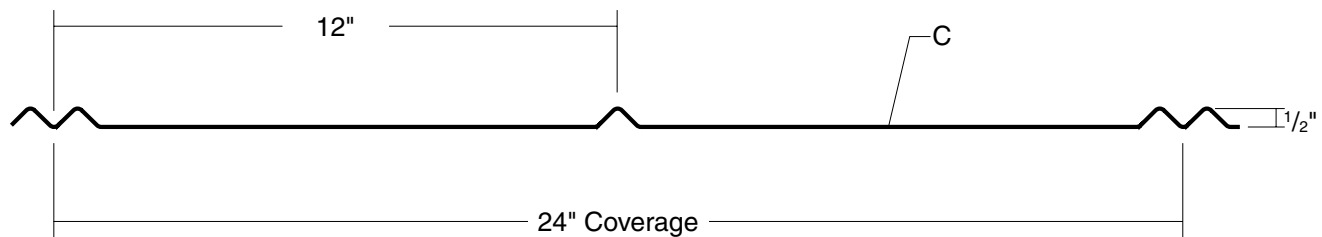


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Cleat	P5V-3
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5V-CRIMP PANEL OVERVIEW

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 3 for locations).

AVAILABILITY

26 Gauge

APPLICATION

Architectural and Residential panel.

PERFORMANCE TEST

UL 580, UL 790, UL 263, UL 2218, Miami-Dade County

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-12-14).

MATERIALS

Steel grade 50, per ASTM A-792

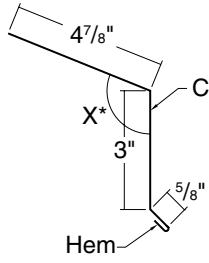
FINISH

- ▶ *Acrylic Coated Galvalume® (ACG) / ASTM A-792 - AZ55
- ▶ Prepainted Galvalume / ASTM A-792 - AZ50
- ▶ **Fluorocarbon (PVDF)

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

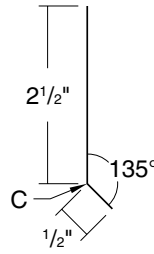
** Meets both Kynar 500 and Hylar 5000 specifications.

EAVE



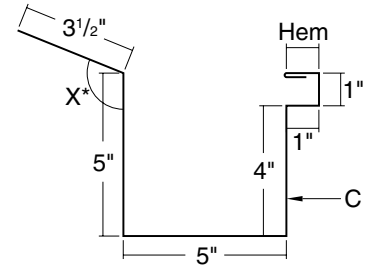
Length 10'-2" - *Specify Slope Angle

CLEAT



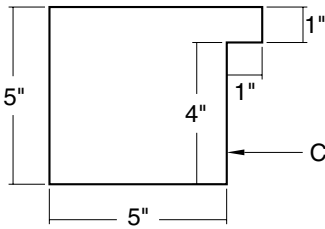
Length 10'-2"

BOX GUTTER

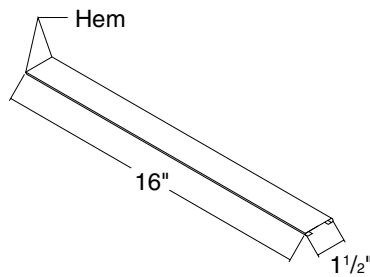


Length 10'-2", 20'-3" - *Specify Slope Angle

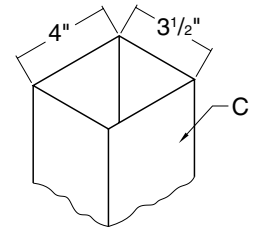
BOX GUTTER END



UNIVERSAL GUTTER/ DOWNSPOUT STRAP

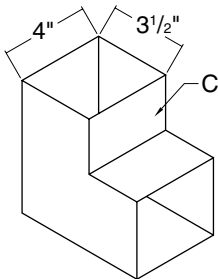


DOWNSPOUT 4" x 3 1/2"



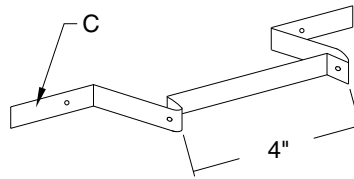
Length 10'-2", 20'-3" (Also available 6" x 4")

95° ELBOW 4" x 3 1/2"



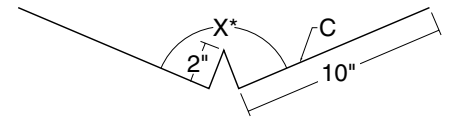
(Also available 6" x 4")

DOWNSPOUT BRACKET



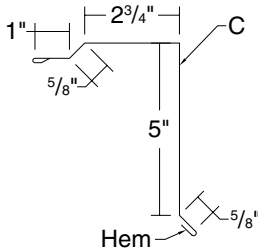
(Also available 6")

VALLEY



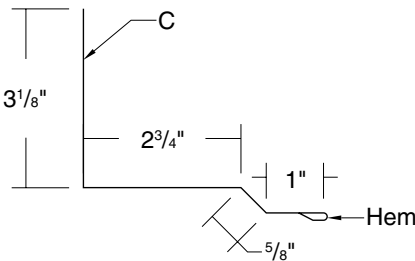
Length 10'-2", 20'-3" - *Specify Slope Angle

5V-CRIMP RAKE



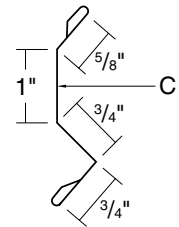
Length 10'-2", 20'-3"

5V-CRIMP RAKEWALL



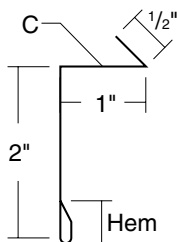
Length 10'-2"

