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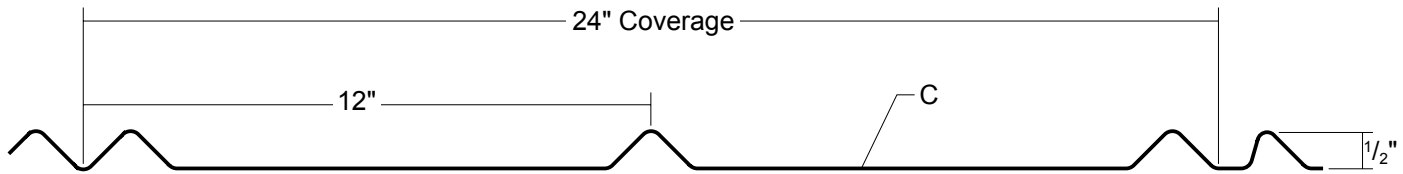
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5V-CRIMP PANEL OVERVIEW

PANEL PROFILE



SLOPE

The minimum recommended slope for any 5V-Crimp roofing 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. **Please note that 5V-Crimp panels are not recommended for use over open framing.**

COVERAGE

5V-Crimp is available in 24" width with a $\frac{1}{2}$ " rib height.

LENGTH

Lengths under 5'-0" are available with some cutting restrictions. Maximum recommended panel length is 45'-0". Longer panels require additional consideration in packaging, shipping and erection. Please consult your Metal Sales branch for recommendations (see PGI-2 and PGI-3 for locations).

AVAILABILITY

26 Gauge standard, 24 gauge optional

APPLICATION

Architectural and Residential Panel

PERFORMANCE TEST

UL 580, UL 790, UL 263, UL 2218, Miami-Dade County, FLorida approval and TDI Evaluation Report

FASTENING SYSTEM

Direct Fastened (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 and 24 gauge steel: Grade 50 per ASTM A 792
Optional material: 0.032" aluminum

FINISH

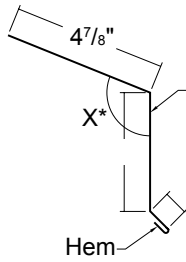
- ▶ *Acrylic Coated Galvalume® (ACG), AZ55 per ASTM A 792
- ▶ Prepainted Galvalume®, AZ50 per ASTM A 792
- ▶ MS Colorfast45®
- ▶ **PVDF

* Differential appearance of Acrylic Coated Galvalume® roofing materials is not a cause for rejection.

** Meets both Kynar 500® and Hylar 5000® specifications.

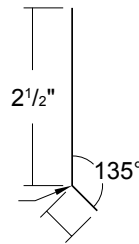
5V-CRIMP FLASHING PROFILES

EAVE



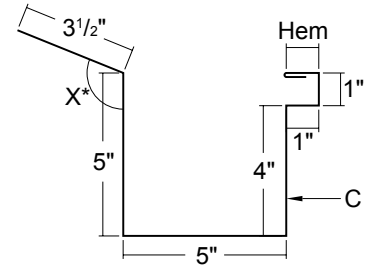
Length 10'-2" - *Specify Slope Angle

CLEAT



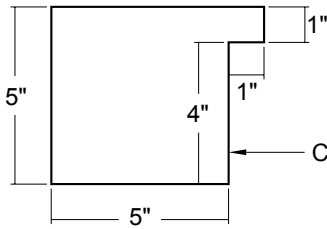
Length 10'-2"

BOX GUTTER

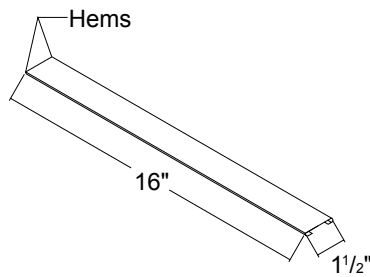


Lengths 10'-2" and 20'-3" *Specify Slope Angle

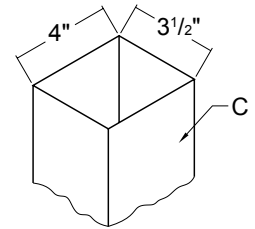
BOX GUTTER END



UNIVERSAL GUTTER/ DOWNSPOUT STRAP

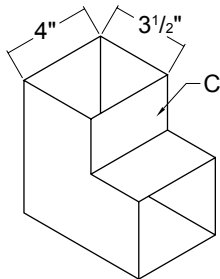


4" x 3 1/2" DOWNSPOUT



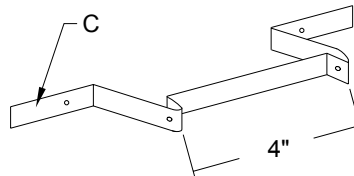
Lengths 10'-2" and 20'-3" (6" x 4" is also available)

4" x 3 1/2" 95° ELBOW



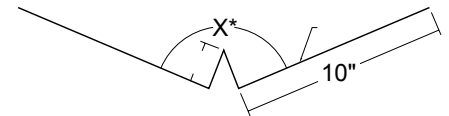
(6" x 4" is also available)

DOWNSPOUT BRACKET



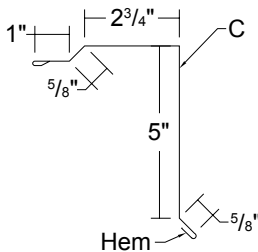
(6" is also available)

VALLEY



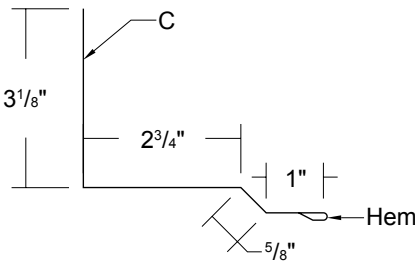
Lengths 10'-2" and 20'-3" *Specify Slope Angle

5V-CRIMP RAKE



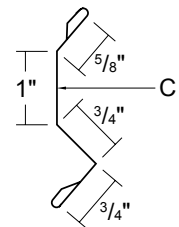
Lengths 10'-2" and 20'-3"

5V-CRIMP RAKEWALL



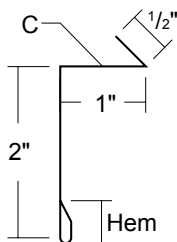
Length 10'-2"

COUNTER FLASHING



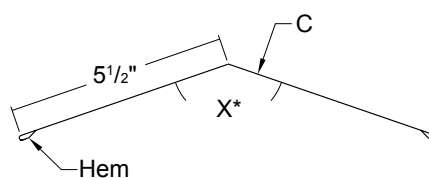
Length 10'-2"

