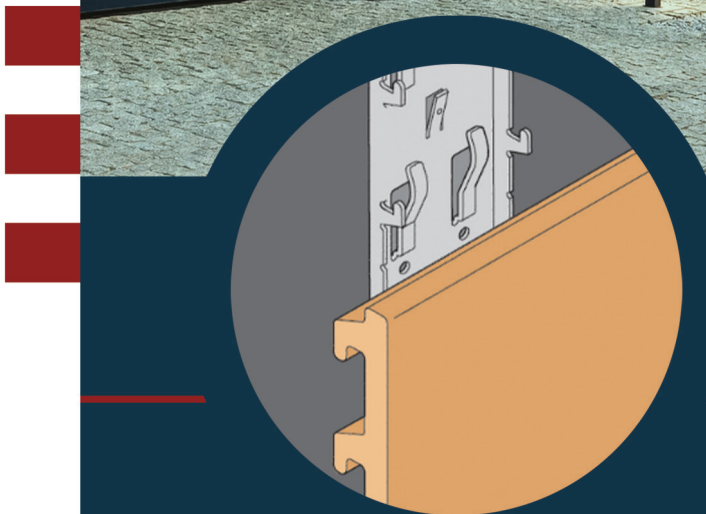


AMERICAN
FIBER CEMENT

AFC Terraslat by Tonality®



Hidden Fastening System

+ RAINSCREEN APPLICATION
22MM SLATS



Construction Practices

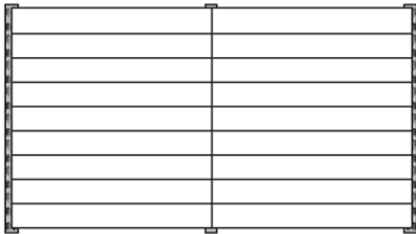
1. Air space at top and bottom of building or wall termination to be 13 mm ($\frac{1}{2}$ "") to facilitate airflow from out behind the panels. Do not block vertical airflow at windows, doors, eaves, or at the base of the building. Airflow needs to be continuous from bottom to top so there is air movement behind each slat. Airflow behind the fiber cement panels is a critical necessity in rainscreen constructions.
2. For areas that receive moderate to high snowfall, panels must terminate 6 to 12 inches above grade line based on expected snow build-up.
3. A metal drip edge may be used at window heads, door heads, and the panel base, but it must not restrict airflow ($\frac{1}{2}$ "").
4. For horizontal layouts, install panels from bottom to top.
5. For walls with inside corners, start installation there and work across the wall.
6. Jobsite storage:
 - Keep material lying flat, under cover, dry, and protected with a waterproof tarp.
 - Using clean water or a microfiber cloth, brush off any material dust generated by cutting before installation. Only install clean slats.
 - Do not use the shipping crates or pallets as a work surface. Keep slats dust-free
7. For field cutting, use we recommend wet cutting like what is used by tile fixers to cut large format and thick porcelain stoneware. Ex: Dahm D2 Ceramic and Stone Cutting Machine Item No. 30025.
8. AFC TerraSlats are graffiti-resistant for life. If marked, the graffiti can be wiped away using a mild ceramic graffiti remover solution.

TerraSlat Layout Options

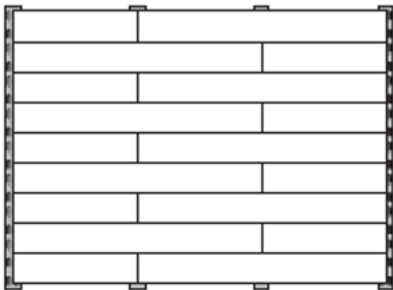
HORIZONTAL ORIENTATION:

AFC TerraSlat may be installed in the horizontal orientation. In this orientation, the SLAT profiles the slats attach to are installed to the substructure running vertically. Installation Instructions begin on page 4.

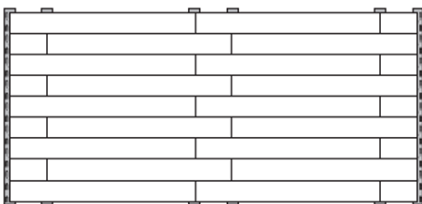
a. Horizontal: Stacked



b. Horizontal: 1/2 Offset (Brick)



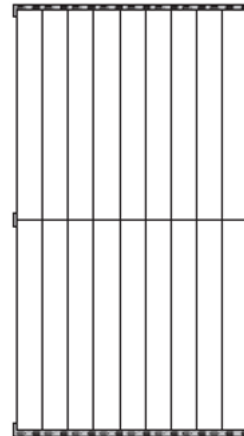
c. Horizontal 1/4 or 1/8 Offset



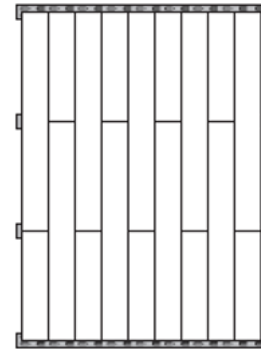
VERTICAL ORIENTATION:

AFC TerraSlat may also be installed in the vertical orientation. In this orientation, the SLAT profiles the slats attach to are installed to the substructure running horizontally. Installation Instructions begin on page 8.

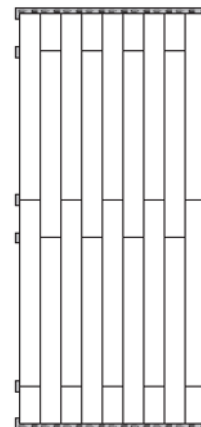
a. Vertical: Stacked



b. Vertical: 1/2 Offset (Brick)



b. Vertical: 1/4 or 1/8 Offset



Building/Structure

Architect/Engineer/Contractor to design and build the structurally sound, water-tight exterior wall. The slats must be free from stress forces once installed.

- Substructure Horizontal Straightness Tolerance: ± 3.0 mm per 2m (± 0.0625 " per 42")
- Substructure Vertical Straightness Tolerance: ± 1.0 mm per 600mm (± 0.125 " per 75")

If the wall is not straight, the profiles should be shimmed to create a flat plane for the slats.

Horizontal TerraSlat Attachment Wall Assembly:

a. (AFC's Recommendation) Attach 3/4" Pressure Treated Plywood or Structural Insulated Sheathing to the studs. (FIG. H1 & H2)

b. For structures with exterior insulation, follow the insulation manufacturer's installation instructions. Z-Profiles, the same depth as the exterior insulation, can be attached to the studs. Then, AFC supplied Hat-profiles (6061-T6 Black Anodized) can then be fastened to these Z-Profiles. (FIG. H3 & H4)

Fasteners in profile must accommodate thermal expansion/contraction of metal and not interfere with panel application. It is also recommended to oversize holes at or near the tops and bottoms of the profiles while having fixed points near the center. This reduces stress in the slats.

c. Outboard of the 3/4" pressure treated plywood, structural insulated sheathing, or exterior insulation, a black UV resistant weather barrier must be applied. This gives the wall assembly protection against moisture and UV rays that enter the air space through the open joints. A black weather barrier is recommended for a consistent black aesthetic through the open joints.

