

Product Page No.

Panel Information

Stile Panel ProfilePST-2
 Panel OverviewPST-2

Flashing Profiles

EavePST-3
 Extended EavePST-3
 CleatPST-3
 Stile StarterPST-3
 Box GutterPST-3
 Box Gutter EndPST-3
 Universal Gutter/Downspout StrapPST-3
 4" x 3½" DownspoutPST-3
 4" x 3½" 95° ElbowPST-3
 Downspout BracketPST-3
 Stile ValleyPST-3
 Stile Valley CoverPST-3
 Stile Formed RakePST-3
 RakePST-3
 Stile Rake StarterPST-3
 Pitch BreakPST-4
 Counter FlashingPST-4
 Reglet FlashingPST-4
 Ridge/Hip CoverPST-4
 Stile Formed RidgePST-4
 Vent DripPST-4
 Stile C-ClosurePST-4
 Stile Junction SheetPST-4
 Stile Ridge DripPST-4

Accessory Profiles

Stile ClosurePST-5
 Stile Formed Ridge ClosurePST-5
 Universal ClosurePST-5
 Tube SealantPST-5
 Tape SealantPST-5
 Rubber Roof JackPST-5
 Touch-Up PaintPST-5
 Stile Roof VentPST-5
 Vent MaterialPST-5
 Stile Hip/Valley ClosurePST-5

Testing Information

UL 580 Wind Uplift InformationPST-6
 Section Properties and General InformationPST-7

Product Page No.

Design/Installation Considerations

Fastener Installation TechniquePST-8
 Condition of SubstructurePST-8
 VentilationPST-9
 Panel ApplicationsPST-9

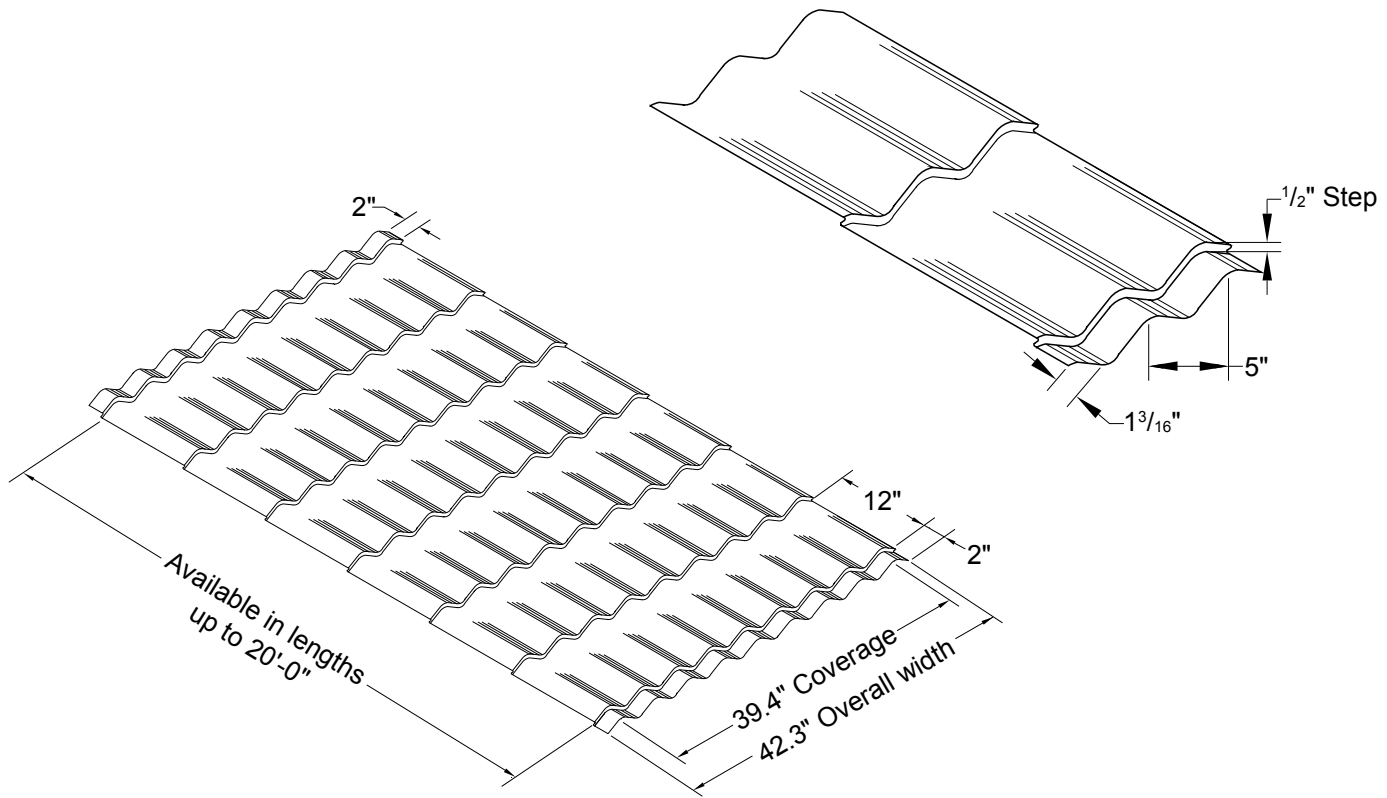
Detail Conditions

Eave DetailPST-10
 Extended Eave DetailPST-10
 Gutter DetailPST-11
 Valley DetailPST-11
 Slope Change DetailPST-12
 Endlap DetailPST-12
 Rake DetailPST-13
 Formed Rake DetailPST-13
 Rakewall with Siding DetailPST-14
 Endwall with Counter DetailPST-14
 Endwall with Reglet DetailPST-15
 Junction Sheet DetailPST-15
 Ridge/Hip DetailPST-16
 Formed Ridge/Hip DetailPST-16
 Vented Formed Ridge DetailPST-17
 Roof Vent DetailPST-17

Notes

NotesPST-18

PANEL PROFILE



SLOPE

The minimum recommended slope for Stile roof panel is 3:12.

SUBSTRATE

The recommended substrate is $\frac{5}{8}$ " plywood with a 30 pound felt moisture barrier. To avoid panel distortion, use a properly aligned and uniform substructure. If your application is over a solid substrate other than $\frac{5}{8}$ " plywood, please contact the your Metal Sales branch location (see pages PGI-2 and PGI-3).

COVERAGE

Stile panels have coverage width of 39.4" (1 meter), corrugations 1 $\frac{3}{16}$ " high, corrugations 5" o.c. and $\frac{1}{2}$ " steps spaced 12" o.c.

LENGTH

Minimum factory-cut length is 3'-0". The maximum panel length is 20'-0". Lengths between 3'-0" and 20'-0" are available in 1'-0" increments.

AVAILABILITY

Stile panels are available in 26 gauge.

APPLICATION

Architectural and Residential Panel

PERFORMANCE TEST

UL 580, UL 790, UL 263, UL 2218, Miami-Dade County and Florida Approvals

FASTENING SYSTEM

Direct Fasten (exposed)

FASTENERS

The fastener selection guide should be consulted for choosing proper fasteners for specific applications. Quantity and type of fastener must meet necessary loading and code requirements (see PGI-12 through PGI-14).

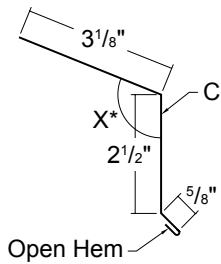
MATERIALS

26 gauge steel: Grade 40 per ASTM A 653

FINISH

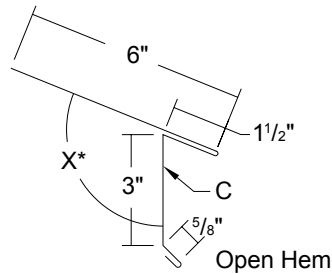
- ▶ *PVDF: Prepainted galvanized, G90 per ASTM A 653
- * Meets both Kynar 500® and Hylar 5000® specifications.

EAVE



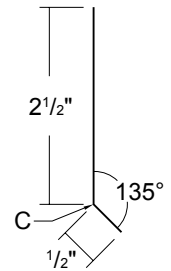
Length 10'-2" - *Specify Slope Angle

EXTENDED EAVE



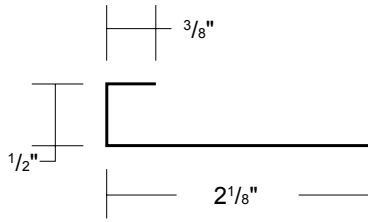
Length 10'-2" - *Specify Slope Angle

CLEAT



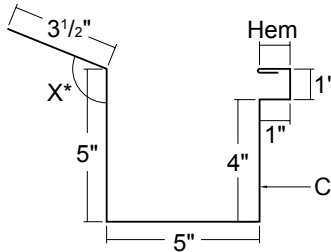
Length 10'-2"

STILE STARTER



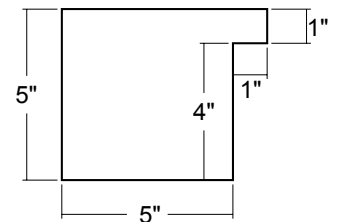
Length 10'-2"

BOX GUTTER

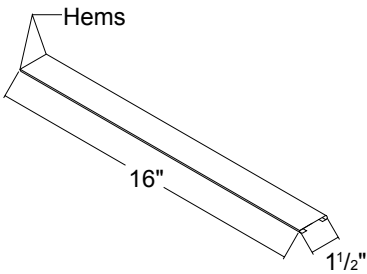


Lengths 10'-2" and 20'-3"
*Specify Slope Angle

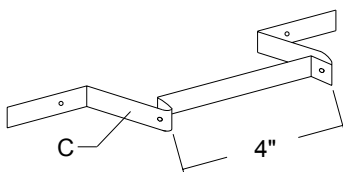
BOX GUTTER END



**UNIVERSAL GUTTER/
DOWNSPOUT STRAP**

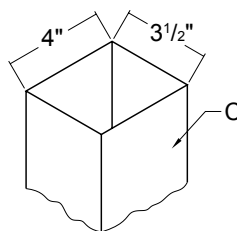


DOWNSPOUT BRACKET



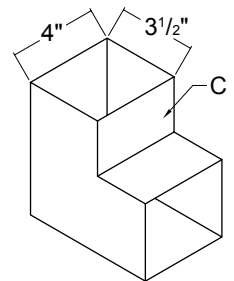
(6" is also available)

4" x 3 1/2" DOWNSPOUT



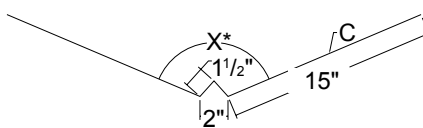
Lengths 10'-2" and 20'-3"
(6" x 4" is also available)