COUNTER FLASHING



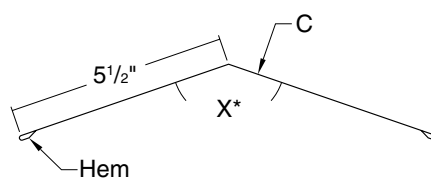
Length 10'-2"

REGLET FLASHING



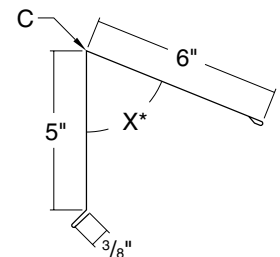
Length 10'-2"

11" RIDGE/HIP COVER



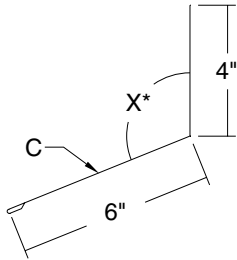
Length 10'-2", 20'-3" - *Specify Slope Angle

PEAK



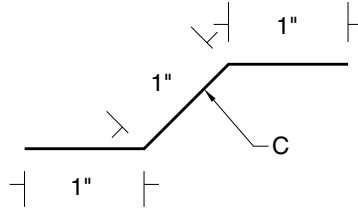
Length 10'-2", 20'-3" - *Specify Slope Angle

PITCH BREAK



Length 10'-2" - *Specify Slope Angle

5V-CRIMP Z-CLOSURE



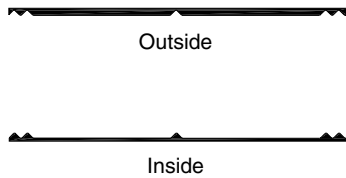
Length 10'-2"

C- Indicates color side of flashing.

5V-CRIMP

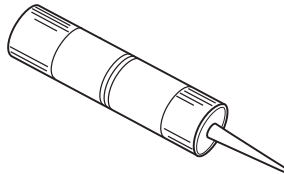
ACCESSORY PROFILES

5V-CRIMP CLOSURES



1" x 2'-0" Polyethylene Foam

TUBE SEALANT



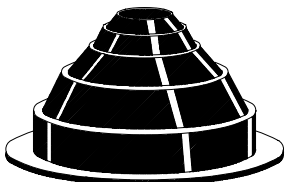
10.3 oz. Cartridge Urethane

TAPE SEALANT



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

RUBBER ROOF JACK

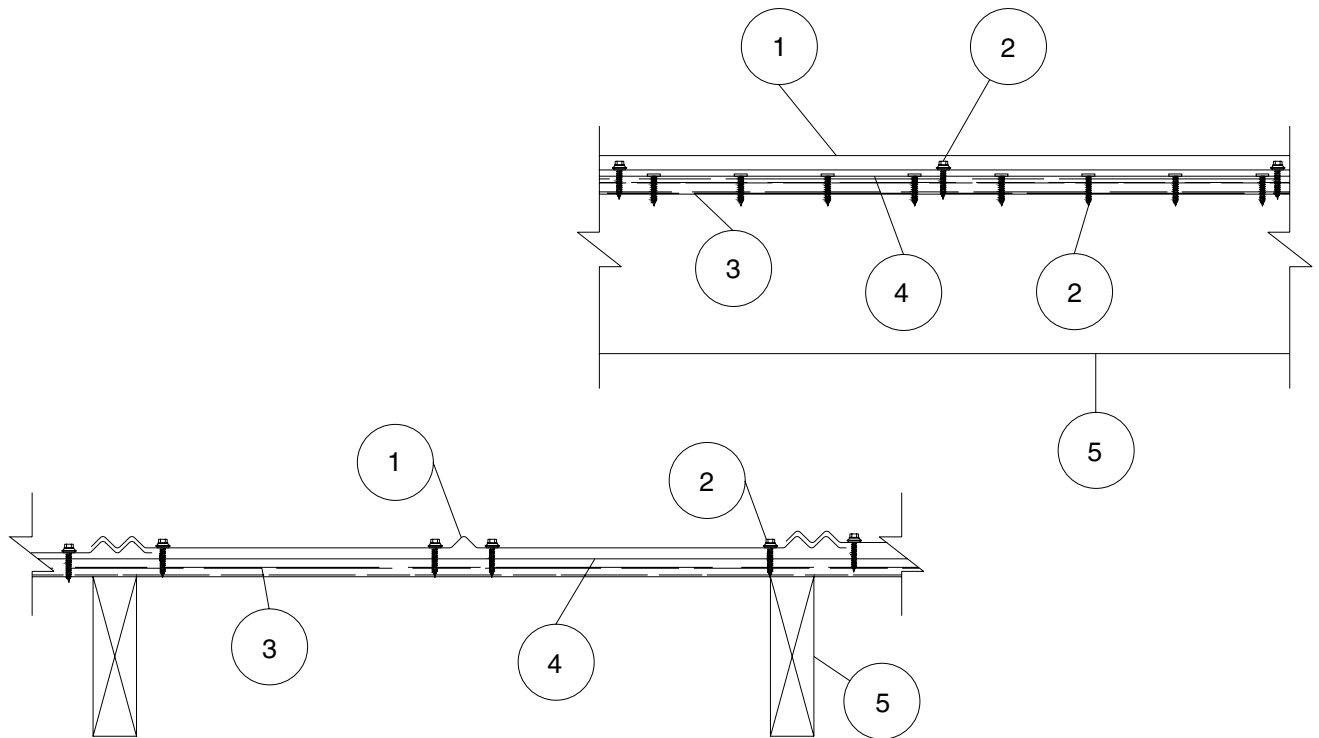


MINI (1/4" to 1 1/8" O.D. Pipe)
 #2 (1 3/4" to 3" O.D. Pipe)
 #4 (3" to 6" O.D. Pipe)
 #6 (6" to 9" O.D. Pipe)
 #8 (7" to 13" O.D. Pipe)

TOUCH-UP PAINT



Available in pints PVDF / MS CF30

**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 #14-10 x 1-1/2 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. 6x1-7/8 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. 12x1-5/8 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.

