

Clip-Loc

Installation Guide

metal sales
manufacturing corporation



The application and detail drawings in this manual are strictly for illustration purposes and may not be applicable to all building designs or product installations. All projects should conform to applicable building codes for that particular area. It is recommended to follow all building regulations and standard industry practices.

Metal Sales Manufacturing Corporation is not responsible for the performance of the roof system if it is not installed in accordance with the suggested instructions referenced in this manual. If there is a conflict between this manual and the actual erection drawings, the erection drawings are to take precedence.

Prior to ordering and installing materials, all dimensions should be verified by field measurements.

Metal Sales reserves the right to modify, without notice, any details, recommendations or suggestions. Any questions you may have regarding proper installation of the Clip-Loc roofing system should be directed to your Metal Sales representative, see pages 2 and 3.

Consult Metal Sales for any additional information not outlined in this manual.

This manual is designed to be utilized as a guide when installing Clip-Loc roofing system. It is the responsibility of the erector to ensure the safe installation of this product system.

SAFETY

STUDY APPLICABLE OSHA AND OTHER SAFETY REQUIREMENTS BEFORE FOLLOWING THESE INSTRUCTIONS.

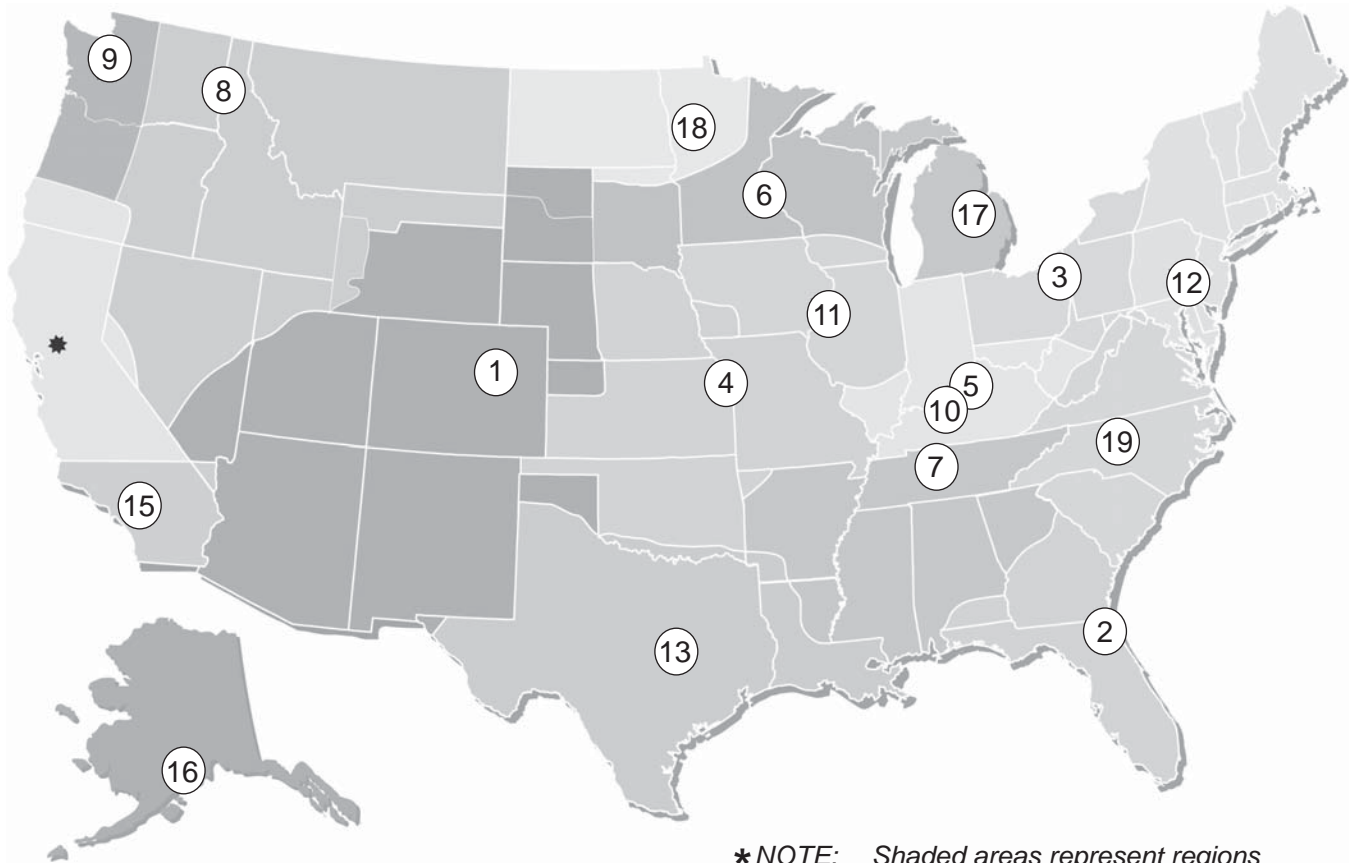
The installation of metal roof systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. **USE EXTREME CARE WHILE INSTALLING ROOF PANELS.** It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to exist. The erector of the roof system is responsible for reading these instructions and determining the safest way to install the roof system.

These instructions are provided only as a guide to show a knowledgeable, trained erector the correct parts placement one to another. If following any of the installation steps would endanger a worker, the erector should stop work and decide upon a corrective action.

Provide required safety railing, netting, or safety lines for crew members working on the roof.

Do not use the roof panel as a walking platform. The roof panels will not withstand the weight of a person standing at the edge of the panel.

Do not stand on the roof panel at the ends until the panels have been attached.



* NOTE: Shaded areas represent regions served by each location.



SELLERSBURG, INDIANA BRANCH

Metal Sales offers a complete line of metal roof, wall, and fascia panel systems for the commercial, architectural, industrial, residential, and agricultural markets. Metal Sales offers over 30 profiles with a wide selection of widths, colors, and gauges - new construction or retrofit.

1. LONGMONT BRANCH

7990 E. I-25 Frontage Rd
Longmont, CO 80504
(303) 702-5440
(800) 289-7663
(800) 289-1617 /FAX

2. JACKSONVILLE BRANCH

7110 Stuart Avenue
Jacksonville, FL 32254
(904) 783-3660
(800) 394-4419
(904) 783-9175 /FAX

3. JEFFERSON BRANCH

352 East Erie Street
Jefferson, OH 44047
(440) 576-9070
(800) 321-5833
(440) 576-9242 /FAX
(800) 233-5719 /FAX

4. INDEPENDENCE BRANCH

1306 S. Powell Road
Independence, MO 64057
(816) 796-0900
(800) 747-0012
(816) 796-0906 /FAX

5. SELLERSBURG BRANCH

7800 State Road 60
Sellersburg, IN 47172
(812) 246-1866
(800) 999-7777
(812) 246-0893 /FAX
(800) 477-9318 /FAX

6. ROGERS BRANCH

22651 Industrial Blvd.
Rogers, MN 55374
(763) 428-8080
(800) 328-9316
(763) 428-8525 /FAX
(800) 938-9119 /FAX

8. ANTIOCH BRANCH

4314 Hurricane Creek Blvd.
Antioch, TN 37013
(615) 641-7100
(800) 251-8508
(615) 641-7118 /FAX

9. SPOKANE BRANCH

East 2727 Trent Avenue
Spokane, WA 99202
(509) 536-6000
(800) 572-6565
(509) 534-4427 /FAX

10. KENT BRANCH

20213 84th Avenue, South
Kent, WA 98032
(253) 872-5750
(800) 431-3470 (outside WA)
(800) 742-7900 (inside WA)
(253) 872-2008 /FAX

11. ROCK ISLAND BRANCH

8111 West 29th Street
Rock Island, IL 61201
(309) 787-1200
(800) 747-1206
(309) 787-1833 /FAX

12. ORWIGSBURG BRANCH

29 Pinedale Industrial Rd
Orwigsburg, PA 17961
(570) 366-2020
(800) 544-2577
(570) 366-1648 /FAX
(800) 544-2574 /FAX

13. TEMPLE BRANCH

3838 North General Bruce Dr.
Temple, TX 76501
(254) 791-6650
(800) 543-4415
(254) 791-6655 /FAX
(800) 543-4473 /FAX

14. WOODLAND BRANCH

1326 Paddock Place
Woodland, CA 95776
(530) 668-5690
(800) 759-6019
(530) 668-0901 /FAX

15. FONTANA BRANCH

14213 Whittram Avenue
Fontana, CA 92335
(909) 829-8618
(800) 782-7953
(909) 829-9083 /FAX

16. ANCHORAGE BRANCH

4637 Old Seward Hwy.
Anchorage, AK 99503
(866) 640-7663
(907) 646-7663
(907) 646-7664 /FAX

17. BAY CITY BRANCH

5209 Mackinaw Rd.
Bay City, MI 48706
(866) 640-7663
(907) 646-7663
(907) 646-7664 /FAX

18. DETROIT LAKES BRANCH

1435 Egret Avenue
Detroit Lakes, MN 56501
(218) 847-2988
(888) 594-1394
(218) 847-4835 /FAX
(888) 594-4835 /FAX

19. MOCKSVILLE BRANCH

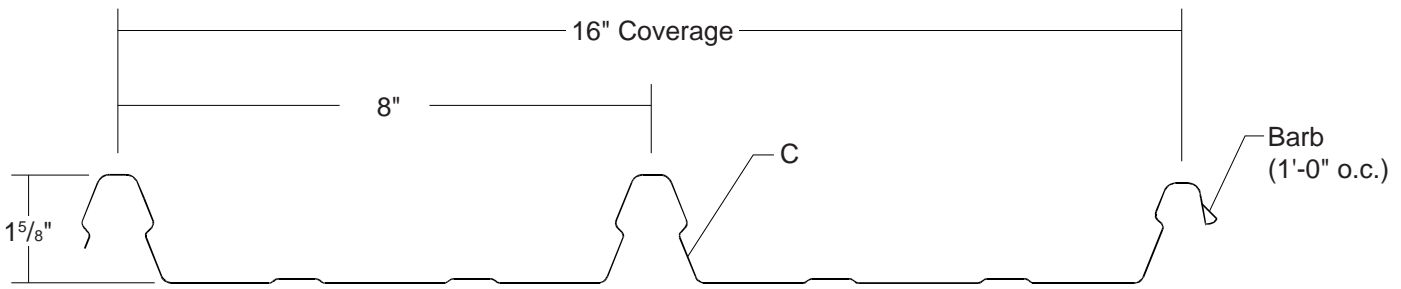
188 Quality Way
Mocksville, NC 27028
(336) 751-6381
(800) 228-6119
(336) 751-6301 /FAX
(800) 228-7916 /FAX

TECHNICAL SUPPORT**TECHNICAL SERVICES**

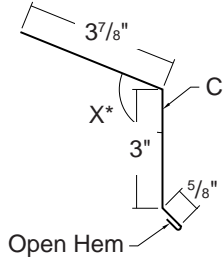
545 South 3rd Street
Suite 200
Louisville, KY 40202
(800) 406-7387
(502) 855-4290 /FAX
(800) 944-6884 /FAX
info@metalsales.us.com

	PAGE NO.
General Information	
Important Information	1
Metal Sales Locations	2
Customer Service	3
Table of Contents	4 & 5
Panel Profile	6
Flashing Profiles	6-8
Accessory Profiles	8
Handling Material	
Receiving Material	9
General Handling	9
Mechanical Handling	9
Manual Handling	10
Storage	
General	11
Storage on Roof	12
Foot Traffic	13
Field Cutting and Touch-up	
Field Cutting	14
Touch-up Paint	14
Fastener Selection Guide	15
Design / Installation Considerations	
Fastener Installation Technique	16
Condition of Substructure	16
Ventilation	17
Insulation	17
Selection of System Components	18
Panel High Side Turn-Up	19
Flashing Notch	19
Installation Procedure Overview	20
Installation of Panel Over Decking	
<i>Installing Floating Rake Zee (Step 1)</i>	21
<i>Installing First Panel (Step 2)</i>	21
<i>Installing Clip-Loc Clip (Step 3)</i>	22
<i>Installing Second Panel (Step 4)</i>	22
Eave	23
Eave Optional	24
Gutter	25
Valley	26
Rake (On Module)	27
Rake (Off Module).....	28
Rake (Optional)	29
Rake Parapet (On Module)	30
Rake Parapet (Off Module)	31
Hip	32
Hip (Optional)	33
Ridge	34
Ridge (Optional).....	35
Vented Ridge	36
High Side Parapet	37
High Side Parapet (Optional)	38
High Side Eave	39
High Side Eave (Optional)	40
Base	41
Sill / Head	41
Sill to Soffit	42
Jamb	42
Outside Corner	43
Inside Corner	43