REGLET FLASHING



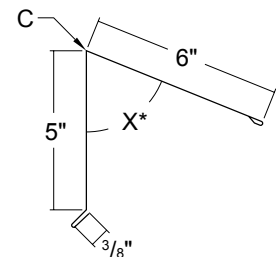
Length 10'-2"

11" RIDGE/HIP COVER



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

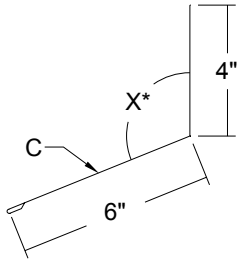
PEAK



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

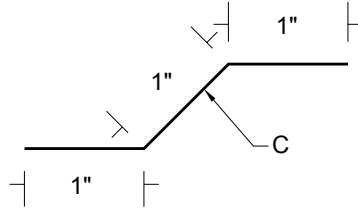
5V-CRIMP FLASHING PROFILES (CONT.) / ACCESSORY PROFILES

PITCH BREAK



Length 10'-2" - *Specify Slope Angle

5V-CRIMP Z-CLOSURE

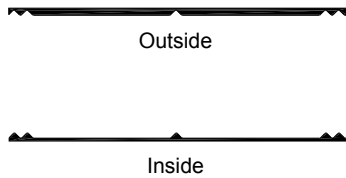


Length 10'-2"

C- Indicates color side of flashing.

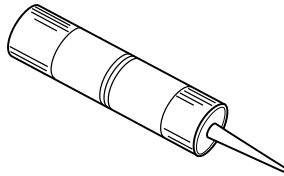
5V-CRIMP ACCESSORY PROFILES

5V-CRIMP CLOSURES



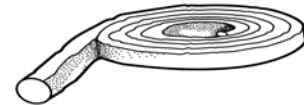
1" x 2'-0" Polyethylene Foam

TUBE SEALANT



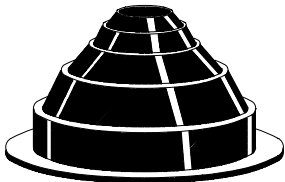
10.3 oz. Cartridge Urethane

TAPE SEALANT



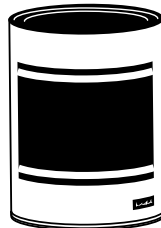
³/₈" Bead x 50' Butyl Single Bead Tape Sealant Butyl - Black

RUBBER ROOF JACK

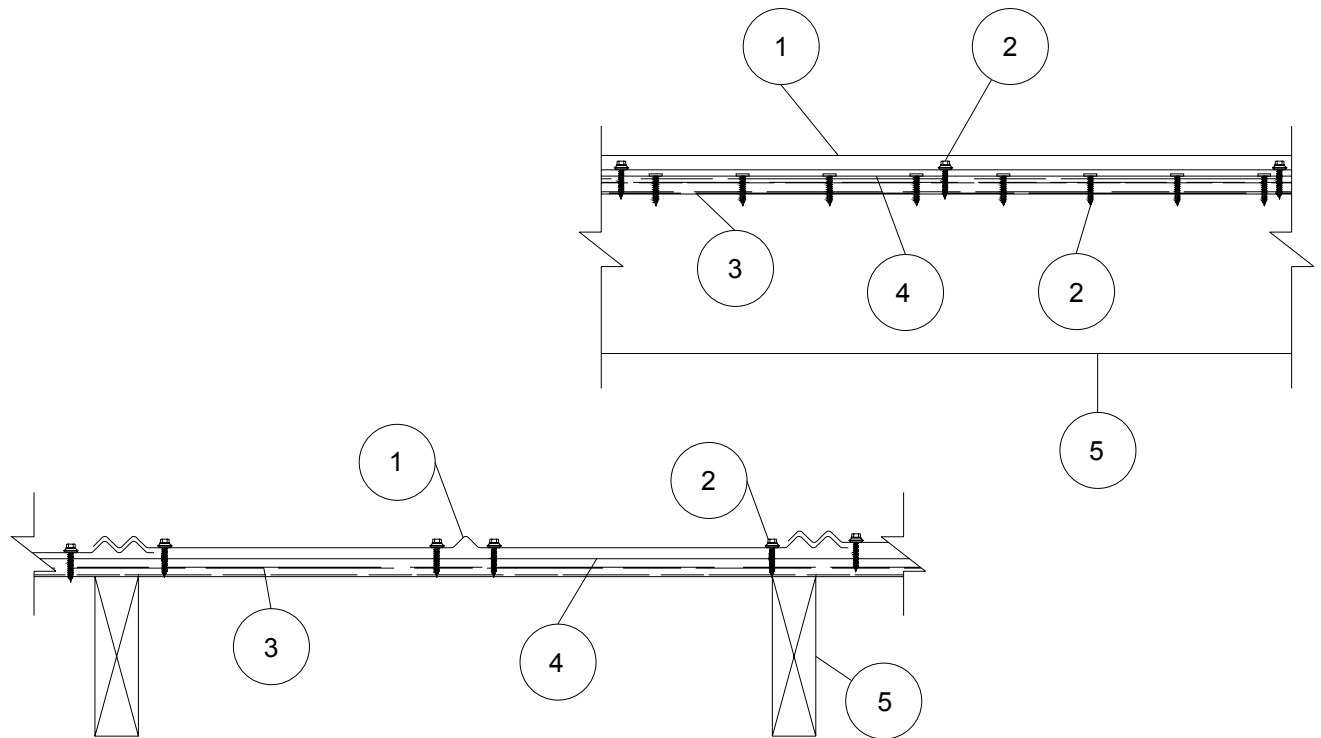


Mini (¹/₄" to ¹/₈" O.D. Pipe)
 #2 (¹/₄" to 3" O.D. Pipe)
 #4 (3" to 6" O.D. Pipe)
 #6 (6" to 9" O.D. Pipe)
 #8 (7" to 13" O.D. Pipe)

