



ARCHITECTURAL WALL PANELS | AWP 3030 | JANUARY 2024

# VERTICAL INSTALLATION GUIDE

# AWP 3030 VERTICAL INSTALLATION GUIDE

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## GENERAL

This guide covers installation of Nichiha's 3030mm Architectural Wall Panels (AWP 3030) in a *vertical* application. Further installation information and technical resources such as [Instructional Videos](#), [Technical Bulletins](#), [Three-Part Specifications](#), [Product Testing Certifications](#), [Architectural Details](#), and other technical documents are available on our website: [nichiha.com/resource-center](https://nichiha.com/resource-center).

Install products in accordance with the latest installation guidelines and all applicable building codes and other laws, rules, regulations, and ordinances. Review all installation instructions and other applicable product documents before installation. *Product building code evaluations for the U.S. and Canada contain critical engineering and installation requirements and must be reviewed.* Access such documents on the website Resource Center. This install guide's effective date is January 1, 2024.

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## PRODUCT INSPECTION

Inspect all products thoroughly prior to installation. Do not install any product which may have been damaged in shipment or appears to have a damaged or irregular finish. Should you have a question or problem with your order, contact your local dealer.

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## STORAGE & HANDLING

AWP is a finished product and care must be taken to protect it against damage prior to and during installation. Panels must be stored flat and kept dry. Indoor storage is best. Refer to the storage information included on product pallets.

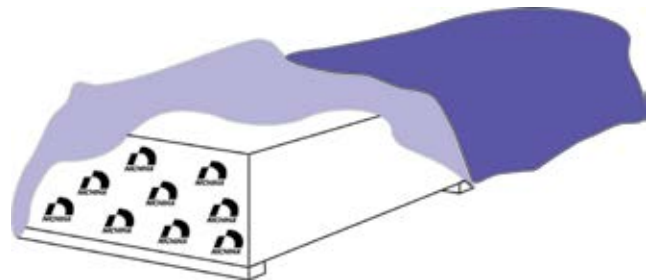
Ensure panels are completely dry before installing. Direct contact between the panels and the ground must be avoided at all times. It is necessary to keep panels clean during the installation process.

Do not stack pallets more than 2 high.

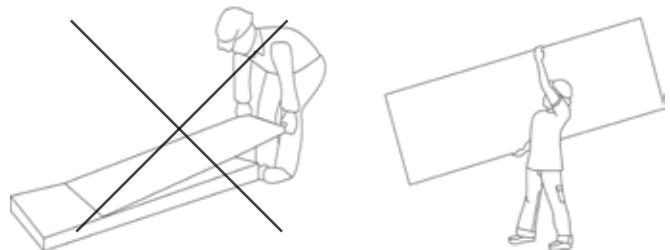
Cut panels face down.

Always clean panels with a HEPA-filtered vacuum after cutting. *Dust can bind to the finish.*

*When sidewalks are poured after AWP installation, take steps to cover/protect panels near grade. Cement dried on AWP cannot be removed.*



**Always cover pallets with a breathable tarp or store indoors!**



**Don't unpackage and re-stack panels!  
Always carry panels on edge!**

# BASICS OF THE AWP SYSTEM

AWP 3030	INCHES	MM
LENGTH	119 5/16"	3030
HEIGHT	17 7/8"	455
THICKNESS	5/8"	16

It is important to keep in mind the actual metric dimensions when considering panel layouts, joint alignments, placement of compression joints, and with respect to sizing window and door openings.

AWP 3030 panel edges are shiplapped on the long edges and a factory sealant gasket is included on one edge, providing a seal on all vertical joints. AWP attachment hardware engages the long edges, holding the panels off the substrate surface by 10 mm (~3/8") and creating a closed-joint, drained/back-ventilated rainscreen system with concealed fastening. The overall thickness of the AWP system is ~1".

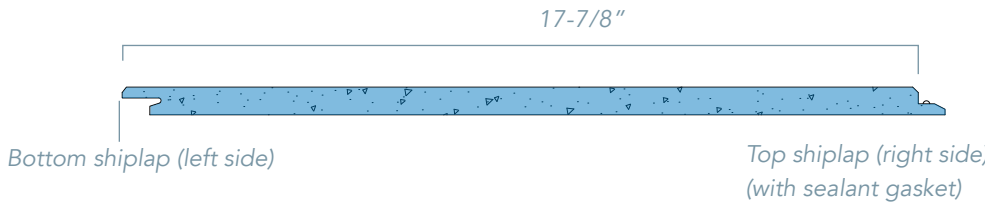
AWP 3030 may be installed horizontally or vertically. For horizontal installation please reference the [Horizontal Installation Guide](#).

**AWP 3030** (aligned vertically)  
HEIGHT: 119-5/16"



119-5/16"  
(3030mm)

PANEL SECTION (PLAN VIEW)



AWP 3030 dimensions are measured from the finished edges of the panel face, which includes the bottom (left side) shiplap only. The short edges, 17-7/8", are flat/square-cut, so they do not have shiplaps.



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## LIMITATIONS AND TECHNICAL DESIGN REVIEWS

Natural limitations on product usage are inherent to any cladding product's design, physical characteristics, and attachment system. AWP is not to be used in any applications/uses not specified or described in this installation guide or other Nichiha technical documents. **ANY SUCH USE SHALL NOT BE BACKED BY THE MANUFACTURER'S PRODUCT WARRANTY.**

Any project of more than three stories or 45 feet as well as those located in high wind coastal areas (Exposure Categories C and D with Basic Wind Speed in excess of 130 mph), or those with any wall assembly not described in the [Framing & Sheathing Requirements](#), require a technical review by Nichiha to evaluate feasibility via our Technical Design Review (TDR).

By evaluating a project's unique criteria and design, we can reference independently test-derived and calculated wind load performance data for our products to determine whether and how the panels can safely be installed on the project. Contact your local rep or [Nichiha technical department](#) for details or to initiate a Technical Design Review.

Refer to our third party building code certifications and/or state and local approvals for allowable wind design pressures: [nichiha.com/resource-center](http://nichiha.com/resource-center).

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## SAFETY

As with any natural stone, masonry, or concrete based product, when cutting, drilling, sawing, sanding, or abrading fiber cement cladding, proper safety measures must be taken due to the potential for airborne silica dust, an OSHA-identified hazardous substance that can pose serious medical risks.

Always wear safety glasses and a NIOSH/OSHA approved respirator with a rating of N, O, or P 100. Carefully follow the respirator manufacturer's instructions as well as applicable governmental safety regulations concerning silica. Refer to Nichiha's [SDS](#) for more information.

Always cut fiber cement panels outside and with a dust-collecting HEPA system. Do not cut the products in an enclosed area.



Use a dust-reducing circular saw with diamond-tipped or carbide-tipped fiber cement saw blades.

# INSTALLATION HARDWARE & ACCESSORIES



## ULTIMATE VERTICAL STARTER TRACK

Ultimate Vertical Starter Track serves as the foundational support for the AWP system while also providing faster and greater ease of installation. *With Vertical AWP 3030, the Starter Track carries the entirety of the dead loads and is required for each course.*

FA 710 T Vertical Starter Track – 10 mm rainscreen

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## ULTIMATE CLIP

Ultimate Clips are secured to the vertical panels' shiplaps, securing AWP to the wall while holding their back surface off the substrate to create the 10mm (~3/8") rainscreen space. *In vertical applications, clips do not support panel weight.*

JEL 778 CLIP Compatible with all 3030mm AWP - 10 mm rainscreen

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Joint Tab Attachments included with Ultimate Clips are not needed for vertical panel installations.



## CORRUGATED SHIM

At termination points where Ultimate Clips cannot be used, Nichiha Corrugated Shim is required to maintain the rainscreen space and prevent panel deflection at face fastening locations such as window jambs and outside corners.

FS 1005 SHIM– 5 mm rainscreen

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FS 1010 SHIM - 10 mm rainscreen



## SEALANT BACKERS

Single Flange Sealant Backer: FHK 1015 – 10 mm



Double Flange Sealant Backer: FH 1015 – 10 mm

Nichiha Sealant Backers provide exact spacing for expansion and termination joints



They provide faster installation than a foam backer rod and require less sealant. At sealant joints, use a sealant that complies with ASTM C920, Class 35 (min.). Refer to the [Sealant](#) section on page 17 for more information.



## METAL TRIM OPTIONS

Nichiha metal trim provides aesthetically pleasing design options for corners, openings, and transitions, as well as vertical joints.



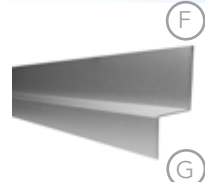
TRIM**	APPLICATIONS
(A) Corner Key	Outside Corners
(B) H-Mold	Vertical Joints - AWP 3030
(C) Open Outside Corner	Outside Corners
(D) J-Mold	Terminations
(E) Inside Corner	Inside Corners

\*\* Be sure to order and use trim channels sized to the appropriate AWP thickness.



ESSENTIAL FLASHING SYSTEM	APPLICATIONS
(F) Starter*	Base/Clearance Concealment
(G) Compression Joint	Horizontal/Compression Joints
(H) Overhang*	Fascia-to-Soffit Transitions

\* Inside and outside corner segments are available.



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## FRAMING AND SHEATHING REQUIREMENTS

Prior to Nichiha installation, closely inspect the exterior wall substrate and correct any problems. Walls that are out of plumb, for example, can negatively impact the installation quality of AWP. If necessary, the Nichiha Shim may be used in conjunction with panel attachment hardware to ensure a smooth, even substrate up to maximum of 10mm.

AWP system may be directly attached to:

- Wood Structural Sheathing (APA Rated OSB/ Plywood - min 7/16")
- Furring (18 ga Steel; hat channel, c-stud, or z-furring)

When furrings are to be used as the installation base for AWP, an engineer must design the furring anchors to account for site-specific loading criteria as well as the weight (dead load) of the AWP system. Special attention must be paid to the furring that will support the Vertical Starter Track (FA710T) because it will bear the full weight of the AWP System. Full size AWP 3030 panels weigh 64 pounds each. Vertical Starter Tracks are 10 feet long, supporting approximately 500 pounds.