Installation of Panel Over Open Framing	PAGE NO.
<i>Installing Floating Rake Zee (Step 1)</i>	44
<i>Installing First Panel (Step 2)</i>	44
<i>Installing Clip-Loc Clip (Step 3)</i>	45
<i>Installing Second Panel (Step 4)</i>	45
Eave	46
Eave (Optional)	47
Gutter	48
Valley.....	49
Rake (On Module)	50
Rake (Off Module)	51
Rake (Optional)	52
Rake Parapet (On Module)	53
Rake Parapet (Off Module)	54
Hip	55
Hip (Optional)	56
Ridge	57
Ridge (Optional)	58
Vented Ridge	59
High Side Parapet	60
High Side Parapet (Optional)	61
High Side Eave	62
High Eave Parapet (Optional)	63
Roof Penetrations	
General Notes.....	64
Installation Notes.....	64
Care and Maintenance	65
Notes	66

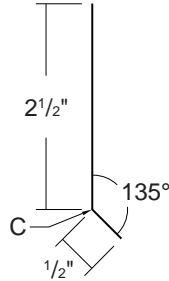


EAVE



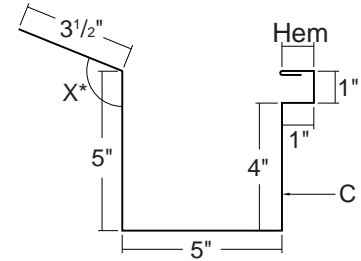
Length 10'-2" *Specify Slope Angle

CLEAT



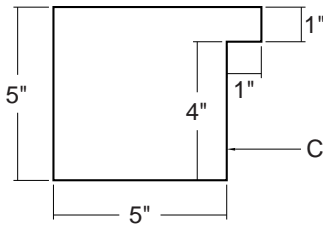
Length 10'-2"

BOX GUTTER

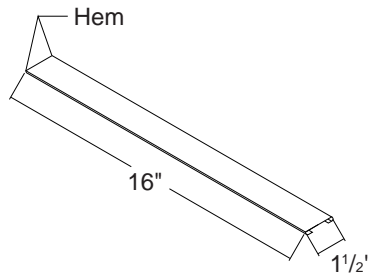


Length 10'-2", 20'-3" - *Specify Slope Angle

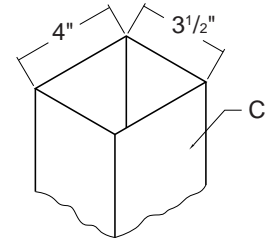
BOX GUTTER END



UNIVERSAL GUTTER / DOWNSPOUT STRAP

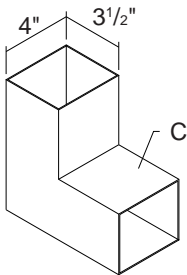


DOWNSPOUT 4" x 3 1/2"



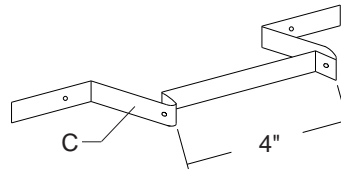
(Also available 6" x 4")

95° ELBOW 6" x 3 1/2"



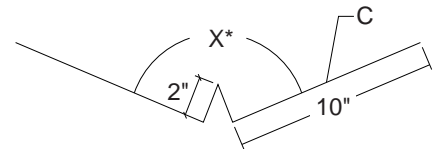
(Also available 6" x 4")

DOWNSPOUT BRACKET



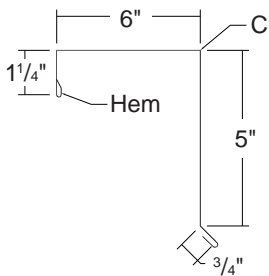
(Also available 6")

VALLEY



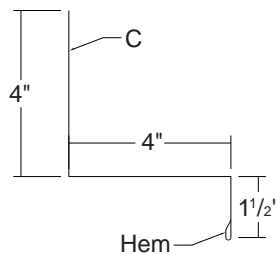
Length 10'-2", 20'-3" - *Specify Slope Angle

CLIP-LOC RAKE



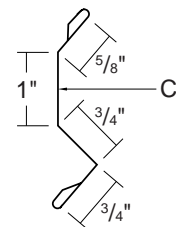
Length 10'-2", 20'-3"

CLIP-LOC RAKEWALL



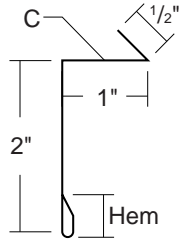
Length 10'-2", 20'-3"

COUNTER FLASHING



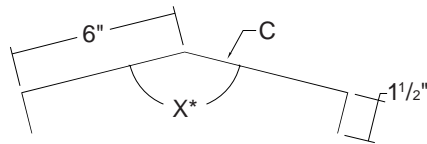
Length 10'-2"

REGLET FLASHING



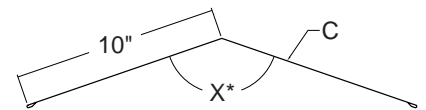
Length 10'-2"

CLIP-LOC HIP



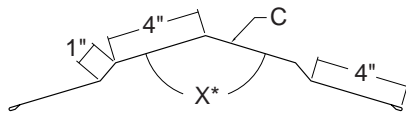
Length 10'-2", 20'-3" - *Specify Slope Angle

20" RIDGE/HIP COVER



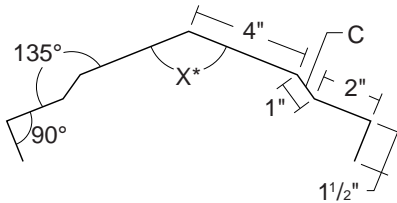
Length 10'-2", 20'-3" - *Specify Slope Angle

SSR RIDGE



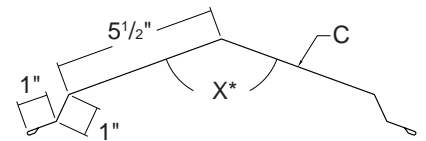
Length 10'-2", 20'-3" - *Specify Slope Angle

CLIP-LOC RIDGE



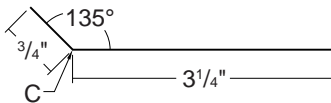
Length 10'-2", 20'-3" - *Specify Slope Angle

13" STEP RIDGE



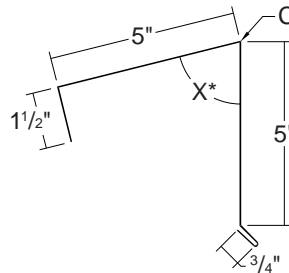
Length 10'-2", 20'-3" - *Specify Slope Angle

PERFORATED VENT DRIP



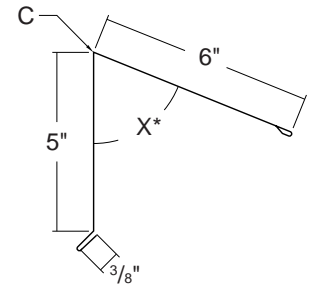
Length 10'-2"

CLIP-LOC PEAK



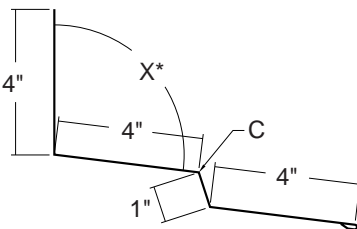
Length 10'-2", 20'-3" - *Specify Slope Angle

PEAK



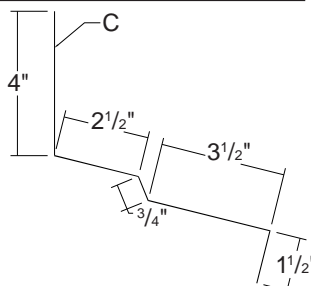
Length 10'-2", 20'-3" - *Specify Slope Angle

SSR PITCH BREAK



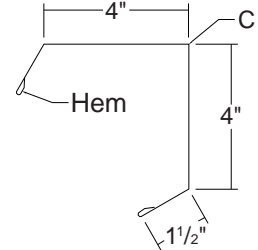
Length 10'-2", 20'-3" - *Specify Slope Angle

CLIP-LOC ENDWALL



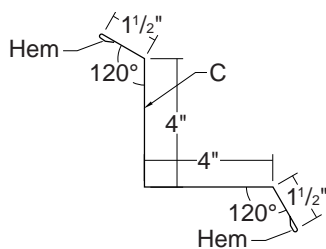
Length 10'-2", 20'-3" - *Specify Slope Angle

CLIP-LOC OUTSIDE CORNER



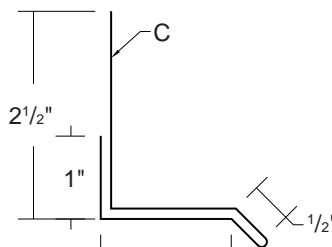
Length 10'-2", 20'-3"

CLIP-LOC INSIDE CORNER



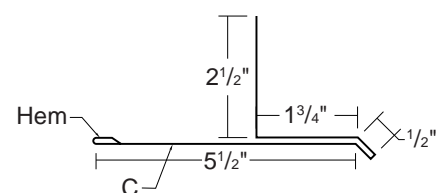
Length 10'-2", 20'-3"

CLIP-LOC SILL/HEAD



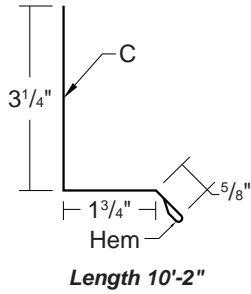
Length 10'-2"

CLIP-LOC SILL TO

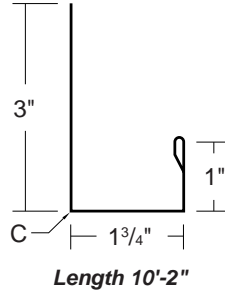


Length 10'-2"

CLIP-LOC BASE



CLIP-LOC JAMB

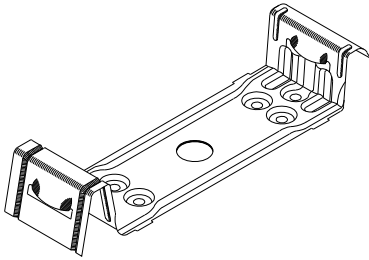


C- Indicates color side of flashing.

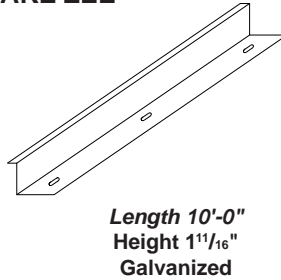
CLIP-LOC

ACCESSORY PROFILES

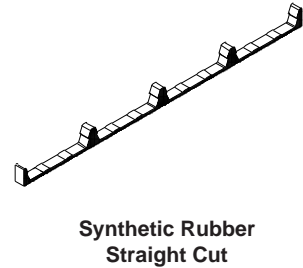
CLIP-LOC CLIP



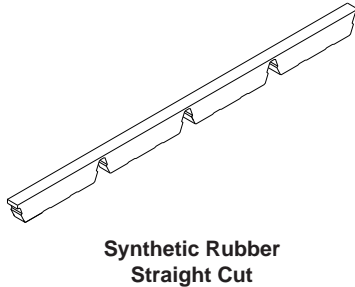
CLIP-LOC FLOATING RAKE ZEE



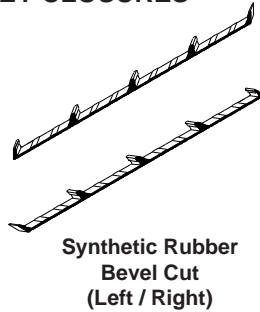
CLIP-LOC INSIDE CLOSURE



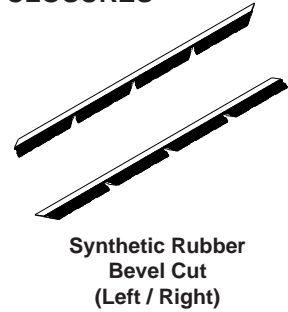
CLIP-LOC OUTSIDE CLOSURE



CLIP-LOC INSIDE VALLEY CLOSURES



CLIP-LOC OUTSIDE HIP CLOSURES



TAPE SEALANT

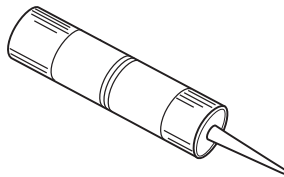


7/8" X 3/16" X 25'
Double Bead
Butyl - Gray



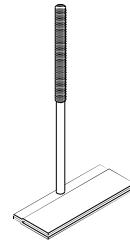
1/4" Bead X 20' Butyl
Sidelap Sealant
Isocryl - Black

TUBE SEALANT



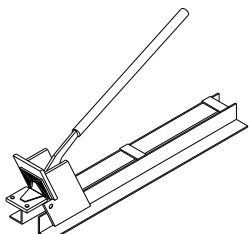
10.3 oz. Cartridge
Urethane

TURN-UP TOOL



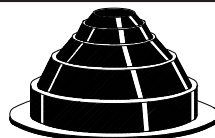
Zinc Plated - 6 1/2"
For Panel Turn-Up

NOTCHING TOOL



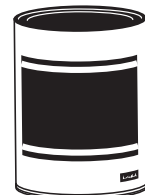
For Flashing Notch

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

RECEIVING MATERIAL

It is the responsibility of the installer to unload material from the delivery truck. The installer shall be responsible for providing suitable equipment for unloading of material from the delivery.