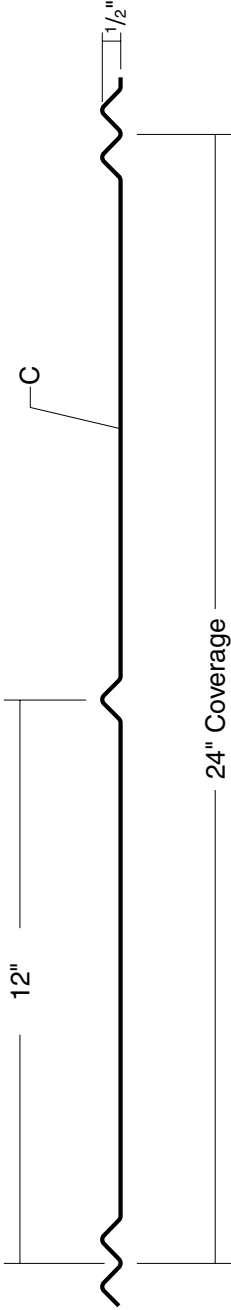
Refer to General Information, Roof Deck Construction, (Roofing Materials and Systems Directory) for Items Not Evaluated.

*Bearing the UL Classification Mark



Underwriters Laboratories Inc. ®

LISTED



5V-CRIMP SECTION PROPERTIES

GAUGE	WIDTH (in)	YIELD KSI	WEIGHT PSF	TOP IN COMPRESSION ¹ :			BOTTOM IN COMPRESSION ¹ :		
				Ixx in ⁴ /ft	Sxx in ³ /ft	Ma (k-in)	Ixx in ⁴ /ft	Sxx in ³ /ft	Ma (k-in)
26	24	50	0.85	0.0025	0.0069	0.2066	0.0015	0.0054	0.162

5V-CRIMP ALLOWABLE UNIFORM LIVE LOADS PSF^{1,2,3,4}

1-Span		Inward (Gravity / Deflection) Load ^{2,4} :			Outward Uplift (Stress) Load ³ :									
GA. Width	Ksi	0.75'	1.5'	1.75'	2'	2.5'	2'	2.5'						
26	24"	50	243	137	61	41	27	14	253	142	63	46	36	23

2-Equal Spans		Inward (Gravity / Deflection) Load ^{2,4} :			Outward Uplift (Stress) Load ³ :									
GA. Width	Ksi	0.75'	1.5'	1.75'	2'	2.5'	2'	2.5'						
26	24"	50	181	104	47	35	27	17	302	175	79	59	45	29

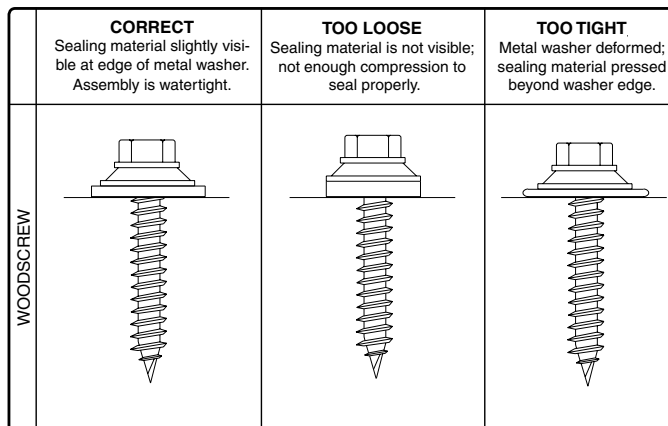
3 or more-Equal Spans		Inward (Gravity / Deflection) Load ^{2,4} :			Outward Uplift (Stress) Load ³ :									
GA. Width	Ksi	0.75'	1.5'	1.75'	2'	2.5'	2'	2.5'						
26	24"	50	209	121	55	40	31	20	345	202	92	68	52	34

- Theoretical section properties have been calculated per AISI 1996. "Specifications for the design of cold formed steel members." Ixx and Sxx are effective section properties for deflection and bending.
- Tabulated loads are allowable loads calculated in accordance with good engineering practices and with AISI 1996 specifications for bending stresses. Panel weight has not been subtracted from allowable gravity loads. Allowable load does not address web crippling requirement, or fasteners/support connection.
- Allowable loads are calculated in accordance with AISI 1996 specifications, and have been increased by 33 1/3% for wind uplift. Contact Metal Sales Technical Services Department for more information.
- Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
- Note: 5V-Crimp is not recommended for open frame construction.**

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.

Drilling through purlin overlaps - Drilling through lapped purlins requires extra care. Excessive voids between purlins sometimes damages drill points and two self-drillers might be necessary to complete the operation. It is sometimes advantageous to predrill.

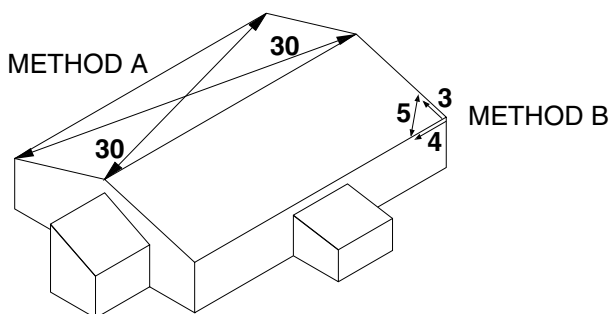
CONDITION OF SUBSTRUCTURE

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.