TOUCH-UP PAINT



Available in 2 oz Bottles
 PVDF / MS Colorfast45®

**5V-CRIMP****Construction No. 453**

March 13, 2001

Uplift - Class 90

Fire Not Investigated

1. Metal Roof Deck Panels* No. 26 MSG minimum coated steel. Maximum panel width 24 in. Rib height maximum 1/2 in. Panels continuous over two or more spans. A bead of sealant may be used at panel sidelaps.
METAL SALES MFG CORP - "5V Crimp"
2. Fasteners - (Screws) For panel attachment to wood deck (Item 3), fasteners to be #9-15 x 1 in. Type A, Hex-head with separate 5/8 in. OD steel washer and a bonded neoprene washer. Fastener spacing is as follows: a line of fasteners is to be installed, beginning from the center of the double V at the sidlap in 2-9-2-9 in. pattern for a total of four fasteners across the width of the panel. This fastener spacing to be 3 feet on center along the length of the panel is 3 feet on center.
For attachment of plywood deck (Item 3) to joists (Item 5), fasteners to be minimum No. 6 x 1-7/8 in. bugle head screw or annular ring-shank nails. Spacing to be 6 in. OC at plywood edges and 12 in. OC at intermediate supports.
When light gauge structural steel joists are used, fasteners to be No. 12 x 1-5/8 in. long with a Phillips head.
3. Substructure - (Plywood) Plywood decking to be a nom 5/8 in. thick, exposure sheathing span C-D, 40/20 plywood. All butt joints to be sealed against leakage by using tape and/or caulk or with one-part urethane sealant.
4. Moisture Barrier (Optional) Any suitable membrane to protect substructure (Item 3).
5. Joists Joists spaced at 2 ft , 0 in. OC; may be one of the following:
 - A. Nom 2 by 6 in. wood joists No. 2 or better.
 - B. Nom 2 by 4 in. wood when used on a top cord of a wood truss, No. 2 or better.
 - C. Light gauge structural steel framing with the member against the plywood to be a minimum No. 22 MSG coated steel.

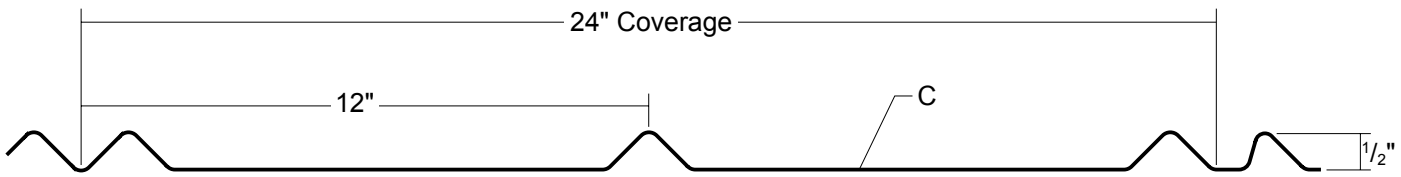
Refer to General Information, Roof Deck Construction, (Roofing Materials and Systems Directory) for Items Not Evaluated.

*Bearing the UL Classification Mark



Underwriters Laboratories Inc. ®

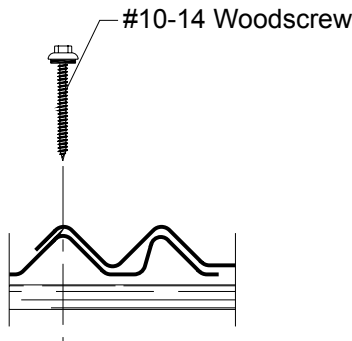
LISTED



SECTION PROPERTIES								ALLOWABLE UNIFORM LOADS psf (3 or More Equal Spans)					
Ga	Width in	Yield ksi	Weight psf	Top in Compression		Bottom in Compression		Outward / Uplift Load					
				Ixx in ⁴ /ft	Sxx in ³ /ft	Ixx in ⁴ /ft	Sxx in ³ /ft	0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"
26	24	50	0.78	0.0025	0.0070	0.0013	0.0054	101	89	60	34	22	15
24	24	50	1.02	0.0031	0.0089	0.0019	0.0072	101	89	60	34	22	15

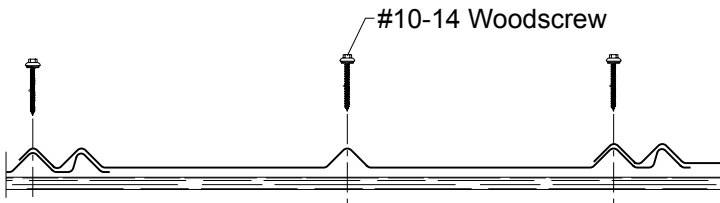
- Theoretical section properties have been calculated per AISI 2012 "Specifications for the Design of Cold-formed Steel Structural Members." Ixx and Sxx are effective section properties for deflection and bending.
- Allowable load is calculated in accordance with AISI 2012 specifications considering bending, shear, combined bending and shear and deflection. Allowable load considers the 3 or more equal span condition. Allowable load does not address web crippling, fasteners/support connection or load testing. 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

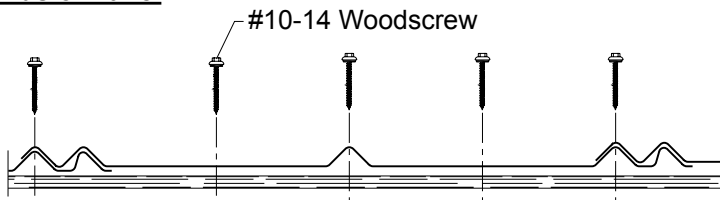


FASTENING PATTERNS

Field of Panel



Ends of Panel



*Contact Metal Sales Technical Services for Miami-Dade County attachment requirements.

GENERAL INFORMATION

► **Slope**

The minimum recommended slope for 5V-Crimp roofing 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: 5V-Crimp roof panels are not recommended for use over open structural framing.

► **Coverage**

5V-Crimp panels are available in a 1/2" rib height with a coverage width of 24".

► **Length**

Minimum factory cut length is 5'-0". Maximum recommended panel length is 45'-0". Longer panels require additional consideration in packaging, shipping, and erection. Please consult Metal Sales for recommendations.

► **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**

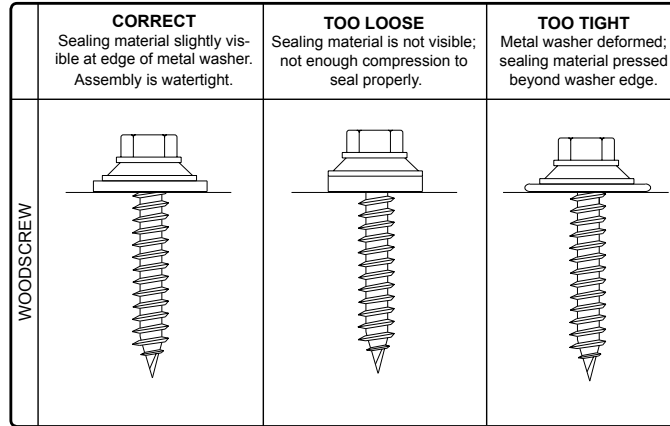
Finishes: Acrylic Coated Galvalume®, PVDF (Kynar 500®) and MS Colorfast45®

Gauges: 26ga and 24ga

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.

