of two adjacent profiles (sheets) in the lengthwise direction.

3. For areas of profiles (sheets) that require direct screw fastening, it is mandatory to pre-drill holes before the screws are installed.
4. A single connecting clip used to secure Great Wall Cladding should not be used to fix more than two panels.
5. When installing more than one Great Wall Cladding in the lengthwise direction, double keels must be utilized at the joist between the panels. The overhang of the panel beyond the keel should typically not exceed 100 mm.
6. Example of lengthwise installation gap: When installing boards that are 3.5 meters per piece, if the surface temperature of the board during installation is measured at 16° C, and considering the local annual climate characteristics with an assessed maximum board temperature of 60° C (with an allowable deviation of  $\pm 5^{\circ}$  C), the installation should leave a gap of 5.9–6.6mm between the adjacent ends of the boards in the length direction, as referenced from the table above.
7. Special Climate Reference: The table above lists scenarios with surface temperatures of profiles (panels) up to 60° C ( $\pm 5^{\circ}$  C), which cover the majority of general use cases. For more unique environmental conditions, installers should refer to the guidance that "for every 1 meter of panel length, a 1° C increase or decrease results in an expansion or contraction of approximately 0.042mm" to determine reasonable installation gaps.
8. General Statement: The linear expansion coefficient of our company's profiles (panels) complies with European and American standards, which serves as a guide for installation gaps. However, this coefficient is specific to the impact of temperature on the lengthwise expansion and contraction of unfixed profiles (panels) in a free state and does not account for all environmental factors in practical applications. Therefore, if a user has experienced reasonable installation gap cases with WPC products primarily made of HDPE in their specific environment, and these have been long-term verified without quality risks due to shrinkage or expansion, and there are discrepancies with the comparison table provided by our company, users may adopt their own "reasonable installation gap plan" that has been proven suitable for local conditions.

## Table of Great Wall Cladding Materials

| Profile name                  | Model     | Texture of material | View                                                                              | Specifications (mm) | Purpose                                                                                 |
|-------------------------------|-----------|---------------------|-----------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------|
| Great Wall Board              | HLYC-018F | WPC                 |  | 155*24              | Flat decoration                                                                         |
| Starting Edge Banding Board   | HLYC-020F | WPC                 |  | 78*33.5             | Starting decoration for the internal corner when vertically installing Great Wall Board |
| End Edge Banding Board        | HLYC-019F | WPC                 |  | 69*90               | Starting decoration for the finishing end when vertically installing Great Wall Panels  |
| External Corner Banding Board | HLYC-021F | WPC                 |  | 88.5*88.5           | External corner decoration for vertically installed Great Wall Panels                   |
| Decorative Board              | HLSC-022B | WPC                 |  | 18*184              | Door and window openings                                                                |

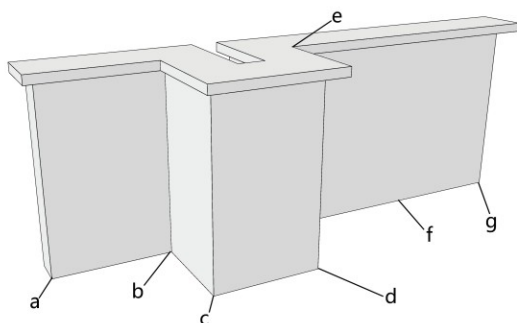
## Great Wall Cladding Accessories List

| Accessory Name                                                                         | Model        | Texture of material              | View                                                                                | Specifications (mm) | Purpose                                                                                                                |
|----------------------------------------------------------------------------------------|--------------|----------------------------------|-------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------|
| Connecting accessories                                                                 | HLPM-103(J)  | 301 stainless steel              |  | 50*28.4*13.9        | Plate connection card                                                                                                  |
| Plum blossom groove countersunk self-tapping and self-drilling screw Color Screws      | HLPM-115 (I) | 410 stainless steel              |  | M5-34.29            | This screw is used for fixing the edge banding plate (batch head T25)                                                  |
| Plum blossom groove cylindrical head self-tapping and self-drilling screw              | HLPM-118 (I) | 410 stainless steel              |  | M5-25.4             | This screw is used for Great Wall slabs card nails Great Wall board rubber pads fixed (batch head T25)                 |
| Plum blossom groove cylindrical head self-tapping and self-drilling screw              | HLPM-119 (I) | 410 stainless steel              |  | M4-38.1             | This screw is used for the Great Wall board lock plate nail (batch head T15)                                           |
| Plum blossom groove cylindrical head self-tapping and self-drilling screw Color Screws | HLPM-120 (I) | 410 stainless steel              |  | M5-57.2             | This screw is used for Great Wall slabs U-shaped edge banding board with visible nails along the edge (batch head T25) |
| Aluminum alloy joist                                                                   | HLPM-093 (E) | Aluminum alloy coated with black |  | 60*40*1.2           | 60 sides of the keel can be installed with card components                                                             |
| Aluminum alloy joist                                                                   | HLPM-106 (E) | Aluminum alloy coated with black |  | 50*30*1.2           | 50 sides of the keel can be installed with card components                                                             |