### WOOD OR STEEL FRAMING

#### *Structural Sheathing Method*

Framing Size: min. 2x4 wood stud, or 18 gauge

Spacing: 16" o.c max

Sheathing: min 7/16" OSB/Plywood (APA Rated) is **required** (clips will not align over or intersect the studs).

**No gypsum sheathing allowed.**

*Horizontal Furring Method:* Steel furring only

For Vertical Starter Tracks: hat channel required - minimum 18 gauge, oriented horizontally, placed at all Vertical Starter Track locations

For Clips: hat channel or z furring - minimum 18 gauge, oriented horizontally, spaced 16" max.

Reference Figure 20B on page 22.

### CONCRETE/CMU

*Furring is required for installation of AWP over concrete and CMU structures.*

*Horizontal Furring Method:* Steel furring only

*For Vertical Starter Tracks:* hat channel only- requires minimum 18 gauge, oriented horizontally, placed at all Vertical Starter Track locations

*For Clips:* hat channels or z furring - minimum 18 gauge, oriented horizontally, spaced 16" o.c. max.

### STRUCTURAL INSULATED PANELS (SIP) AND STRUCTURAL INSULATED SHEATHING (NAILBASE)

SIPs should be constructed in accordance with the manufacturer's instructions and local building codes. Generally, vertical AWP installation over SIPs follows the *Structural Sheathing Method*. The horizontal framing elements of SIPs allow for Vertical Starter Tracks and face fasteners to be secured to solid framing.

Install nailbase sheathing in accordance with the manufacturer instructions and load tables. AWP installation specifics over nailbase insulated sheathings depend upon the nailbase type and thickness.

Contact the Technical Department for assistance with these substrates.



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## WATER RESISTIVE BARRIERS

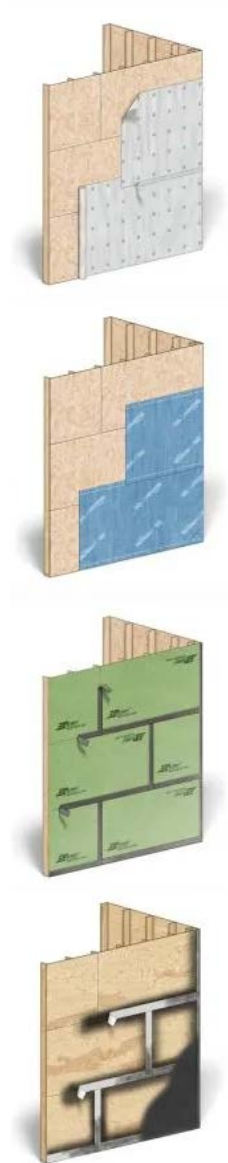
A code compliant water resistive barrier (WRB) is required when installing Nichiha panels as per Section 1402 of the IBC. For concrete/CMU and PEMB assemblies, Nichiha defers to local code requirements.

Sheathings and insulations with an integrated code-compliant WRB such as ZIP System® and DensElement™ are acceptable.

**All openings, corners, and transitions must have appropriate flashing to prevent moisture penetration.**

Follow moisture management best practices, WRB manufacturer's guidelines, window manufacturer instructions, and all local building codes.

**Nichiha assumes no responsibility for moisture infiltration.**



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## CONTINUOUS INSULATION

When exterior continuous insulation is to be used with AWP 3030 in vertical applications. Framing/sheathing/furring adjustments will be necessary.

### VERTICAL AWP 3030 OVER C.I. ATTACHMENT REQUIREMENTS

Furring requirements are as follows:

*Special attention must be paid to supporting the Vertical Starter Track, which bears the full weight of AWP 3030 in vertical applications. The Ultimate Clips do not share the dead loads for vertical panels.*

*When furrings are to be used as the installation base for AWP, an engineer must design the furring anchors to account for site-specific loading criteria as well as the weight (5 psf dead load) of the AWP system.*

Full size AWP 3030 panels weigh 64 pounds each.

Vertical Starter Tracks are 10 feet wide, supporting approximately 500 pounds. Furring must account for expected building compression. Nichiha does not provide fastener design for anchoring the furring to the structure. Refer to the International Building Code for more information.

1. Horizontal furring can be used as direct attachment

- Shaped Steel furring must be a minimum 18 gauge spaced at 16" o.c. max
- If Z-furring is being used, hat channels must be utilized at the starter track to support the weight of the panels
- No wood furring allowed.

2. Shaped metal Steel furrings (two layers)

-Layer One (Z, hat channel, C, etc.)

- Minimum 18 gauge
  - Aligned vertically at wall stud spacing
- Layer Two (Z, hat channel, etc.)

- Minimum 18 gauge
- Aligned horizontally at 16" o.c.
- Hat channel is required at Vertical Starter Track locations

3. Cladiator CL-300®

- Base Track and Wall Mount T-Tracks (vertical) at 16" o.c. (aligned with framing), and Therme Clips spaced per project loading requirements
- Wall Mount Supports (horizontal) at 16" o.c.

4. Minimum 7/16" plywood nail-base/structural insulated sheathing panels (such as ZIP R-Sheathing)

- The nail-base panel anchoring schedule must account for AWP dead loads and site wind loads
- Contact Nichiha Technical Services for additional information concerning Vertical Starter Track and face fasteners to be secured to solid framing

*Third Party furring systems:*

*A number of engineered third party systems exist that are designed to solve the conflicts between energy code compliance and the safe installation of exterior claddings over continuous insulation.*

*Nichiha has direct experience with these products:*

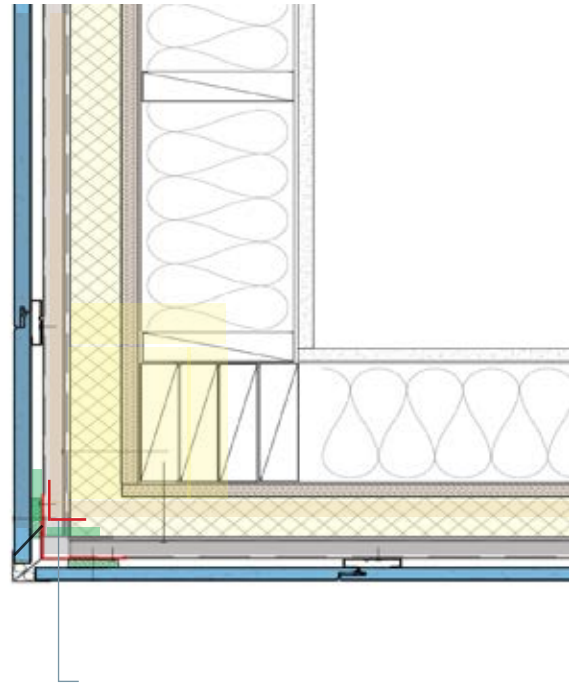
*Bracket and rail systems:*

- *Cascadia Clips®™*
- *FERO Cladding Support ISO Clip™*
- *Knight Wall MFI® CL-TALON®™*
- *Hunter Xci Ply™*
- *Knight Wall CI® and HCI™ Systems™*
- *SMARTci GreenGirts™*

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## VERTICAL AWP AT C.I. CORNERS

Edges of AWP 3030 at terminations are cut and secured via face fasteners into framing or furring. With C.I. conditions at corners, the use of min. 18 gauge, galvanized steel brake metal to wrap the corner is appropriate. See Figure A. Attach the angle to furring on both sides of the corner. Face fasten the vertical AWP cut edge no more than every 16" to the 18 ga. metal angle.



*Figure A: Wrap corner with 18 gauge steel angles anchored. Face fasten vertical AWP to brake metal angle.*

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## FASTENERS

Fasteners must be exterior grade corrosion resistant, screws such as stainless steel, hot-dipped zinc or ceramic coated.

Comply with all local building codes for fastener requirements.

The minimum size for Ultimate Clip, Starter Track fasteners is a #10 screw. Component screws must have a pan, wafer, or hex type full head. Bugle head screws are not approved for component fastening.

A min. #8 or larger screw with a bugle head or trim head is appropriate for face fastening locations. Refer to the Face Fastening.

Best Practices section on page #16 for face fastening procedure.

Fasteners must penetrate framing or furring per the minimum requirements below.

When installing AWP with the *Structural Sheathing Method* on stud framing, over SIPs, or nailbase, ensure clip fasteners are at least 1" in length to fully penetrate the OSB/Plywood. Wherever possible when face fasteners are needed, screws must be long enough to penetrate all the way through the sheathing and into the framing/furring.

For the *Horizontal Furring* the fasteners must always penetrate the steel furring with a minimum of 1/2". A minimum of three threads are needed for an effective grab.



CLIPS/PANEL	
PANEL	ULTIMATE CLIP
3030	4

FASTENERS/CLIP		
	WOOD/STEEL FRAMING	OSB & PLYWOOD
ULTIMATE CLIP	2	4

MINIMUM SIZE FASTENERS	
ULTIMATE CLIPS	#10 SCREW
STARTER TRACK	#10 SCREW
FACE FASTENING	#8 SCREW
METAL TRIMS AND SEALANT BACKERS	#10 SCREW

MINIMUM O.C. SPACING OF FASTENERS		
COMPONENT	WOOD/STEEL FRAMING	OSB & PLYWOOD
METAL TRIMS	16"	16"
FACE FASTENING	16"	16"

Vertical panel installation requires the use of our vertical starter track. One of the following fastening schedules shall be used;

1. Install 8" o.c. fastening into the horizontal framing member
2. With 16" o.c. framing members, space fasteners 8" o.c. with every other fastener alternating between vertical framing members and attaching directly to minimum 7/16" OSB or plywood sheathing.