After receiving material, check the condition of the material, and review the shipment against the shipping list to ensure all materials are accounted for. If damages or shortages are discovered, it should be noted on the Bill of Lading at the time of delivery. A claim should be made against the carrier as soon as possible. Metal Sales is not responsible for any damages or shortages unless they are documented in writing and presented to Metal Sales within 48 hours.

GENERAL HANDLING

Each bundle should be handled carefully to avoid being damaged. Care should be taken to prevent bending of the panel or abrasion to finish. Whenever possible, the bundle should remain crated until it is located in its place of storage. If bundles must be opened, we recommend you recreate them before lifting. To avoid damage please lift the bundle at its center of gravity.

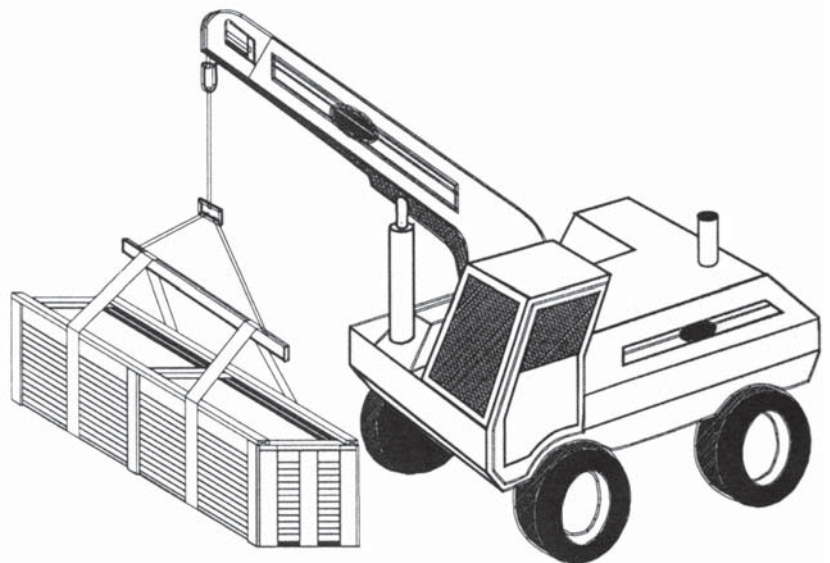
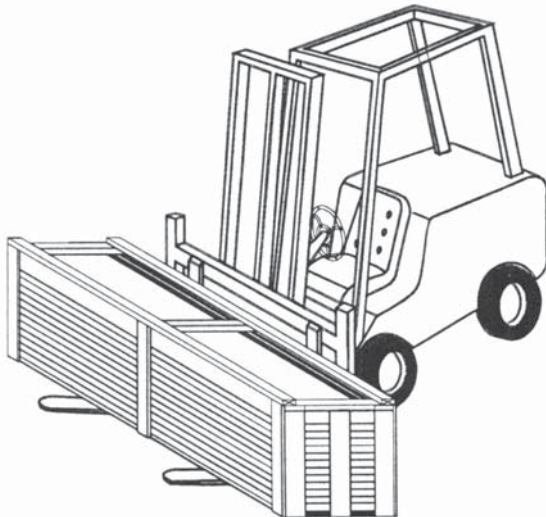
CAUTION

Improper loading and unloading of bundles and crates may result in bodily harm and/or material damage. Metal Sales is not responsible for bodily injuries and/or material damages resulting from improper loading and unloading.

MECHANICAL HANDLING

Forklift - A forklift may be used for panels up to 20'-0" long. Please make sure the forks are at their maximum separation. Do not transport open bundles. When transporting bundles across rough terrain, or over a longer distance, some means of supporting the panel load must be used.

Crane - A crane should be used when lifting panels with lengths greater than 20'-0". Please be sure to utilize a spreader bar to ensure the even distribution of the weight to the pick up points. As a rule when lifting panels, no more than $\frac{1}{3}$ of the length of the panel should be left unsupported. Never use wire rope because this will damage the panels.

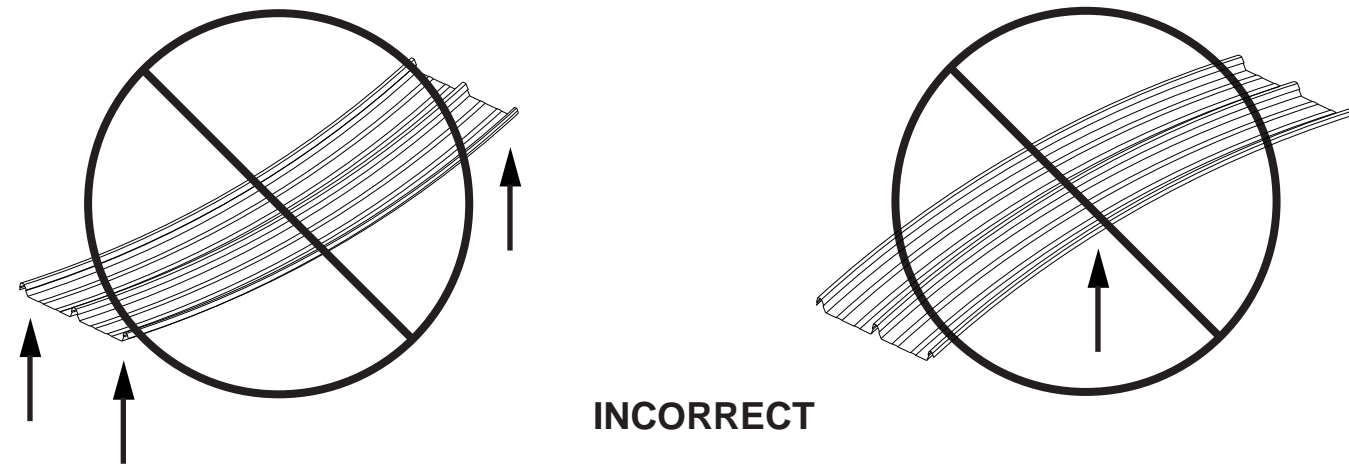
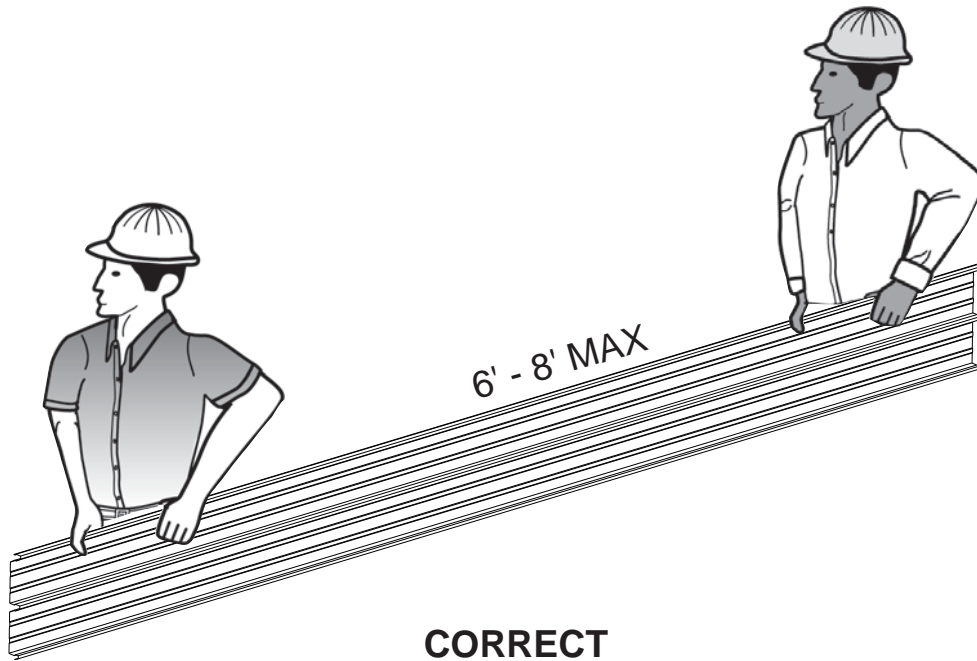


MANUAL HANDLING

When handling painted steel care should be taken to prevent scratching of material. Clean gloves should be worn at all times to prevent a reaction with salts found on bare skin. Installers should wear rubber sole shoes to keep from scuffing material while walking on the roof.

Handling of individual panels should be done carefully and properly to avoid bending or damaging. Clip-Loc panels should be carried by grasping the edge of the panel so that the Clip-Loc panel is vertical to the ground. The Clip-Loc panel should not be carried with the panel horizontal to the ground as this could cause the panel to buckle or bend in the center.

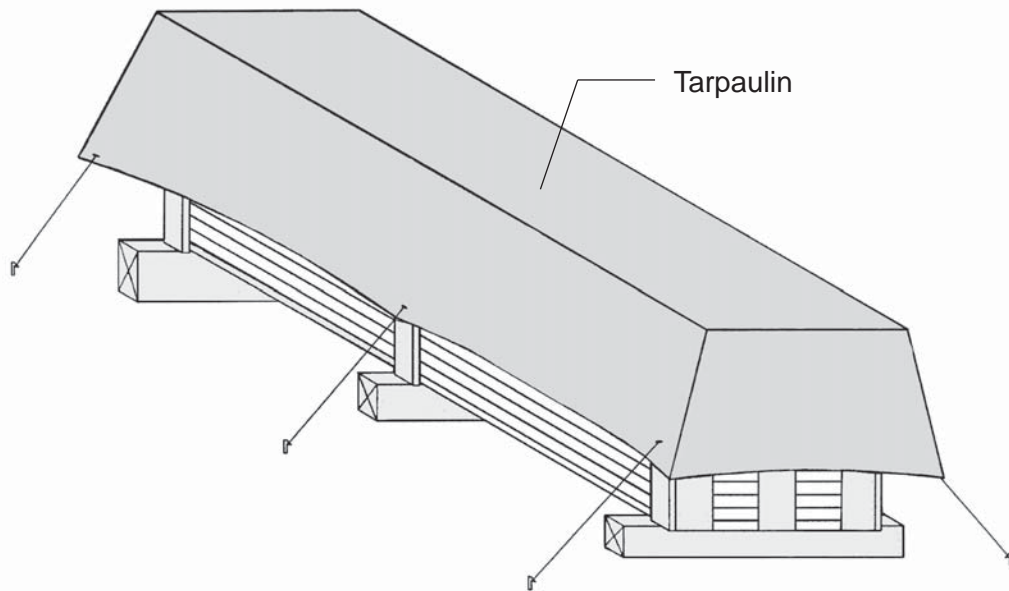
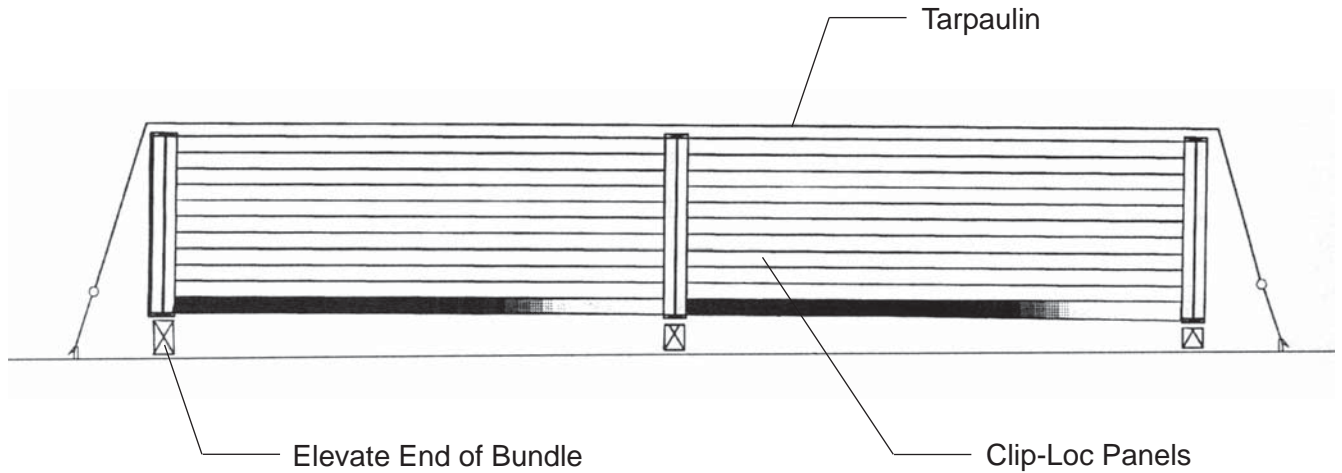
Normally individual panels can be handled by people placed every 6'-0" to 8'-0" along the length of the panel.