4" x 3 1/2" 95° ELBOW



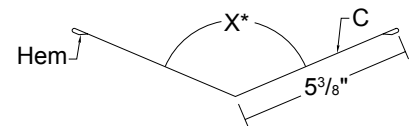
(6" x 4" is also available)

STILE VALLEY



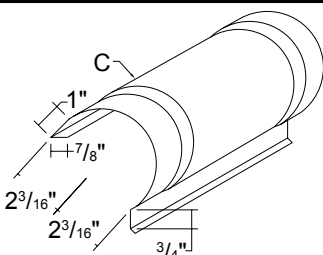
Lengths 10'-2" and 20'-3"
*Specify Slope Angle

STILE VALLEY COVER



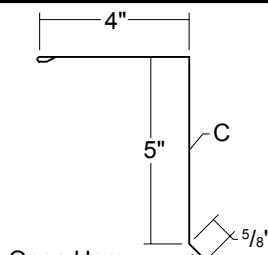
Length 10'-2" - *Specify Slope Angle

STILE FORMED RAKE



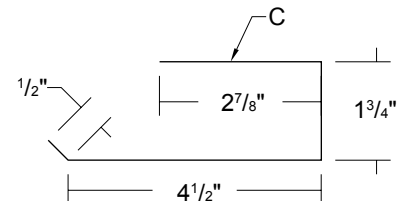
Length 3'-6"
(Left and Right are available)

RAKE



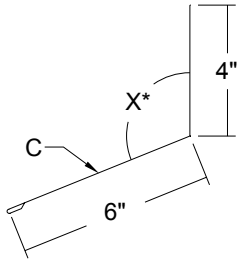
Lengths 10'-2" and 20'-3"

STILE RAKE STARTER



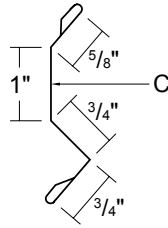
Length 10'-2"

PITCH BREAK



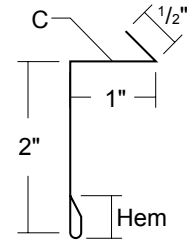
Length 10'-2" - *Specify Slope Angle

COUNTER FLASHING



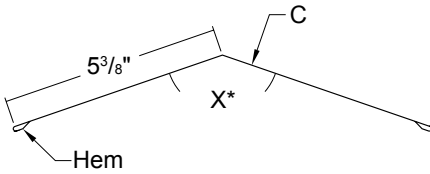
Length 10'-2"

REGLET FLASHING



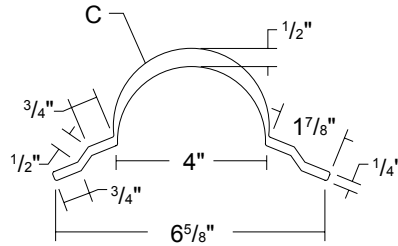
Length 10'-2"

RIDGE/HIP COVER



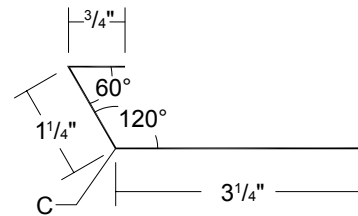
Lengths 10'-2" and 20'-3"
*Specify Slope Angle

STILE FORMED RIDGE



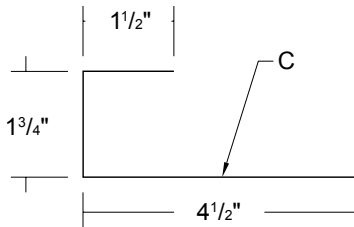
Length 3'-6"

VENT DRIP



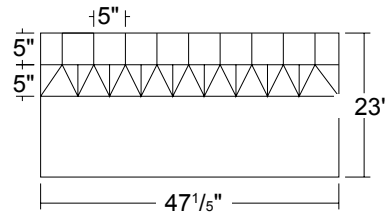
Length 10'-2"

STILE C-CLOSURE



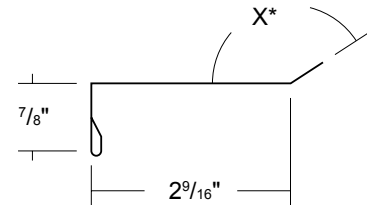
Lengths 10'-2" and 20'-3"

STILE JUNCTION SHEET



Length 1'-11"

STILE RIDGE DRIP



*Specify Slope Angle

C- Indicates color side of flashing.

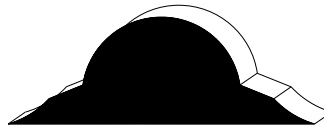
STILE CLOSURE



Inside / Outside

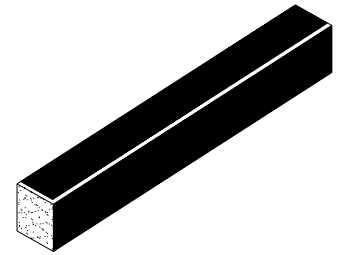
Polyethylene Foam

STILE FORMED RIDGE CLOSURE



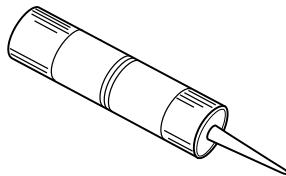
Polyethylene Foam

UNIVERSAL CLOSURE



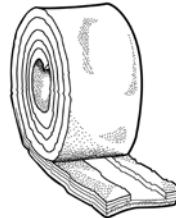
1" x 1 1/2" x 50' Polyethylene Foam
1" x 1 1/2" x 10' Polyethylene Foam

TUBE SEALANT



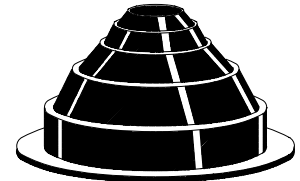
10.3 oz. Cartridge Urethane

TAPE SEALANT



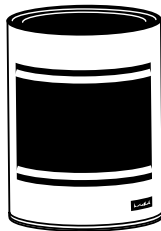
7/8" X 3/16" X 25'
Double Bead Tape Sealant
Butyl - Gray

RUBBER ROOF JACK



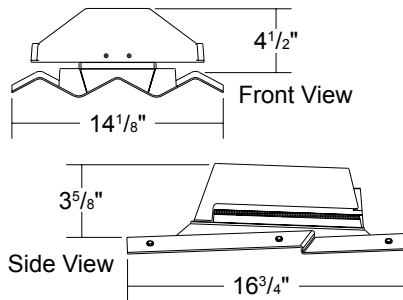
Mini (1/4" to 1 1/8" O.D. Pipe)
#2 (1 3/4" to 3" O.D. Pipe)
#4 (3" to 6" O.D. Pipe)
#6 (6" to 9" O.D. Pipe)
#8 (7" to 13" O.D. Pipe)

TOUCH-UP PAINT

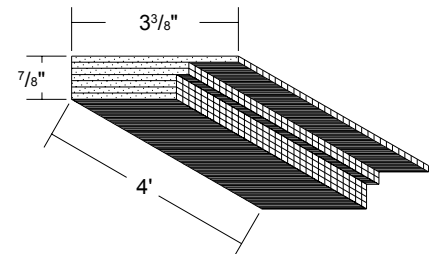


Available in pints
PVDF

STILE ROOF VENT



VENT MATERIAL



STILE HIP/VALLEY CLOSURE

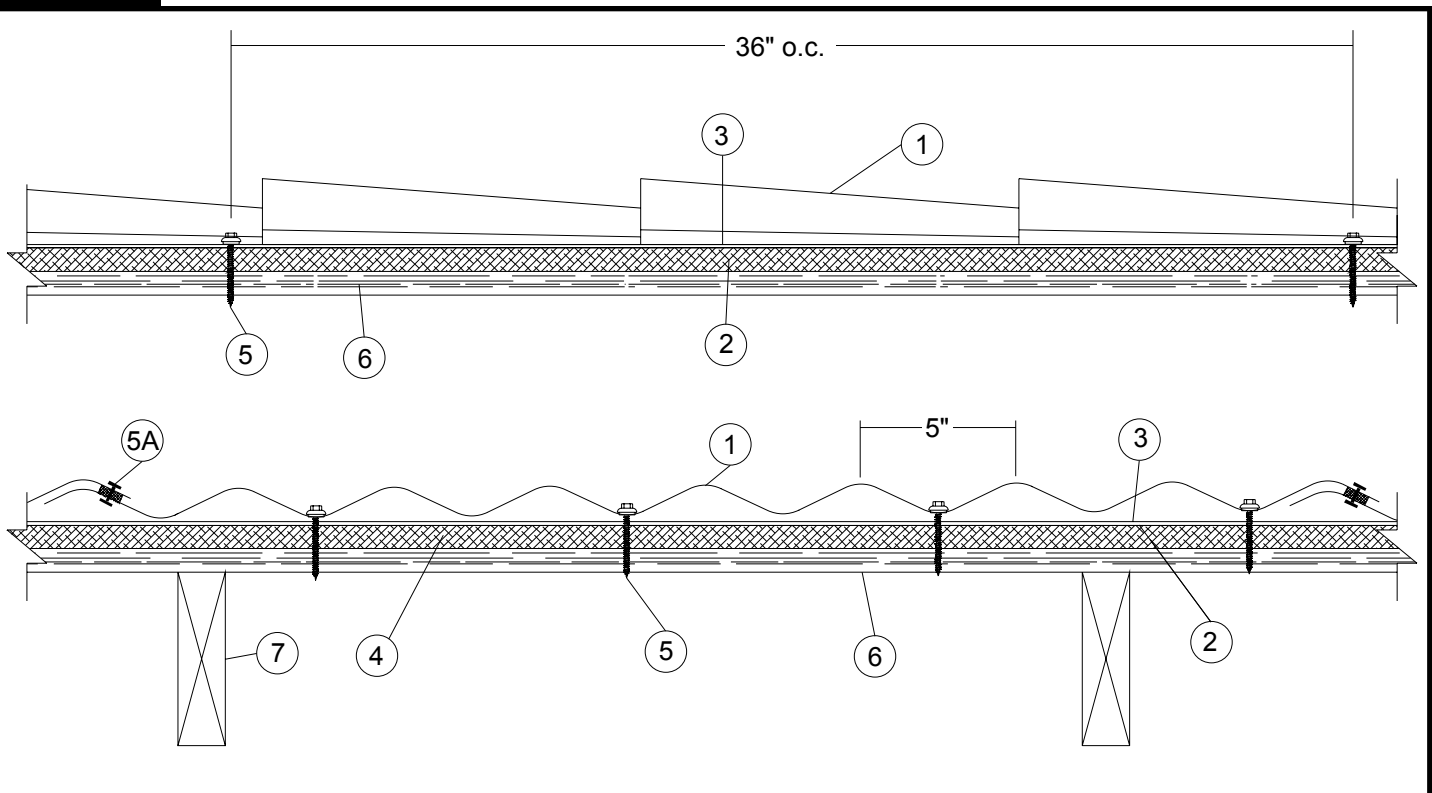


Right Closure



Left Closure

Polyethylene Foam



STILE

Construction No. 533

November 11, 1999

Uplift - Class 90

Fire Not Investigated

1. Metal Roof Deck Panels* No. 26 MSG min thick coated steel. Width 39.4 in., height at ribs 1-3/16 in. METAL SALES MANUFACTURING CORPORATION - "Stile"

2. Cover Board (Optional)-1/4 in. Georgia-Pacific "Dens- Deck".

3. Underlayment 30 lb organic felt. Sides overlapped min 2 in., end laps per manufacturer's instructions.

4. Insulation* (Optional)-Any UL Classified rigid insulation, thickness not to exceed 3-1/2 in.

5. Fasteners (Screws) Fasteners to be No. 14-14 x 1-1/2 in., hex head, Type AB, self-tapping screws with sealing washer and painted finish.