MINIMUM CLEARANCES TO PANEL	
FLASHING	1/4"
COMPRESSION JOINT FLASHING	1/2"
HARDSCAPE	2"
FINISHED SOIL GRADE/ SOFT SCAPE	6" (200MM CANADA)
LOW SLOPED ROOF	REFER TO ROOFING MANUFACTURER
DECKING/BALCONY	2"
PITCHED ROOF	1"



# GENERAL PANEL & ACCESSORY BASICS

## PANEL SELECTION

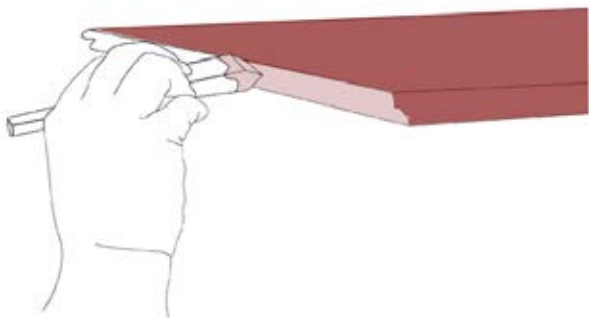
Nichiha AWP are packaged with two panels in a pack, which are placed on pallets consisting of two stacks. Due to alternating patterns of texture and color between individual panels as well as how the panels are manufactured and packaged, it is best to install all panels from each individual stack before installing panels from the second stack on the same pallet. Do not alternate installing from one stack and the second, which may result in undesirable patterns.

## COATING CUT PANEL EDGES

When cutting AWP 3030, it is best to cut with the panel face down.

Cut panel edges must be sealed. A exterior grade color matched acrylic latex paint is highly recommended. No oil based paints.

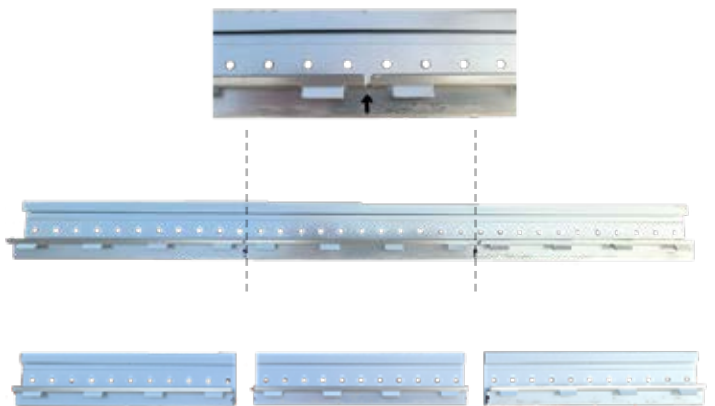
Be sure to clean panels with a dry, soft, clean cloth or HEPA-filtered vacuuming after cutting to prevent dust from bonding to the finish.



## CUTTING ULTIMATE CLIPS

JEL778 Ultimate Clips are 26" long. Where full length clips can be used, they are required. However, there may be conditions where clips must be cut to accommodate shortened vertical panels such as under windows.

Notches on the upward panel engagement flanges indicate where clips can be cut evenly into thirds. These 1/3 segments can be further reduced evenly into two or four pieces each with weep holes serving as dividing points. The smallest segment must include at least one downward panel engagement flange. Always use the widest clip segment possible. Cut clips with a non-ferrous saw blade on a band or chop saw.



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## PLANNING AND PANEL LAYOUT

To ensure a successful installation, it is important to first plan how the panels will be laid out, where horizontal/compression joints will be located for each course, and line of sight regarding inside corners.

**Reminder:** AWP 3030 actual dimensions are metric: 455 mm (h) x 3,030 mm (l). Imperial equivalents: 17-7/8" (h) x 119-5/16" (l).

**Panel to Clip Ratio:** Full height AWP 3030 edges are held by four Ultimate Clips each. There must be no more than 4-6" of space between clips. The first and last clips must be no more than an inch from the top/bottom edges of the panels. When panels are shortened, maintain the same ratio in proportion to the reduced panel height(s). Clips can be cut as needed.

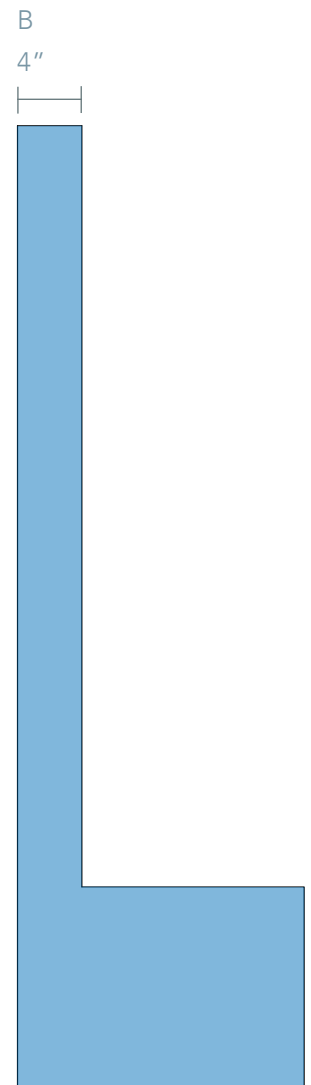
### **Horizontal/Compression Joints:**

Minimum 1/2" horizontal, flashed break detail to allow for building compression at floor lines.

Specifically, when an individual panel is taller than a window or other opening and is used over the head or under the sill, do not cut it to less than 4" in width along the opening jamb. (see image A)

When an opening is taller than an individual panel, do not cut the panel to less than 4" in width along the jamb (see image B).

**Design Wind Pressures:** Refer to our [code approval documents](#) when determining the best vertical panel installation method for a specific project. Refer also to the *Limitations, Technical Reviews* section regarding Nichiha's technical review process.



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## FACE FASTENING BEST PRACTICES

To minimize the appearance of face fasteners, utilize the following steps:

Apply low adhesive tape such as painters tape to the panel at face fastening locations.

Pre-drill panels a minimum 1" from the cut edge to be face fastened. It is recommended to use a bi-metal countersink drill bit matching the head diameter of the face fasteners.

Fill counter-sunk fastener holes with an exterior patching compound.

Use a high grade exterior acrylic latex paint to conceal the patched area.

It is very important to keep the paint to the patched hole area only. Feathering the paint into a large area can negatively highlight the fastener locations.

Remove the painter's tape only after applying the patch and touch up paint.



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## SEALANT

Sealants to be used with AWP must match the following requirements:

- Comply with ASTM C920 as a class of 35, 50, or 100/50 (minimum 35% joint movement).
- Provide two-sided adhesion at joints (Nichiha sealant backers are light gauge steel with galvalume and fluorine coatings.)

Refer to the Technical Bulletin: [Sealants](#) available at [Nichiha.com/resource-center](http://Nichiha.com/resource-center).

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## SEALANT JOINTS/CAULKING

Fasten Single Flange Sealant Backers at inside corners (one wall at corner), along window and door jambs, and transition points with other cladding. Fasten to framing, blocking or OSB/plywood sheathing at 16" o.c. with the 3/8" bump/sealant portion butting the corner or jamb.

Refer to the sealant manufacturer's instructions or requirements.

1. Place low-adhesive tape over the panel along the areas requiring sealant joints for a clean caulk line.
2. Fill the gap between the panels with a color-matched/coordinating sealant. Nichiha Sealant Backers allow for the proper depth of sealant (75-80%).
3. Before removing tape, tool the sealant with a caulk spatula or similar tool to ensure an even and smooth surface.
4. Remove tape before sealant cures.
5. Following the sealant manufacturers recommendations remove any excess sealant from the face of the panel before allowing it to cure.

# AWP3030 - VERTICAL: INSTALLING THE FA710T VERTICAL STARTER TRACK

## All Applications

When using the structural sheathing method outlined in the *Framing & Sheathing Requirements* section, 7/16" or thicker APA rated OSB or plywood sheathing MUST be used to enable vertical installation of AWP 3030. Refer also to the [Continuous Insulation](#) information on pages 10-11. OSB/plywood shall be secured to building framing or furring in compliance with best practices and local building codes. *For nailbase insulation sheathings with sheathings other than OSB or plywood please contact Nichiha Technical Services for guidance.*

*Starter Track must remain continuous and level. Staggering of horizontal joints is not permitted.*



*Vertical (Panel) Starter Track fastened every 8" to wood framing and sheathing*

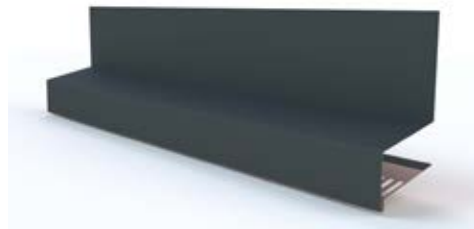
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## MINIMUM CLEARANCES

**The Vertical Ultimate Starter Track must be level** and positioned to enable a minimum panel clearance of 6" above finished soil grade or per local building codes (*the National Building Code of Canada requires minimum 200mm clearance*). When installing over a hard surface such as driveways or sidewalks the starter track must be positioned to enable the minimum panel clearance of 2". It is recommended to use a laser level to verify.

Keep AWP at least 1" above steep slope roofs. Otherwise, follow roofing manufacturer instructions and water management best practices.

*When sidewalks are poured after AWP installation, take steps to cover/protect panels near grade. Cement dried on AWP cannot be removed.*



Essential Starter Flashing may be installed prior to the Starter Track to conceal the clearance gap above hard surfaces. *Follow the WRB manufacturer instructions or local code with respect to flashing details for waterproofing.* Beginning with outside and inside corner segments, "tack" the Flashing to the substrate. Using a roofing nail or similar exterior flat head fastener. Fasten Flashing inside and outside corner segments to substrate on both sides, keeping at least 1" from vertical edges. Main segments will slide into the corner segments.

Position Flashing and/or Starter Track to leave 1/4" minimum clearance between the panel edge and Flashing.



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## ALL APPLICATIONS

To fully secure Vertical Starter Track, use corrosion resistant screws of sufficient length to ensure full penetration of the sheathing a minimum of 1" into wood framing member and a minimum 1/2" into metal framing members. *Starter must be level.*

### WOOD & METAL STUDS

Vertical Starter Track must be secured every 8".