## • Matters Needing Attention:

1. If additional materials not included in the accessories list are required for construction, please consult with the product installation and after-sales personnel in advance.
2. When securing all edge banding boards and Great Wall Cladding with visible nails, pre-drilled holes must be made before screw installation. The spacing between screw centers should not exceed 400 millimeters. For edge banding boards and Great Wall Cladding shorter than 400 mm, a minimum of two screws must be used for fixing.
3. The gap between the main sheet and each auxiliary edgebanding plate after snap-in is reserved for 5mm.

## The base surface for wall Cladding installation



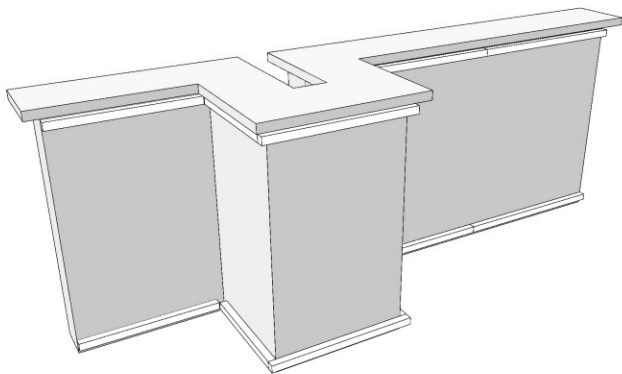
▲ Schematic diagram of grassroots surface

### Matters Needing Attention:

The base surface for wall panel installation must be flat and level.

## Installation of Great Wall Cladding Keels

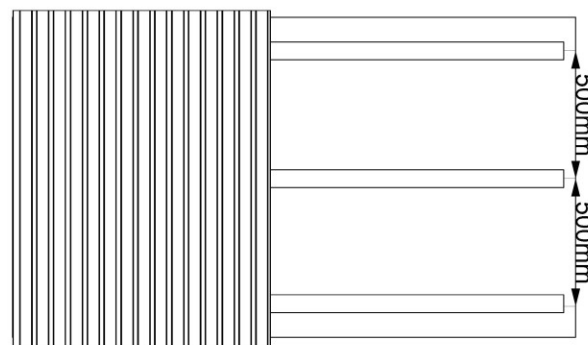
As shown in Figure 1-1、1-2:



▲ Figure 1-1



▲ Figure 1-2



▲ Horizontal layout

### Matters Needing Attention:

1. Keels should be secured using plastic expansion screws.
2. Determine the spacing between the joists and pre-drill the holes accordingly. The center-to-center distance between keels must not exceed 500 mm.
3. Ensure that the overall surface of the keel is flat and aligned.

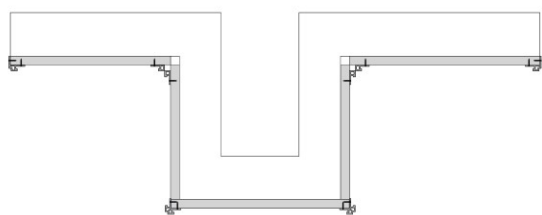
# Schematic diagram of the installation of the Great Wall Cladding

## Installation of Edge Panels for Great Wall Slabs

### Warm Reminder:

To ensure an aesthetically pleasing overall installation effect of the Great Wall Cladding, it is recommended to start the installation with HLYC-021F, and the second choice is HLYC-020F. Try to ensure that the final panel requiring trimming is at the HLYC-020F end.

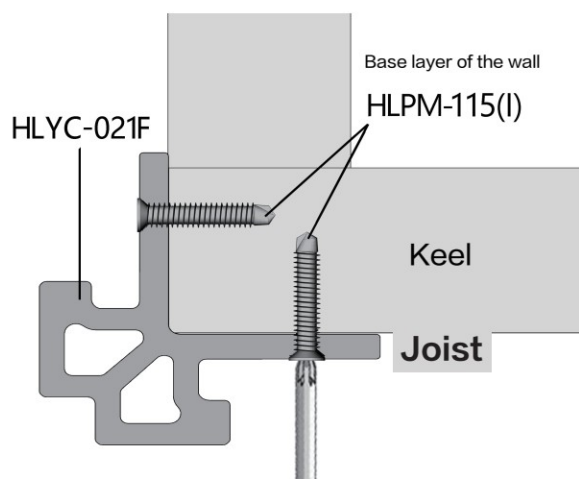
Properly install the external and internal corner pieces as well as the end caps of the wall.