GENERAL

Please inspect panels for moisture accumulation. If moisture has formed, the panels should be unbundled, wiped dry, and allowed to dry completely. Once dry, carefully restack the panels and loosely recover allowing for ample air circulation.

Bundled sheets should be stored high enough off of the ground to allow for air circulation and prevent contact with accumulating water. If possible, elevate one end of the bundle to allow any moisture to run off the panels. Metal Sales recommends covering the bundle with a tarpaulin. Do not use tight fitting plastic-type tarpaulins as panel bundle covers. While they may provide protection from heavy downpours, they can also retard necessary ventilation and trap heat and moisture that may accelerate metal corrosion. If panels are to be stored in possible bad weather, we suggest they be stored inside. Extended storage of panels in a bundle is not recommended. **Under no circumstances should the sheets be stored near or come in contact with salt water, corrosive chemicals, ash, or fumes generated or released inside the building or nearby plants, foundries, plating works, kilns, fertilizer, and wet or green lumber.**

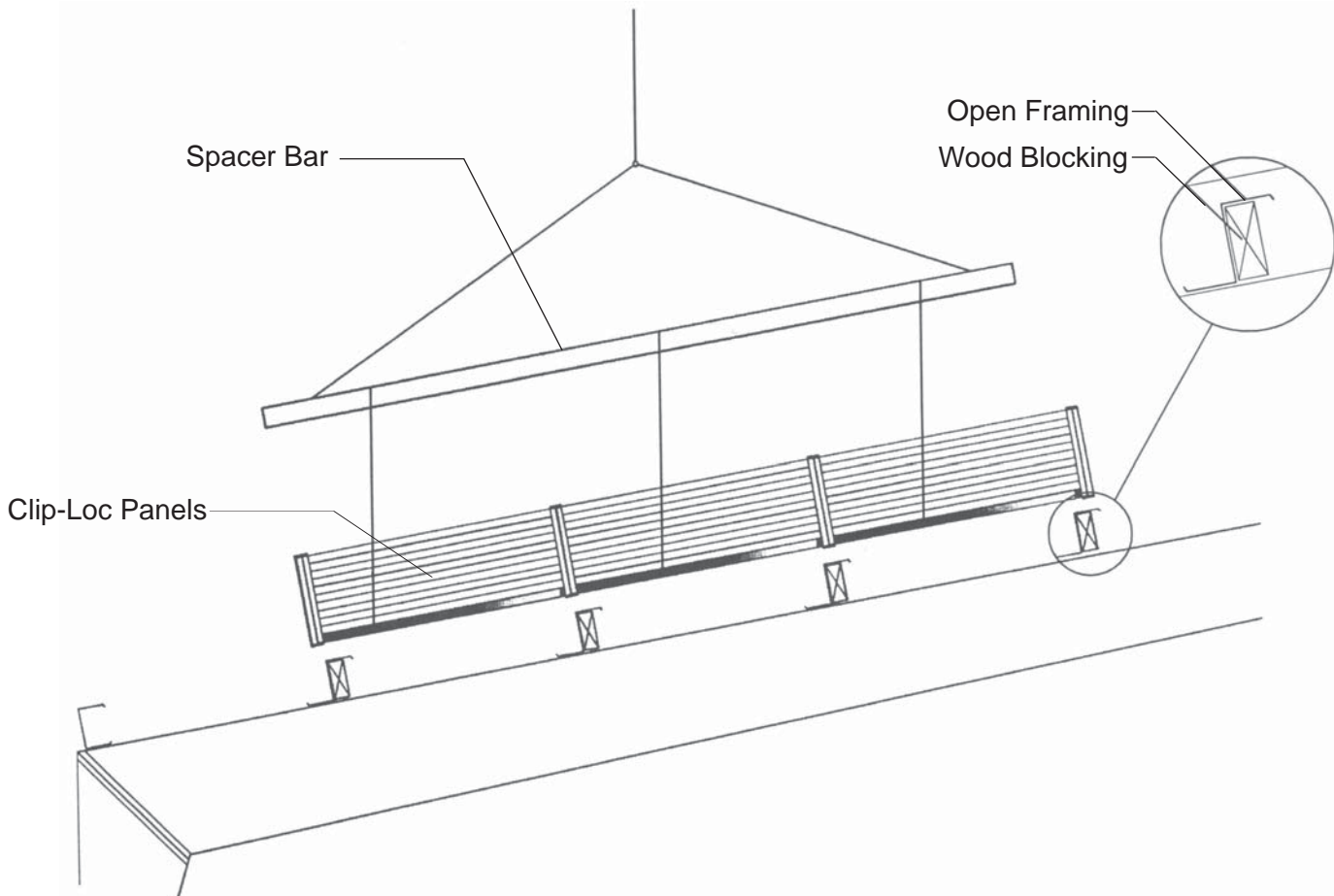


STORAGE ON ROOF

To facilitate the handling of Clip-Loc panels, panel bundles can be lifted and placed on the roof. Bundles need to be placed on the roof in order for the roof structure to handle the weight. Loading capabilities of the structure must be checked.

When lifting packaged sheets, make certain they are adequately supported. Panels less than 20'-0" in length can normally be lifted with a forklift; however, when lifting panels in excess of 20'-0", it is recommended that a spreader bar and slings be used. As a rule, when lifting, no more than $\frac{1}{3}$ of the length of the panel should be left unsupported.

Make a plan for bundle placement by determining how much area a bundle of panels will cover. Bundles should be placed on the roof in accordance with the direction the panel will be installed. Consider where the string line, if any, is to run at the eave to set roof panels by. Roof bundles should not interfere with this string line.

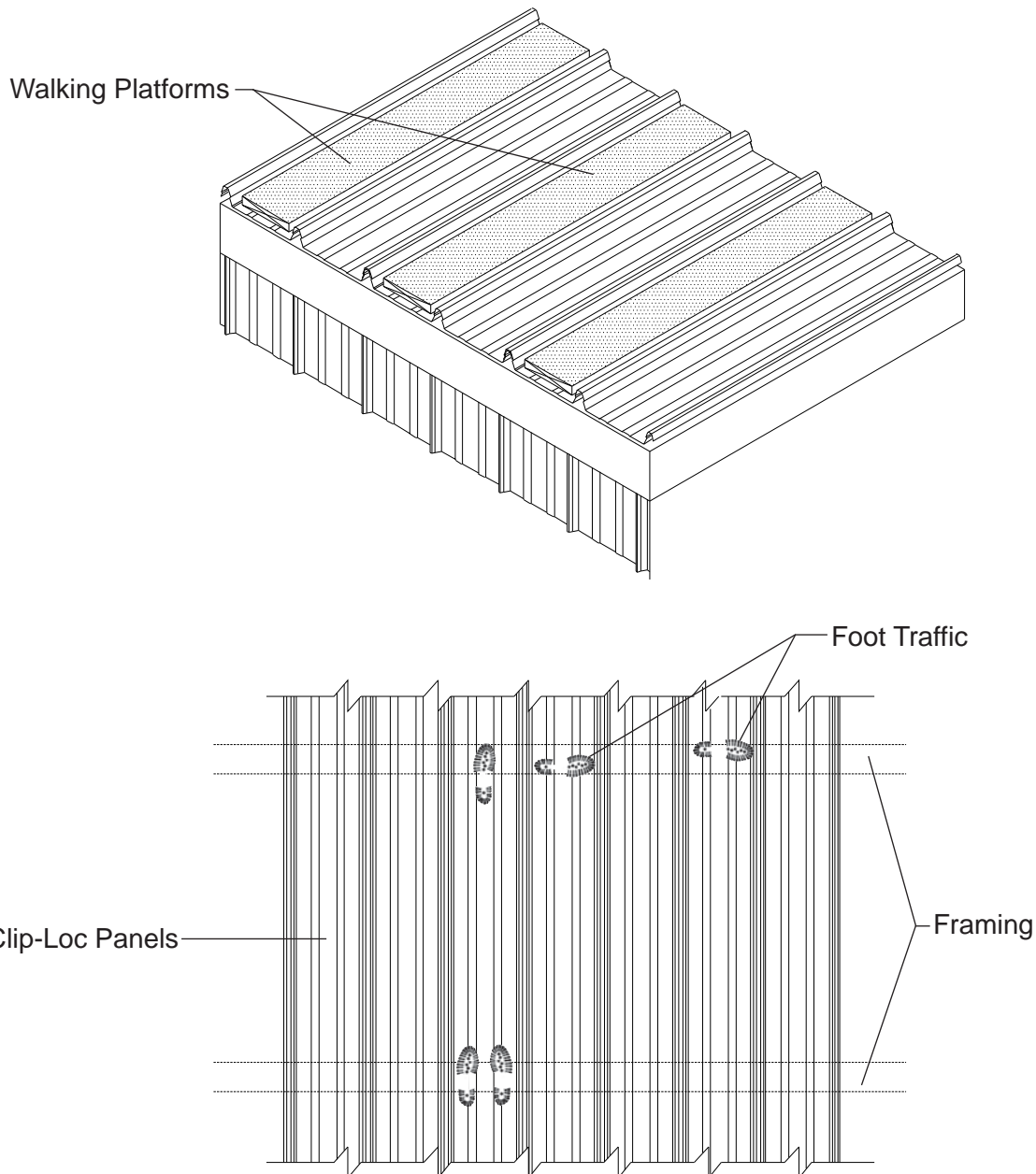


Care of metal panels and flashings must be exercised throughout erection. Foot traffic can cause distortion of panel and damage to finish. Traffic over the installed system must be kept to an absolute minimum. If continuous foot traffic is necessary for maintenance over certain areas of the roof, then a permanent walkway should be installed.

If metal panels are installed over open framing, do not use the roof panel as a walking platform. The roof panels will not withstand the weight of a person standing at the edge of the panel. Provide walking platforms to avoid any panel damage as shown below.

When walking on the roof panels is unavoidable, walk only in the flats of the panel. Walking on the ribs can cause damage to the panels. If Clip-Loc is installed over open framing, step in the flat of the panel only and as close to the framing as possible.

OVER OPEN FRAMING



FIELD CUTTING

Tin snips or a "nibbler" type electric tool are recommended for field cutting Clip-Loc panels. Cutting the steel generates slivers or metal chips. These slivers and metal chips must be immediately removed from the Clip-Loc panels because they will damage the finish and shorten the life of the product.

One method of preventing this problem is to flip the Clip-Loc panels over when cutting. This allows the slivers and metal chips to be brushed from the back side and avoids damaging the paint on the top side of the panels.

When cutting Clip-Loc panels, goggles must be worn for eye protection.

CAUTION

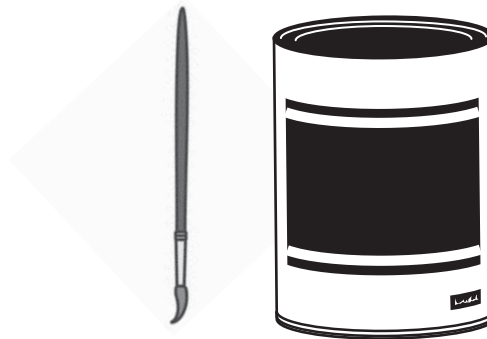
All product surfaces should be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface, voiding the warranty.

TOUCH-UP PAINT


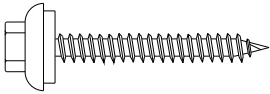
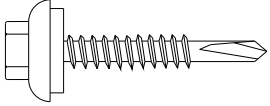
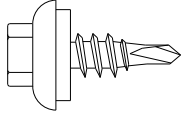
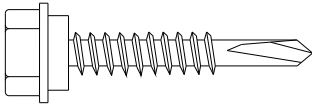
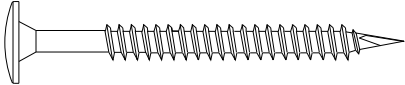
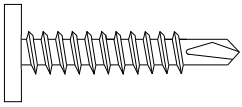
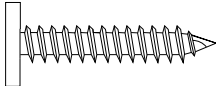
All painted panels and flashings have a factory applied baked on finish. Handling and installing panels may result in some small scratches or nicks to the paint finish. Touch-up paint is available in matching colors from Metal Sales. It is recommended that a small brush be used to apply touch-up paint to those areas that are in need of repair. Touch-up paint does not have the superior chalk and fade resistance of the factory applied paint finish and will normally discolor at an accelerated rate. Aerosol paint should not be used because of the overspray that may occur.