5A. Fasteners (Rivets) Fasteners used to attach panels (Item 1) at side and end laps to be 1/8 in. diameter by 3/16 in. long stainless steel pop rivets.

6. Plywood Decking Decking to be min 5/8 in. (19/32 in. actual) thick. APA 20 span rated plywood sheathing. Fastened to supports with No. 8 by 2 in. long coarse thread wood screws. All butt joints to be sealed against leakage by using tape and/or caulk or with one-part urethane sealant.

7. Supports (Joists) Spaced max 2 ft OC. Graded dimension lumber, No. 2 or better.

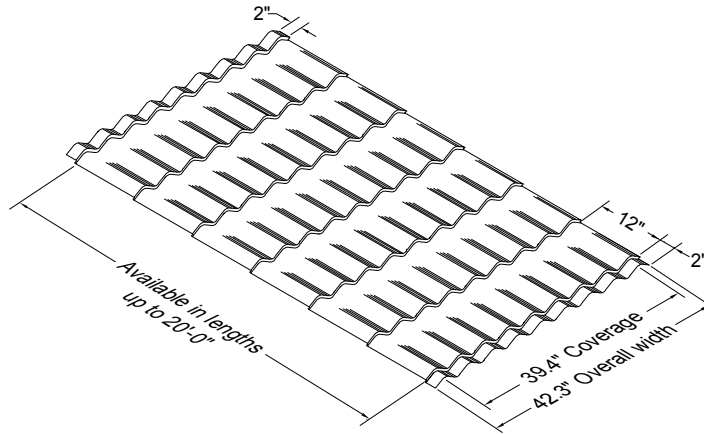
Refer to general information, Roof Deck Construction, for Items not evaluated.

*Bearing the UL Classification Marking



Underwriters Laboratories Inc.®

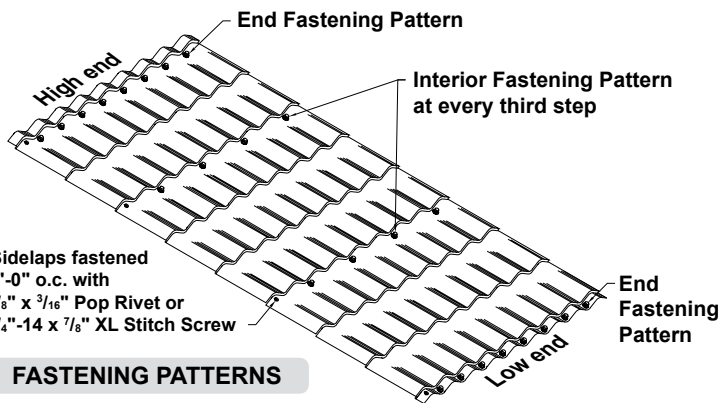
LISTED



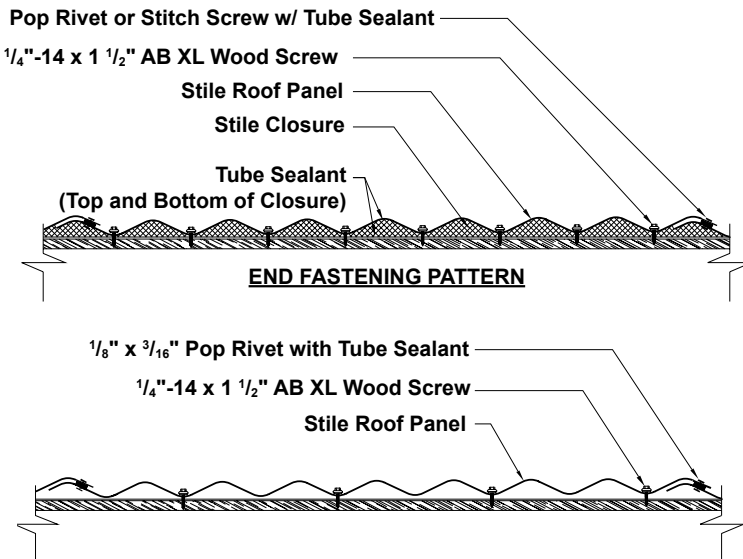
SECTION PROPERTIES								ALLOWABLE UNIFORM LIVE LOADS psf (3 or More Equal Spans)		
Ga	Width in	Yield ksi	Weight psf	Top in Compression		Bottom in Compression		Outward Load		
				I _{xx} in ⁴ /ft	S _{xx} in ³ /ft	I _{xx} in ⁴ /ft	S _{xx} in ³ /ft	1'-0"	2'-0"	3'-0"
26	39.4	40	0.91	0.0432	0.0700	0.0429	0.0693	103	77	50

- Theoretical section properties have been calculated per AISI 2012 "Specifications for the Design of Cold-formed Steel Structural Members." I_{xx} and S_{xx} are effective section properties for deflection and bending.
- Allowable load is calculated in accordance with AISI 2012 specifications considering bending, shear, combined bending and shear, and UL580 testing over 5/8" plywood. Allowable load considers the 3 or more equal span condition. Allowable load does not address web crippling, fasteners/support connection. Panel weight is not considered.
- Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
- Allowable loads do not include a 1/3 stress increase in uplift.

ATTACHMENT DETAIL



FASTENING PATTERNS



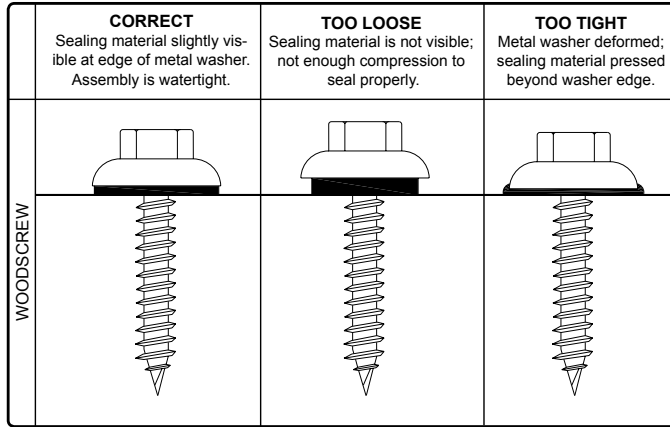
GENERAL INFORMATION

- ▶ **Slope**
The minimum recommended slope for the Stile roof panel is 3:12.
- ▶ **Substructure**
The recommended substrate is 5/8" plywood with a 30 pound felt moisture barrier. To avoid panel distortion, use a properly aligned and uniform substructure.
NOTE: Stile® roof panels are not recommended for use over open structural framing.
- ▶ **Coverage**
Stile panels have a coverage of 39.4" (1 meter).
- ▶ **Length**
Minimum factory cut panel length is 3'-0". Maximum panel length is 20'-0". Panel lengths are available in 1'-0" increments.
- ▶ **Fasteners**
The fastener selection guide should be consulted for choosing the proper fastener for specific applications. Quantity and type of fastener must meet necessary loading and code requirements.
NOTE: All panels are subject to surface distortion due to improperly applied fasteners. Overdriven fasteners will cause stress and induce oil canning across the face of the panel at or near the point of attachment.
- ▶ **Availability**
Finish: PVDF (Kynar 500®)
Gauge: 26 ga standard

FASTENER INSTALLATION TECHNIQUE

Recommended Tool Type - Use depth locating nose or adjustable clutch on screw gun to prevent overdrilling and strip out. **Do not use impact tools or runners.**

Seating the washer - Apply sufficient torque to seat the washer - do not overdrive the fastener.



To prevent wobbling - Make sure fastener head is completely engaged in the socket. If the head does not go all the way in the socket - tap the magnet deeper into the socket to allow full head engagement. Metal chips will build up from drilling and should be removed from time to time.

Protect drill point - Push only hard enough on the screw gun to engage clutch. This prevents excess friction and burn out of the drill point. Correct pressure will allow screw to drill and tap without binding.

Drilling through sheet and insulation - Ease up on pressure when drilling through insulation to avoid striking the purlin or girt with the point - apply more pressure after drill point contacts purlin or girt.

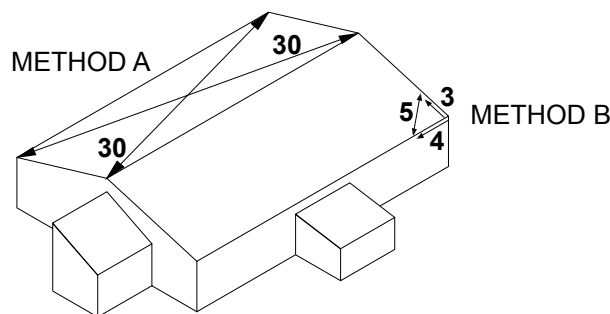
CONDITION OF SUBSTRUCTURE

Whether over solid substrate or open structural framing, panel distortion may occur if not applied over properly aligned and uniform substructure.

The installer should check the roof deck for squareness before installing Stile panels. Several methods can be used to verify squareness of the structure for proper installation of the panels.

METHOD "A" - One method for checking the roof for squareness is to measure diagonally across one slope of the roof from similar points at the ridge and eave and obtain the same dimension.

METHOD "B" - The 3-4-5 triangle system may also be used. To use this system measure a point from the corner along the edge of the roof at a module of three (3). Measure a point from the same corner along another edge at a module of four (4). Then by measuring diagonally between the two points established, the dimension should be exactly a module of five (5) to have a square corner. Multiple uses of this system may be required to determine building squareness. If the endwall cannot be made square, the roof system cannot be installed as shown in these instructions.