▲ Figure 2

### 1. Install Anodized Edge Boards HLYC-021F.

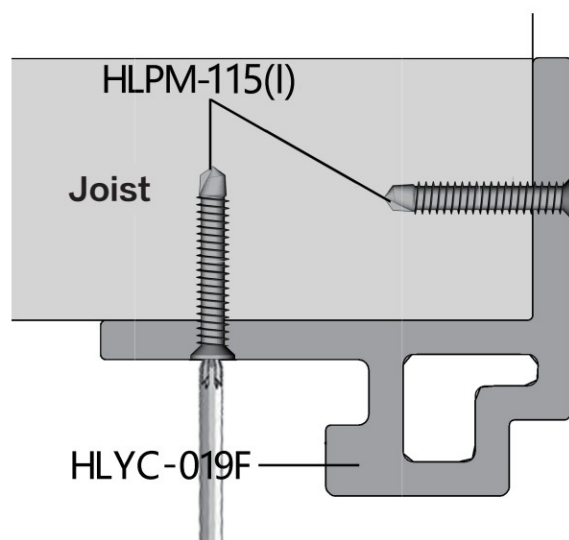
As shown in Figure 2-1:



▲ Figure 2-1

### 2. Install End Edge Plates HLYC-019F.

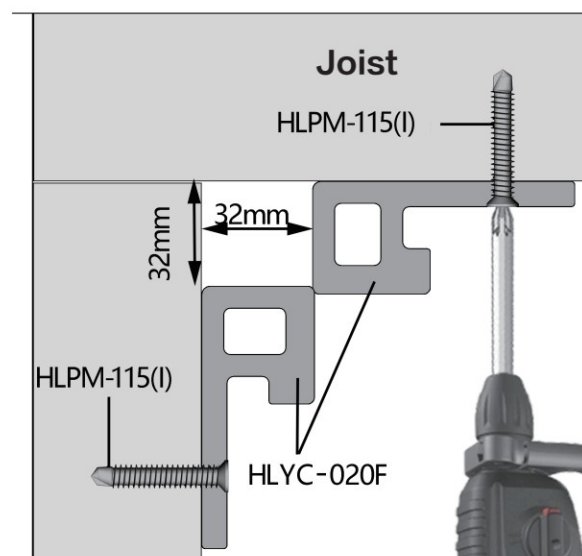
As shown in Figure 2-2:



▲ Figure 2-2

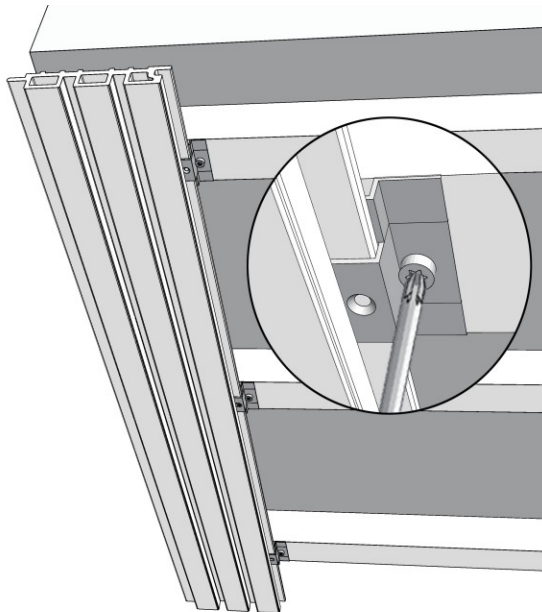
### 3. Install Corner Edge Boards HLYC-020F.

As shown in Figure 2-3:



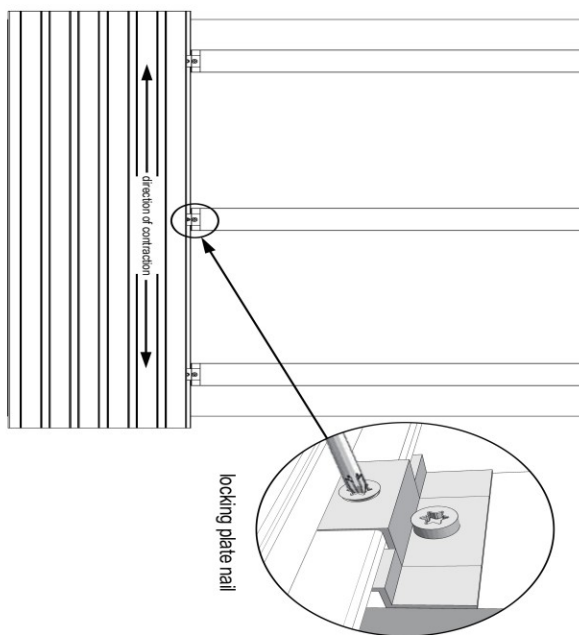
▲ Figure 2-3

## Schematic diagram of clip installation



▲ Schematic diagram of clip installation

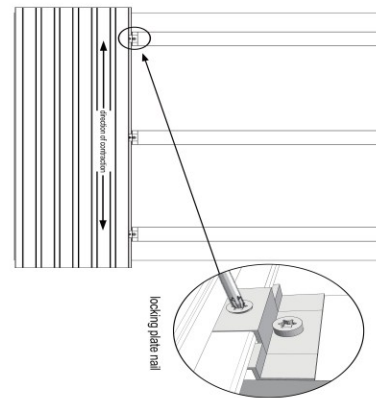
### 1. Schematic diagram of thermal expansion and contraction of lock plate nails.



▲ Schematic diagram of thermal expansion and contraction of lock plate nails

#### Matters Needing Attention:

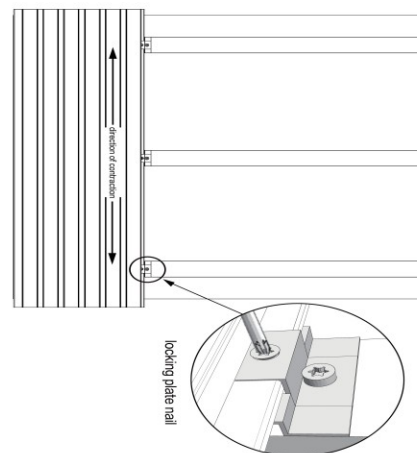
When the locking nail is positioned in the center, expansion gaps must be maintained on both sides of the Great Wall Cladding. The dimensions for these gaps should be referred from the "Lengthwise Gap Guidance Parameters (mm)" table.



▲ Schematic diagram of thermal expansion and contraction of lock plate nails

#### Matters Needing Attention:

When the locking plate nail is situated at the starting end, an expansion gap must be maintained between the rear end of the Great Wall panel and the starting end of the preceding Great Wall panel. Refer to the "Lengthwise Gap Guidance Parameters (mm)" table for the required dimensions.



▲ Schematic diagram of thermal expansion and contraction of lock plate nails

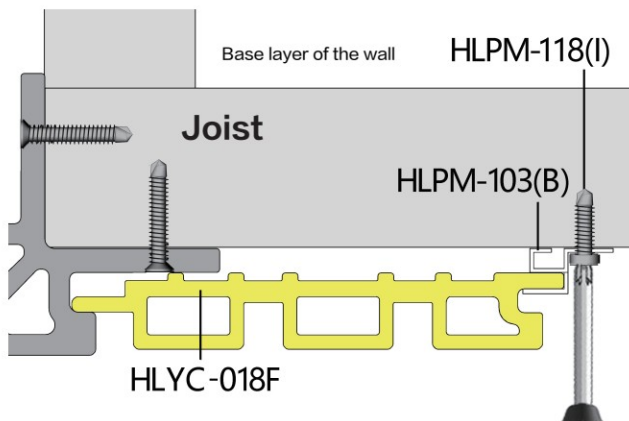
#### Matters Needing Attention:

When the locking plate nail is positioned at the tail end, an expansion gap must be left between the starting end of the Great Wall panel and the tail end of the preceding panel. The dimensions for this gap are detailed in the "Lengthwise Gap Guidance Parameters (mm)" table.

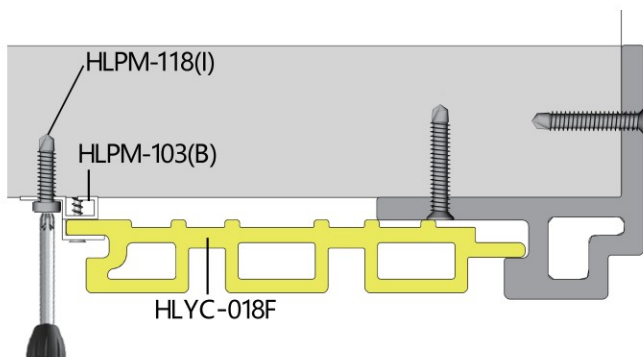
## Installation of Great Wall Cladding

1. To install the Great Wall Board, snap the Great Wall Board into the HLYC – 021F or HLYC-019F slot and then secure it at the end using the Great Wall Board Connection Clip HLPB-103(J).