SPRAY PAINT




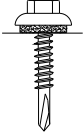
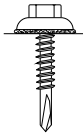

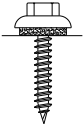
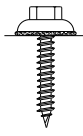
TOUCH-UP PAINT

POP RIVET	SIZE	TYPE	FINISH	APPLICATION
	1/8" x 3/16"	A	Unpainted	Flashing to Panel or Flashing
	1/8" x 3/16"	A	Painted	Flashing to Panel or Flashing
WOODSCREW XL	SIZE	TYPE	FINISH	APPLICATION
	#9-15 x 1"	A	Unpainted	Panel or Flashing to wood substructure
	#9-15 x 1 1/2"	A	Unpainted	
	#9-15 x 2"	A	Unpainted	
	#9-15 x 1"	A	Painted	Panel or Flashing to wood substructure
	#9-15 x 1 1/2"	A	Painted	
	#9-15 x 2"	A	Painted	
SELF DRILLER XL	SIZE	TYPE	FINISH	APPLICATION
	#12-14 x 1 1/4"	Driller	Unpainted	Panel or Flashing to metal substructure
	#12-14 x 1 1/2"	Driller	Unpainted	
	#12-14 x 1 1/4"	Driller	Unpainted	
	#12-14 x 1 1/4"	Driller	Painted	Panel or Flashing to metal substructure
	#12-14 x 1 1/2"	Driller	Painted	
	#12-14 x 1 1/4"	Driller	Painted	
STITCH SCREW XL	SIZE	TYPE	FINISH	APPLICATION
	#1/4 - 14 x 7/8"	Stitch	Unpainted	Flashing to Panel or Flashing
	#1/4 - 14 x 7/8"	Stitch	Painted	Flashing to Panel or Flashing
SHOULDER SELF DRILLER	SIZE	TYPE	FINISH	APPLICATION
	#12"-14 x 1 1/4"	Driller	Plated	For use with Floating Rake Zee to substructure
DEKFAST	SIZE	TYPE	FINISH	APPLICATION
	#14-13 x 1 5/8"	Driller	Black	Panel Clip to metal deck and rigid board insulation assembly or wood substructure
	#14-13 x 4"	Driller	Black	
	#14-13 x 5"	Driller	Black	
	#14-13 x 6"	Driller	Black	
	#14-13 x 8"	Driller	Black	
PANCAKE HEAD DRILLER	SIZE	TYPE	FINISH	APPLICATION
	#10-16 x 1" (#2 Point)	Driller	Plated	Panel/clip/flashing to metal framing or decking
PANCAKE HEAD WOODSCREW	SIZE	TYPE	FINISH	APPLICATION
	#10-12 x 1"	A	Plated	Panel/clip/flashing to wood substructure

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.

	CORRECT Sealing material slightly visible at edge of metal washer. Assembly is watertight.	TOO LOOSE Sealing material is not visible; not enough compression to seal properly.	TOO TIGHT Metal washer deformed; sealing material pressed beyond washer edge.
SELF DRILLER			
WOODSCREW			

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.

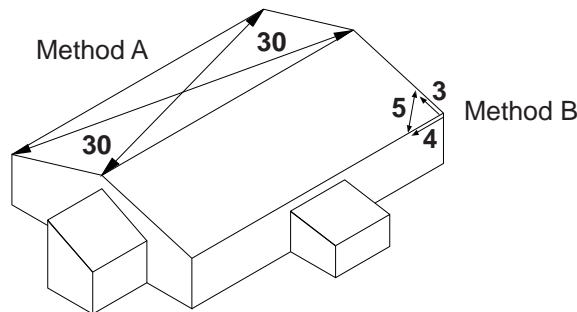
CONDITION OF SUBSTRUCTURE

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 Clip-Loc 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.



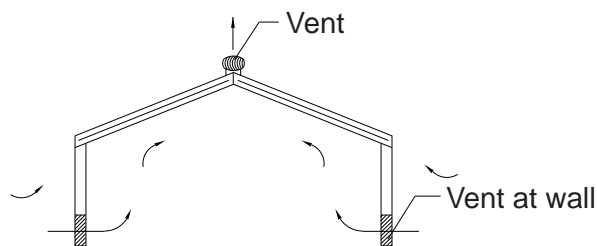
VENTILATION

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.

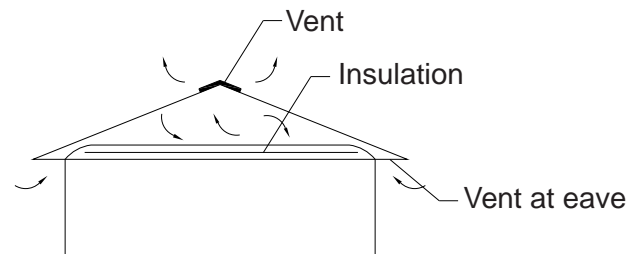
Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal buildings; these problems are common to all types of construction.

The underside of the metal roof on a typical metal building (no attic) should be protected from condensation by insulating with a faced insulation. This should reduce the potential of condensation forming on the underside of the panels.

On buildings that have an attic space or are being retrofitted with a metal roofing system, vents should be placed at both the eave and peak of the roof in order to prevent a buildup of moisture (humidity) in the attic space.



Typical metal building (no attic)

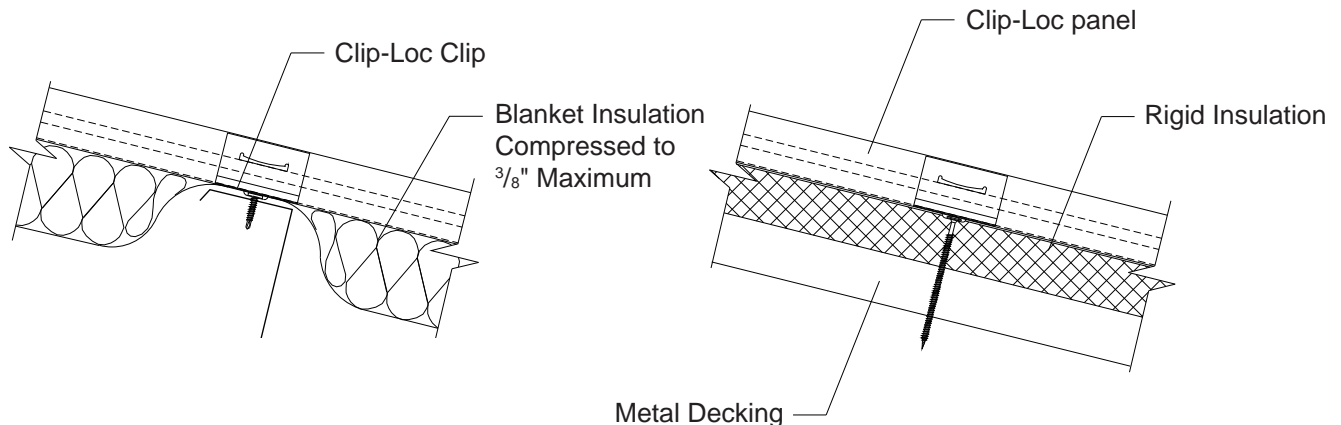


Building with attic or retrofitted

INSULATION

Insulation is recommended on all applications to act as a sound barrier, prevent condensation, and increase insulating value of the roof or ceiling system.

Typically, panels are installed over solid substrate but can be installed over open framing or metal decking (shown below) with many different types of insulation. Blanket, rigid, and reflective insulation are just a few. Maximum thickness for blanket insulation is four inches. Please contact your insulation supplier for specific recommendations on type of insulation, vapor barriers, and installation procedures.



CAUTION

Use extreme care when working next to insulation. The insulation will provide a false sense of security by hiding the view of the ground below the insulation.

SYSTEM EXPANSION / CONTRACTION

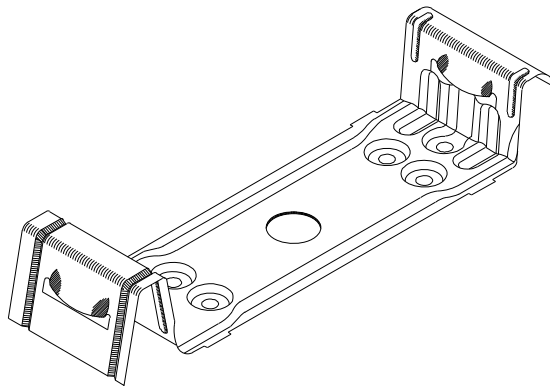
Steel roofing panels are subject to dimensional changes after installation due to exposure to varying temperatures. The greatest influence is solar energy. Steel roofing absorbs various amounts of heat depending upon color, finish, angle of exposure, and time of exposure.

The relationship of ambient temperature to building structural temperature must be considered when designing a Clip-Loc roof system. The clips for the Clip-Loc panels are designed for expansion and contraction of the panels in the longitudinal direction. Lateral expansion and contraction is accommodated by the configuration of the panel cross section and causes negligible panel movement.

When the total length of panel run exceeds the capability of the clips to accommodate the thermal movement, expansion joints must be designed into the structure.

SELECTION OF SYSTEM COMPONENTS

Clip-Loc Panel Clip - Clips are placed along the male leg of each panel prior to installing adjacent panels. Design wind uplift must be considered for proper clip spacing.



Clip-Loc Clip

The following chart should be used to determine proper fasteners required for clip installation on the selected applications (see Fastener Selection Guide page 15 for other fasteners available).

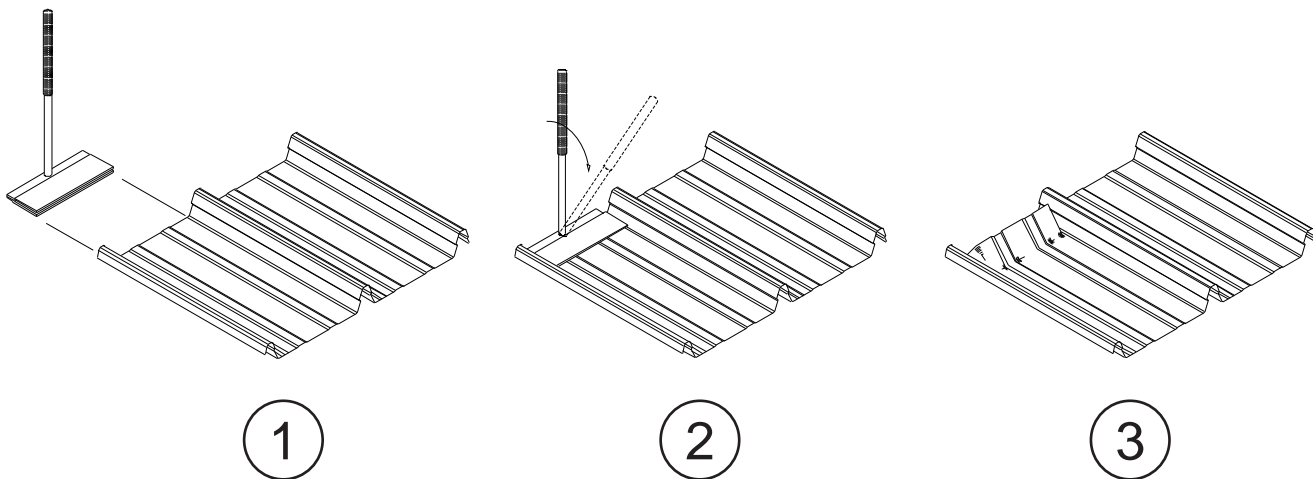
APPLICATION	INSTALLATION REQUIREMENTS		**CLIP SPACING	TYPE OF FASTENER	NUMBER REQUIRED
CLIPS OVER PURLINS (16 GA. MIN)	STANDARD	26 GAUGE	BY DESIGN	#10 X 1" PANCAKE HEAD DRILLER	2 FASTENERS
	STANDARD	24 GAUGE	**5'-0" O.C.	#10 X 1" PANCAKE HEAD DRILLER	2 FASTENERS
	STANDARD	22 GAUGE	**5'-0" O.C.	#10 X 1" PANCAKE HEAD DRILLER	2 FASTENERS
CLIPS OVER 5/8" WOOD DECK	STANDARD	26 GAUGE	BY DESIGN	#10 X 1" PANCAKE HEAD WOOD	2 FASTENERS
	STANDARD	24 GAUGE	**3'-0" O.C.	#10 X 1" PANCAKE HEAD WOOD	2 FASTENERS
	STANDARD	22 GAUGE	**3'-0" O.C.	#10 X 1" PANCAKE HEAD WOOD	2 FASTENERS
CLIP OVER RIGID INSULATION / METAL DECK	STANDARD	26 GAUGE	BY DESIGN	DEKFAST #14*	2 FASTENERS
	STANDARD	24 GAUGE	BY DESIGN	DEKFAST #14*	2 FASTENERS
	STANDARD	22 GAUGE	BY DESIGN	DEKFAST #14*	2 FASTENERS

* Length of Dekfast will vary depending on the total thickness of the rigid insulation and metal (see page 17).