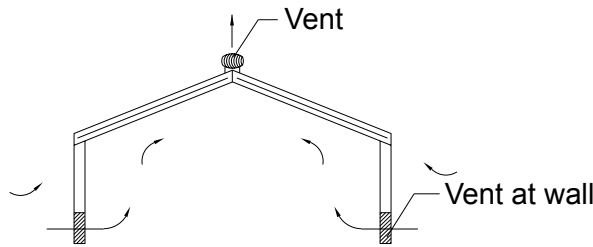


VENTILATION

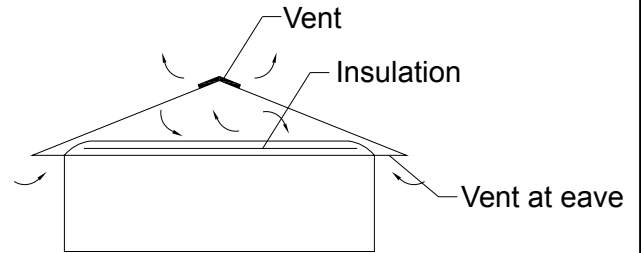
Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal roofing; these problems are common to all types of construction.

The underside of the metal roof on a typical Architectural building should be protected from condensation by installing panels directly over a minimum 30 lb moisture barrier and uniform solid substrate. This reduces airspace and the potential of condensation forming on the underside of the panels.



Typical metal building (no attic)



Building with attic or retrofitted

PANEL APPLICATIONS

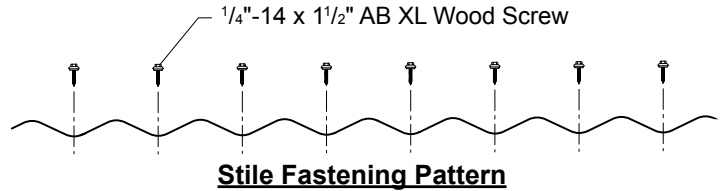
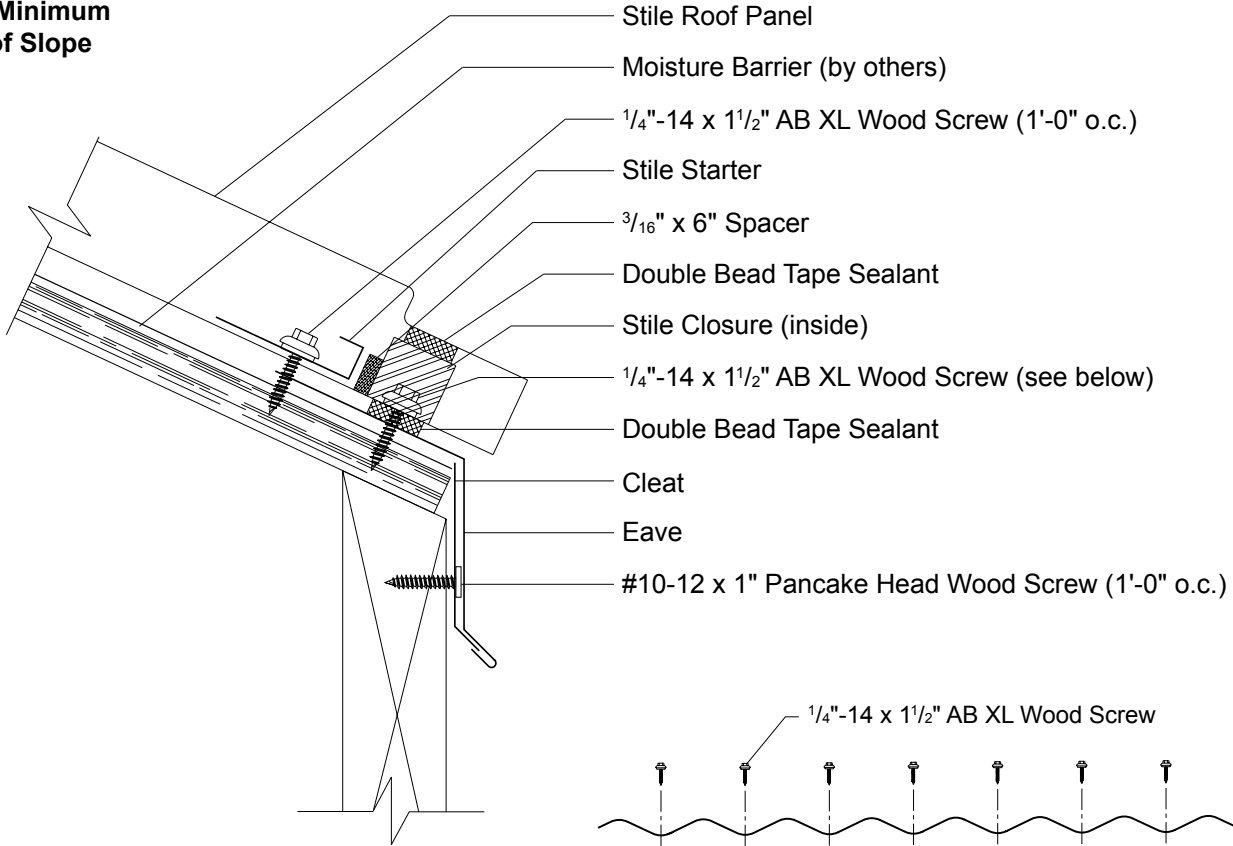
The following chart highlights UL 580 Class 90 for fastener spacing on the selected applications (see Fastener Selection Guide page PGI-12 through PGI-14 for other fasteners available). For more information on UL Construction numbers, refer to UL Roofing Materials and System Directories.

PANEL TYPE	APPLICATION	INSTALLATION REQUIREMENTS		FASTENER SPACING	TYPE OF FASTENER	NUMBER REQUIRED
STILE	FASTENERS OVER 5/8" PLYWOOD DECK CONST. #533	UL 90	26 GAUGE	3'-0" O.C.**	1/4"-14 x 1 1/2" AB XL WOOD SCREW	4 FASTENERS*

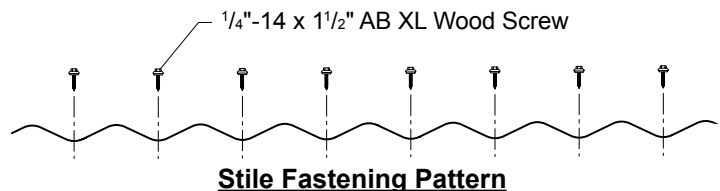
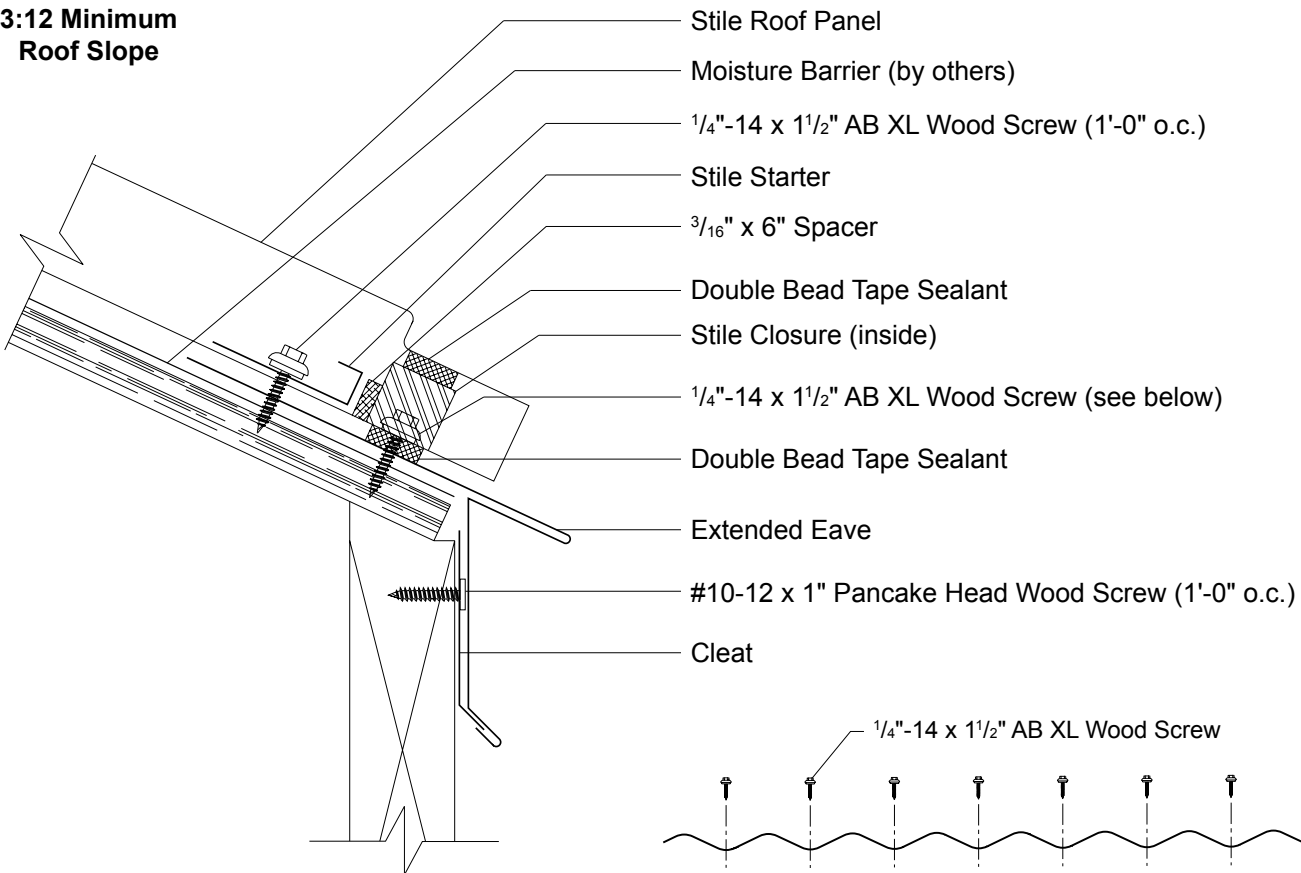
* AB XL fastener also available in 1/4"-14 x 1".

** Based on UL 580. Subject to project loading, closer fastener spacing may be required. Contact your local Metal Sales branch representative for more information (see pages PGI-2 and PGI-3).