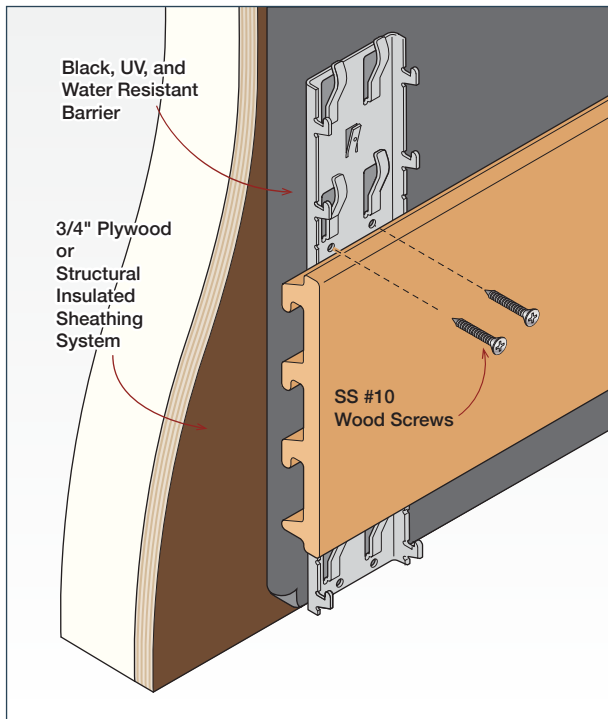


FIG. H1

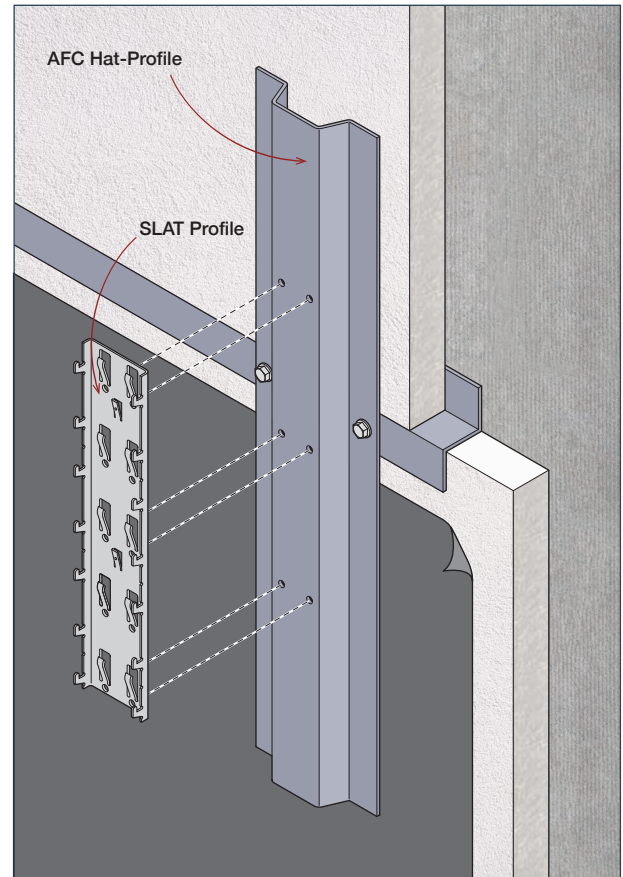


FIG. H3

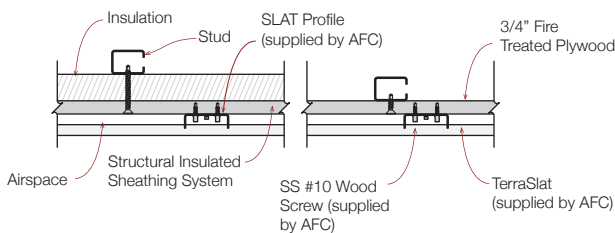


FIG. H2

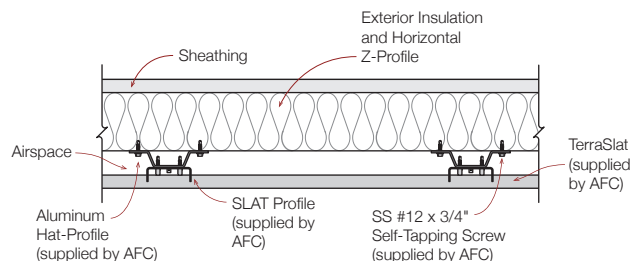


FIG. H4

Horizontal TerraSlat Attachment

For Vertical Attachment, see page 8

- Attach the aluminum SLAT profiles vertically to the AFC supplied aluminum Hat-profiles or structural sheathing. The SLAT profile is designed for TerraSlat attachment only. AFC offers engineering calculations. Structural engineer to determine fastening/affixing specification, i.e. quantity and type of attachment and fasteners, based upon exterior wall construction. Attachment must support 6.1 lbs/ft² dead load, plus design wind loads.
- For horizontal slat orientation, the SLAT profiles are installed vertically.
- There are three types of SLAT Profiles. Type A, Type B, and Type C (FIG. H6).
 - Type A & B: Hooks located at every other slat location. Intended for use in offset slat patterns. Type A and B are used in series with one another.
 - Type C: Hooks located throughout the entire profile. Intended for use in stacked slat layouts and at terminations.
- Spacing between SLAT profiles in the same plane must be 3/8" (10mm) to maintain a 3/8" open joint size between panels (FIG. H5). Slats must also be attached to the same SLAT Profile.
- SLAT profile on center spacing:
 - In a stacked layout, the on center spacing of the Type C profile will be 49.2" on center (1250mm). (FIG. H7)
 - In an offset layout, the profiles will alternate between Type A, and Type B. The on center spacing from Type A to Type A and Type B to Type B will be 49.2" (1250mm). Note: Type C profiles are still required inside corners, outside corners, window jambs, and all other side terminations. (FIG. H8)