** Based on UL580. Subject to project loading requirements, closer clip spacing may be required. Contact your local Metal Sales branch representative for more information (see pages 2 and 3).

PANEL HIGH SIDE TURN-UP

Panels must be field turned up at all high side conditions. Field bending panels up helps prevent moisture from draining into building. It is recommended panels be installed, and then field bent. Do not cut panel.

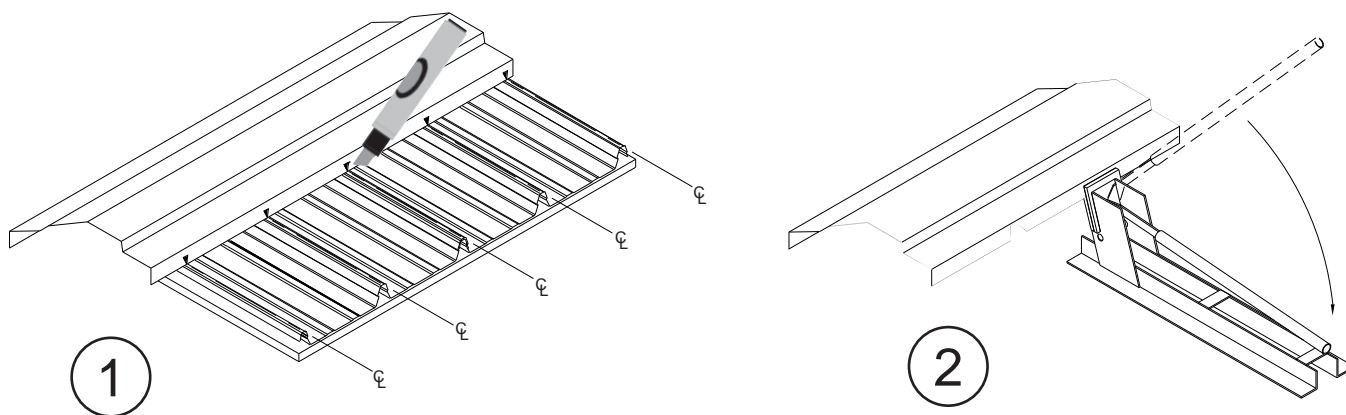


Field Bending Steps

1. Slide Clip-Loc Turn-Up Tool over panel end 2 inches.
2. Bend Clip-Loc panel up until flush with top of panel rib.
3. Repeat steps 1 and 2 for every panel.

FLASHING NOTCH

Clip-Loc flashings are available with factory turn-downs that will help conceal closures from weathering and help prevent moisture drainage into building. Flashings must be field notched to fit over panel ribs. These types of flashings are available for all high side conditions.



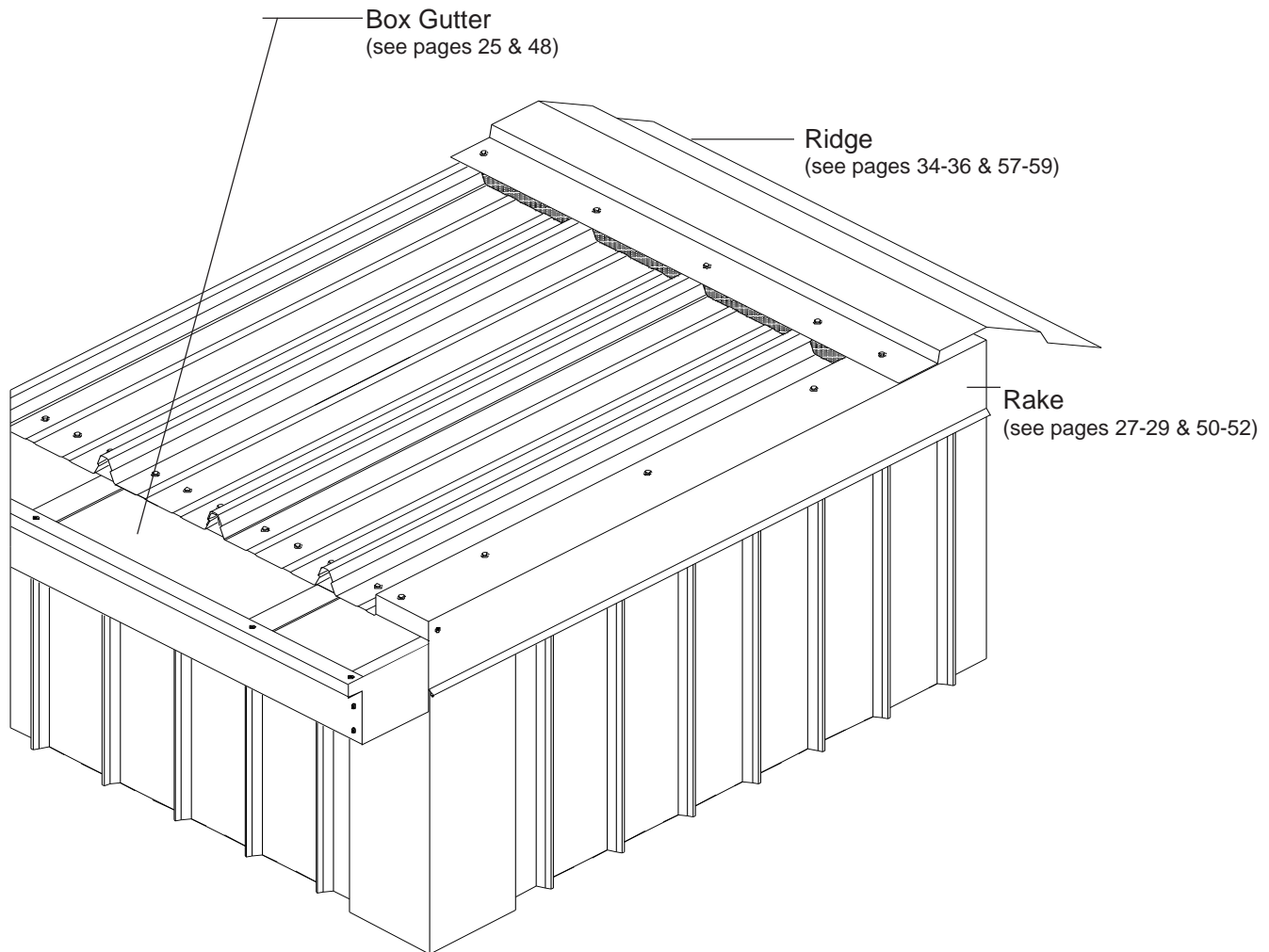
Field Notching Steps

1. Place High Side Flashing on top of Clip-Loc panel ribs and mark center of each rib on flashing.
2. Slide notching tool over flashing leg and notch out for panel rib at every mark.
3. Repeat steps 1 and 2 for every panel rib.

The following procedures (pages 21-64) are presented as a general guide for installing Clip-Loc panels, flashings, and accessories on a typical building or residence. Details are shown for installing Clip-Loc and related flashings over solid decking and over open framing. For other applications please contact Metal Sales.

The installation procedures will involve:

1. Panel installation from left to right (looking from eave to peak).
2. Panel clip installation.
3. Eave condition installation.
4. Valley condition installation.
5. Gutter condition installation.
6. Rake condition installation.
7. Rake Parapet condition installation.
8. Ridge/Hip condition installation.
9. High Side Parapet condition installation.
10. High Side Eave Condition installation
11. Corner condition installation
12. Sill condition installation
13. Base condition installation
14. Jamb condition installation



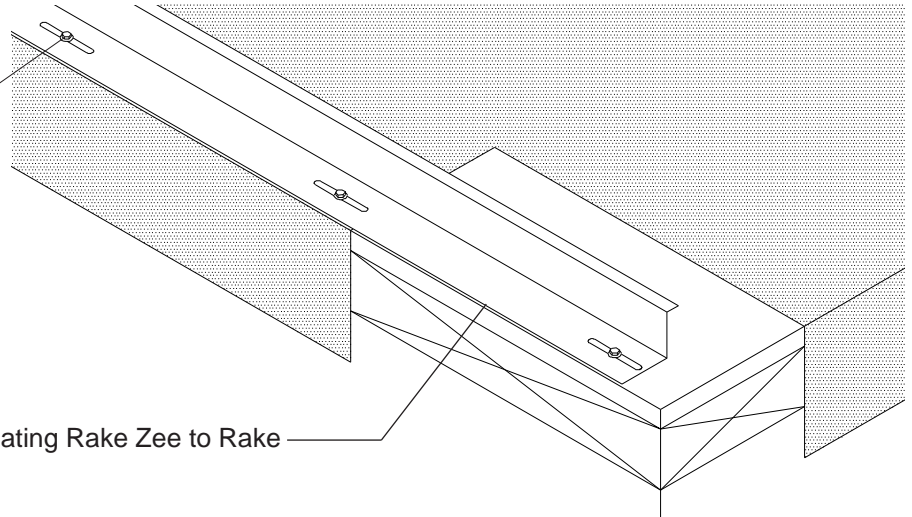
INSTALLING FLOATING RAKE ZEE (OPTIONAL)

STEP 1

1. If Floating Rake Zee is not used, go to STEP 2 else proceed.
2. Install Floating Rake Zee at all rake and rake parapet conditions. Square Floating Rake Zee to rake condition. **It is critical that Floating Rake Zee be square to building as this will control alignment of panels.**
3. Fasten to decking with #12-14 x 1 1/4" Shoulder Self Driller screws at 1'-0" o.c. **Do not over tighten screws for it is imperative that the Clip-Loc roof system be allowed to float.**
4. If two or more Floating Rake Zees are required, butt ends. **Do not overlap Floating Rake Zees.**

Fasten Floating Rake Zee with Shoulder Self Driller (1'-0" o.c.)

Square Floating Rake Zee to Rake

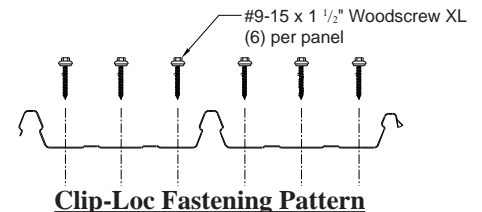
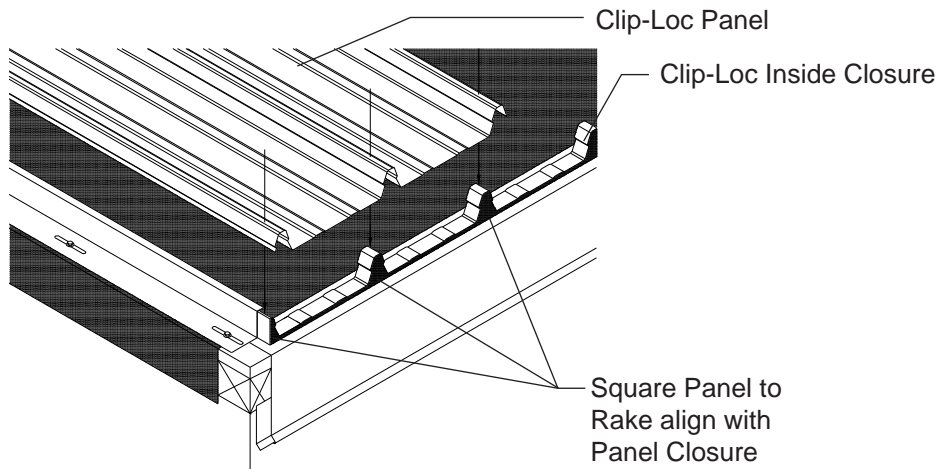


INSTALLING FIRST PANEL

STEP 2

Note: Moisture barriers, Eave, Gutter, and Valley flashings must first be installed before panel installation can begin (see pages 23-26). Clip-Loc panels can be installed going from either left or right or right to left looking from eave to peak.