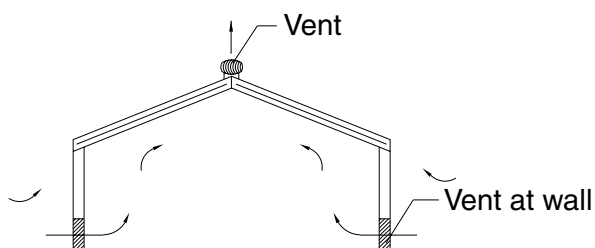


VENTILATION

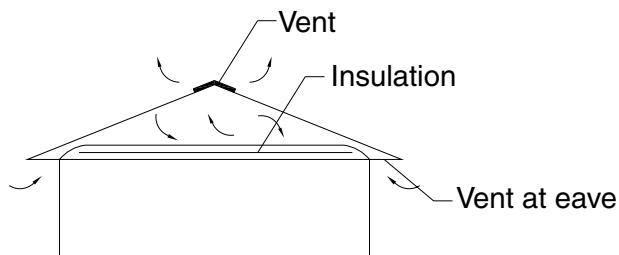
Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

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 #435 for fastener spacing on the selected applications (see Fastener Selection Guide pages PGI-12-14 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	# REQ.
		UL-90	26 GAUGE			
5V-Crimp	FASTENERS OVER 5/8" PLYWOOD DECK CONST. #435	UL-90	26 GAUGE	3'-0" O.C.**	#1/4-14 x 1 1/2" ABMP XL - PAINTED	4 FASTENERS*

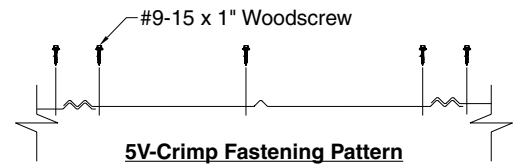
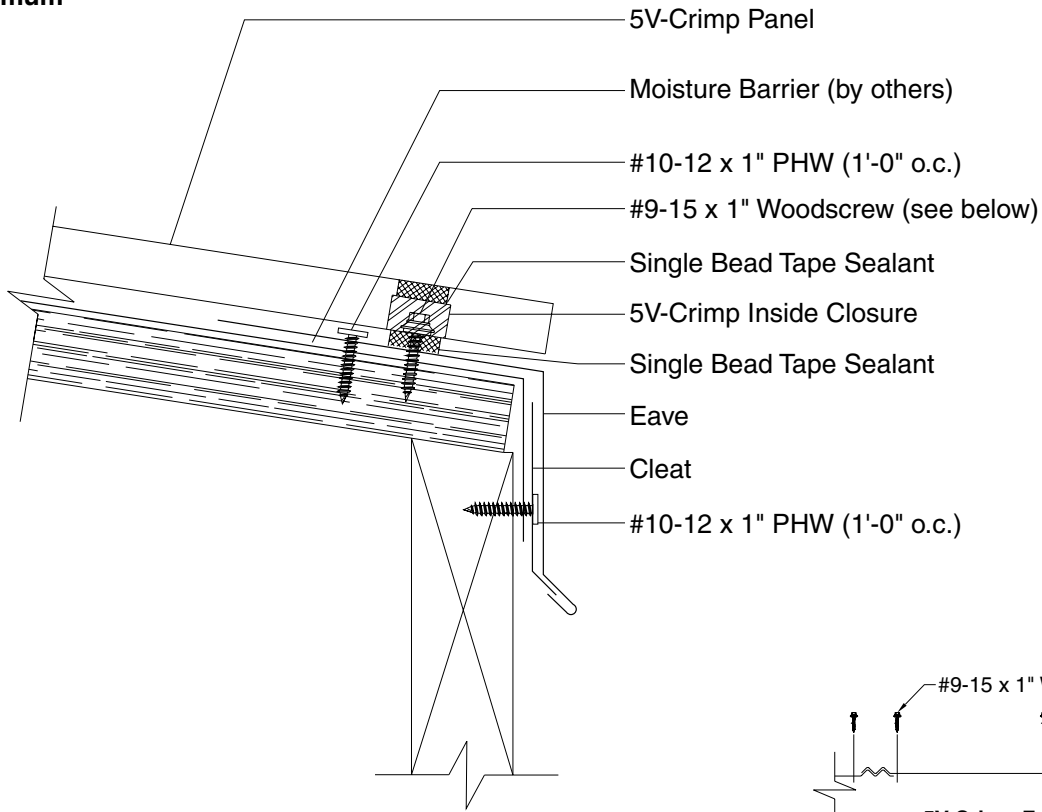
* ABMP XL Fastener also available in #1/4-14 x 1" - Painted.