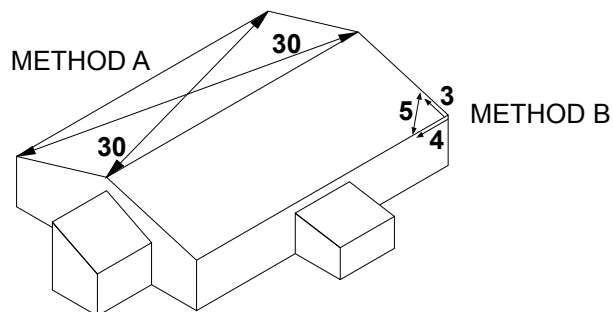
CONDITION OF SUBSTRUCTURE

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 5V-Crimp 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.

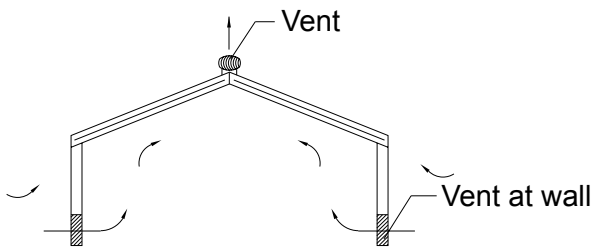


VENTILATION

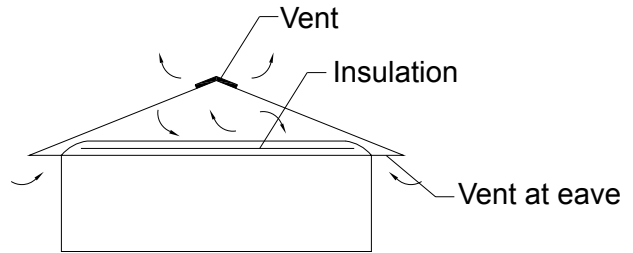
Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

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 Construction #435 for fastener spacing on the selected applications (see Fastener Selection Guide pages 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
		UL-90	26 GAUGE			
5V-Crimp	FASTENERS OVER 5/8" PLYWOOD DECK CONST. #435	UL-90	26 GAUGE	3'-0" O.C.**	#9-15 x 1" ABMP XL - PAINTED	4 FASTENERS*

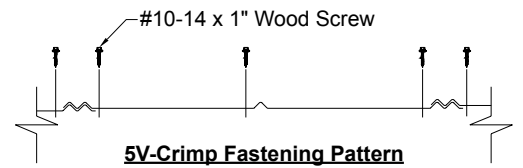
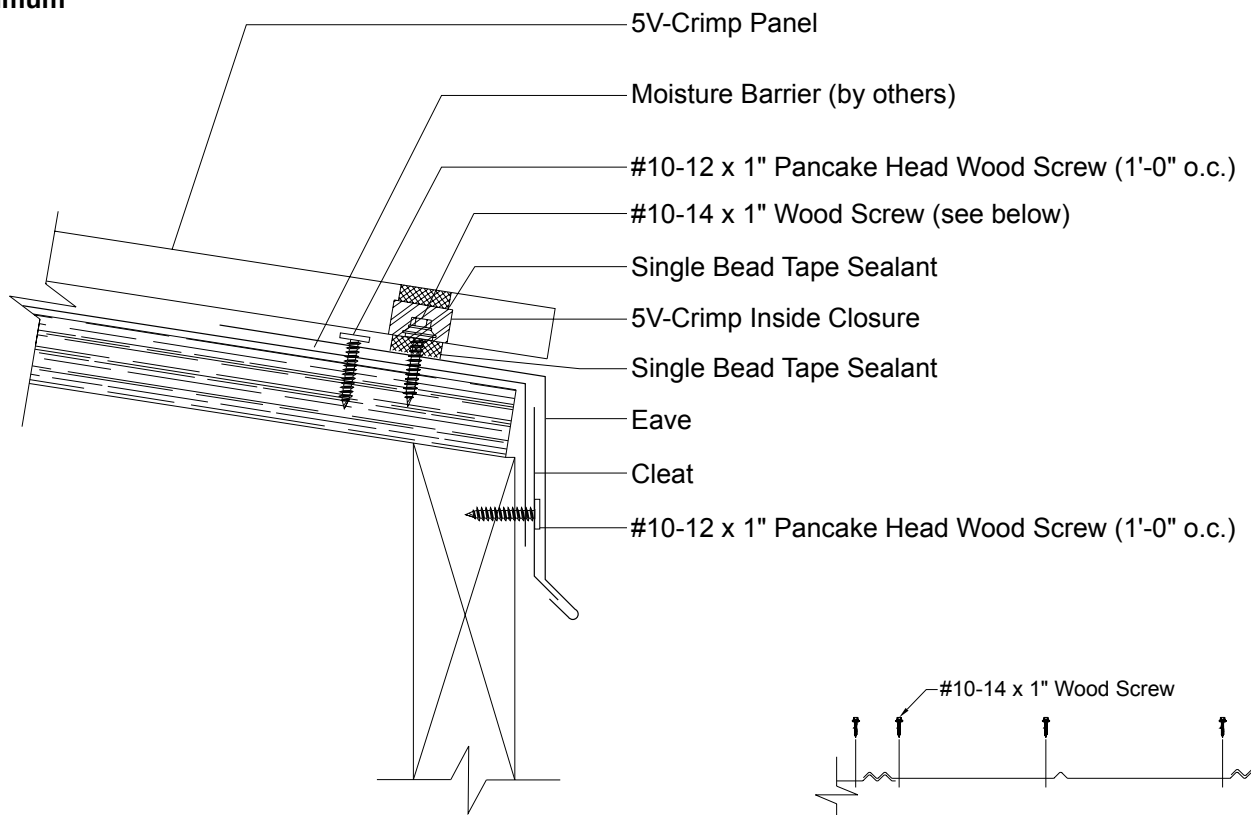
* ABMP XL Fastener also available in 1/4"-14 x 1" - Painted.