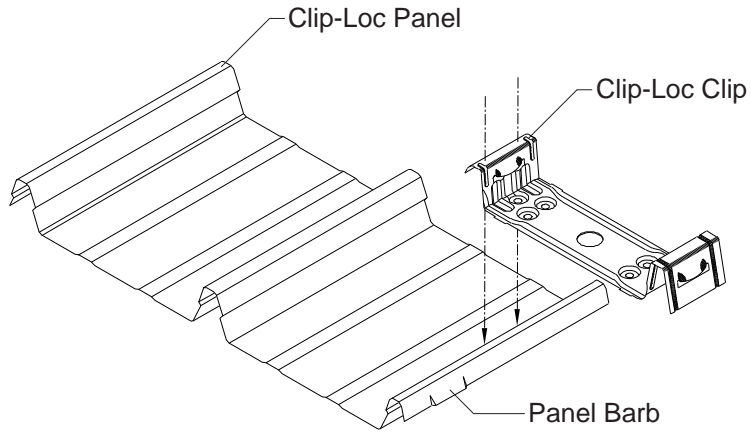
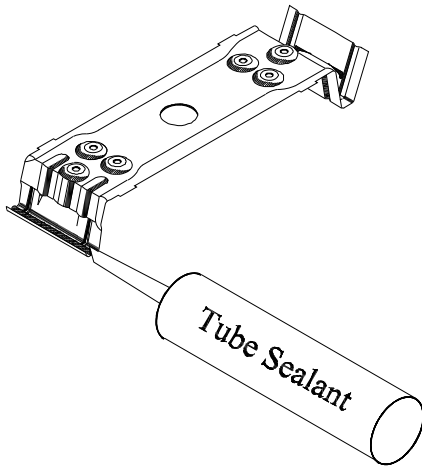
1. If Floating Rake Zee is not used, panel clips are required under first panel, see STEP 3. Apply a row of Double Bead Tape Sealant across Eave flashing approximately 2" from face of Eave flashing.
2. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
3. If Floating Rake Zee is not used, square panel to rake condition. If Floating Rake Zee is used, position the first panel so female leg is on top of rake zee, panel ribs are aligned with inside closures, and panel is at desired overhang. Additional overhang must be considered for wall panels.
4. Fasten through panel, closure, and sealant into decking with (6) #9-15 x 1 1/2" Woodscrew XL fasteners per panel. See pattern below. **Fasteners must penetrate closure and sealant.**



INSTALLING CLIP-LOC CLIP

STEP 3

1. If roof slope is less than 3:12, apply a continuous bead of tube sealant on inside of clip leg as shown. Clip is not required at panel eave end.
2. Install clip over male leg of panel as shown. Make sure short leg of clip is over male leg of panel. Clip spacing is determined from chart on (page 18) or from project design wind uplift requirements. Design requirements take precedence. Bend down panel barb if necessary for clip to fit male rib.
3. Fasten clip to decking with number of recommended fasteners shown in chart on (page 18).
4. Refer to chart on (page 18) if installing over rigid insulation.

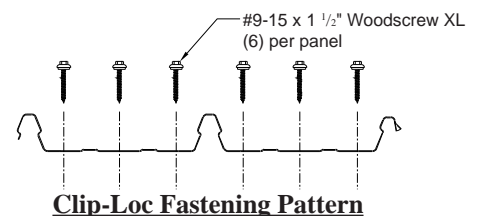
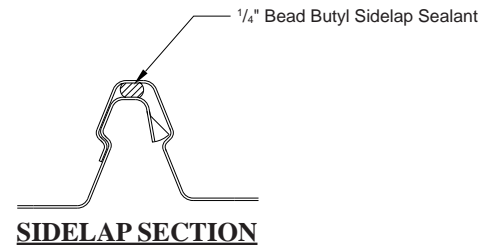
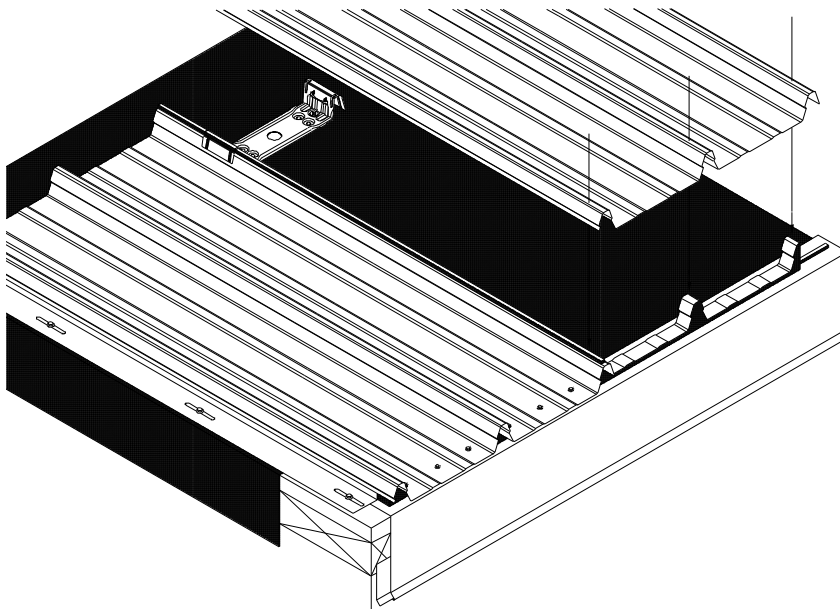


■ If roof slope is less than 3:12 apply a continuous bead of tube sealant across inside of clip.

INSTALLING SECOND PANEL

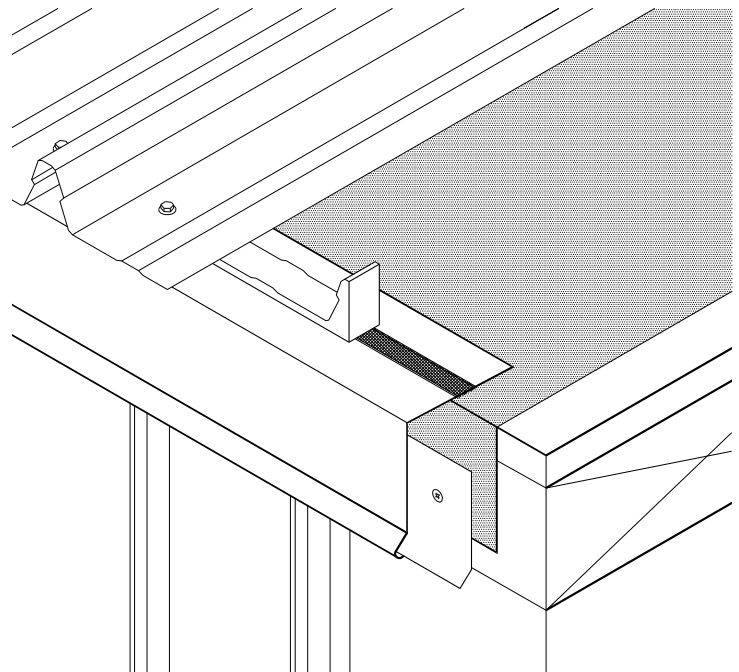
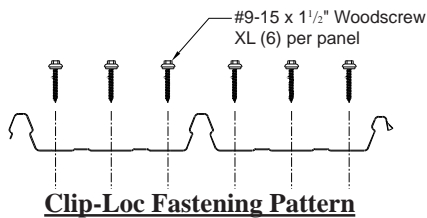
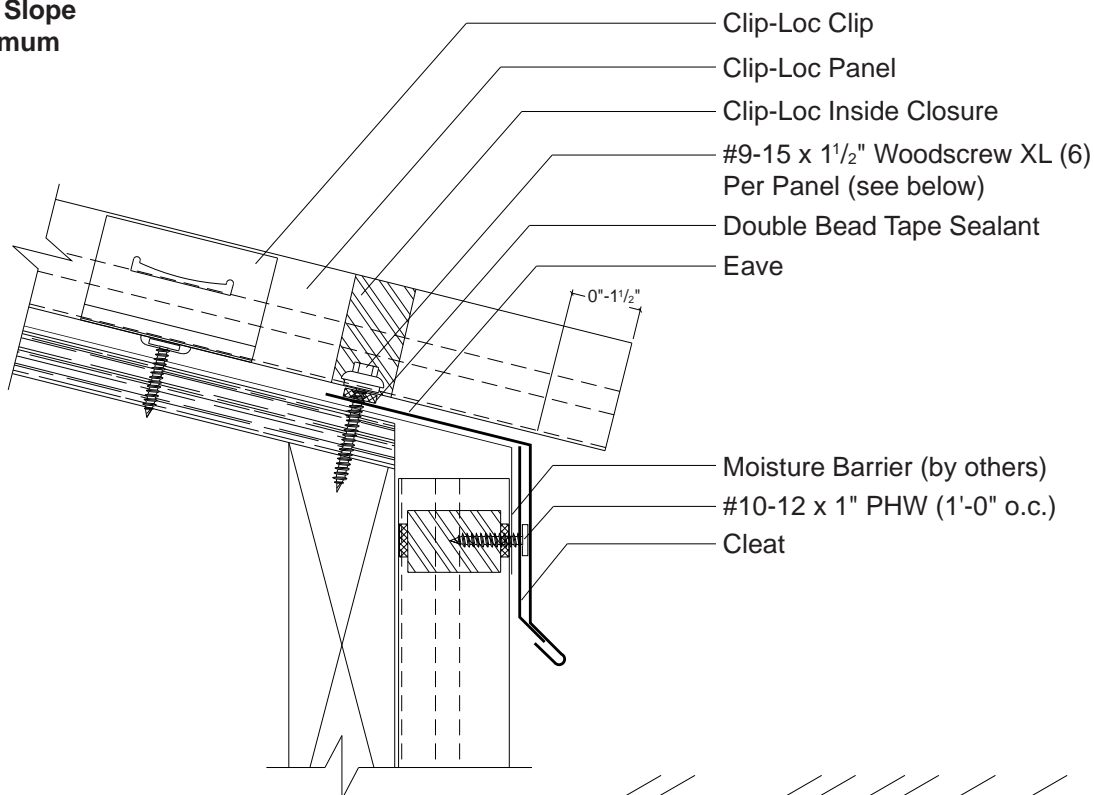
STEP 4

1. If roof slope is less than 3:12, 1/4" Bead Butyl Sidelap Sealant must be placed on top of male leg in sidelap.
2. Place the second panel on top of previously installed panel so that panel ends are flush at eave.
3. Clip-Loc center rib must be snapped in place first followed by female rib. Start snapping panel at one end and working to other.
4. Fasten at eave through panel, closure, and sealant into decking with (6) #9-12 x 1 1/2" Woodscrew XL fasteners per panel. **Fasteners must penetrate closure and sealant.**
5. Repeat steps 3 and 4 for remaining panels.



■ If roof slope is less than 3:12 apply a continuous row of 1/4" Bead Butyl Sidelap Sealant on top of male leg.

**1:12 Slope
Minimum**



CAUTION

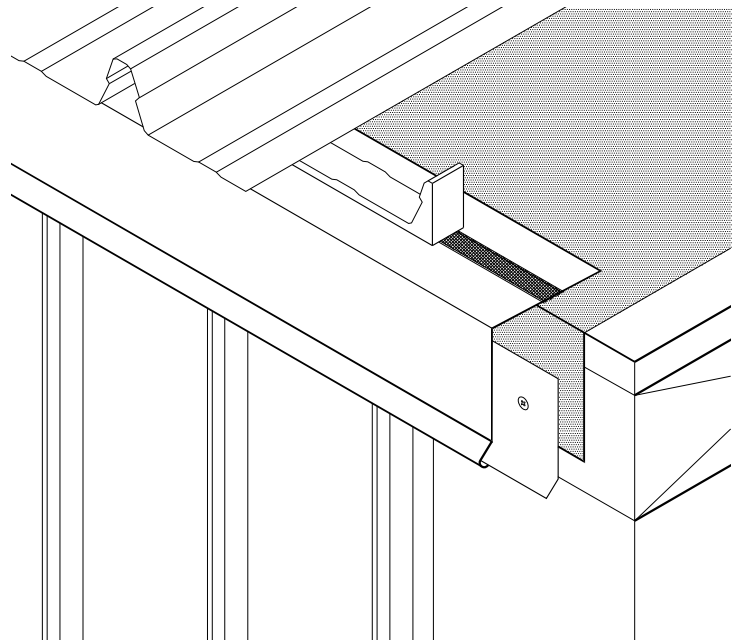
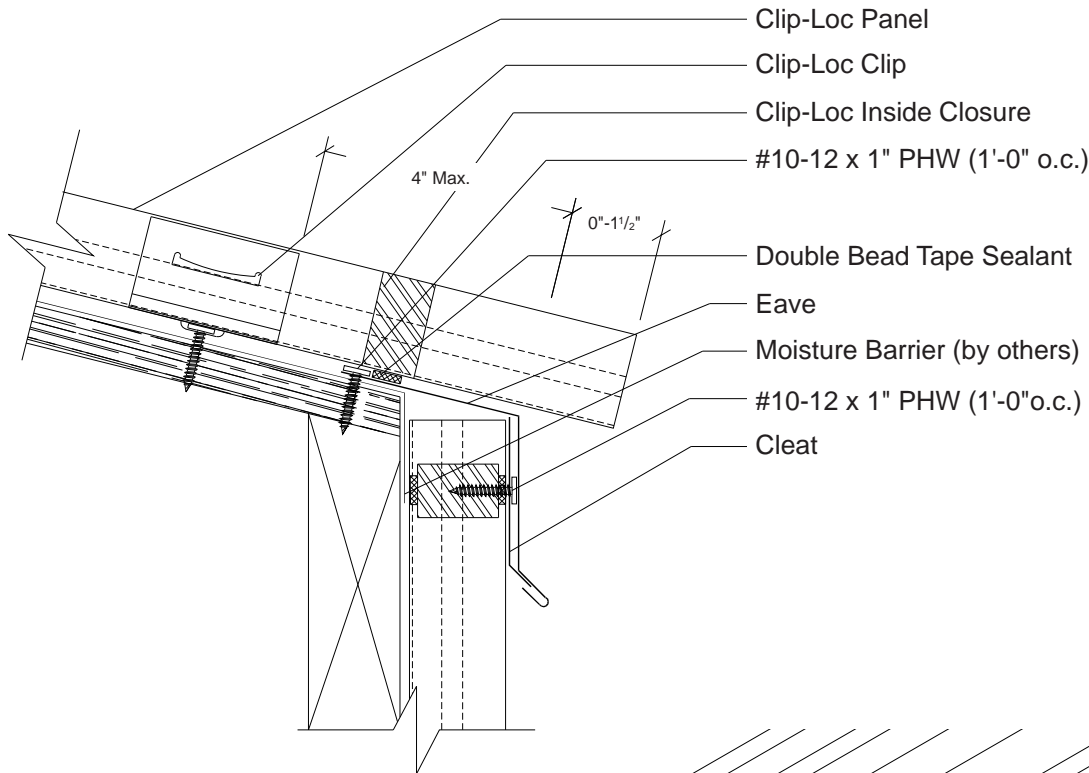
Additional screws may be required for high snow loading and steep slopes.