** 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 PGI2 - PGI4).

5V-CRIMP

EAVE DETAIL

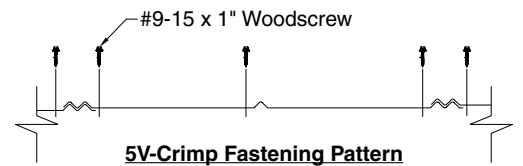
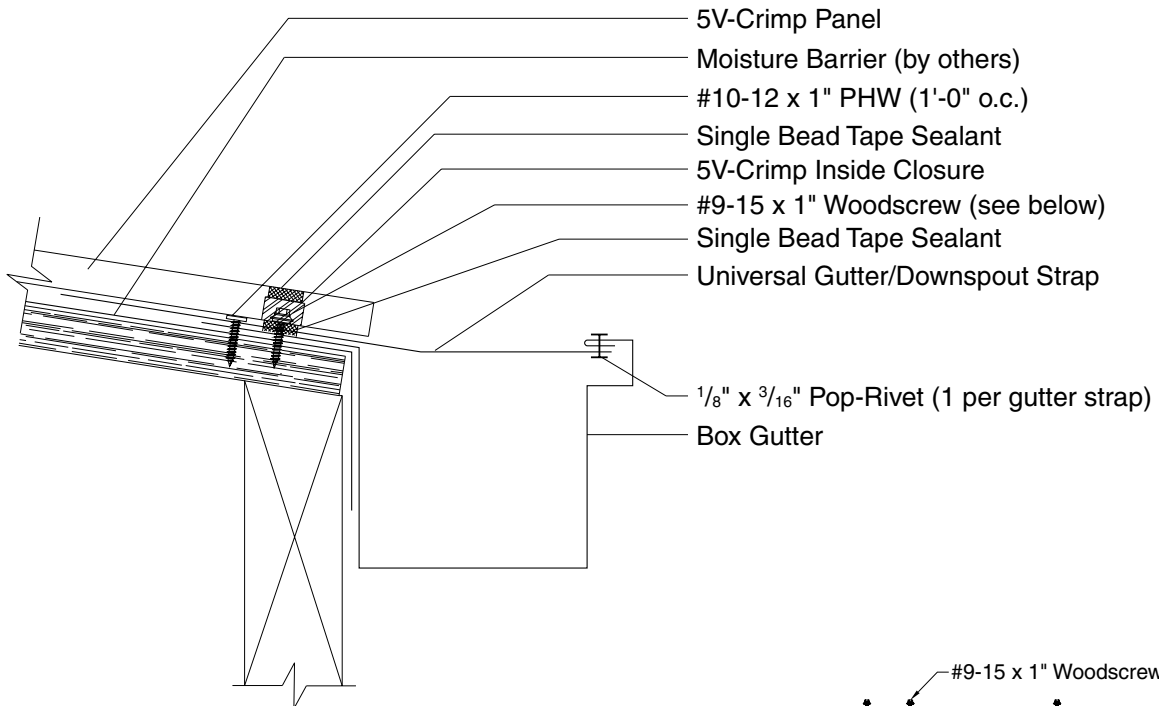
3:12 Slope
Minimum



5V-CRIMP

BOX GUTTER DETAIL

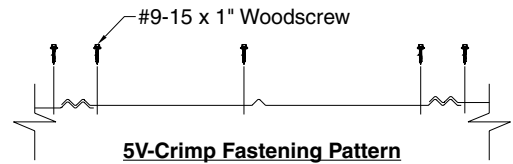
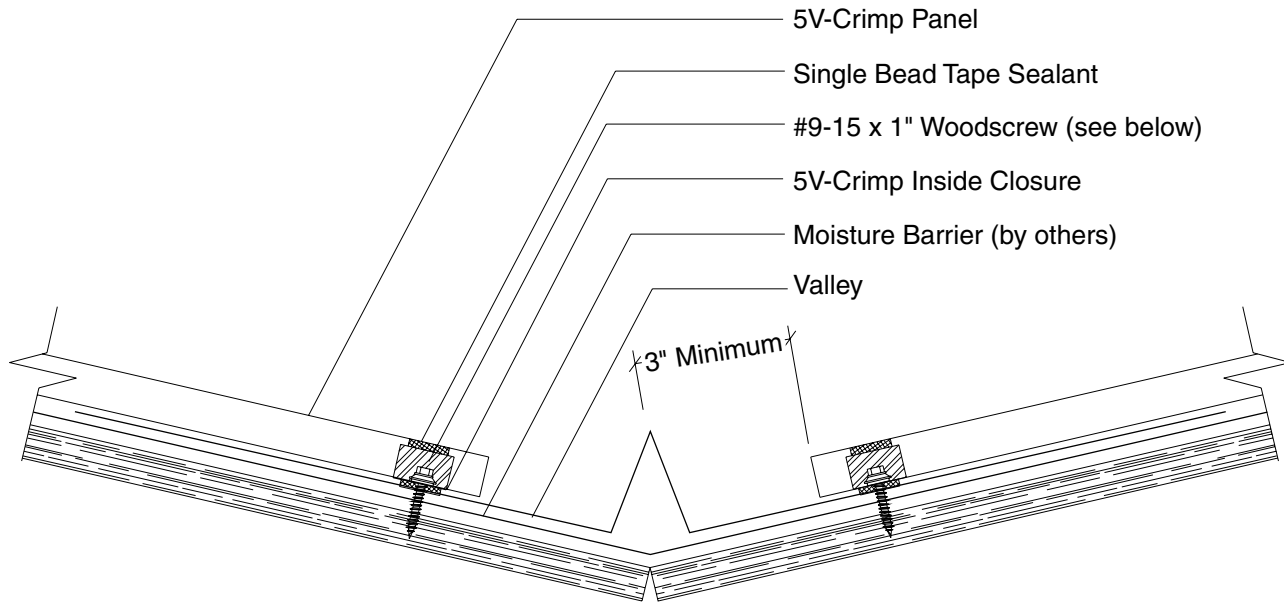
3:12 Slope
Minimum