**3:12 Minimum
Roof Slope**

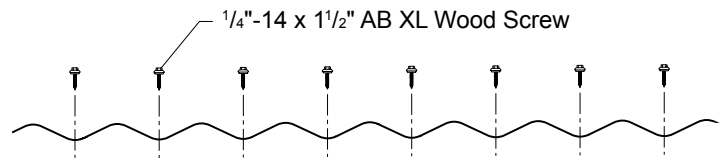
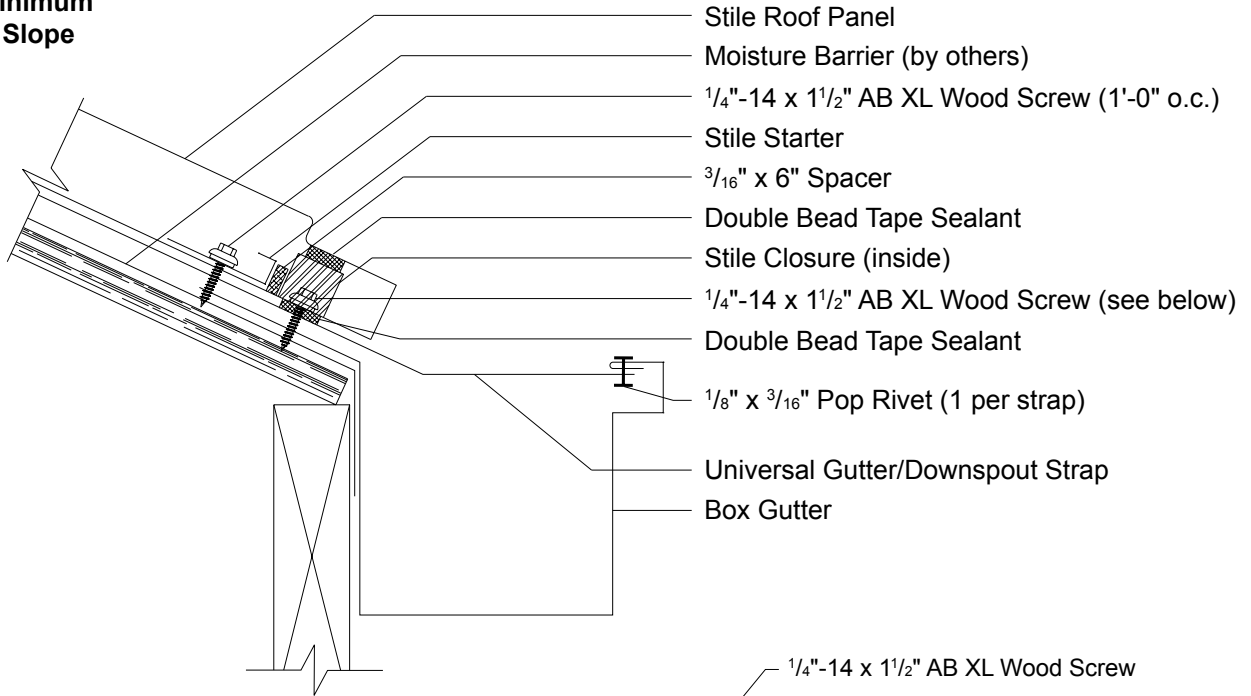


**3:12 Minimum
Roof Slope**



STILE® GUTTER DETAIL

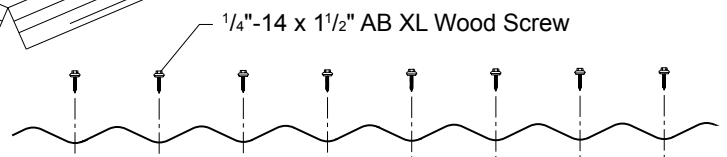
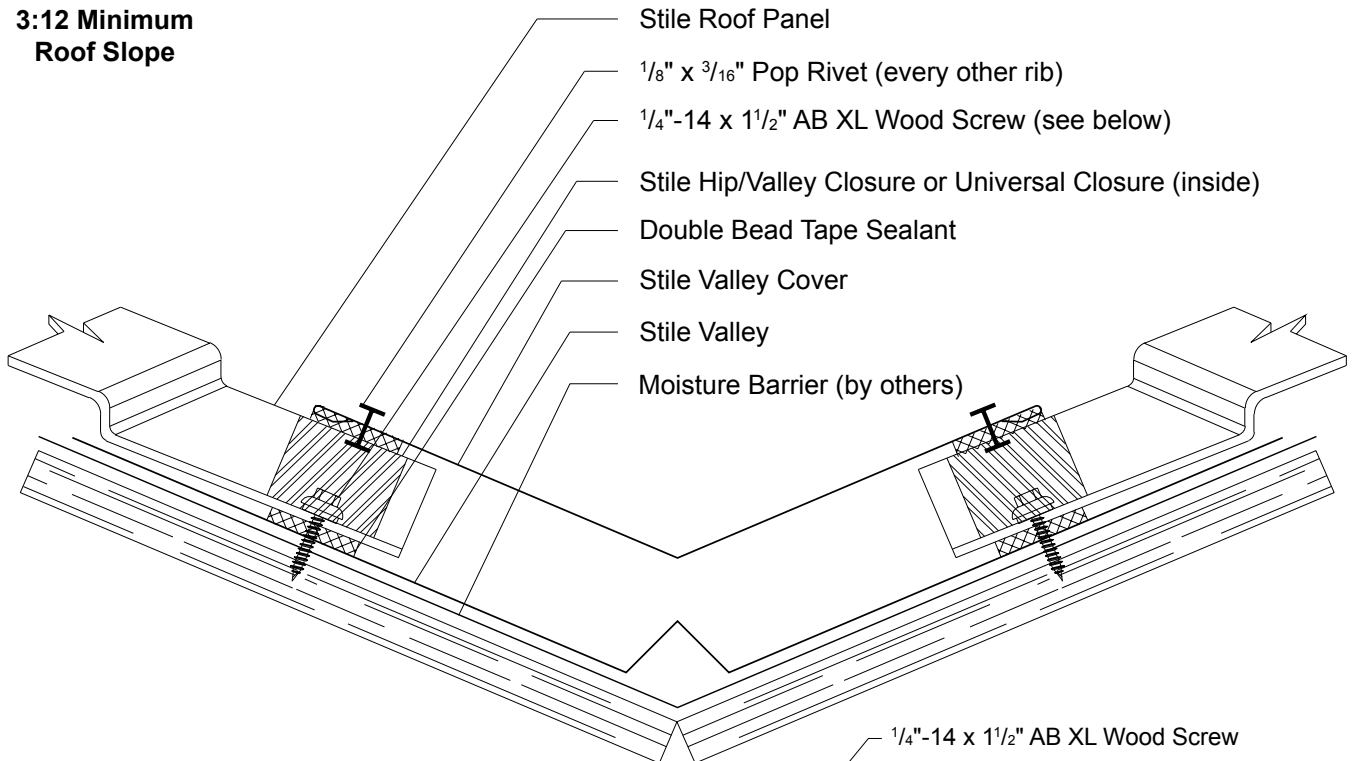
3:12 Minimum
Roof Slope