Type A Type B Type C

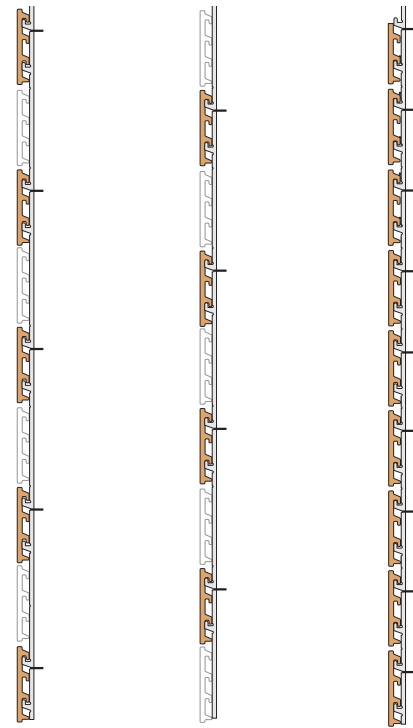


FIG. H6

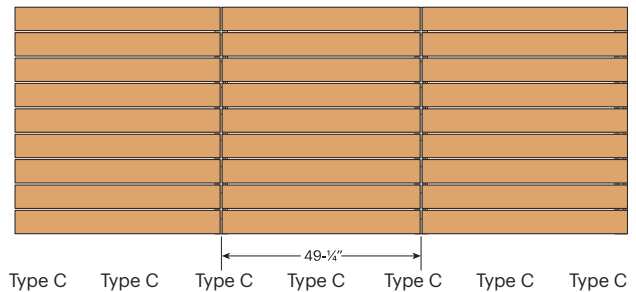


FIG. H7

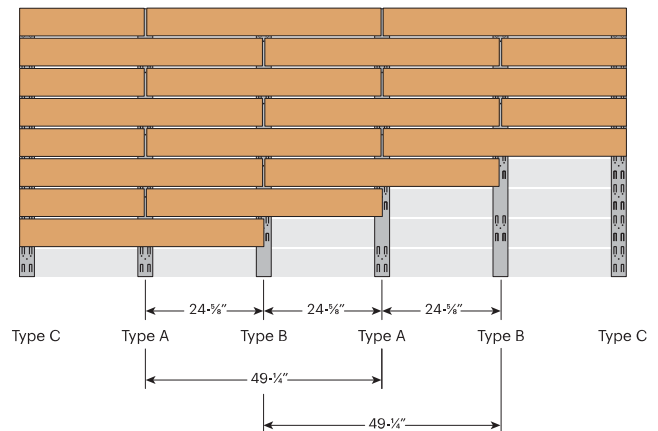


FIG. H8

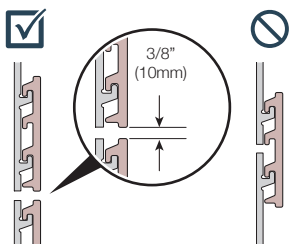


FIG. H5

One slat attaching to two different SLAT profiles is only permitted at the terminating slat in the base, parapet, sill, and head details. See FIG. H10 & 11.

Horizontal TerraSlat Attachment

6. SLAT profiles are fastened to either the plywood or Hat-profile with two fasteners per 11.8" (300mm) through the pre-punched holes and within 2" of the ends of the profile where pre-punched holes may not occur.

7. At the top and bottom, the SLAT profiles may need to be fastened through areas without pre-punched holes.

- Hat-Profile Attachment (FIG. H3 & H4): Use a stainless steel 4.8mm x 19mm self-tapping screw (By AFC)
- Plywood Attachment (FIG H1 & H2): Use a #10 stainless steel wood screw (By AFC)
- For other Structural Insulated Sheathings, follow the manufacturer's screw recommendations.

8. SLAT profiles are to be straight, plumb, level, and aligned correctly on the building before attaching the slats.

9. This is paramount to having all of the joints between slats looking uniform. The SLAT profiles or AFC Hat-Profiles may be shimmed if needed.

10. Before attaching the slats, only on SLAT profiles where there will be a vertical joint between slats, joint tabs, bend the prongs in the middle of the profile outwards. This sets where the joint should be between slats (FIG. H9)

Note: The edge of the slat should be 1/8" from the joint tab. This makes the vertical joints match the horizontal joints

11. SLAT profiles at terminations profiles are recommended to be 2" from the edge of the slat (3/4" min. / 8 1-4" max.).

12. Then attach the slats. Once the slat is in position, push down, and it will pop into place. Repeat this process for all the slats. Adjust the vertical joints to match the horizontal joint size as you go.

13. Figures H10 and H11 display the proper way to terminate a wall at the top or bottom when a full slat does not fit.

Note: If a slat feels loose once put into position, the slat should be removed by pushing upwards or using a wooden wedge shown on page 12. Then, using a pair of plyers, the clamping prongs can be pulled outward slightly to create a tighter fit.

SLAT Profile and TerraSlat Edge Distance Requirements:

- Recommended SLAT profile distance from Edge: 2"
- Maximum cantilever off SLAT profile: 8-1/4"
- Minimum SLAT profile distance from Edge: 3/4"

TerraSlat Minimum Size Requirements:

- Minimum height: 3-1/2" or 3-3/4" ↑↓
- Minimum width: 2.75" ↔

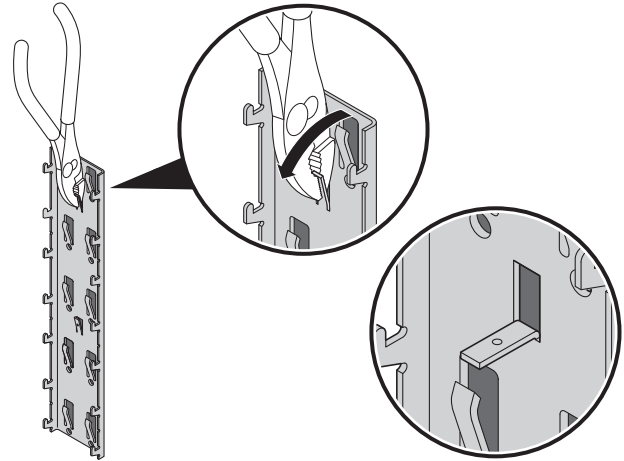


FIG. H9

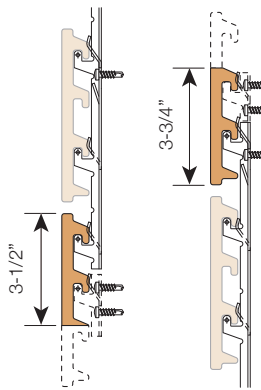


FIG. H10

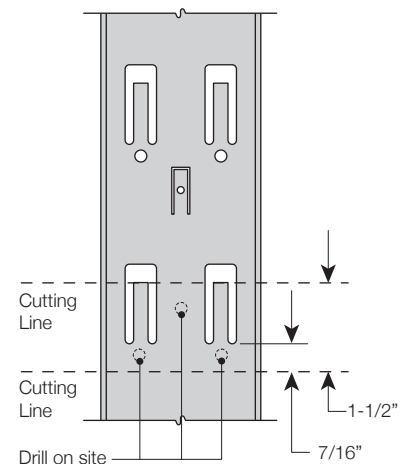


FIG. H11

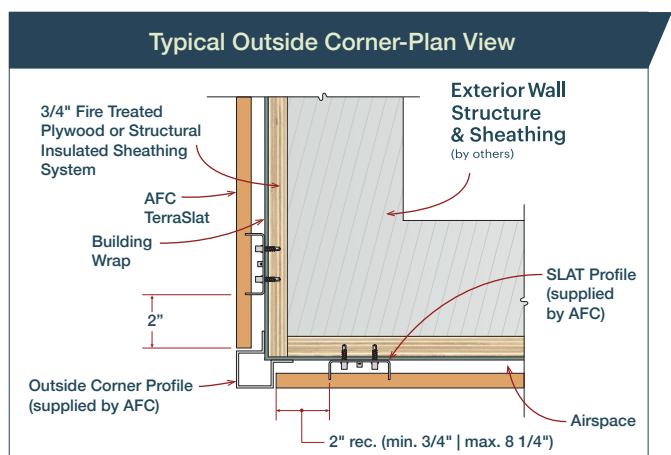
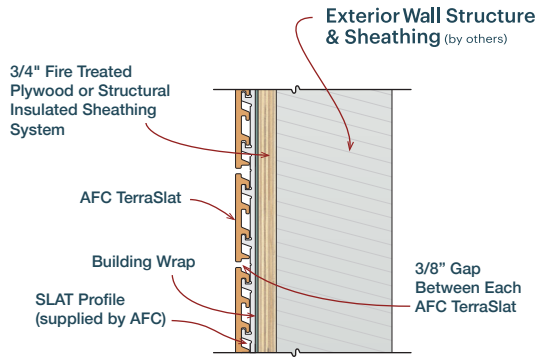


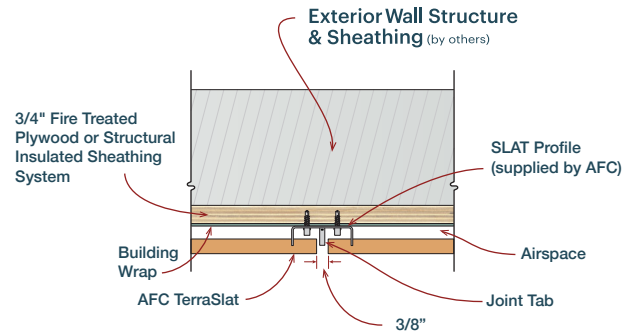
FIG. H12

Horizontal Layout Details

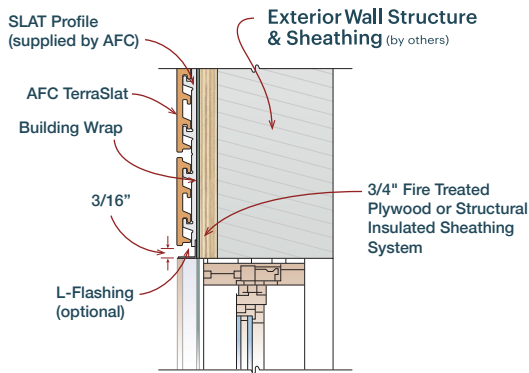
Typical Horizontal Panel Joint



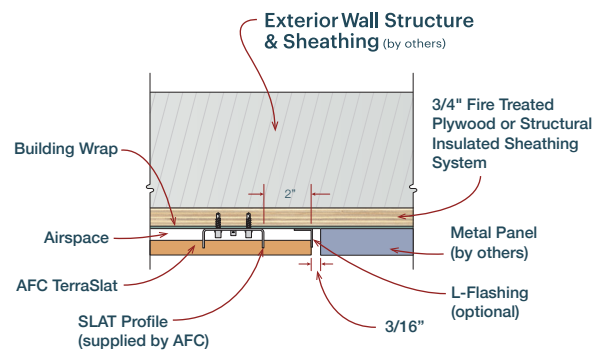
Typical Vertical Panel Joint



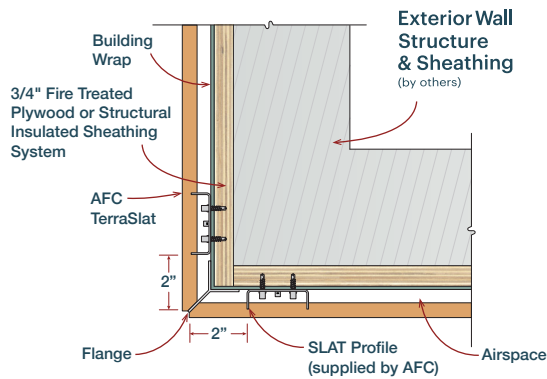
Typical Panel @ Window Head or Door Head



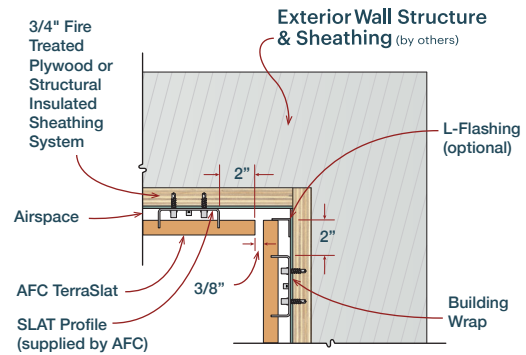
TerraSlat @ Metal Panel



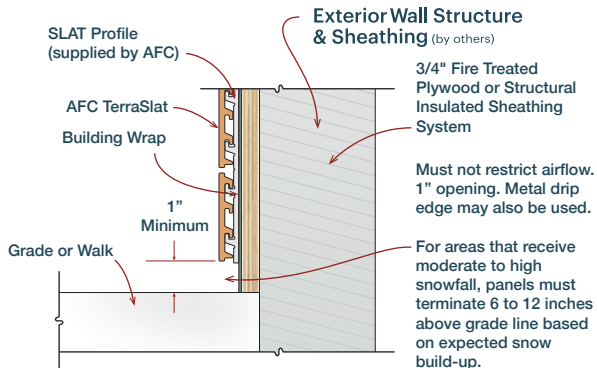
Alternate Outside Corner-Plan View



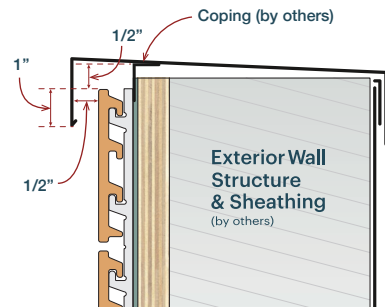
Typical Inside Corner-Plan View



Typical Panel Base



Parapet Coping-Closeup



Vertical TerraSlat Attachment Wall Assembly:

- a. (AFC's Recommendation) Attach 3/4" Pressure Treated Plywood or other structural sheathing. (FIG. V1 & V2)
- b. For structures with exterior insulation, follow the insulation manufacturer's installation instructions. Z-Profiles, the same depth as the exterior insulation, can be attached to the studs. Then, AFC supplied Hat-profiles (6061-T6 Black Anodized) can then be fastened to these Z-Profiles. (FIG. V3 & V4)

- c. Outboard of the 3/4" Pressure Treated plywood, other structural sheathing or exterior insulation, a black UV resistant weather barrier must be applied. This gives the wall assembly protection against moisture and UV rays that enter the air space through the open joints. A black weather barrier is recommended for a consistent black aesthetic through the open joints.