** 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 through PGI-3).

5V-CRIMP

EAVE DETAIL

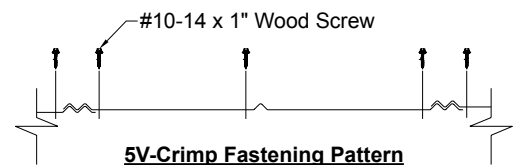
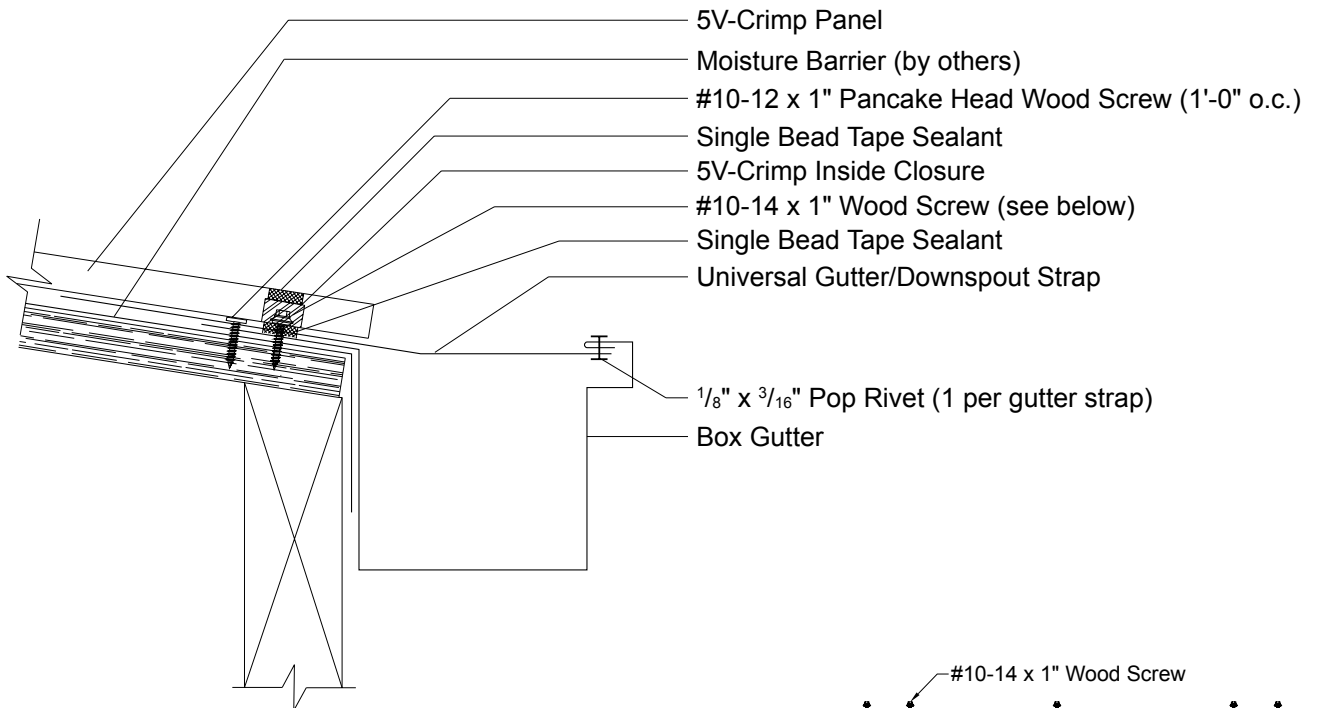
3:12 Slope
Minimum



5V-CRIMP

BOX GUTTER DETAIL

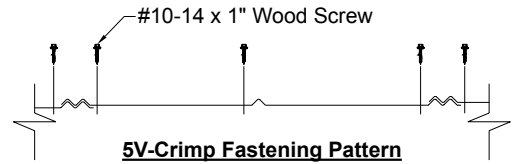
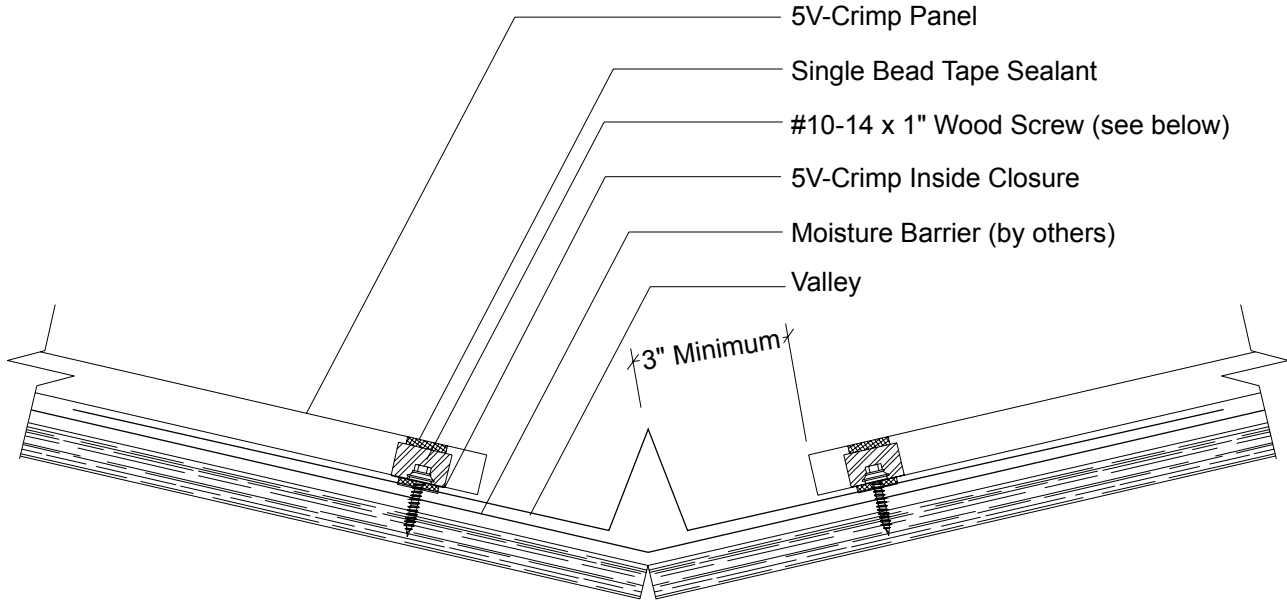
3:12 Slope
Minimum