Stile Fastening Pattern

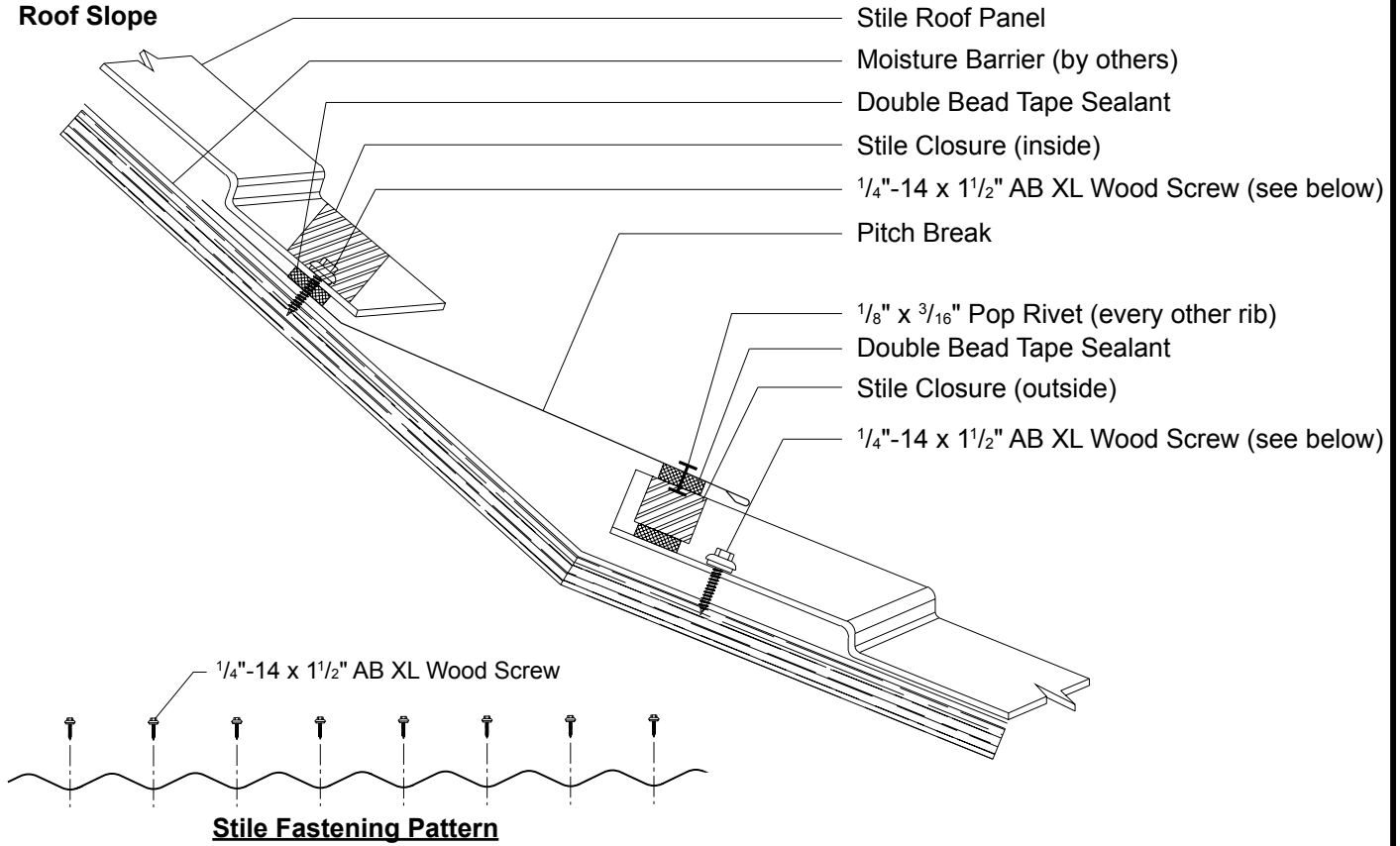
STILE VALLEY DETAIL

3:12 Minimum
Roof Slope

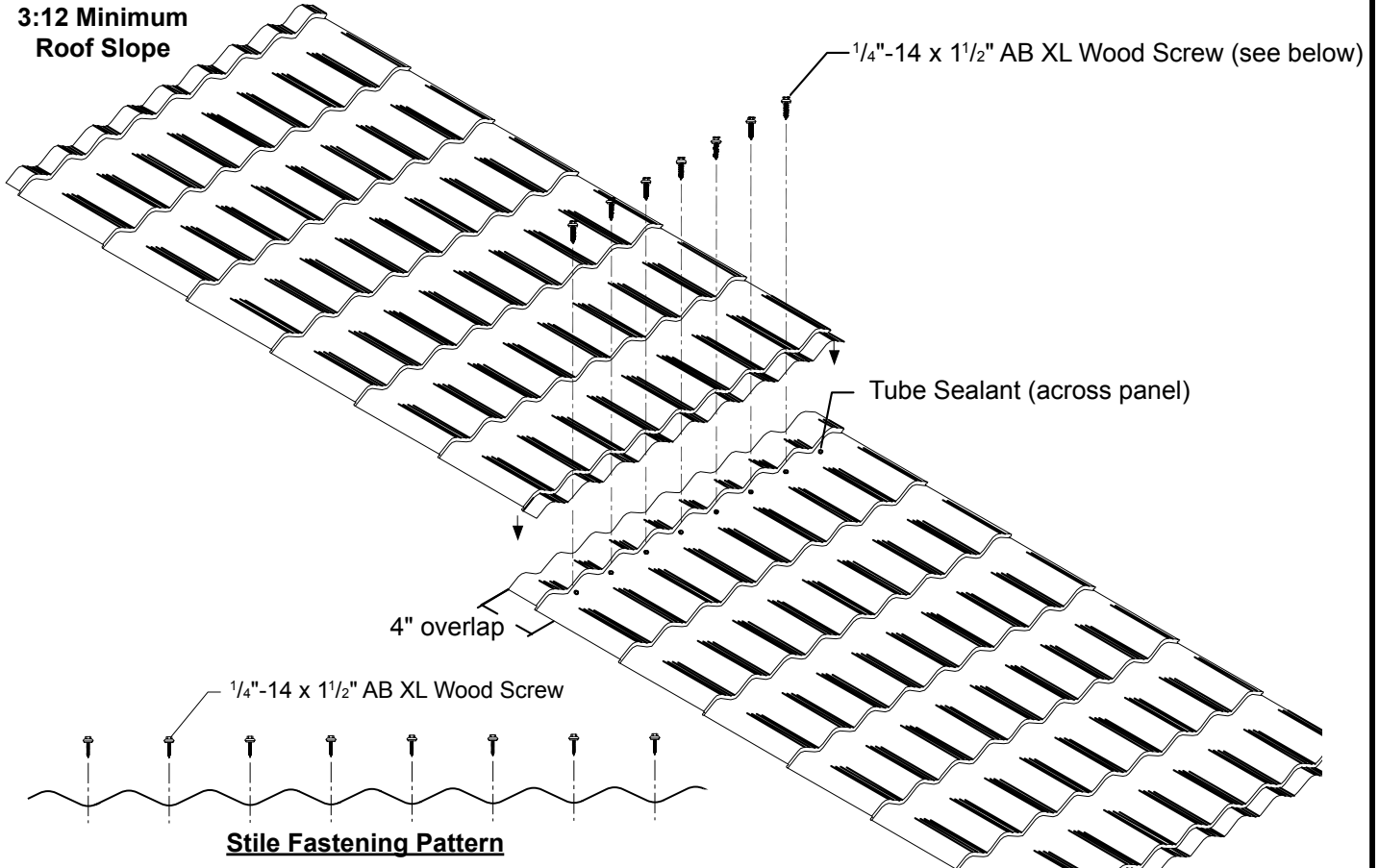


Stile Fastening Pattern

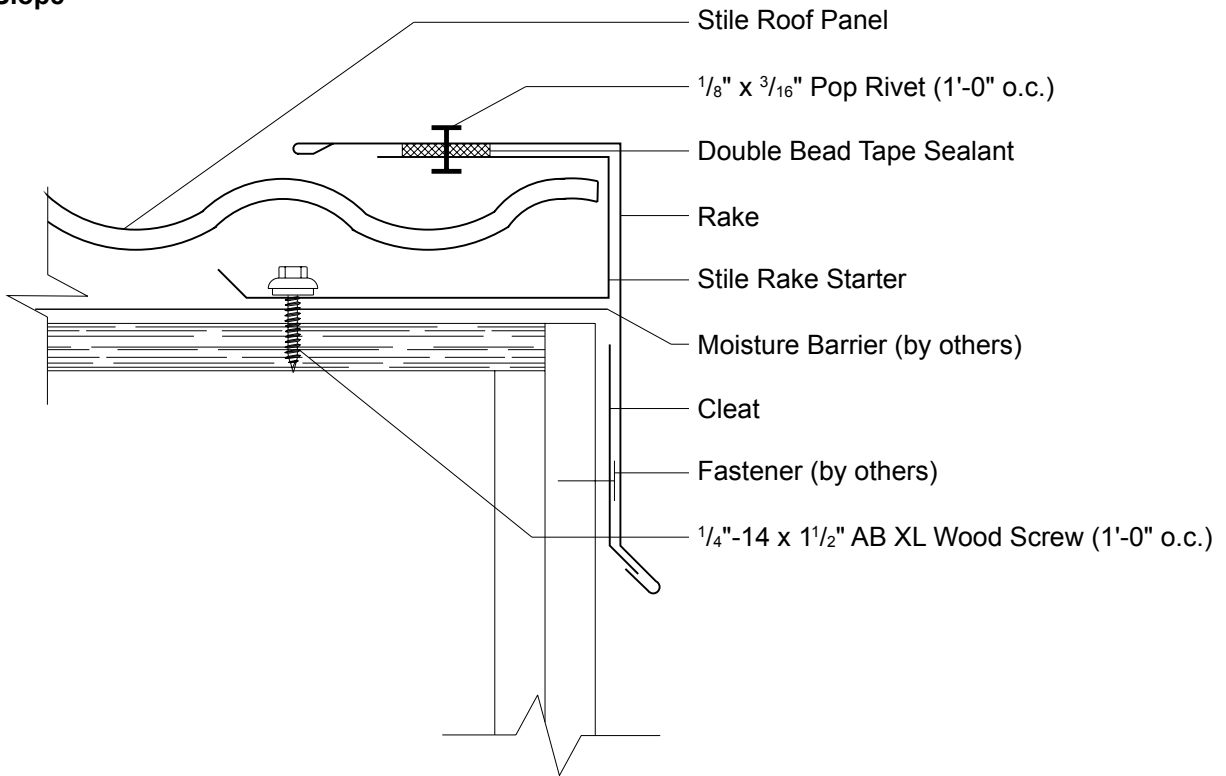
**3:12 Minimum
Roof Slope**



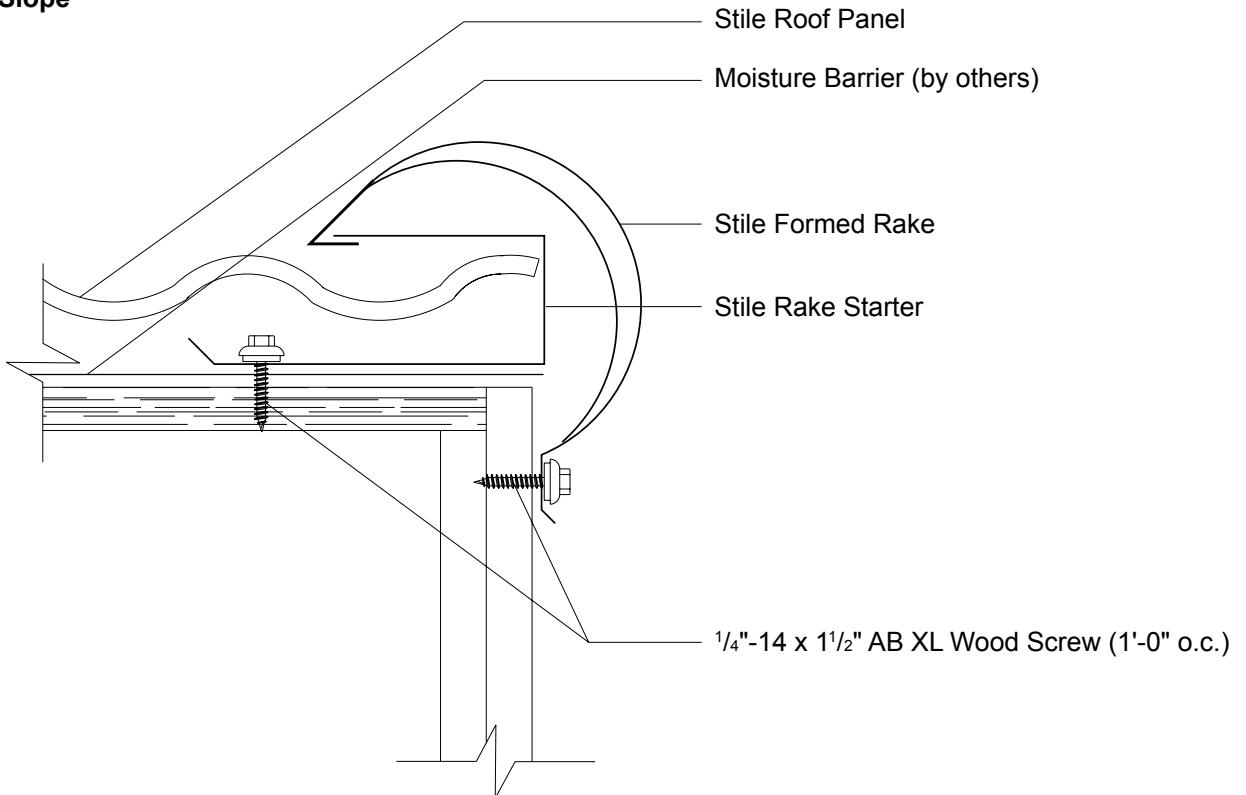
**3:12 Minimum
Roof Slope**



**3:12 Minimum
Roof Slope**

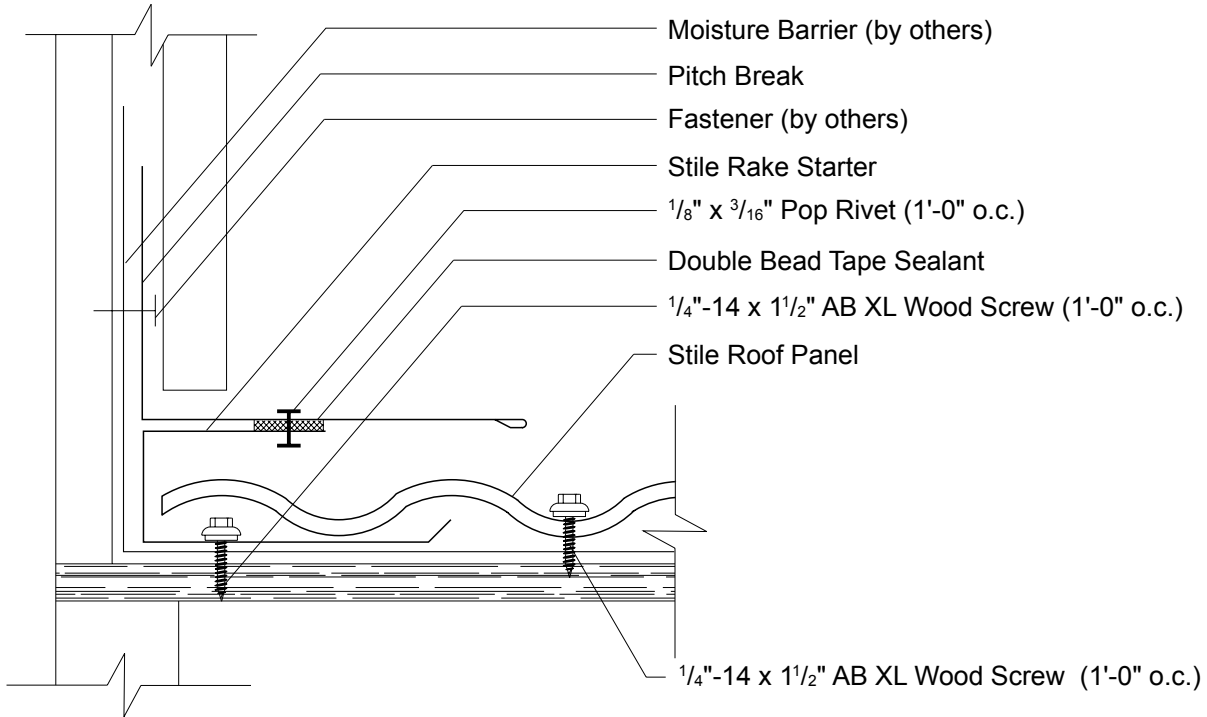