One of the below fastening schedules shall be used:

1. Install 8" o.c. fastening into the horizontal framing member
2. With 16" o.c. framing members, space fasteners 8" o.c. with every other fastener alternating between vertical framing members and attaching directly to minimum 7/16" OSB or plywood sheathing.

### CONCRETE/CMU

When installing over concrete construction, the wall must be furred out with pressure treated lumber, metal hat channel, or z-furring. Refer to *Framing & Sheathing Requirements* on page 8 for furring design options. Starter Track must be secured with an overall fastener spacing of 8" o.c.

## STRUCTURAL INSULATED PANELS (SIP) STRUCTURAL INSULATED SHEATHING (NAILBASE)

Secure Vertical Starter Track every 8" o.c. max into the sill/horizontal base framing member of the SIP.

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## LARGE OPENINGS

### All Applications

Install Vertical Starter Track at the wall base in keeping with standard instructions on both sides of the opening.

Install Vertical Starter Track at the head of all openings, either the width of the opening or all the way across the wall.

Add panels per the standard procedure as in a typical *Window or Door Opening* for the jamb conditions.

Do not span floor lines with panels. Plan for a *Horizontal/Compression Joint* at the head of the opening or above, at the same level where the panels along the sides of the opening terminate, assuming the storefront, garage or other large opening is shorter than full height panels.



# AWP 3030 - VERTICAL INSTALLATION

Reference the [Framing & Sheathing Requirements](#) and [Continuous Insulation](#) sections for wall assembly requirements and adjustments. With standard wall stud or vertical furring spacings, 7/16" or thicker APA rated OSB or plywood sheathing **MUST** be used to enable vertical installation of AWP 3030. Wall surfaces must be flat.

## STRUCTURAL SHEATHING METHOD

Use fully-threaded corrosion resistant screws of minimum 1" in length to ensure full penetration of wood sheathing to secure Ultimate Clips. Face fasteners must account for the AWP system thickness (~1") plus adequate length for minimum 1" penetration into wood studs or 1/2" and a minimum three threads are needed for effective grab into metal studs or furrings.

Single Flange Sealant Backer and metal trims should typically be installed before panels. Refer to the [Inside Corners, Windows & Doors](#) and [Outside Corners](#) sections.

Nichiha can be installed right to left or left to right. Must lead with the gasketed edge of the panel.

If starting at an inside corner, predetermine which wall will include the Single Flange Sealant Backer. Consider the location to minimize the visibility of the sealant line. Clad the higher visibility wall without the sealant joint first so that the adjoining wall panels can terminate to it with the Single Flange Sealant Backer detail. Alternatively, utilize Inside Corner metal trim. If beginning at an outside corner, refer to the Outside Corners section regarding when it is best to add metal trim.

Looking at an AWP 3030 oriented horizontally, remove the bottom ship-lapped edge ([Fig. 18](#)). This will be the beginning side of the panel when it is aligned vertically. If necessary, cut the panel to the proper height of the area(s) to be clad. Coat all cut edges with exterior acrylic latex paint and be sure to clean dust from cut panels with a dry, soft cloth or HEPA vacuum.

Prior to installing the first vertical panel, add 10mm corrugated Shim at the wall edges (starting and termination locations). The Shim should extend upwards to where the panel will end ([Fig. 19A](#)).

Set the short panel edge on the FA 710T Vertical Starter Track. The freshly cut and sealed edge should butt to the corner/starting point and will cover the 10mm Shim. Secure the panel by adding the first Ultimate Clip on the shiplapped, factory edge at the Starter Track, no more than 1" up. Use min. #10 washer, hex, or pan head wood screws to fully penetrate the wood sheathing, with 4 screws per clip ([Fig. 19B](#)).

Keep screws a minimum 1" from the panel edge. Face fasten the cut edge placing a fastener every 16" into substrate. Refer to the Face Fastening Best Methods page. ([Fig. 19B,C](#)).

On the shiplapped edge with gasket, add three more Ultimate Clips evenly spaced along the full-height AWP 3030 panel. There must be four (4) clips per full-height panel edge with only 4-6" of space between clips. Add four (4) fasteners per clip, evenly spaced ([Fig. 19B](#)) no more than 6" apart vertically. The clips will be fastened only to the plywood/osb sheathing. Position the highest clip no more than 1" down from the top edge. When panels are shortened to less than 3030mm, keep the same panel edge to clip ratios and spacings. Refer to [Cutting Ultimate Clips](#).

Install the next panel with its ship-lapped edges intact. A rubber mallet or block may be used to seat panels firmly in place and tighten together on vertical joints. Do not hammer directly on the panels as direct contact may cause cracks, gouges, or chipping. Install four Ultimate Clips as with the first panel, each with four screws.

Continue installing until reaching a termination or transition point. The (top) factory edge must be removed from the last panel, and this cut edge must be face fastened over 10mm Shim. Space the fasteners every 16" vertically, with a minimum 1" distance from the cut, vertical edge. Again, whenever possible, use face fastening screws long enough to penetrate all the way through the sheathing and for framing: 1/2" into metal, 1" into wood.

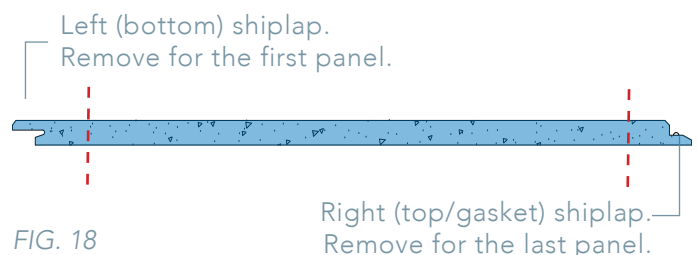
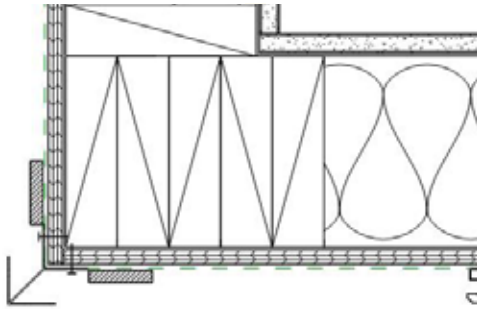


FIG. 18

FIG. 19A



Nichiha 10mm Shim at Corner Key trim

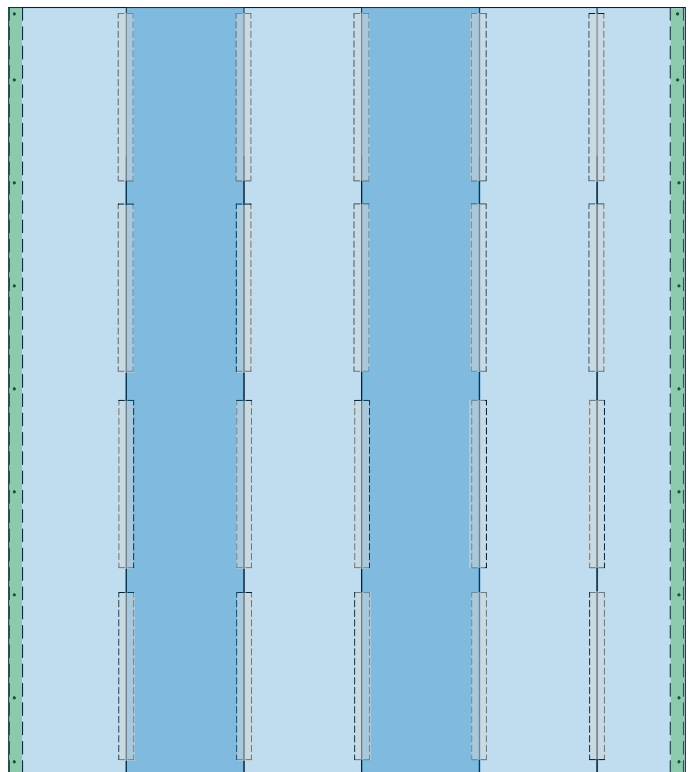
FIG. 19B



FIG. 19C



Vertical AWP and Ultimate Clip layout.



## FURRING SPACING AND HORIZONTAL HAT CHANNEL METHODS

Refer to the *Framing & Sheathing* and *Continuous Insulation* sections on pages 8-11.

These methods allow Ultimate Clips to align with or intersect framing or furring, the fasteners will be secured every 16", vertically, with two screws per clip (*Figures 20A, B*).

**HORIZONTAL HAT CHANNELS:** At Ultimate Vertical Starter Track (FA710-T) locations, the anchors securing the horizontal hat channel to the base wall or furring must be designed to account for the full weight of the AWP. A full length of Vertical Starter Track supports 6.7 panels which collectively weigh 500 pounds.