5V-CRIMP

VALLEY DETAIL

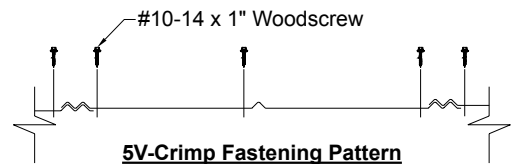
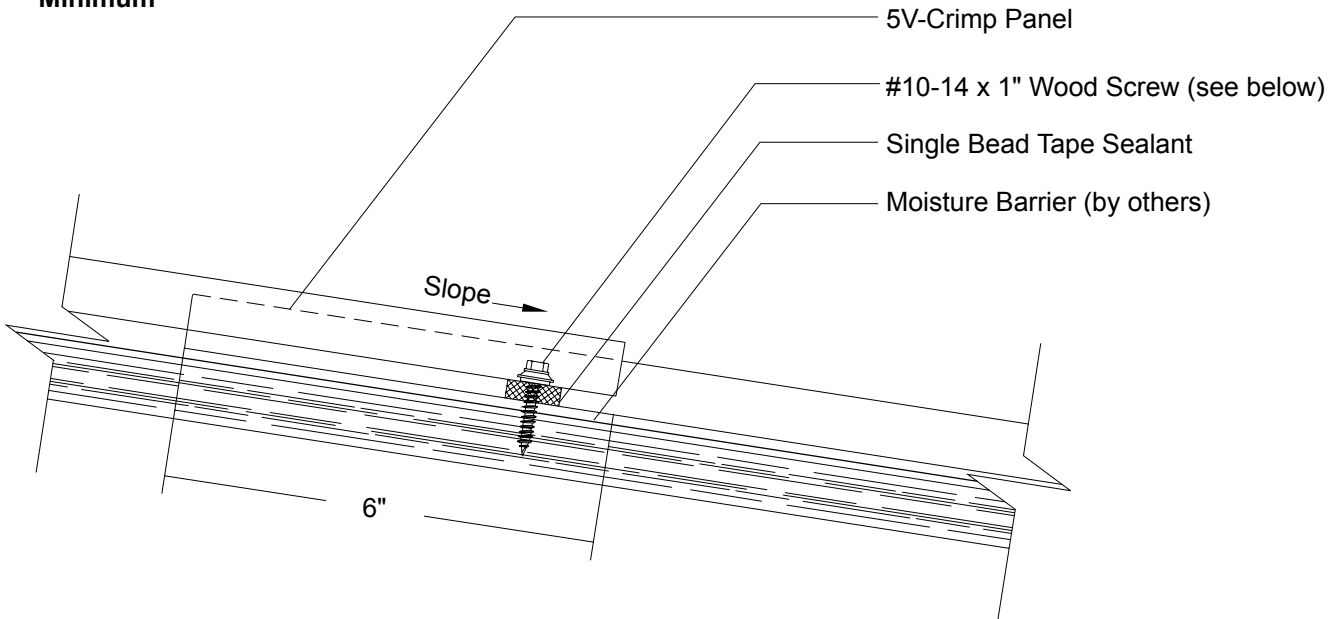
3:12 Slope
Minimum