5V-CRIMP

VALLEY DETAIL

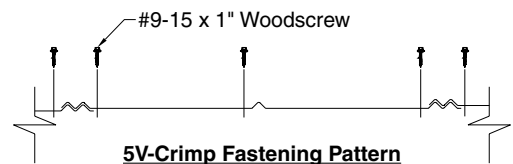
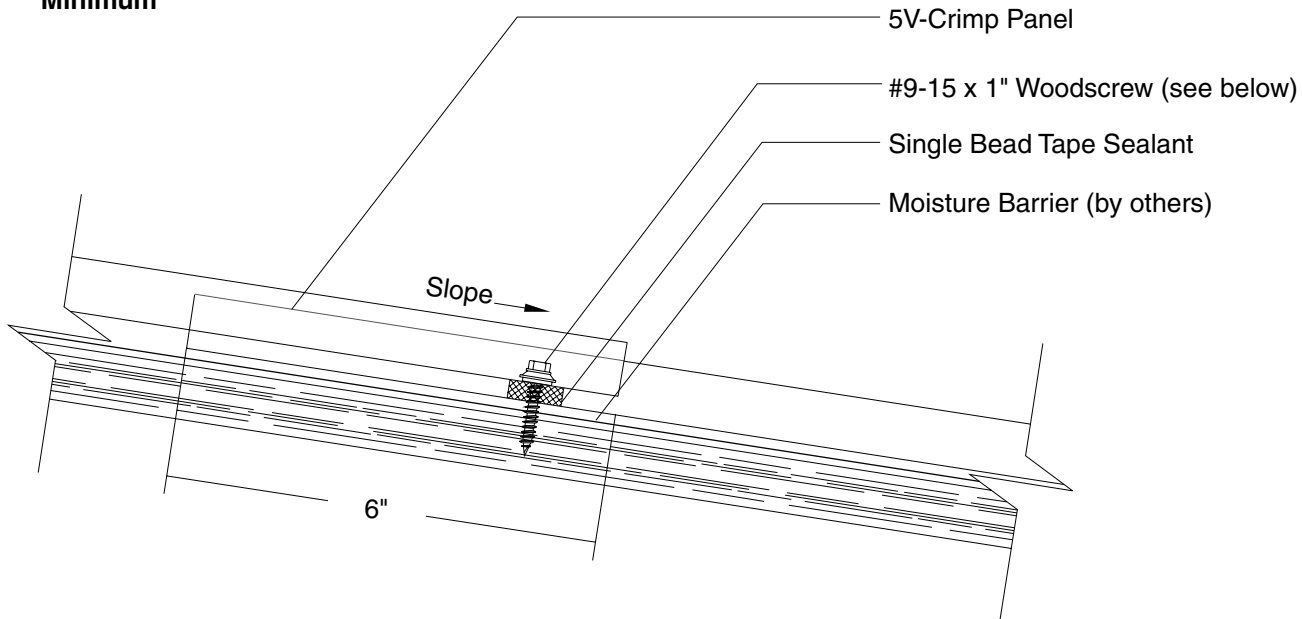
3:12 Slope
Minimum