Fasteners in profile must accommodate thermal expansion/contraction of metal and not interfere with panel application. It is also recommended to oversize holes at or near the tops and bottoms of the profiles while having fixed points near the center. This reduces stress in the slats.

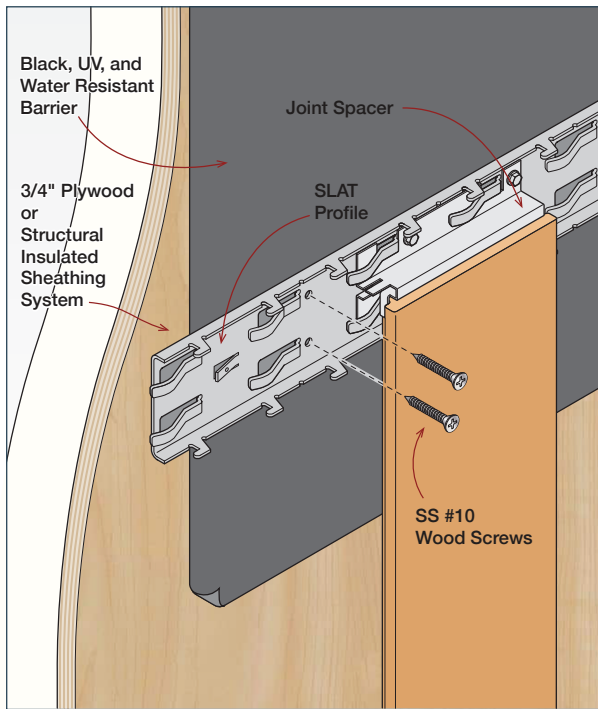


FIG. V1

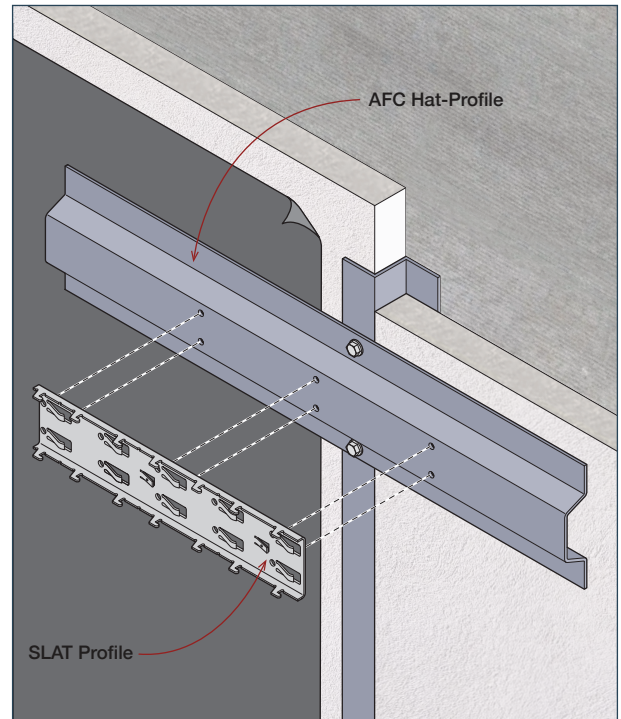


FIG. V3

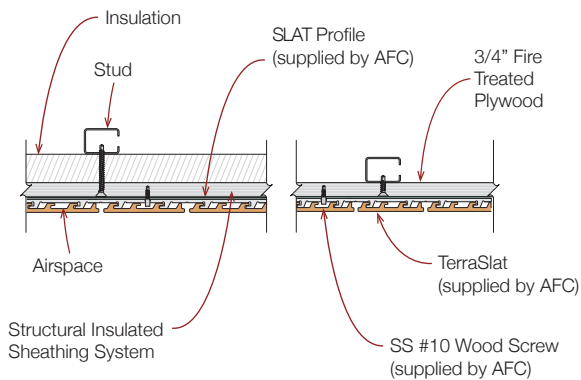


FIG. V2

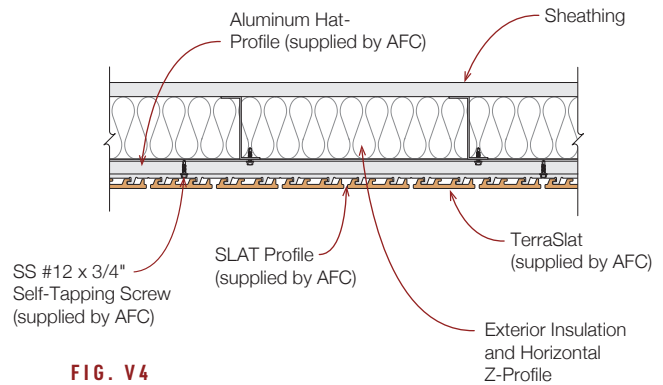


FIG. V4

Vertical TerraSlat Attachment

1. Attach the aluminum SLAT profiles horizontally to the AFC supplied aluminum Hat-profiles, 3/4" fire treated plywood, or a structurally insulated sheathing. The SLAT profile is designed for TerraSlat attachment only. AFC offers engineering calculations. Structural engineer to determine fastening/affixing specification, i.e. quantity and type of attachment and fasteners, based upon exterior wall construction. Attachment must support 6.1 lbs/ft2 dead load, plus design wind loads.

2. For vertical slat orientation, the SLAT profiles are installed horizontally.

3. There are three types of SLAT Profiles. Type A, Type B, and Type C (FIG. V6).

- Type A & B: Hooks located at every other slat location. Intended for use in offset slat patterns. Type A and B are used in series with one another.
- Type C: Hooks located throughout the entire profile. Intended for use in stacked slat layouts and at terminations.

4. Spacing between SLAT profiles in the same plane must be 3/8" (10mm) to maintain a 3/8" open joint size between panels (FIG. V5). Slats must also be attached to the same SLAT Profile.

5. SLAT profile on center spacing:

- In a stacked layout, the on center spacing of the Type C profile will be 49.2" on center (1250mm) (FIG. V7).
- In an offset layout, the profiles will alternate between Type A, and Type B. The on center spacing from Type A to Type A and Type B to Type B will be 49.2" (1250mm). Note: Type C profiles are still required at the parapet, base, window sills, and window heads. (FIG. V8).