FIG. 20A

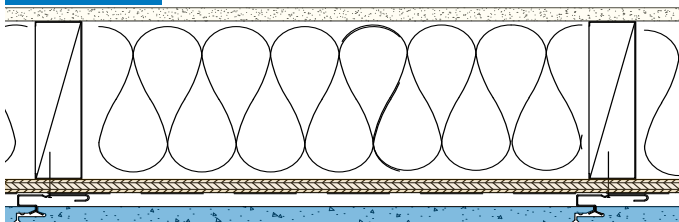
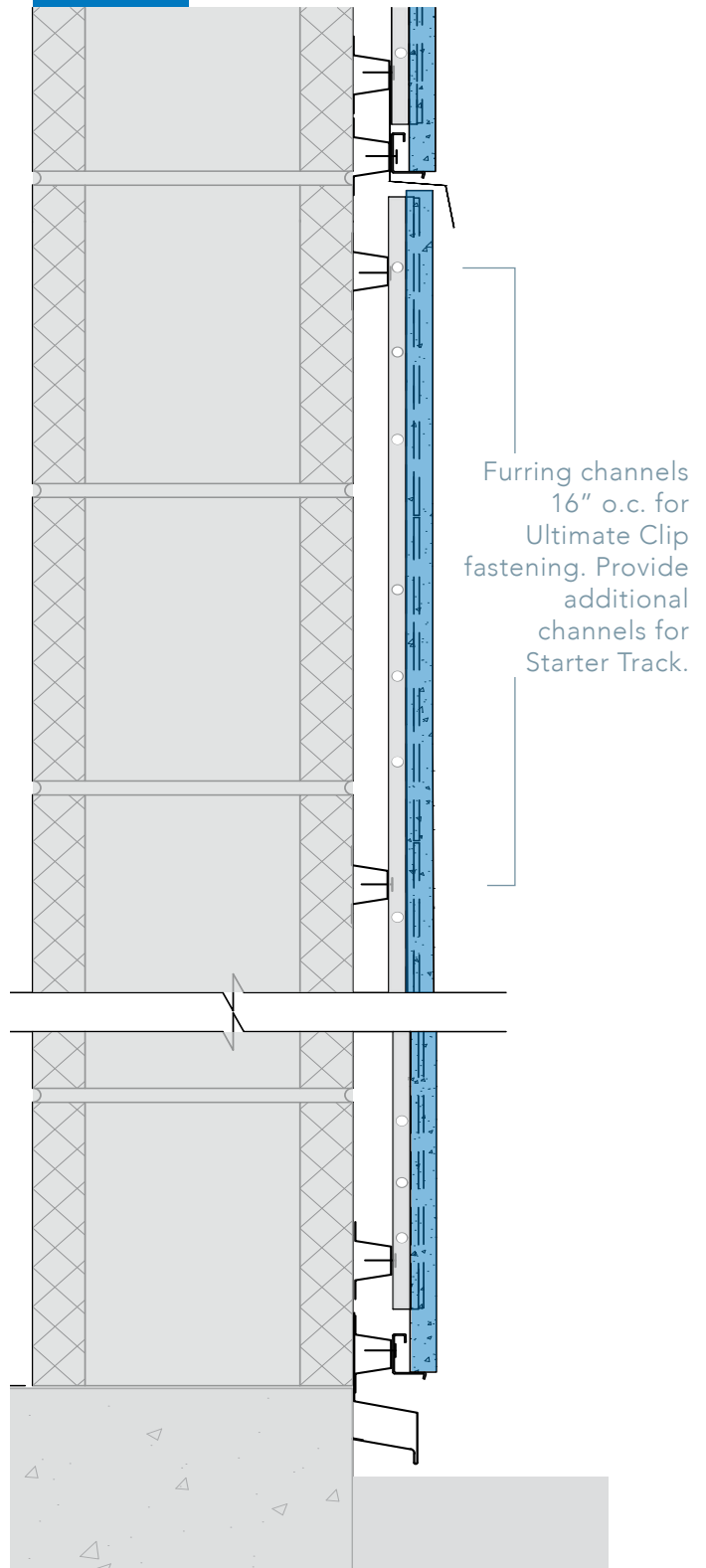


FIG. 20B



*Horizontal Hat Channels: 16" o.c. horizontal furring allows Ultimate Clips to fasten to these members 16" o.c. (vertically).*

## HORIZONTAL/COMPRESSION JOINTS

To begin a second course of panels, the module of Vertical AWP 3030 necessitates a continuous Horizontal/Compression Joint a maximum of 119-5/16 inches (repeating after each course).

*Horizontal joints may not be staggered.*

Do not span floor lines with panels.

### INSTALLING A HORIZONTAL COMPRESSION JOINT



Install Compression Joint Flashing or heavy gauge z-shaped metal flashing or drip cap over the top edge of the course of panels terminating under the Horizontal Compression Joint location.

Fasten Essential Flashing at each stud location.

*Follow relevant WRB manufacturer instructions and local code for moisture management best practices and detailing for through-wall flashings.*

Install Vertical Starter Track over the flashing and check for level. Place Vertical Starter at least 1/2" above the below course and 1/4" above flashing/trim.

Continue to install panels according to these guidelines with compression joints every 119-5/16 inches (max).





# CORNERS & OPENINGS

## All Applications

Appropriate flashing and moisture management best practices must be used to prevent moisture penetration at all inside corners, doors, and windows. Follow moisture management best practices, WRB manufacturer's guidelines, window/door manufacturer instructions, and all local building codes.

### Compression Joints:

When compression joints are required on a project, continue the joint through the corner in line with the face wall. Refer to the compression joint section.

Nichiha assumes no responsibility for moisture infiltration.

As necessary, add trim, jamb/sill extenders, and/or other flashings at corners, windows, doors, and other openings prior to AWP installation.

**Inside Corner Metal Trim:** Install Nichiha Inside Corner metal trim directly against the inside corner sheathing or furring. Fasten metal trim every 16" in a staggered fashion on alternating flanges.

Remove the shiplapped edges that will be inserted into the trim, treating the cuts, and install panels normally, butting to the Inside Corner trim in moderate contact.

**Trim Boards:** Install trim boards at the inside corner first and then add Single Flange Sealant Backer or J-Mold

\*Face fasteners should fully penetrate OSB or plywood sheathing and into the framing whenever possible, or furring if applicable. With C.I. conditions, refer to pages 10-11. Refer also to *Face Fastening Best Practices* for info on patching face fasteners.

## INSIDE CORNERS

### Single Flange Sealant Backer:

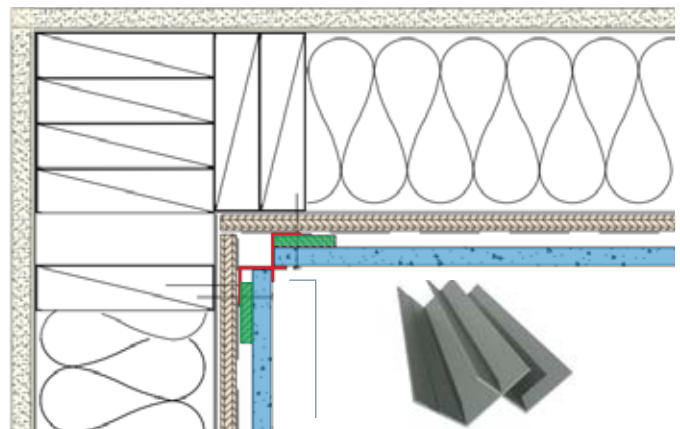
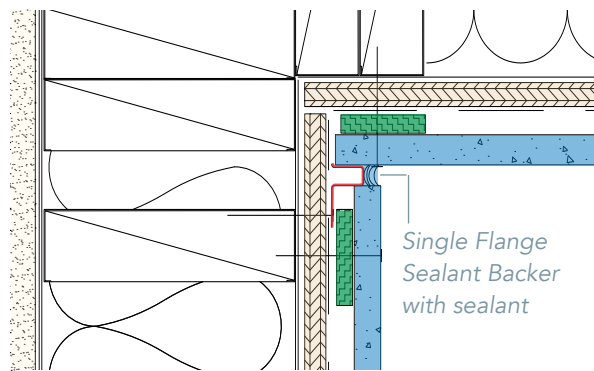
Decide the primary line of sight in order to minimize visibility of the sealant joint.

Install the AWP 3030 on the more visible wall first. For the first panel, remove the (long bottom) factory edge shiplap and coat the cut edge. Add 10mm Shim and place the panel on the Vertical Starter Track. Ensure the panel is butted up tight to the inside corner wall. Secure it per the steps given on pages 18-20.

Next, fasten the Single Flange Sealant Backer every 16", onto the side wall, tightly against the front wall panel face.

Add 10 mm Shim over the fastening flange of the Sealant Backer.

Once work proceeds again to the inside corner, install the last side wall panel, with the factory edge removed, and cut edge sealed, directly against the sealant backer and over the Shim. Secure the cut edge with face fasteners\*. Fill the sealant joint space with ASTM C920, Class 35 (min.) sealant.



Nichiha Inside Corner Trim

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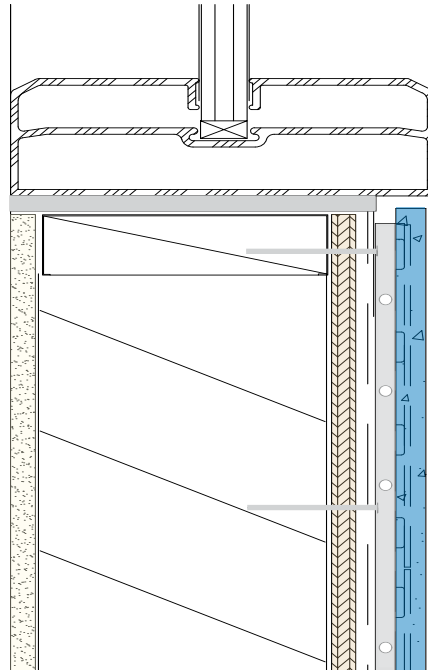
## WINDOWS AND DOORS

### WINDOW SILLS

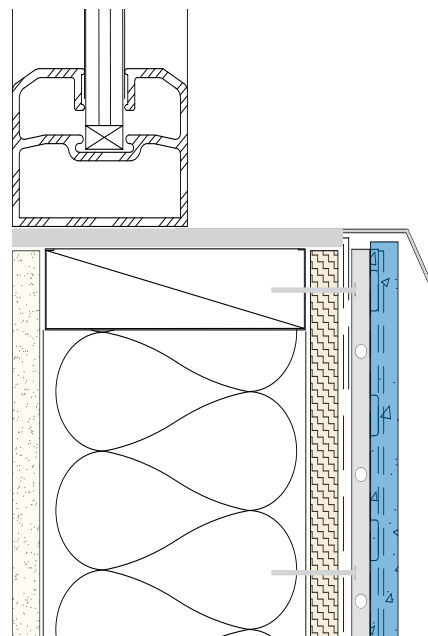
For recessed windows, add the window manufacturer's sill flashing/extension attachments or other flashing cap where the panels will terminate so that the top edges are covered or capped at the sill.

If the top edge of the panel is fully sheltered under the sill, it is not necessary to seal the 1/4" gap. For better system performance, Nichiha recommends a vented approach.