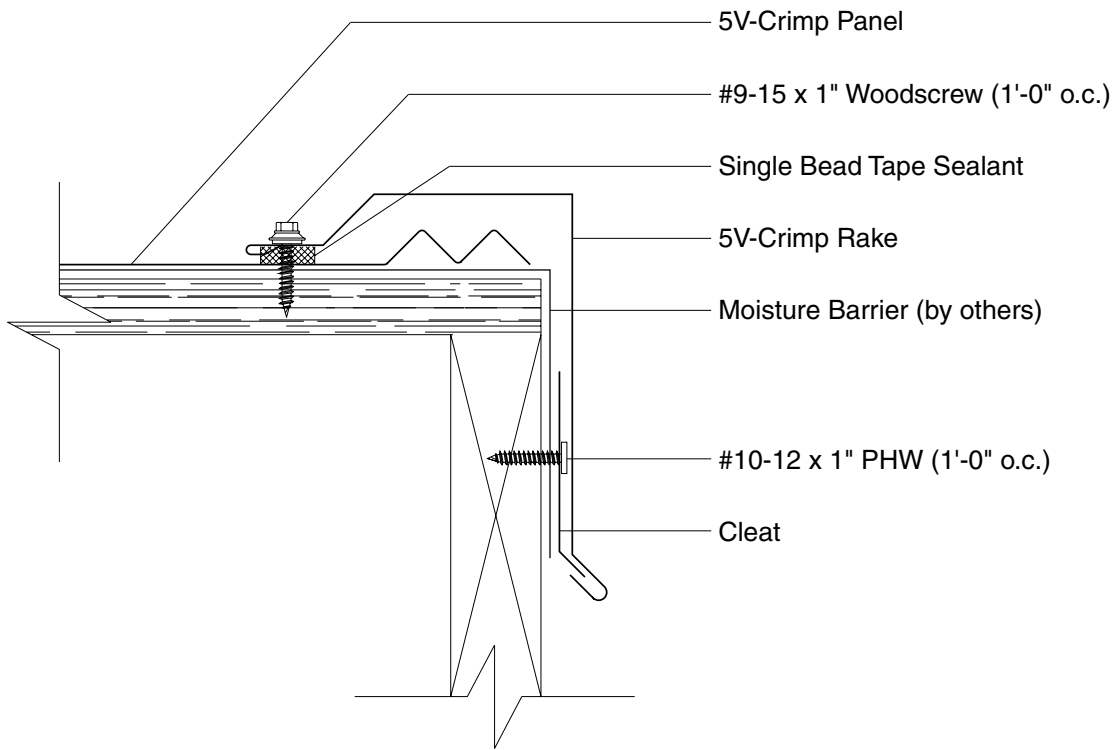
5V-CRIMP

ENDLAP DETAIL

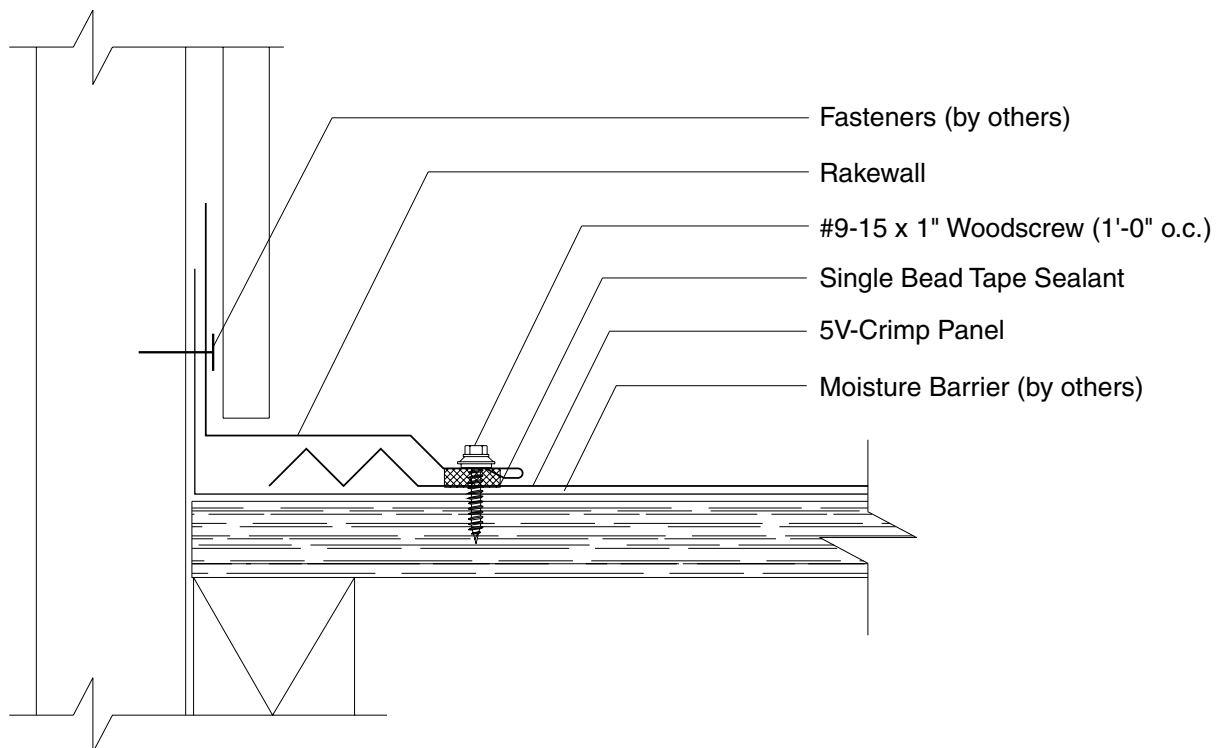
3:12 Slope
Minimum



5V-CRIMP RAKE DETAIL

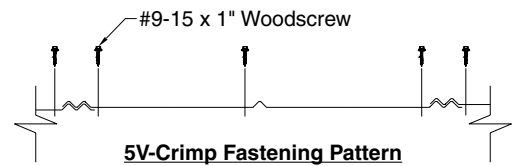
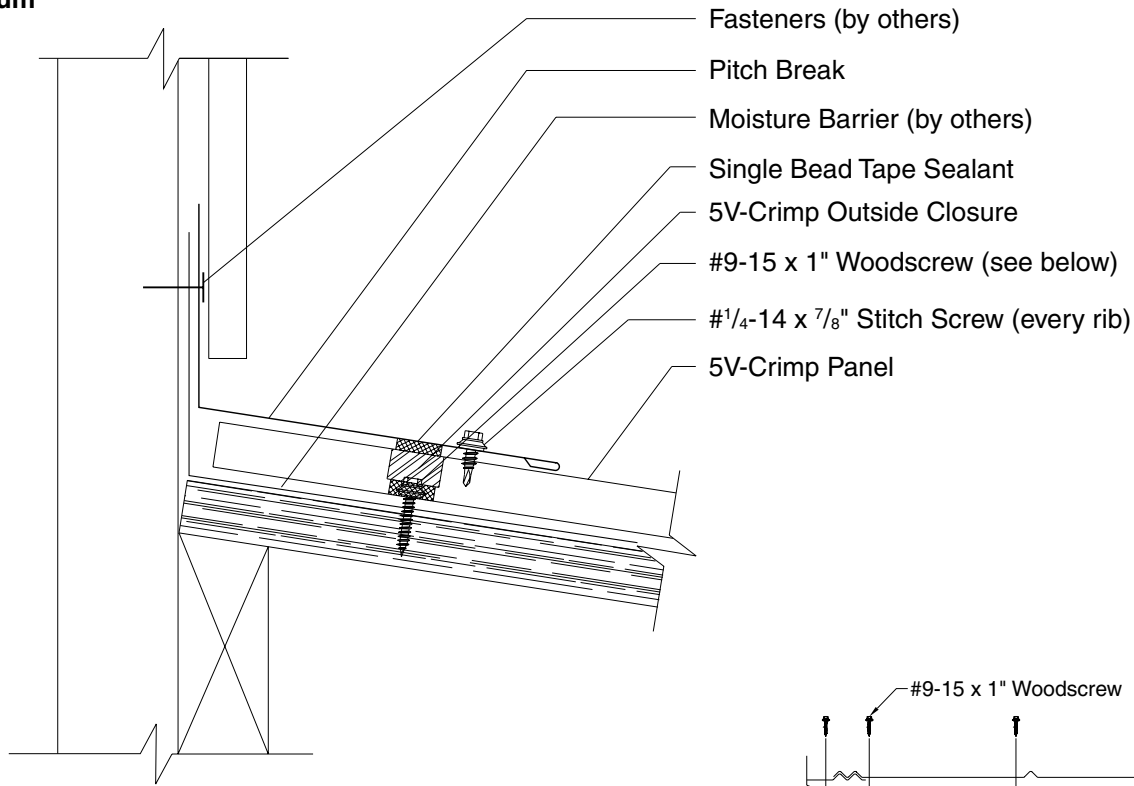