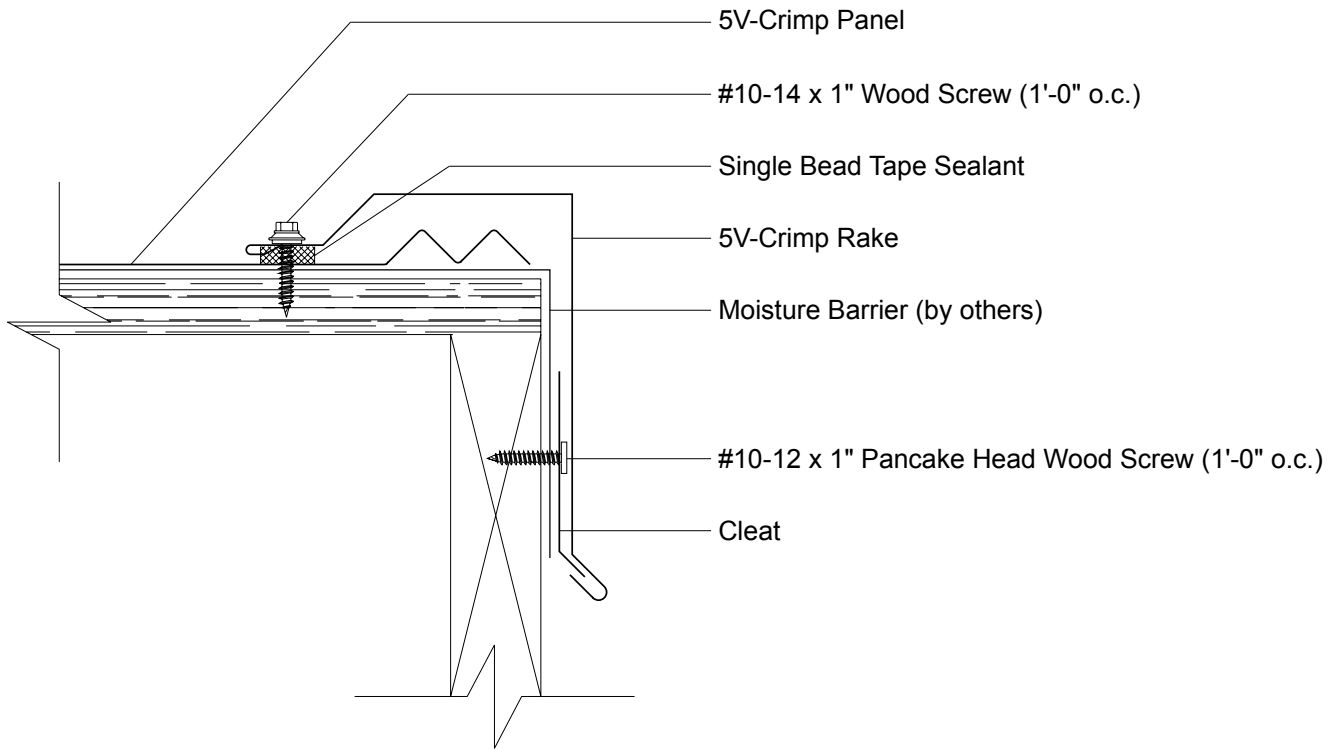
5V-CRIMP

ENDLAP DETAIL

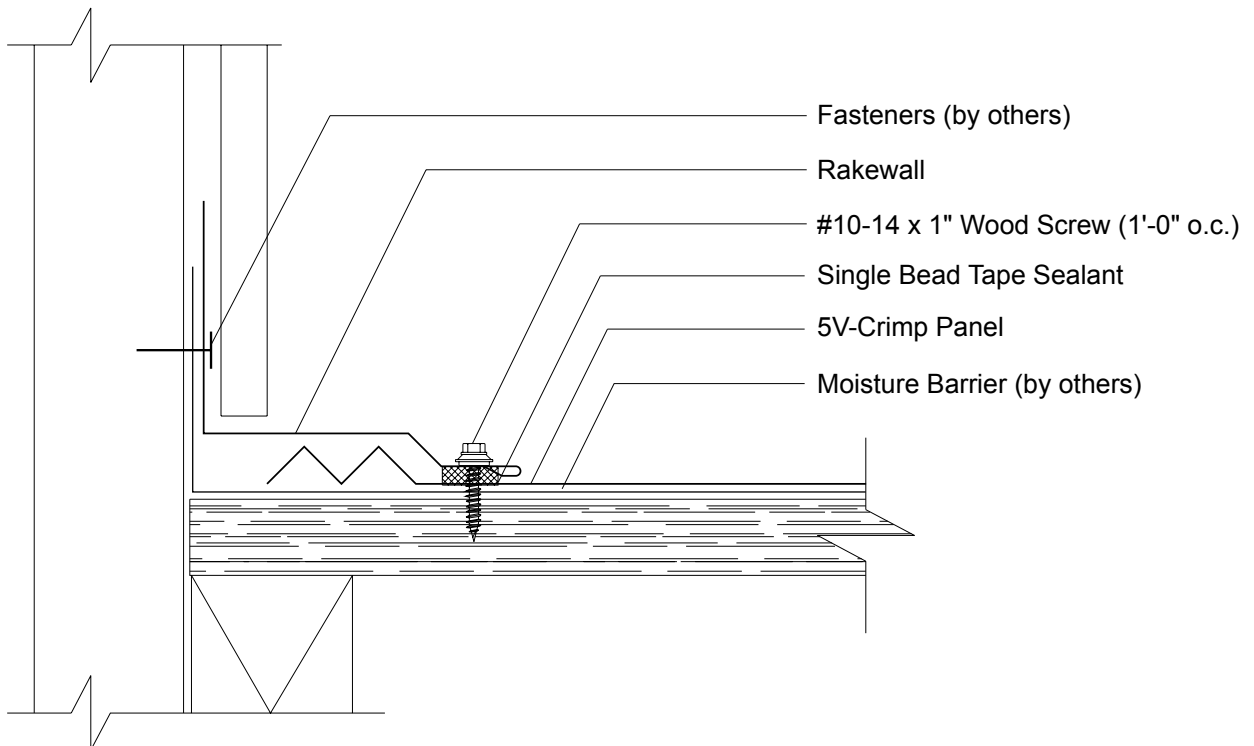
3:12 Slope
Minimum



5V-CRIMP RAKE DETAIL



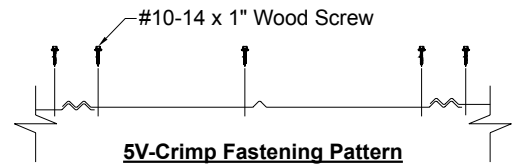
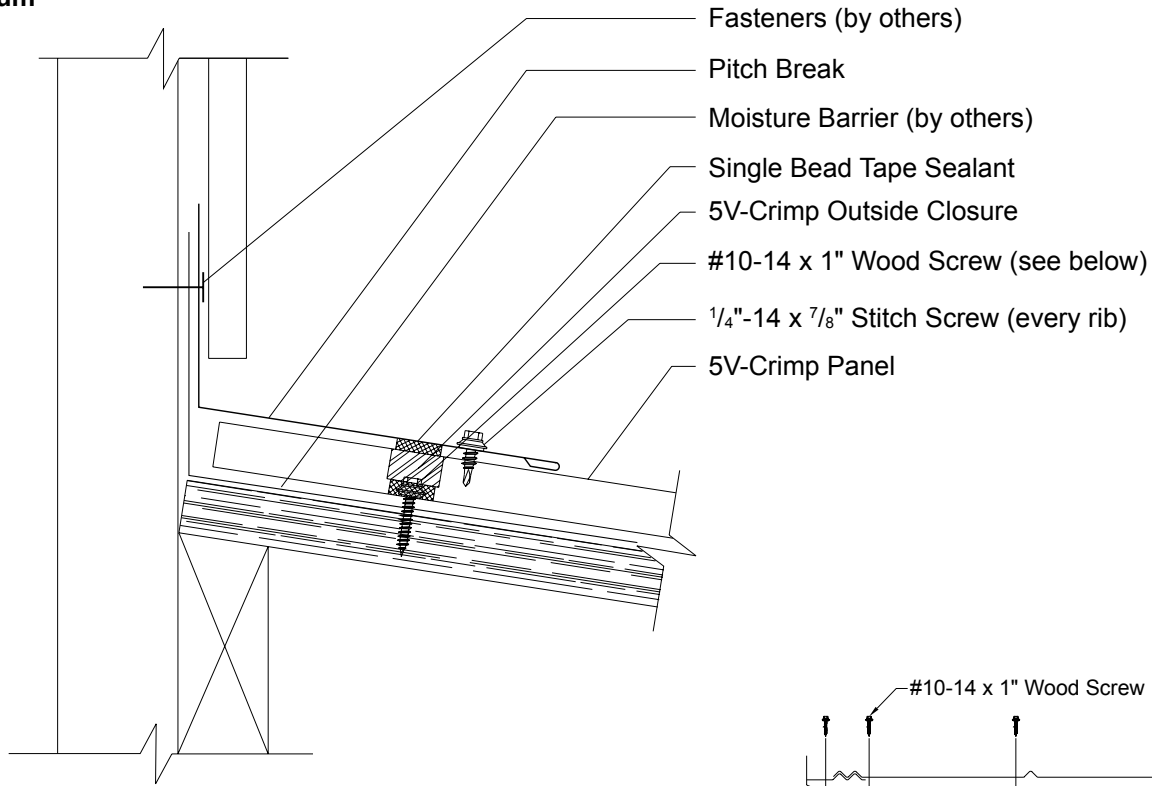
5V-CRIMP RAKEWALL DETAIL