J-Mold type trim (installed before AWP) may be used at window sills if AWP can be slid into position from the side(s).



*To allow for ventilation, if the top edge of AWP is fully sheltered at a window sill, sealant is not required at the 1/4" (6mm) gap.*



*Use window manufacturer sill extensions/flashing or brake metal to cap over the panels at recessed sill returns.*

## WINDOW/DOOR JAMBS

Refer to window/door manufacturer guidelines for spacing trims around openings.

### SINGLE FLANGE SEALANT BACKER

**Window or door jamb must extend a minimum of 1" past the substrate in order to use the single flange sealant backer option.**

Install the Single Flange Sealant Backer first, butting to the door/window jamb or trim pieces prior to installing the panels.

The Single Flange Sealant Backer must be fastened every 16" to studs, blocking, or structural sheathing.

Install cut edge of panels against sealant backer with moderate contact.

### J-MOLD

Pre-install J-Mold trim at window and door jambs prior to installing panels. For J-Mold positioning, refer to the window/door manufacturer instructions regarding trim attachments to determine if the J-Mold can be butted directly to the window or door jamb or if a gap is required.

AWP cut vertical edges must fit completely within the J-Mold, leaving no exposed panel edges.

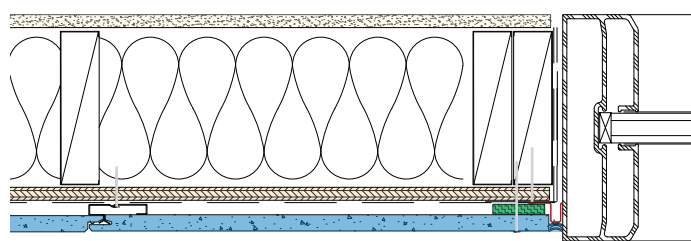
## RECESSED JAMBS

At recessed openings, the best option for finishing the jamb returns/recesses is with jamb extension accessories from the window or door manufacturer. The extenders must account for the depth of the return, inclusive of the Nichiha system (1-1.25"). With these in place, the standard Single Flange Sealant Backer or J-Mold steps can be followed.

### BRAKE METAL

Another option at recessed jambs is to use brake metal to cover the return over furring, continuous insulation, or other assembly components that create the recessed window condition. Because of thermal expansion and contraction of AWP, the brake metal must be of a heavier gauge sheet steel (24 ga or thicker) or equivalent aluminum.

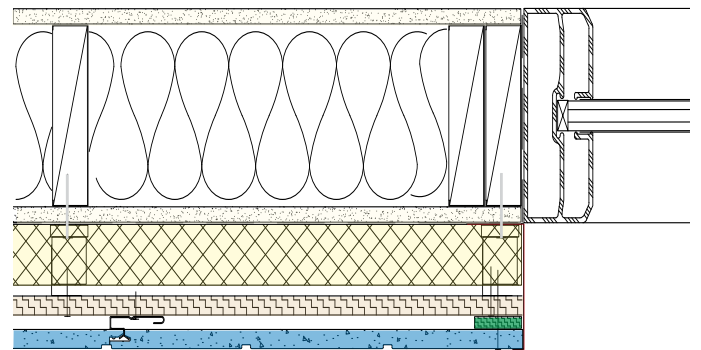
For an L-angle shaped metal, terminate the AWP to a Single Flange Sealant Backer meeting the outward fin, which must extend to just beyond the panel face. Or include a face return flange on the brake metal to form a J-Mold type profile. With a minimum 10mm (3/8") return leg covering the panel edge and face, the sealant joint can be eliminated. Insert the panel edge in moderate contact with the metal.



Single Flange Sealant Backer



J-Mold trim may be used at opening jambs.



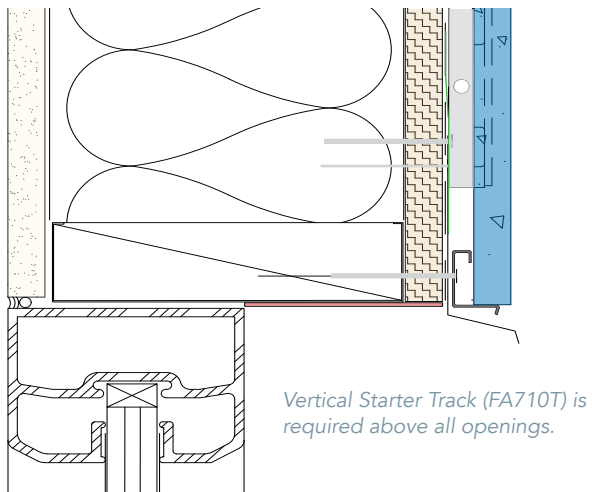
Recessed window jamb: J-profile brake metal with a min. 10mm panel face return flange. C.I. assembly shown includes thermally-broken vertical furring with min. 7/16" OSB or plywood.

## WINDOW/DOOR HEADERS

**Starter Track:** When starting a course of vertical panels above a window or door, add flashing and FA 710 T Vertical Starter Track at the header, installed with fasteners every 8" into the opening header (or C.I. assembly substrate).

Add the window manufacturer's extenders, brake metal, or other trim for recess returns.

*Always follow the window/door manufacturer, WRB manufacturer, and/or local code concerning moisture management best practices directly above openings.*



**Window Head:** Flash over the window head. Add window manufacturer extenders, brake metal, or trim to cover any recess returns.

---

## OUTSIDE CORNERS

*Refer to page 8 for Framing & Sheathing and Continuous Insulation requirements and options for detailing outside corners with C.I./furring conditions.*

There are two primary outside corner installation options for vertical AWP 3030:

- Trim Boards: Fiber Cement, Wood, or PVC
- Metal channels (Open Outside, Corner Key)

Appropriate flashing must be used as required to prevent moisture penetration at outside corners.

### FIBER CEMENT & PVC TRIM BOARDS

Nichiha manufactures a full line of fiber cement trim boards - NichiTrim™, which are available in the Southeast U.S. Refer to [Nichiha.com](http://Nichiha.com) for more information.

When panels are to be butted to fiber cement, wood or other trim pieces, use Nichiha Single Flange Sealant Backer.

Add 10mm Shim remove the appropriate panel shiplap, and face fasten panel edges every 16", vertically, keeping 1" from edges. Apply sealant to joint width. Sealant must be compliant with ASTM C920, Class 35 (min).

### METAL TRIM

(Including Nichiha Corner Key and Open Outside Corner trim)

When installing Nichiha AWP 3030 in a vertical orientation, pre-fasten corner trim channels, securing trim to framing every 16", alternating/staggering the fasteners on both flanges.

At the starting point, remove the panel edge, add 10mm Shim to the wall at the corner. Set the panel on the Starter and into the corner trim channel. Face fasten the panel as described in the *AWP 3030 Vertical Panel Installation* section (pages 20-21).

When reaching the next outside corner, follow the steps for the appropriate trim profile:

**Corner Key:** After installing the next-to-last panel, measure from the edge of the face of this panel to the Corner Key edge (the 90 degree corner angle edge). From this measurement, subtract 1" and cut the panel to this width. Paint or prime cut edges and clean off dust from panel. (Fig. 24A)

**Open Outside Corner:** After installing the next-to-last panel, measure from the edge of the face of this panel to the Open Outside Corner edge (the 90 degree angle edge). From this measurement, subtract 1/4" and cut the panel to this width. Paint or prime cut edges and clean off dust from panel.

Install 10mm Shim next to the metal trim. Install panels by inserting the cut edge into the metal channel, rotating into the wall plane, and then shifting the panel over onto the side clips along the adjacent panel, fitting ship-lapped edges together.

Face fasten panels through Shim along the corner edge every 16" (Fig. 24B). Use face fasteners long enough to penetrate framing/furring.

Fit panels into channel trim so that panel edges are not exposed. Nichiha metal trim pieces are each 10 feet in length. To cut metal trim, use a non-ferrous carbide miter saw blade. When butting/stacking metal trim pieces, add a bead of polyurethane sealant at the seam/joint.

Metal trim can be pre-finished when purchased to match Nichiha Color Xpressions color(s) and some stock colors. Otherwise, for field painting primed metal trim, refer to Tamlyn's XtremeTrim Painting Guide.

### NON-90 DEGREE CORNERS

Corners other than 90 degrees can be achieved with custom metal trim, butting panels to trim board with the use of Single Flange Sealant Backer/J-Mold to set cut panel edges at the desired corner angle.

FIG. 24A



FIG. 24B



# PENETRATIONS, RAILINGS, AND SIGNAGE

## ALL APPLICATIONS

Openings for small penetrations like pipes or conduits may be cut through a panel and the hole sealed with ASTM C920 compliant sealant. For larger non-circular penetrations greater than 6" treat the penetration like a small window.

Along the jambs of the opening install Single Flange Sealant Backer. Cut panel edges as needed to butt to Single Flange Sealant Backer and add recommended sealant.

Underneath the opening, install a single flange sealant backer. Terminate the panel with moderate contact to the single flange sealant backer.

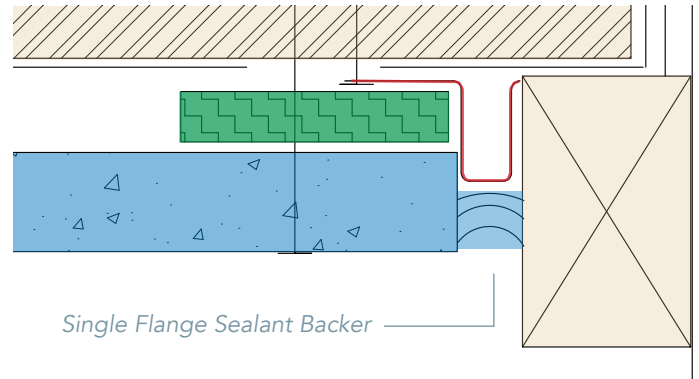
Above the penetration, add flashing and install FS1010 Shim as needed for face fastening the panel edge at framing locations if needed. Ensure a minimum 1/4" gap between the bottom of the panel edge and flashing. Keep any face fasteners 1" away from panel edges.