As shown in Figures 3-1 、 3-2:



▲ Figure 3-1

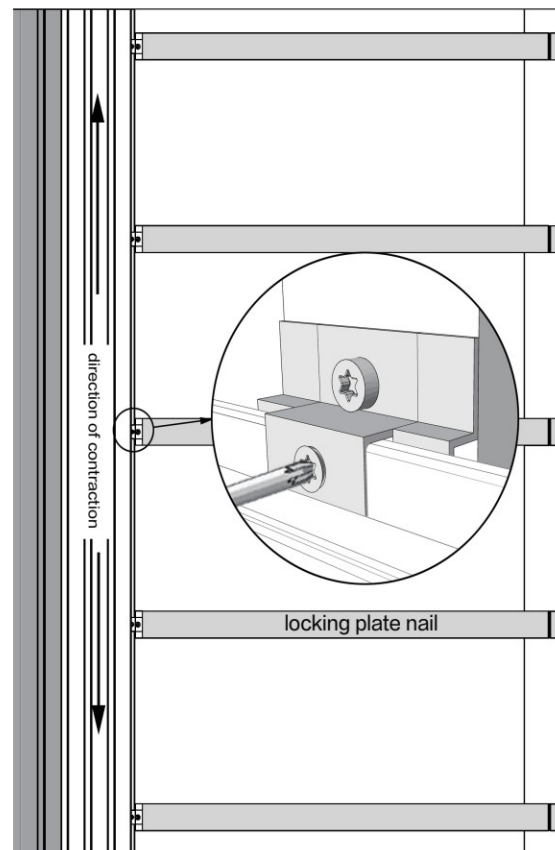


▲ Figure 3-2

## Great Wall Cladding Installation process

1. When fixing the Great Wall Cladding by the clips, each Great Wall Cladding must have one locking nail HLPB-119(I), the position of the locking nail is determined according to the thermal expansion and contraction of the actual board, usually at the beginning/middle/rear end of the length of the Great Wall Cladding.

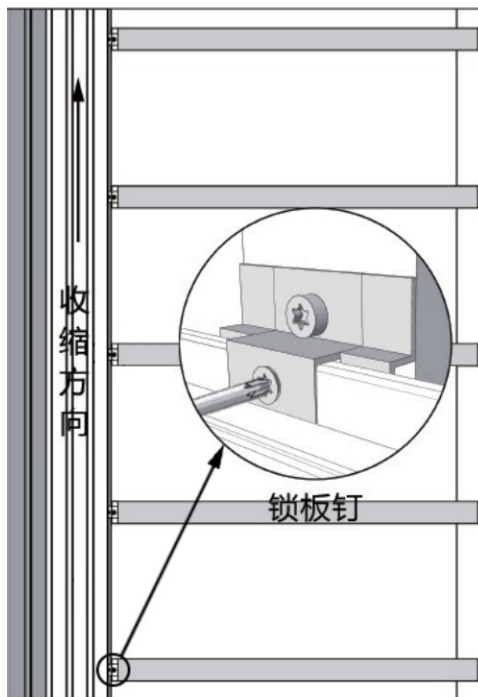
As shown in Figures 4-1 、 4-2、 4-3、 4-4:



▲ Figure 4-1

### Matters Needing Attention:

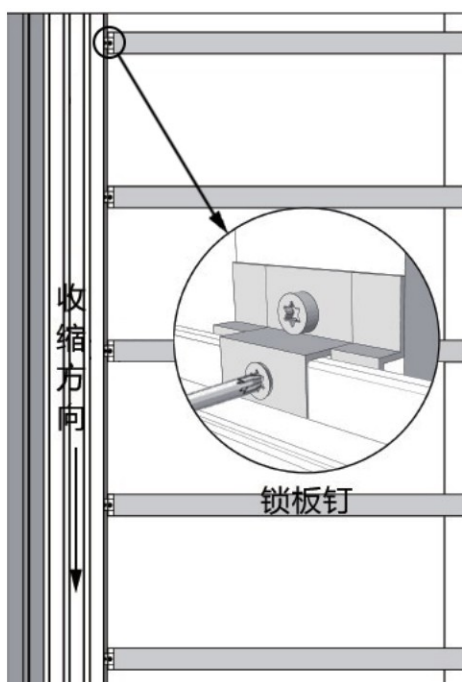
When the locking nail is positioned in the center, expansion gaps must be maintained on both sides of the Great Wall Cladding. The dimensions for these gaps should be referred from the "Lengthwise Gap Guidance Parameters (mm)" table.