**3:12 Minimum
Roof Slope**



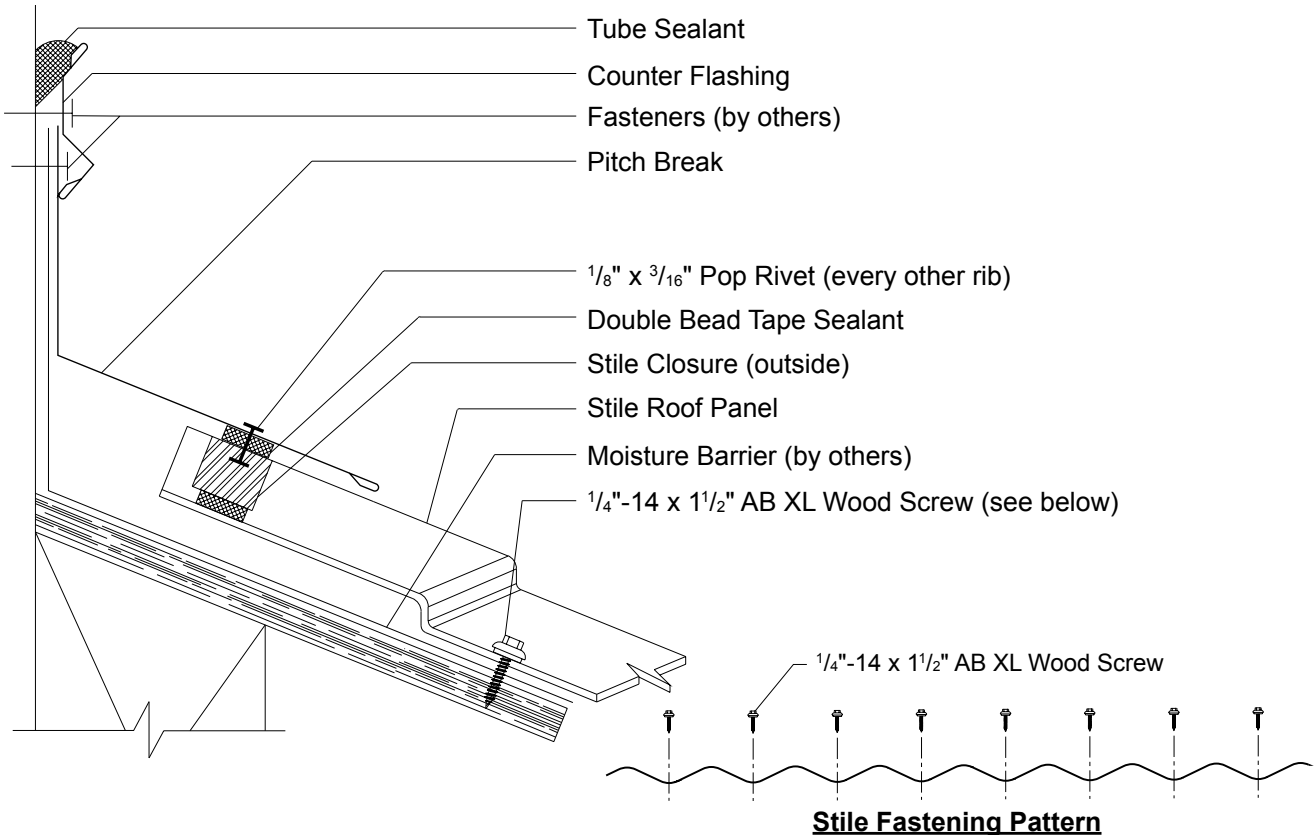
STILE® RAKEWALL WITH SIDING DETAIL

3:12 Minimum
Roof Slope

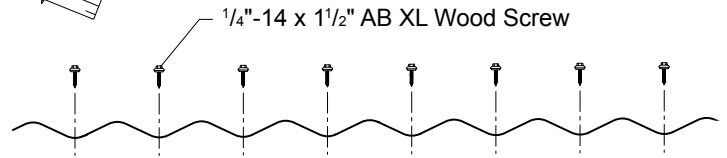
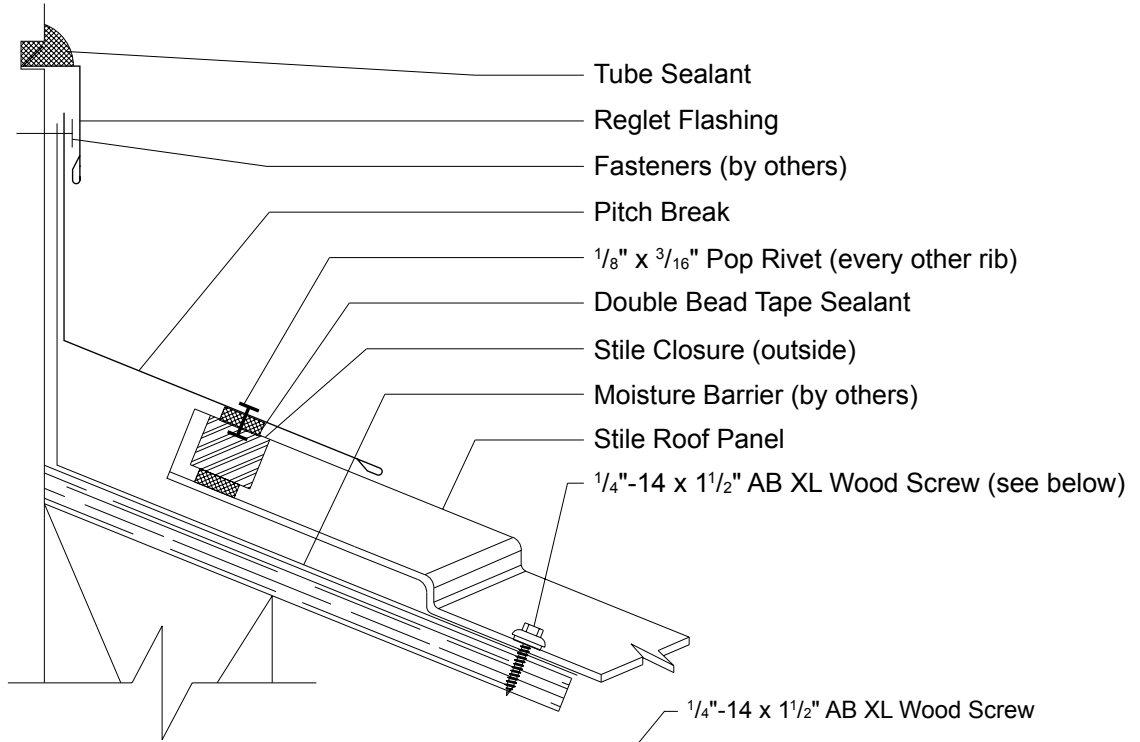


STILE ENDWALL WITH COUNTER DETAIL

3:12 Minimum
Roof Slope

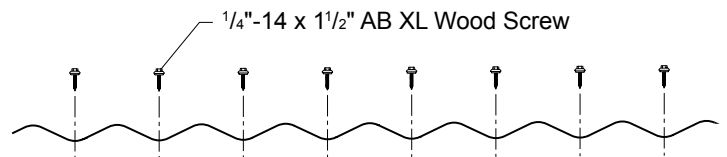
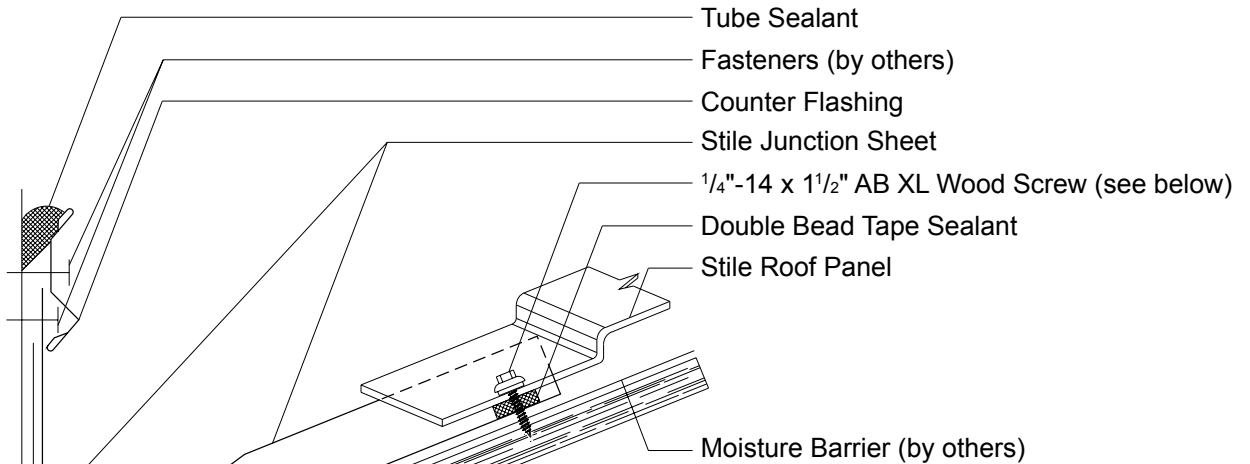