If installing railings, signage, or other items directly over AWP, ensure the fasteners are secured through Shim to the framing or other structural support. Do not fasten any attachment solely to AWP. Further, add a small Shim (up to 10mm) between signage/ attachments and AWP to prevent moisture pooling on top of the attachment and seeping between it and the AWP, becoming trapped.

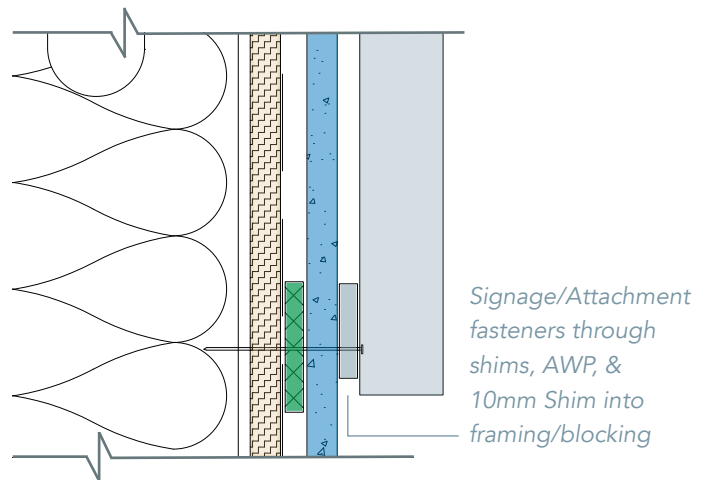
# VERTICAL CONTROL/ EXPANSION JOINTS

## All Applications

Because thermal expansion occurs in the long (3030mm) dimension of the panels, Vertical Control/ Expansion Joints are not required for vertical installations of AWP 3030.



Blocked Penetration Jamb detail



Signage/Attachments detail

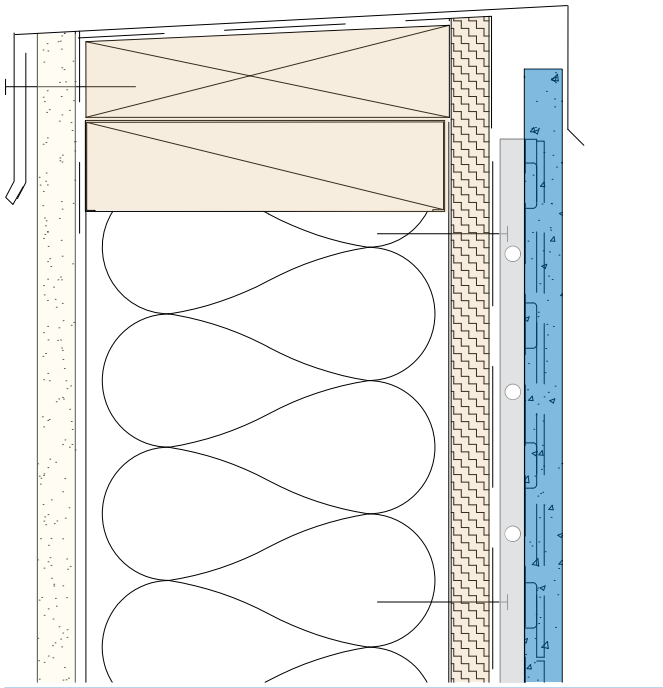


# LAST COURSE

## All Applications

Cut panels (horizontally) to properly fit at the roof line under a soffit or parapet cap (or at the proper transition point). Ensure Ultimate Clips along factory edges are secured no more than 1 inch from the top of the panels.

Cover the top panel row edge with a roof cap/ coping, where applicable.



## GABLES & OVERHANGS

At the top of the gable area, cut the panel to follow the slope of the gable or overhang.

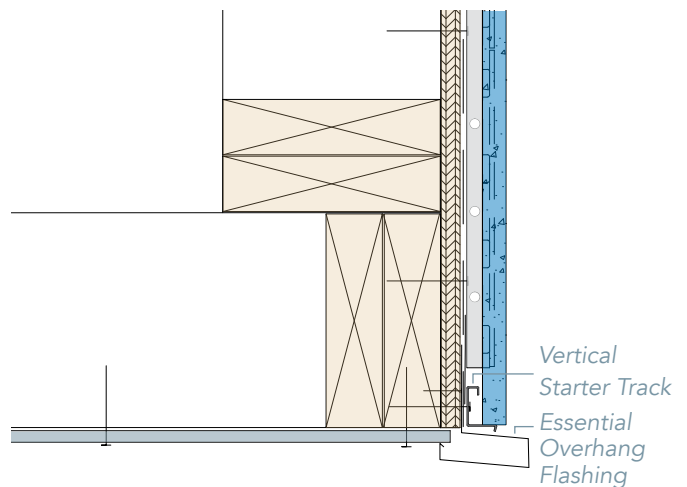
When installing soffit, the wall panels should be installed first, with the soffit installed over the panels.

Essential Overhang Flashing may be used at the base of overhangs/bump-outs or porte-cochères. Alternatively, Essential Compression Joint Flashing may also be used. Keep a minimum clearance of 1/4" for the panel edge above flashings. Do not seal this gap. *Always follow WRB manufacturer instructions and local code with respect to moisture management best practices for treating and detailing metal through-wall flashings.*

Prior to panel installation, "tack" Overhang Flashing to the substrate. Beginning with corner segments. Main segments will slide under corner segments.

Use Joint Clip segments to join main segments together. After the first piece is secured, add a Joint Clip, fastening through both it and the first main segment. The next main piece will slide behind the Joint Clip.

Position Overhang Flashing so that its bottom/return flange overlaps soffit materials. The bottom return portion must extend beyond the face of the fascia substrate. Positioning the flashing too high can deform it from its original shape. The bottom return should slope away from the soffit as pictured.



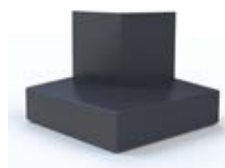
## Essential Overhang Flashing & Joint Clip



Outside Corner



Inside Corner



# TRANSITIONS WITH HORIZONTAL AWP

On projects utilizing both vertical and horizontally-installed AWP, expansion and compression type joints will be required as there is no way to naturally joint horizontal and vertical AWP directly.

## VERTICAL JOINTS

A Double Flange Sealant Backer or H-Mold trim is necessary at vertical joints/transitions between horizontally oriented panels and vertically oriented panels.

## HORIZONTAL JOINTS

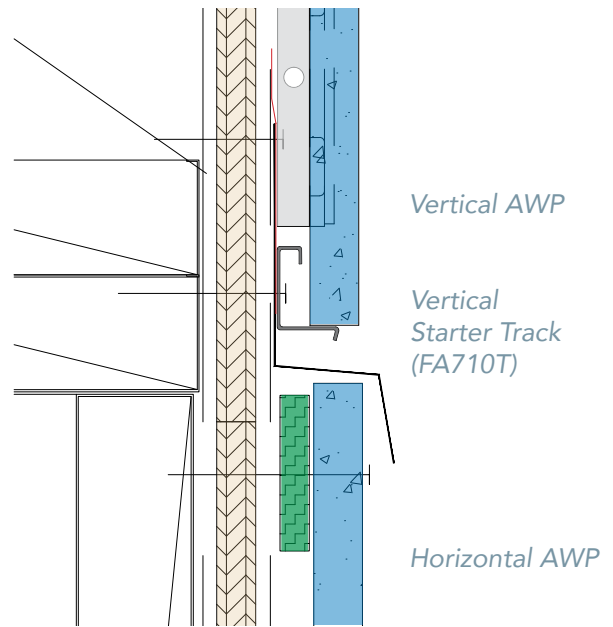
A horizontal/compression joint style detail is necessary to transition between horizontal and vertical AWP. Please refer to *Horizontal/Compression Joints* on page 23.

### *Horizontal panel to Vertical panel Transitions*

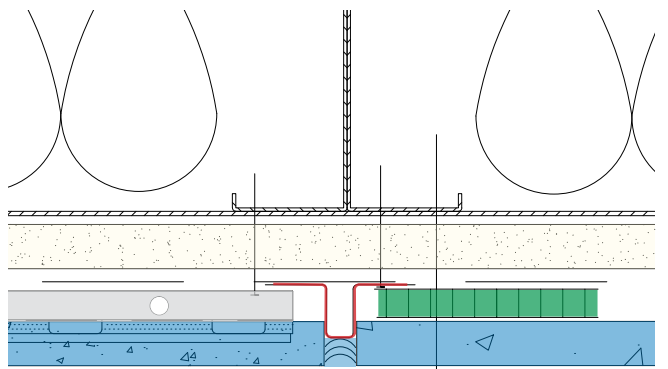
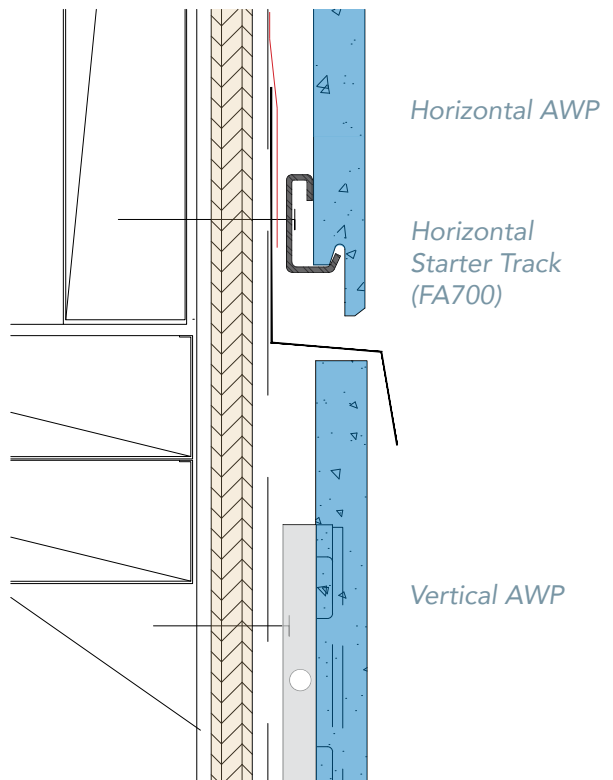
Face fasten the top, cut the edge of the horizontal AWP, cap it with Compression Joint Flashing or Z-flashing. Install vertical AWP with Vertical Starter Track following the standard procedure and fastening requirements.