▲ Figure 4-1

**Matters Needing Attention:**

When the locking plate nail is situated at the starting end, an expansion gap must be maintained between the rear end of the Great Wall panel and the starting end of the preceding Great Wall panel. Refer to the "Lengthwise Gap Guidance Parameters (mm)" table for the required dimensions.

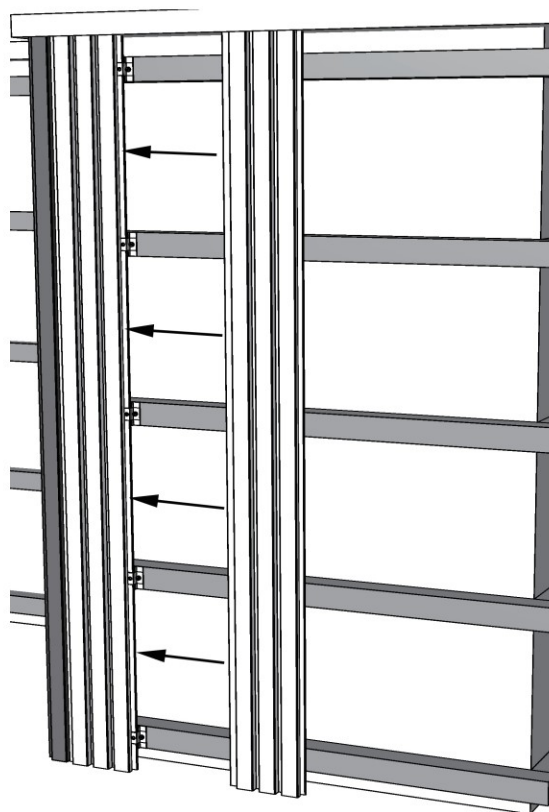


▲ Figure 4-1

**Matters Needing Attention:**

When the locking plate nail is positioned at the tail end, an expansion gap must be left between the starting end of the Great Wall panel and the tail end of the preceding panel. The dimensions for this gap are detailed in the "Lengthwise Gap Guidance Parameters (mm)" table.

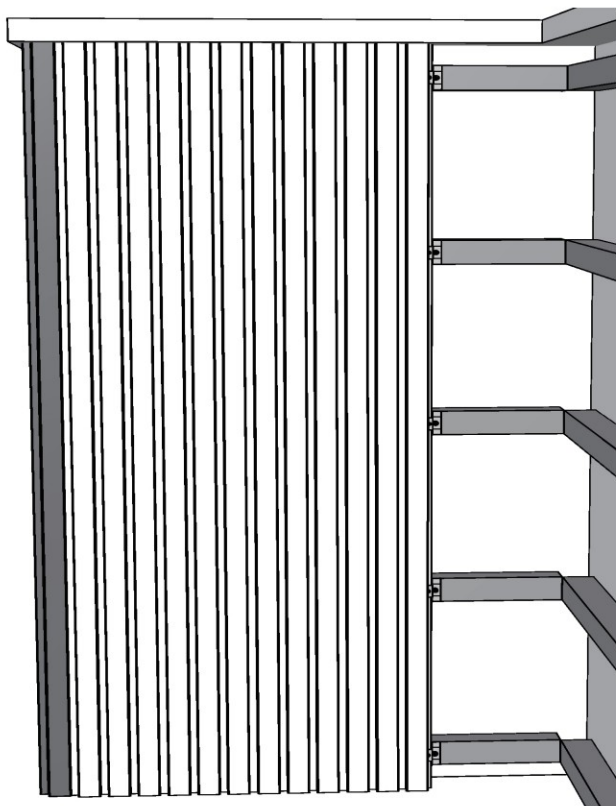
Install the center Great Wall Cladding plate as shown in Figure 4-5.



▲ Figure 4-5

**2.**Follow step 2 to complete to the last board.

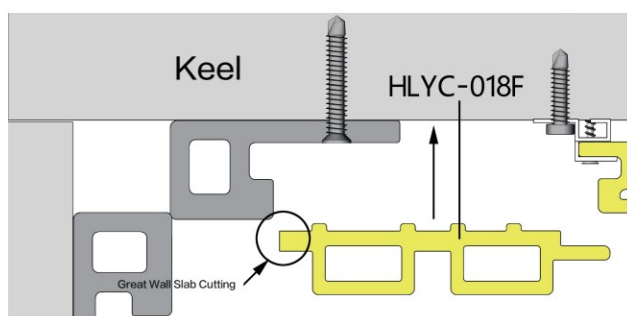
As shown in Figure 4-6:



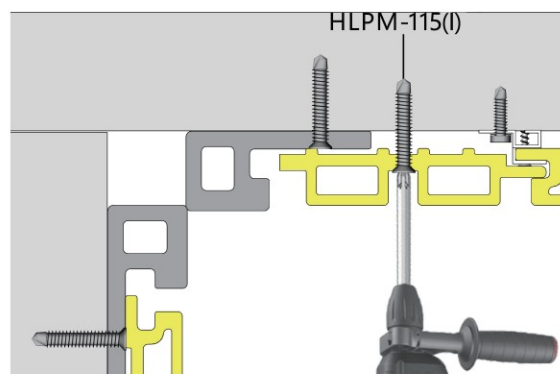
▲ Figure 4-6

**3.**Installation of the Great Wall Cladding tailboard, cut the Great Wall Cladding to the appropriate size according to the actual site conditions and then snap it onto the Great Wall Cladding plate clamp HLP-103(J).

As shown in Figures 4-7 and 4-8:



▲ Figure 4-7



▲ Figure 4-8

**4.**Achieve the vertical splicing installation effect for the Great Wall Cladding.

As shown in Figure 4-9:



▲ Figure 4-9

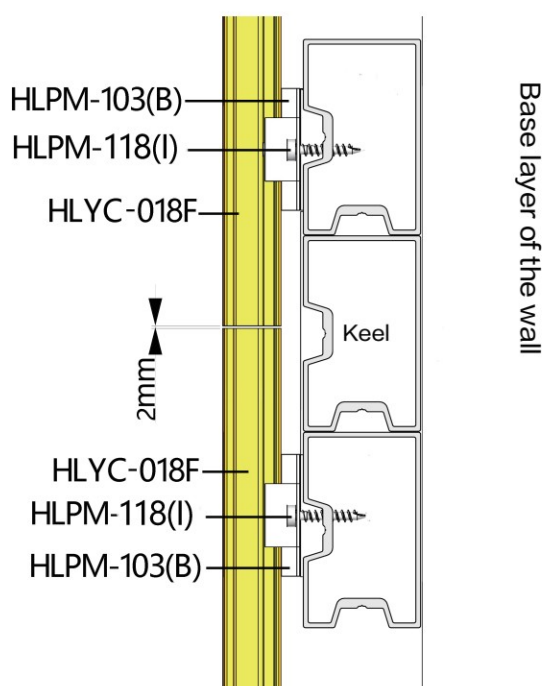
## Special Installation Reference for Vertical Installation of Great Wall Panels

### 1. Install two Great Wall Cladding when mounting them vertically.

As shown in Figure 5:

#### Matters Needing Attention:

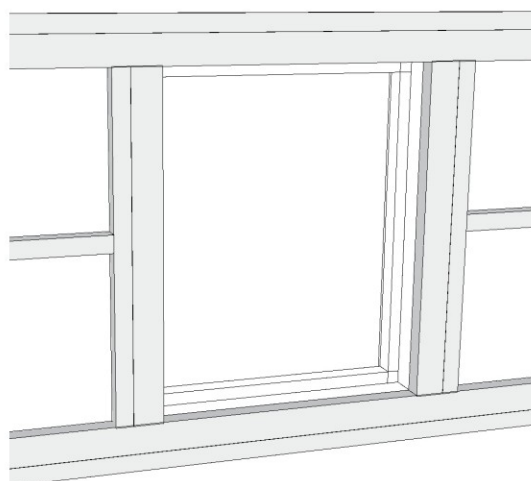
When joining Great Wall panels, a 2mm gap for thermal expansion and contraction should be reserved, and a locking plate nail should be used to secure each panel at the joining point.



▲ Figure 5

2. When installing more than two vertical Great Wall Cladding, it is recommended to determine the optimal position for the locking plate nails on each panel according to the actual on-site conditions and the thermal expansion characteristics of the material.

## Installation of Door and Window Openings



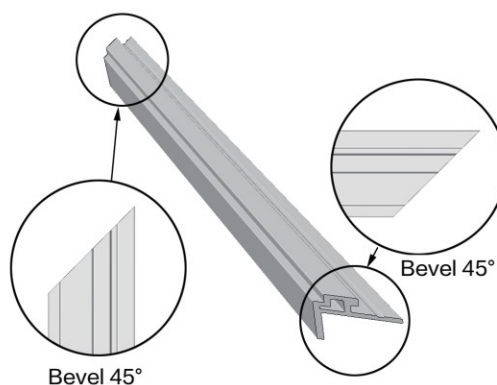
▲ General door and window opening diagram

#### Matters Needing Attention:

Arrange the joist around door and window openings in accordance with the end termination of the wall panels.