5V-CRIMP

ENDWALL DETAIL

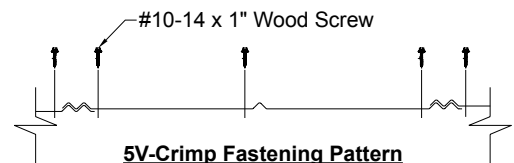
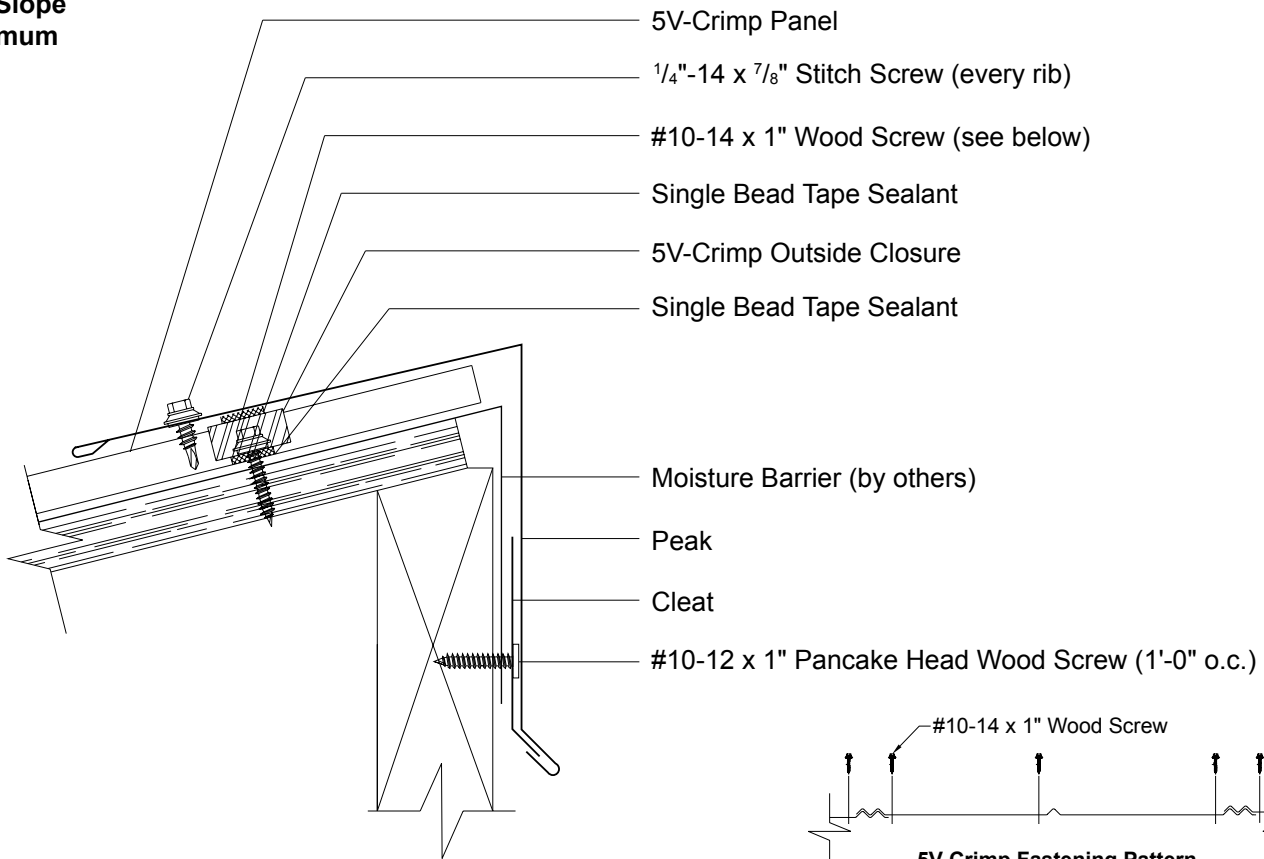
3:12 Slope
Minimum



5V-CRIMP

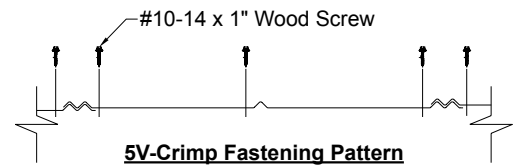
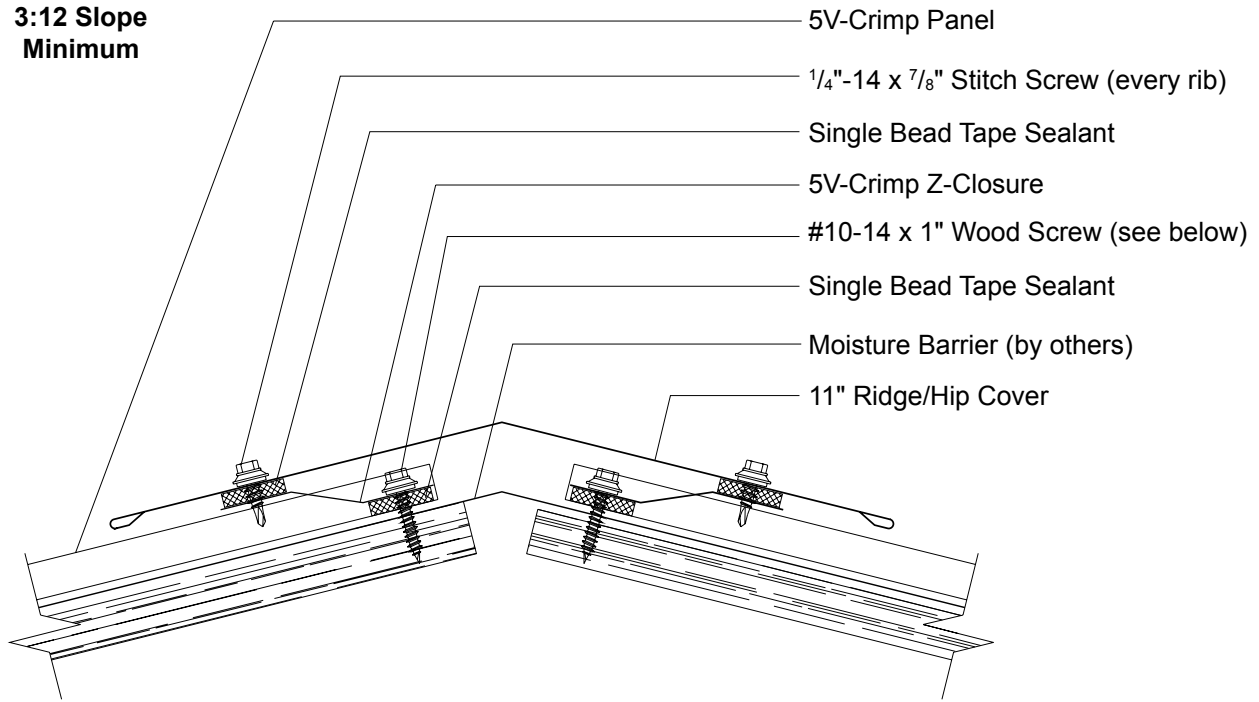
PEAK DETAIL

3:12 Slope
Minimum



5V-CRIMP HIP DETAIL

3:12 Slope
Minimum



5V-CRIMP RIDGE DETAIL

3:12 Slope
Minimum