### *Vertical panel to Horizontal panel Transitions*

Install vertical panels to the desired transition level and cap with Essential Compression Joint Flashing or Z-flashing. Install the Horizontal Starter Track 1-1/4" above the flashing, following the standard procedure and fastening requirements. Refer to the *Horizontal Installation Guide AWP 1818, AWP 3030*.



*Horizontal transition joint: Compression Joint details*



*Horizontal AWP*

*Vertical AWP*

*Vertical transition joint: Double Flange Sealant Backer joint (H-Mold also OK)*

## PANEL REPLACEMENT

Set the depth of a circular saw blade slightly deeper than the panel so the saw blade does not cut into the building wrap or sheathing.

Make cuts into the damaged panel and break into pieces for easier removal. (Figure F)

Remove damaged panel.

If necessary, cut the new panel to appropriate height.

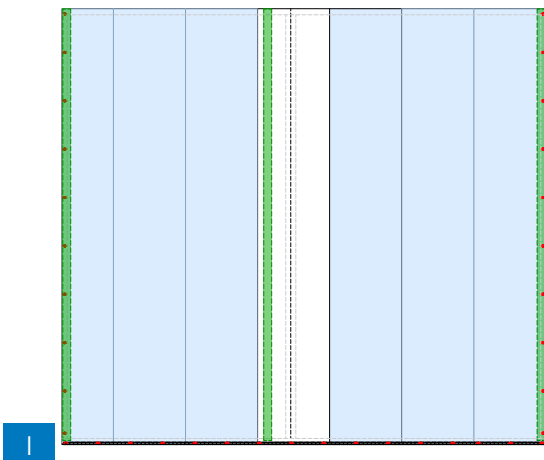
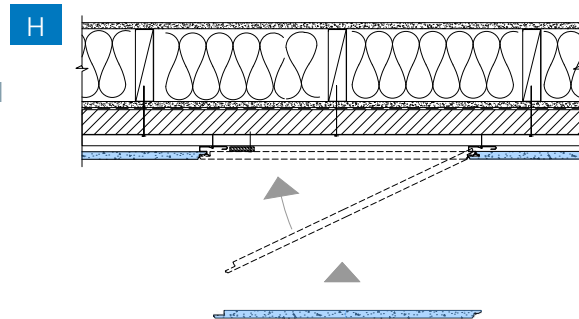
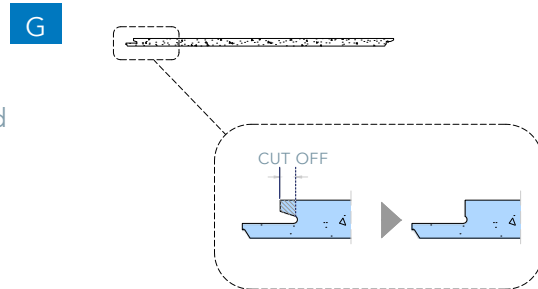
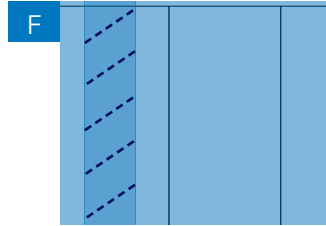
Looking at the panel oriented horizontally, cut  $3/16$ " off of the back ship-lapped edge at the bottom of the panel. (Figure G)

Add 10mm Shim along the left side of the uncovered wall surface. (Figure I)

Set the new panel in place by first inserting the gasketed edge under the ship lap of the existing panel. (Figure H)

Pre-drill and face fasten the left edge of panel through the Shim with a screw every 16" into framing, furring, or blocking (Figure J). When only wood sheathing is available for the face fasteners, reduce the screw spacing to 6-8".

Fill countersunk screw heads per *Touch Up Paint* and *Repairing Minor Damage*.



# TECHNICAL RESOURCES

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## TECHNICAL DESIGN REVIEWS

If your project meets any of the criteria listed below, or you simply wish to take advantage of the service, your Nichiha Sales Representative can connect you to Technical Department staff for a Technical Design Review. It's our way of assuring that your project will be implemented without issues prior to installation. Refer to [nichiha.com/technical-design-review](https://nichiha.com/technical-design-review)

\*All require a technical review by Nichiha to evaluate feasibility via our Technical Design Review (TDR) process. Submission of a TDR does not imply or guarantee project approval.

- Any project of more than three stories or 45 feet
- Those located in high wind coastal areas (Exposure Categories C and D with Basic Wind Speed in excess of 130 mph (Vult))
- Those with any wall assembly not described in the Framing & Sheathing Requirements
- Continuous Insulation projects (thicker than 1")



## TECHNICAL BULLETINS

Even the power of possibilities has limitations. Nichiha offers a wide variety of Technical documents to help aid your design. Refer to [nichiha.com/resources/technical-bulletins](https://nichiha.com/resources/technical-bulletins).

- [AWP and Sierra Finishes](#)
- [AWP Maintenance Guide](#)
- [AWP Minimum Cuts](#)
- [Crystalline Silica](#)
- [ICFs](#)
- [NichiBoard Replacement](#)
- [NichiProducts Blocked Penetrations](#)
- [NichiProducts Quick Care and Maintenance](#)
- [NichiProducts Soffit](#)
- [NichiProducts, Sierra, and Savannah Care Maintenance](#)
- [Retrofits with AWP](#)
- [Sealants](#)
- [Sierra Shake Layout](#)
- [Vertical AWP Above Sloped Surfaces](#)
- [Continuous Insulation and AWP](#)



## DETAILS

For complete offerings of AutoCAD and Revit details visit [nichiha.com/architectural-details](https://nichiha.com/architectural-details)

For Installation hardware, accessories and full installation requirements/details visit: [nichiha.com/resource-center](https://nichiha.com/resource-center)

# Never underestimate the power of REALLY GOOD TOOLS.

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Whether you are an architect, a builder or a contractor, Nichiha wants to ensure that you have all the information you need to make your project go as smoothly as possible. The way we see it, we are partners. Our website offers a comprehensive collection of technical information, installation videos, Architectural details, in-depth specifications and everything you'll ever need to know about installing Nichiha products. You can even schedule a Technical Design Review via [nichiha.com/technical-design-review](https://nichiha.com/technical-design-review), and our Field Technical Services team can make site visits for installation training and/or preconstruction guidance.



## DESIGN REVIEW GUIDE

Download our quick reference guide to get an overview on our Architectural Wall Panels.

[nichiha.com/resource-center](https://nichiha.com/resource-center)



## ARCHITECTURAL DETAILS

Take a closer look and download our conceptual detail drawings.

[nichiha.com/architectural-details](https://nichiha.com/architectural-details)



## INSTALL VIDEOS

Watch our installation instructions come to life — check out our installation videos today!

[nichiha.com/resource-center/install-support](https://nichiha.com/resource-center/install-support)



## SUPPORT

Our field and in-house technical teams are here to assist. If you have questions, comments, concerns, or wish to schedule a site visit or pre-con meeting, please call or email us.

1.866.424.4421 or [technicalservices@nichiha.com](mailto:technicalservices@nichiha.com)

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# THE POWER OF POSSIBILITIES AND PARTNERSHIPS

Your creative vision is unique. That's why Nichiha wants to offer you the power of cooperation to help your project move from conception to completion. Our ever-expanding offering of textures and finishes lift buildings to new and unexpected places and we want to share them with you. We place a high value on our relationships and are proud to work with our dedicated partners across the country. Join us and discover the power of possibilities and partnerships with Nichiha.

## NICHIHA WARRANTIES

- ILLUMINATION SERIES PANELS  
15-year limited warranty\* on panels,  
15-year limited warranty\* on finish.
- ARCHITECTURAL WALL PANELS  
(Brick, Block, Stone, Wood, Kurastone)  
15-year limited warranty\* on panels,  
15-year limited warranty\* on finish.
- METAL TRIM  
Tamlyn warrants defective-free products for a period of  
15 years for the original purchaser. Please visit [tamlyn.com](http://tamlyn.com) for  
detailed information on terms, conditions and limitations.

\*See Nichiha warranties for detailed information on terms, conditions and limitations. Visit [nichiha.com](http://nichiha.com) for easy downloadable warranties or call toll-free 1.866.424.4421 for a copy.

Nichiha SDS are available on [nichiha.com](http://nichiha.com).

## CERTIFICATION & TESTING



C.C.R.R. 0299



Florida Approval  
12875



CCMC 14366-R



Report EC-58



WUI  
8140-2029



Miami-Dade  
NOA 18-0522.05



L.A.R.R. 26081



**CRYSTALLINE SILICA DUST WARNING:** Nichiha products may contain some amounts of crystalline silica [a.k.a. sand, silicone dioxide], which is a naturally occurring mineral. The amount will vary from product to product. Inhalation of crystalline silica into the lungs and repeated exposure to silica can cause health disorders, such as silicosis, lung cancer, or death depending upon various factors. To be conservative, Nichiha recommends that whenever cutting, sawing, sanding, sniping, or abrading the product, users observe appropriate safety protocols. For further information or questions, please consult Nichiha SDS, your employer, or visit [osha.gov/silica](http://osha.gov/silica) and [cdc.gov/niosh/topics/silica](http://cdc.gov/niosh/topics/silica). The SDS for Nichiha products are available at [nichiha.com/resources](http://nichiha.com/resources), at your local Nichiha dealer, or through Nichiha directly at 1.866.424.4421. FAILURE TO ADHERE TO OUR WARNINGS, SDS, AND OTHER INSTRUCTION MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

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