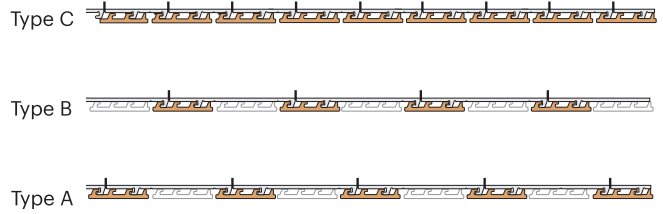


FIG. V6

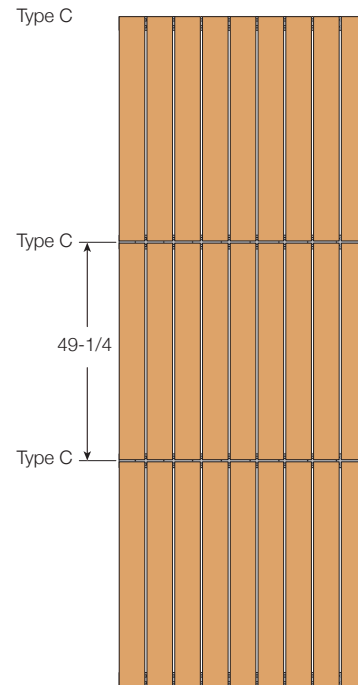


FIG. V7

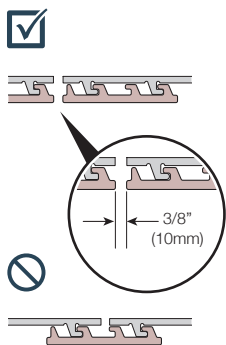


FIG. V5

One slat attaching to two different SLAT profiles is only permitted at the terminating slat in the corner, jamb, and terminating details. See (FIG. V12)

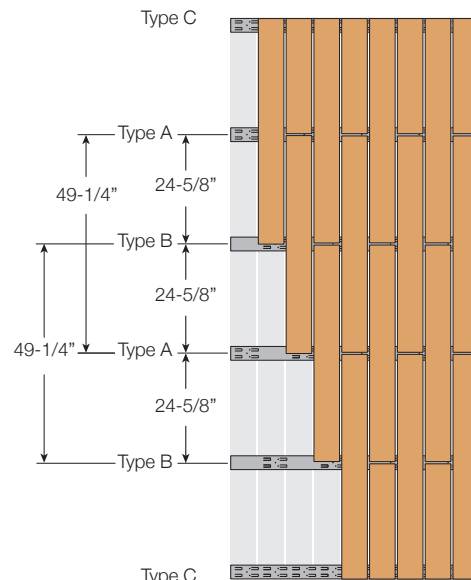


FIG. V8

6. SLAT profiles are fastened to either the structural sheathing or Hat-profile with two fasteners per 11.8" (300mm) through the pre-punched holes and within 2" of the ends of the profile where pre-punched holes may not occur.

- Hat-Profile Attachment (FIG. V3 & V4), profiles run horizontally): Use a stainless steel 4.8mm x 19mm self-tapping screw (By AFC)
- Plywood Attachment (FIG. V1 & V2), SLAT profile runs horizontally): Use a #10 stainless steel wood screw (BY AFC)

7. For other Structural Insulated Sheathings, follow the manufacturer's screw recommendations.

8. A joint spacer supplied by AFC, (FIG. V9) must be placed at all horizontal joint locations before the Slats are attached. These are installed at the same time as installing the profile. Four screws per joint spacer. (See joint spacer install on page 8)

9. Profiles are to be straight, plumb, level, and aligned correctly on the building before attaching the slats. This is paramount to having all of the joints between slats looking uniform. The SLAT Profiles or AFC Hat-Profiles may be shimmed if needed.

10. SLAT profiles at terminations are recommended to be 2" from the edge of the slat (3/4" min. / 8 1/4" max).

11. Start on the side opposite of where the hooks on the SLAT profile are pointing. The panels clamp onto the SLAT profiles by firmly pressing down on the slats with the notches on the back of the slat in between the hooks and the prongs. **Note:** If a slat feels loose once put into position, the slat should be removed by pushing sideways. Then, using a pair of pliers, the clamping prongs can be pulled outward slightly to create a tighter fit.

12. Once a panel is attached, bend the end of the joint spacer with pliers up or down to trap the panel in place. (FIG. V10)

13. Repeat this process for all the slats.

14. At the top and bottom slats on the wall, there will not be joint spacers. In these locations, to secure the slat in place, fasten a #8 or #10 screw at a 30-45 degree angle through the through the middle of the SLAT Profile Profile. Once performed, the adjacent slat may be fastened (FIG. V11). Pilot hole may be necessary to accurately place the screw. This screw must be inserted before attaching the next panel.

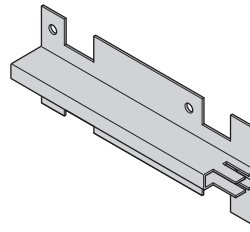


FIG V9: Joint Spacer (Vertical Layout only)

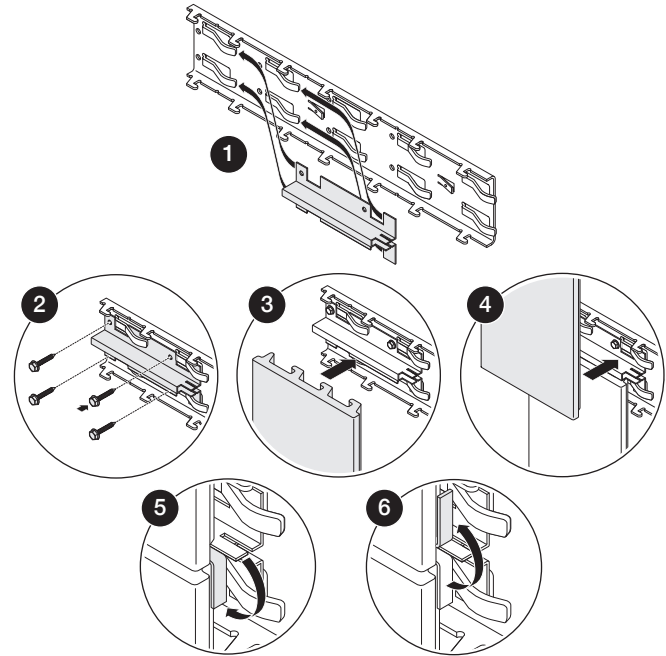


FIG. V10

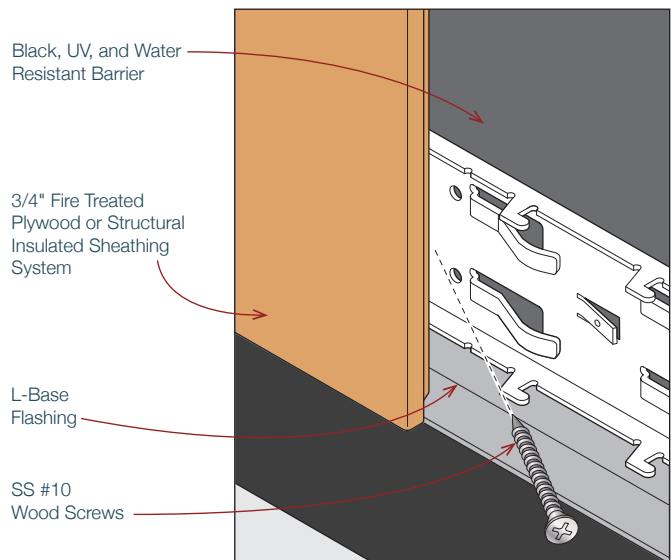


FIG. V11

L-profiles at the base terminations and window/door heads should be installed before slat installation.