5V-CRIMP RAKEWALL DETAIL



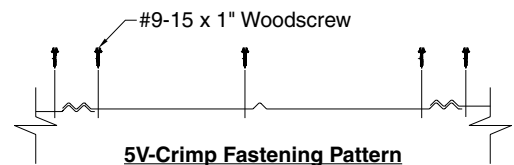
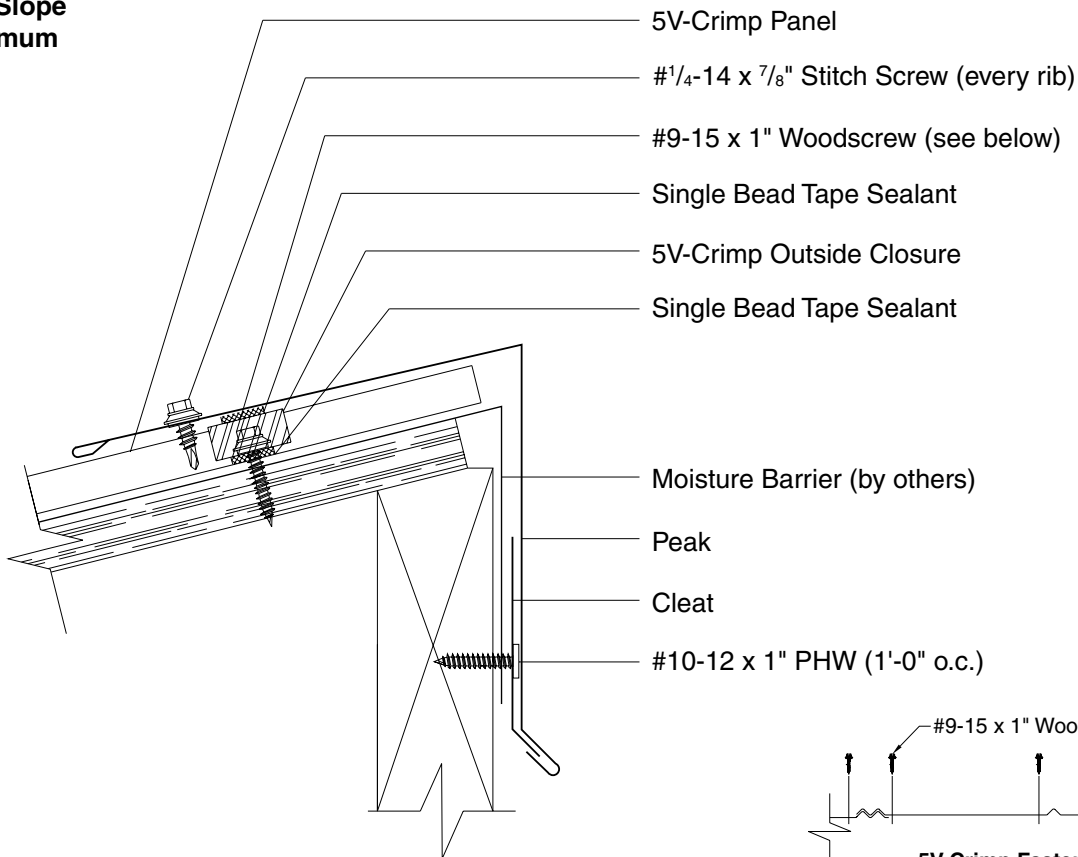
5V-CRIMP ENDWALL DETAIL

3:12 Slope
Minimum



5V-CRIMP PEAK DETAIL

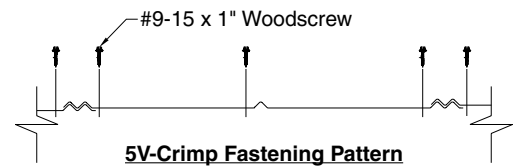
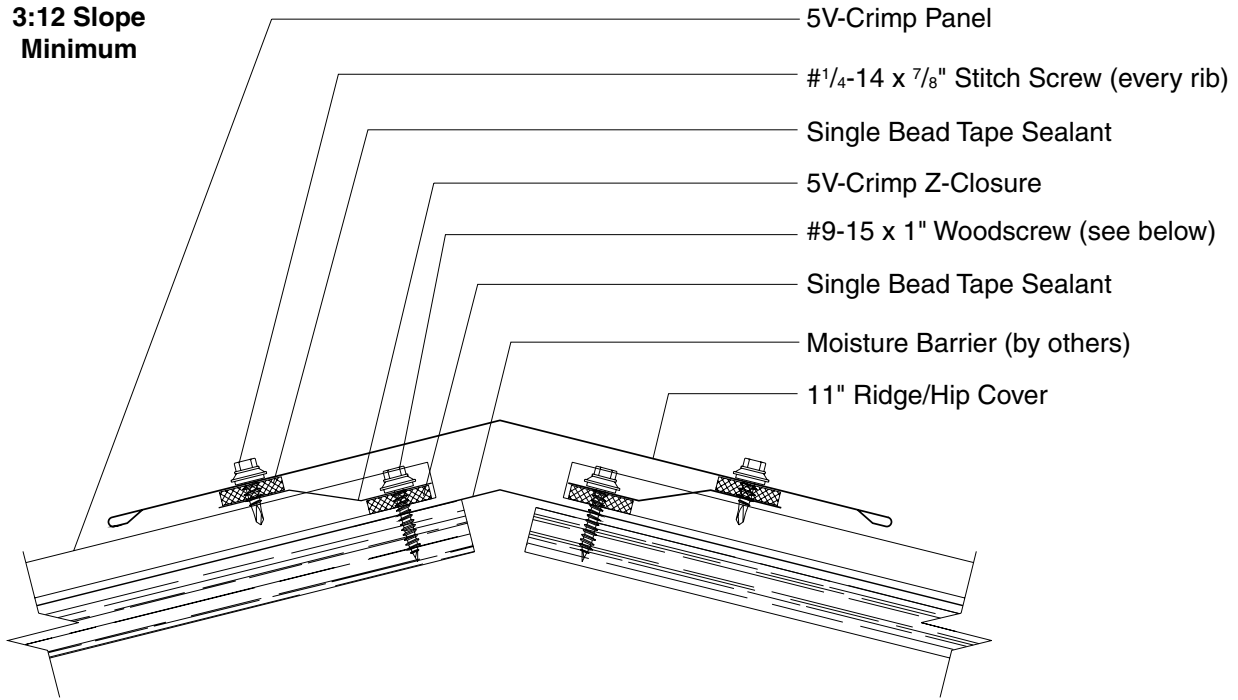
3:12 Slope
Minimum



5V-CRIMP

HIP DETAIL

3:12 Slope
Minimum



5V-CRIMP

RIDGE DETAIL

3:12 Slope
Minimum