### 1. Measure and cut the HLYC-019F according to the dimensions of the door and window openings.

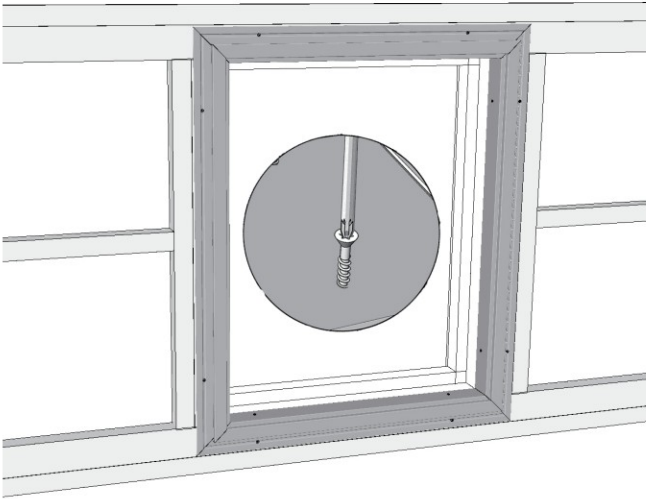
As shown in Figure 6-1:



▲ Figure 6-1

**2.**For door and window openings, cut HLYC-019F at a 45-degree angle for splicing, pre-drill holes, and then secure the pieces with visible nails.

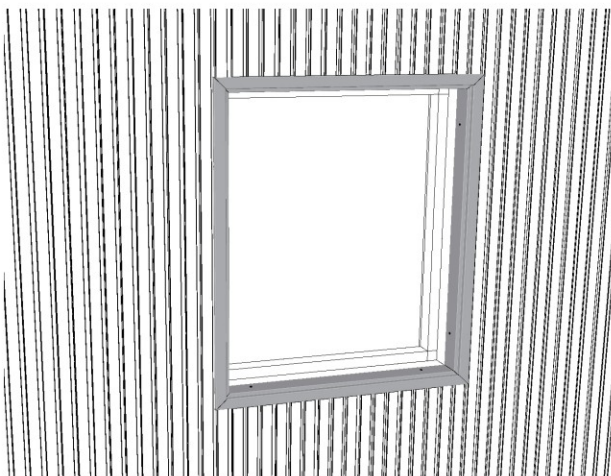
As shown in Figure 6-2:



▲ Figure 6-2

**3.**Install the Great Wall Cladding in conjunction with the regular large wall surface as a single continuous operation.

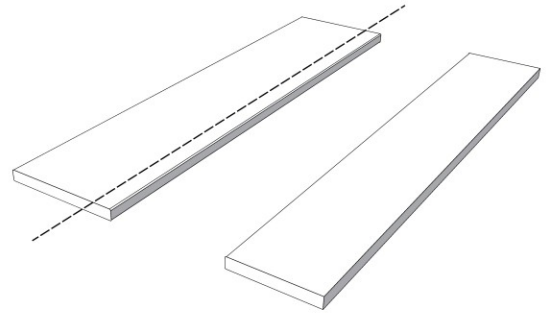
As shown in Figure 6-3:



▲ Figure 6-3

**4.**Measure and cut the decorative panels to fit the dimensions of the door and window openings.

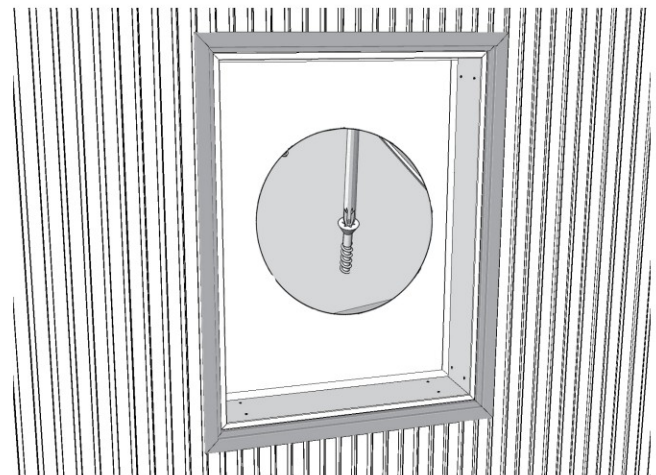
As shown in Figure 6-4:



▲ Figure 6-4

**5.**For the installation of decorative panels around door and window openings, secure them with visible nails after drilling pre-drilled holes.

As shown in Figure 6-5:



▲ Figure 6-5