15. Figures V12, V13, and V14 display the proper way to terminate a wall at the corners and jambs when a full slat does not fit.

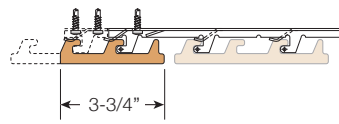
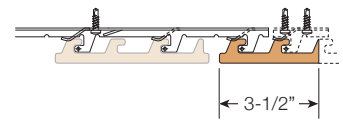


FIG. V12



SLAT Profile and TerraSlat Edge Distance Requirements:

- Recommended SLAT profile distance from Edge: 2"
- Maximum cantilever off SLAT profile: 8-1/4"
- Minimum SLAT profile distance from Edge: 3/4"

TerraSlat Minimum Size Requirements:

- Minimum height: 2.75" \updownarrow
- Minimum width: 3-1/2" or 3-3/4" \leftrightarrow

See FIG. V12

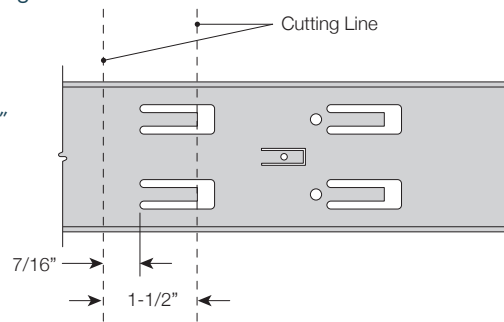


FIG. V13

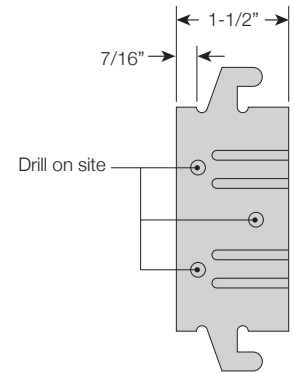
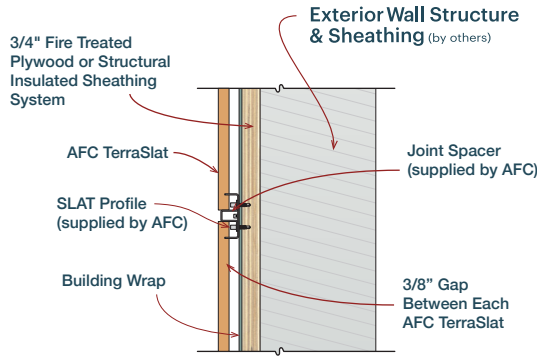


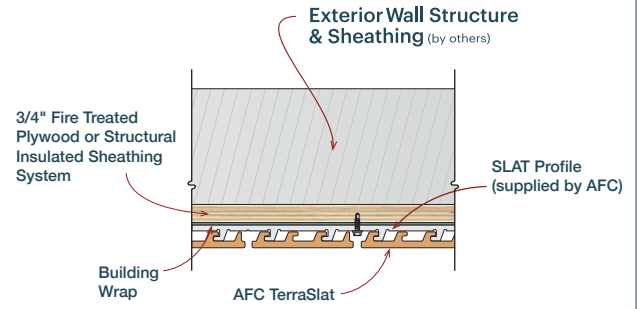
FIG. V14

Vertical Layout Details

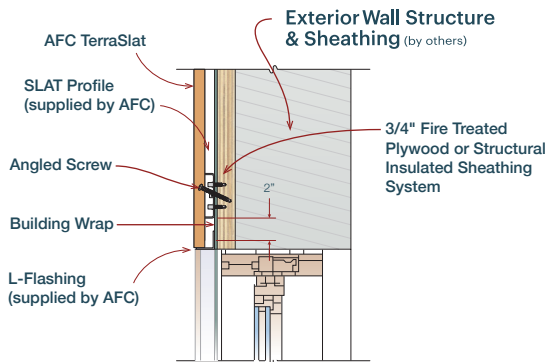
Typical Horizontal Panel Joint



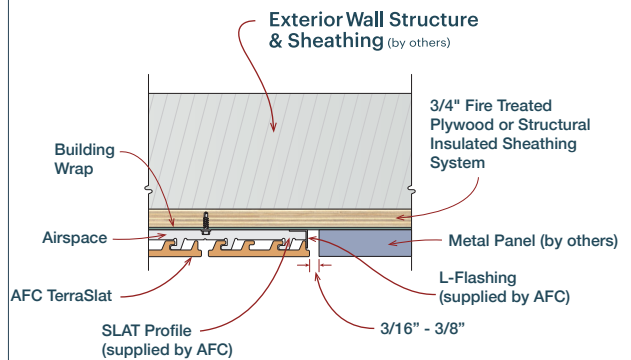
Typical Vertical Panel Joint



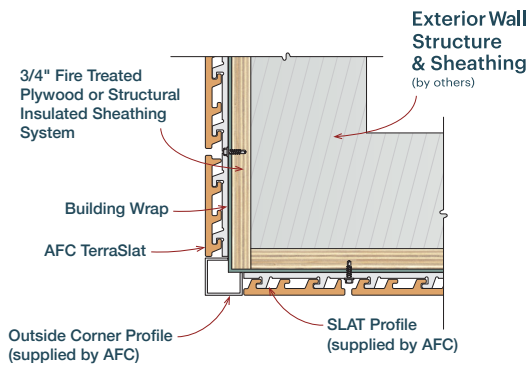
Typical Panel @ Window Head or Door Head