**3:12 Minimum
Roof Slope**



Stile Fastening Pattern

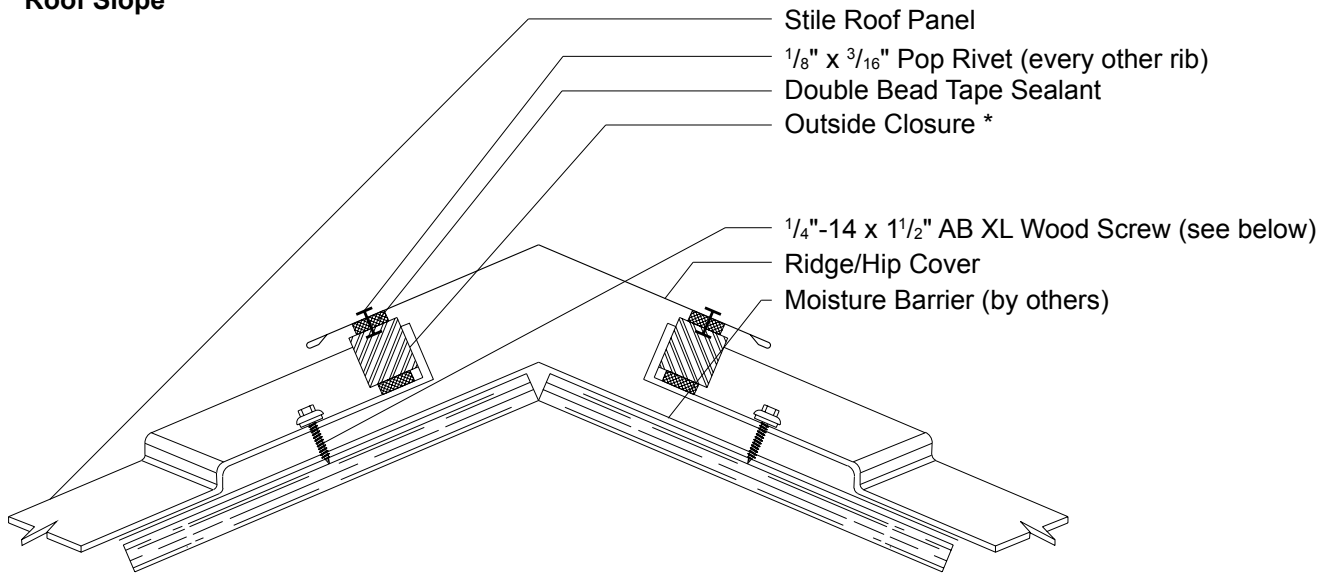
**3:12 Minimum
Roof Slope**



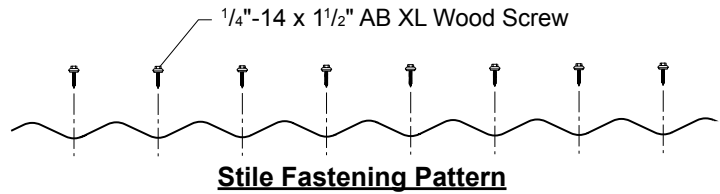
Stile Fastening Pattern

STILE® RIDGE/HIP DETAIL

3:12 Minimum
Roof Slope

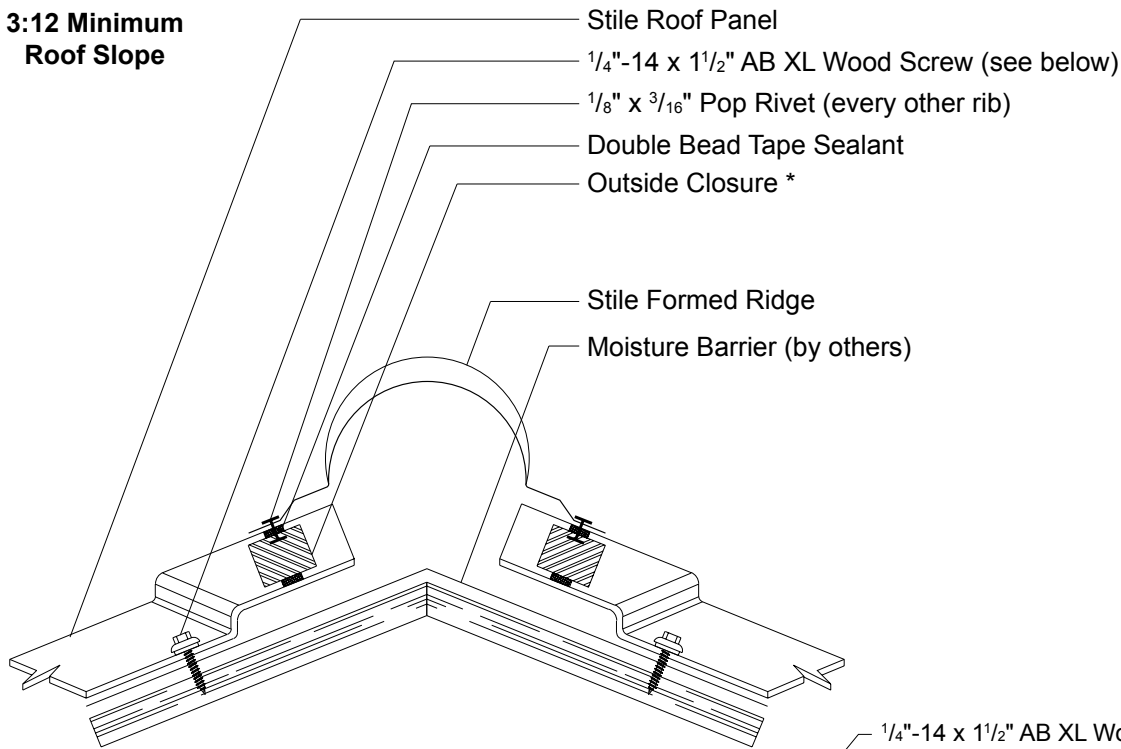


* For Ridge, use Stile Closure.
 For Hip, use Stile Hip/Valley Closure
 or Universal Closure.

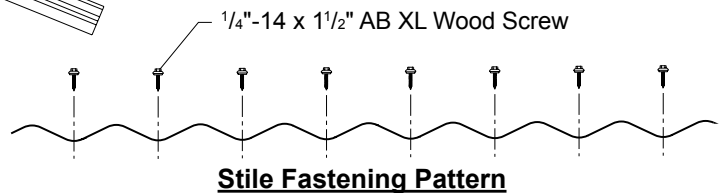


STILE FORMED RIDGE/HIP DETAIL

3:12 Minimum
Roof Slope

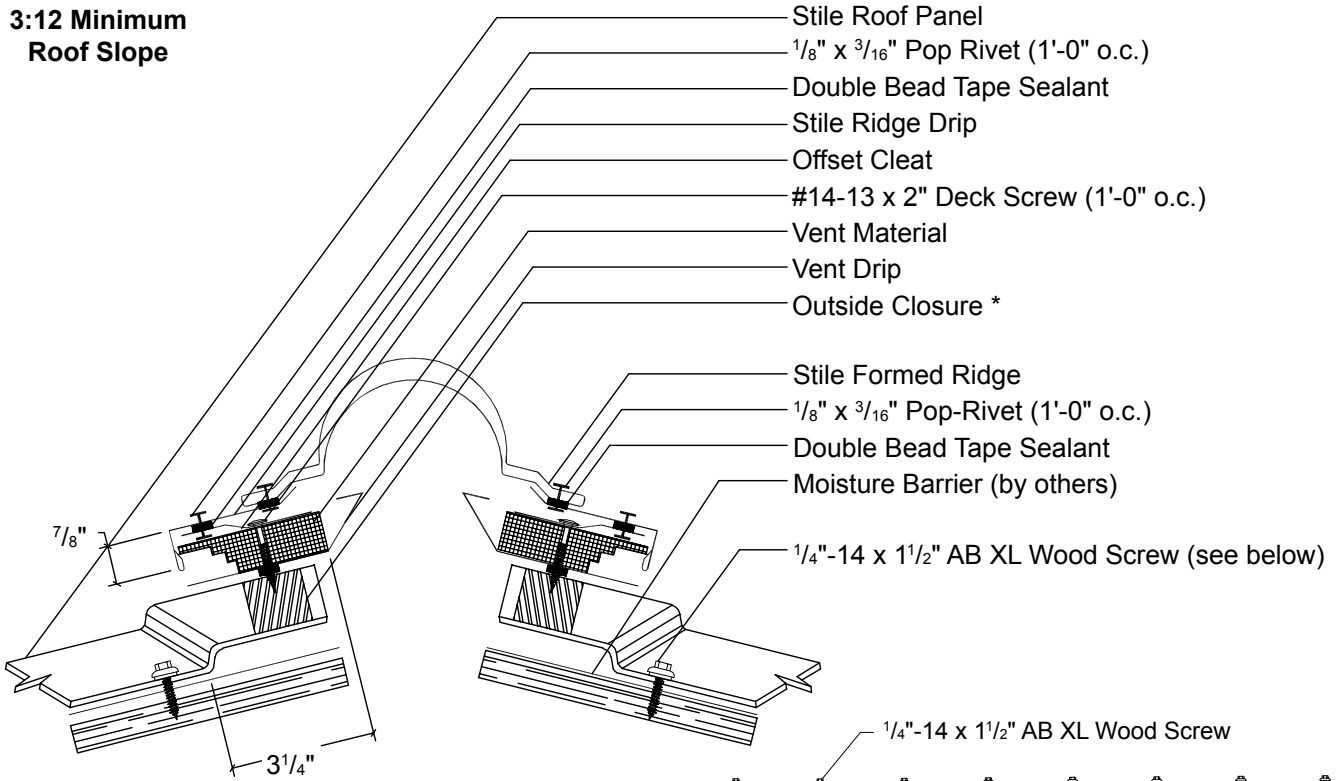


* For Ridge, use Stile Closure.
 For Hip, use Stile Hip/Valley Closure
 or Universal Closure.

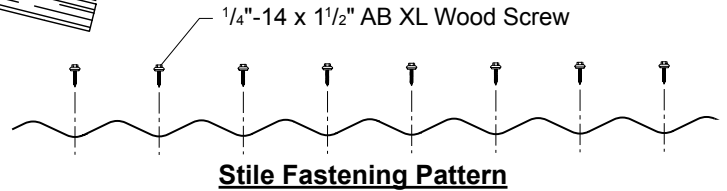


STILE® VENTED FORMED RIDGE DETAIL

**3:12 Minimum
Roof Slope**



* For Ridge, use Stile Closure.
For Hip, use Stile Hip/Valley Closure
or Universal Closure.



STILE ROOF VENT DETAIL

**3:12 Minimum
Roof Slope**