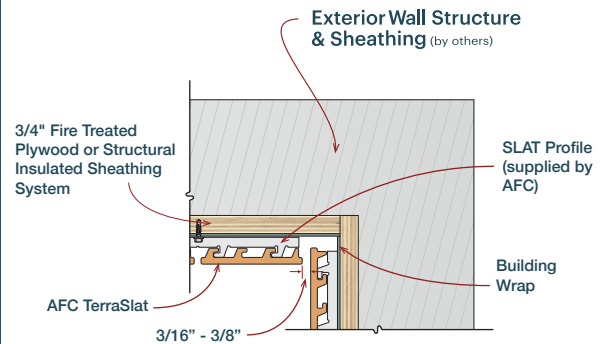
TerraSlat @ Metal Panel



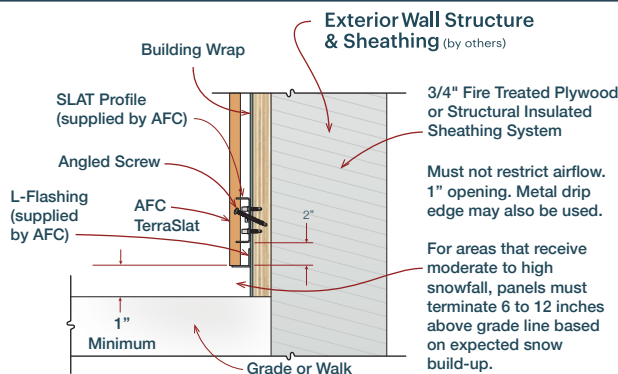
Typical Outside Corner-Plan View



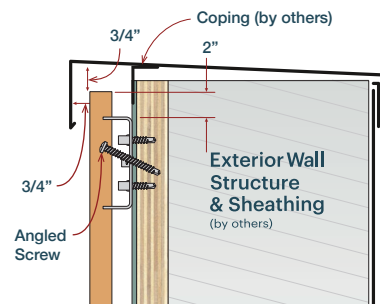
Typical Inside Corner-Plan View



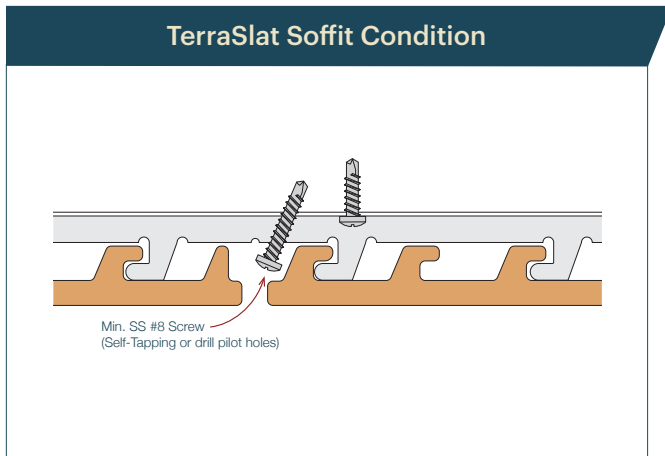
Typical Panel Base



Parapet Coping-Closeup



Horizontal & Vertical TerraSlat Attachment



Soffits

In a soffit application, after hooking each slat onto the SLAT profile, a minimum #8 screw must be fastened into the substrate at an angle through the center of each SLAT profile. There must be two screws per slat (one at each SLAT profile).

SLAT Profile Alignment

There are notches in the SLAT profiles. Aligning these notches on a chalk or laser line will align the SLAT profiles with one another. Combining this tactic with the use of a leveler will fully align the SLAT Profiles.

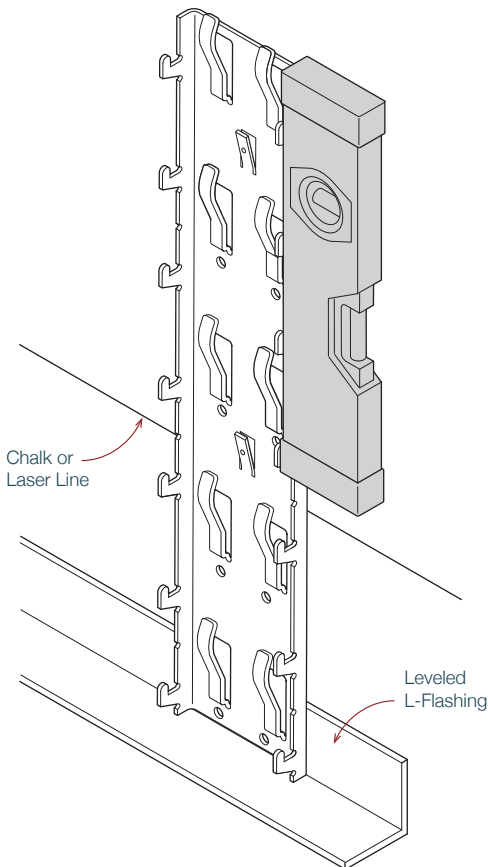


FIG. 15

Base & Side Terminations (Flashing/Trim Pieces)

In a vertical slat layout, an L-piece must be used at the panel base to hold the dead load of the bottom slat (Supplied by AFC). In a horizontal slat layout, the base L-piece is optional.

At side terminations, in a vertical slat layout, L-flashing is optional.

In a horizontal slat layout, L-flashing must be used at terminations where there is no adjacent cladding, or the adjacent cladding is farther than $\frac{3}{16}$ " from the edge of the slat. If there is adjacent cladding and it is $\frac{3}{16}$ " from the edge of the slat, L-flashing is optional.

At outside corners, the slats may be mitered (horizontal layout) or an outside corner flashing supplied by AFC may be used (horizontal and vertical layout).

Slat Removal

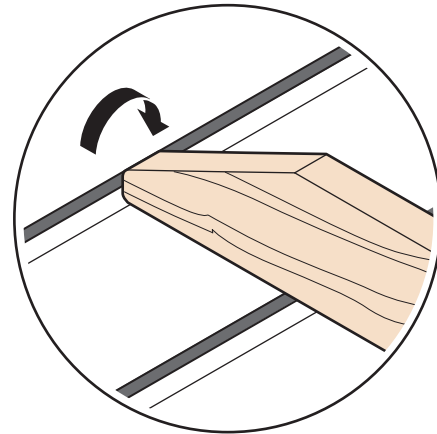


FIG. 14

In a horizontal slat layout, slats may easily be removed with the use of a wooden wedge. Simply insert the wedge into the horizontal open joint near the left SLAT profile and twist. Then repeat this step near the right SLAT profile and the slat can be easily lifted off the hooks.

In a vertical slat layout, the hinges on the joint spacer must be pried back and then a wooden wedge may be used. The very top or bottom slat on the wall will need to have the angled screw removed in order to remove the slat.

In a soffit application, the angled screw must also be removed in order to remove the slat.

Product Sustainability Statement

AFC is committed to providing the highest quality high-density compressed fiber cement panels to the U.S. and Canadian building markets. To accomplish this, we provide premium, sustainable products that contribute to green (LEED) building projects and benefit the environment we all live in. AFC products currently have a potential contribution to various LEED credits, including but not limited to:

Direct Contribution

Materials and Resources:

- Environmental Product Declarations
- Material Ingredients
- Building Life-cycle Impact Reduction

Indirect Contribution

Indoor Environmental Quality:

- Thermal Comfort

Energy and Atmosphere:

- Optimize Energy Performance

One of the most important sustainable attributes is the durability of AFC TerraSlat. Graffiti-proof and scratch-resistant, AFC TerraSlat elements feature a long lifespan, require almost no refurbishment or replacement, and drastically lower maintenance costs over the useful life of the building.

The Ventilated and Insulated Rainscreen Cladding (VIRSC) system, which is used to affix AFC TerraSlat to the exterior of a structure, offers many benefits and green attributes to the performance of the building envelope. Durability and resistance to moisture and mold build-up are noteworthy benefits. Equally important is its ability to accommodate external insulation.

In addition, AFC is dedicated to further research and analysis of our products to achieve additional LEED credits and further the cause of building sustainable and efficient buildings.

Warranty information is available upon request.

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