INSTALLATION NOTES

All eave flashings must be installed prior to panel installation.

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper Eave attachment.
2. Install Eave flashing by sliding open hem onto Cleat and resting the Eave flashing back against substrate. To hold Eave flashing in place fasten to substrate with #10-12 x 1" Pancake Head Woodscrew 4'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Eave flashing approximately 2" from face of Eave flashing.
4. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.
6. Once panels have been installed, (see pages 21-22), fasten through panel, closure, and sealant into substructure with 6 fasteners per panel. Fasteners must penetrate closure and sealant to eliminate closure movement.

1:12 Slope
Minimum



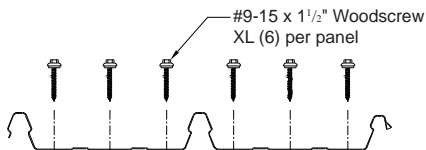
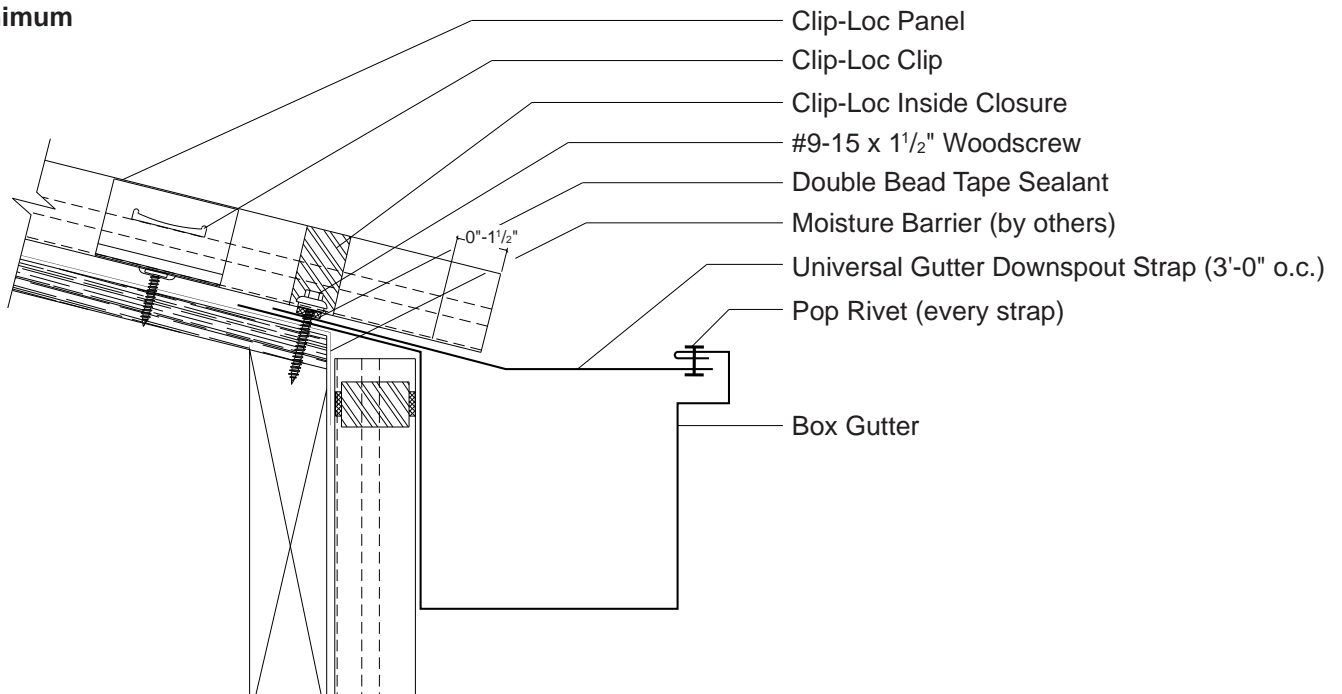
■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

All Eave flashings must be installed prior to panel installation.

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper Eave attachment.
2. Install Eave flashing by sliding open hem onto Cleat and resting the Eave flashing back against substrate. To hold Eave flashing in place fasten to substrate with #10-12 x 1" Pancake Head Woodscrew 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Eave flashing approximately 2" from face of Eave flashing.
4. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

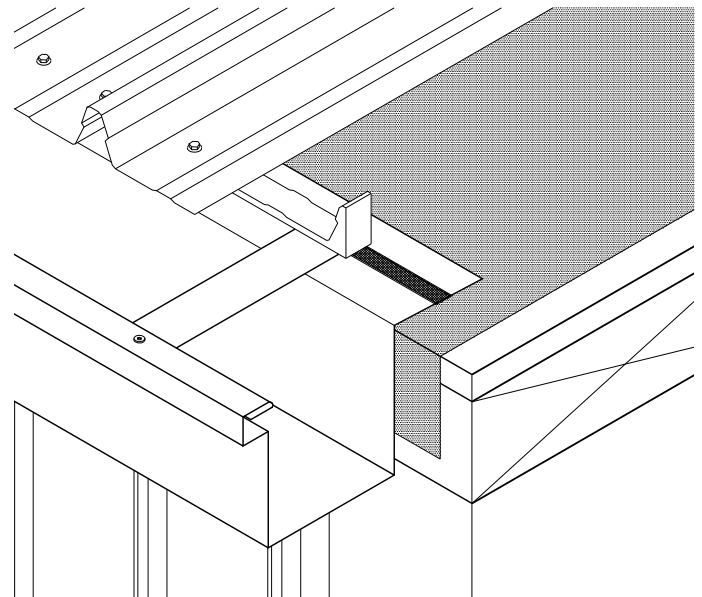
1:12 Slope
Minimum



Clip-Loc Fastening Pattern

CAUTION

In locations where heavy rainfall or severe ice and snow may occur, Metal Sales' standard gutters may not be suitable for use.

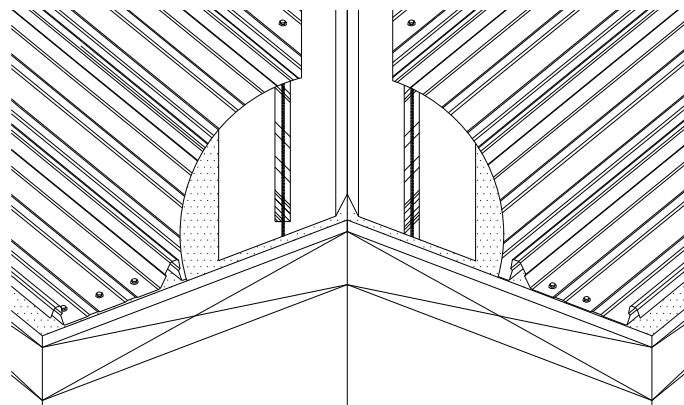
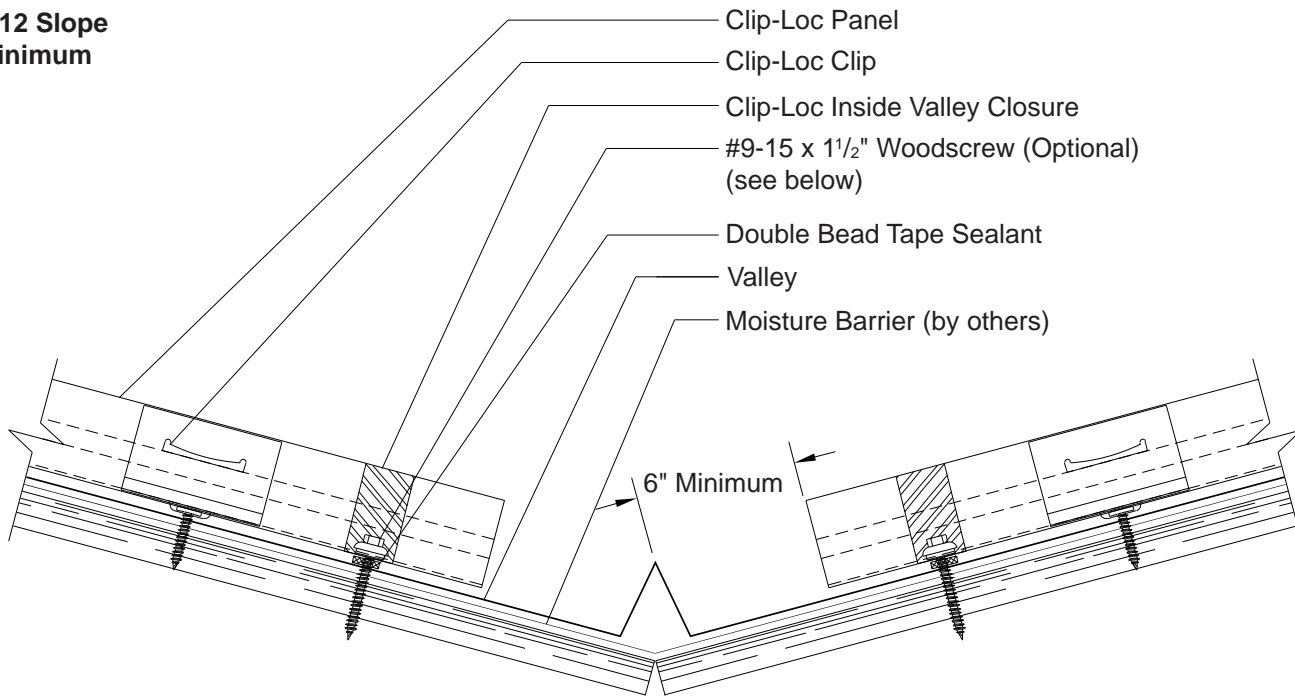


INSTALLATION NOTES

Note: All Gutter flashings must be installed prior to panel installation.

1. Install Box Gutter flashing back against substrate. To hold Box Gutter flashing in place, fasten to substrate with #10-12 x 1" Pancake Head Woodscrew 4'-0" o.c.
2. Install Universal Gutter/Downspout Straps every 3'-0" of gutter length. Before continuing make sure strap placement is such that strap can be fastened to substrate with panel fasteners (see note #6). Pop Rivet Universal Gutter/Downspout Strap to Box Gutter.
3. Apply a row of Double Bead Tape Sealant across Box Gutter flashing approximately 2" from backside of gutter flashing.
4. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.
6. Once panels have been installed, (see pages 21-22), fasten through panel, closure, and sealant into substructure with 6 fasteners per panel. Before continuing make sure at least one fastener secures Universal Gutter/Downspout Strap to substrate. Fasteners must penetrate closure and sealant to eliminate closure movement.

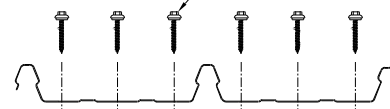
1:12 Slope
Minimum



CAUTION

Additional screws may be required for high snow loading and steep slopes.

#9-15 x 1 1/2" Woodscrew
XL (6) per panel



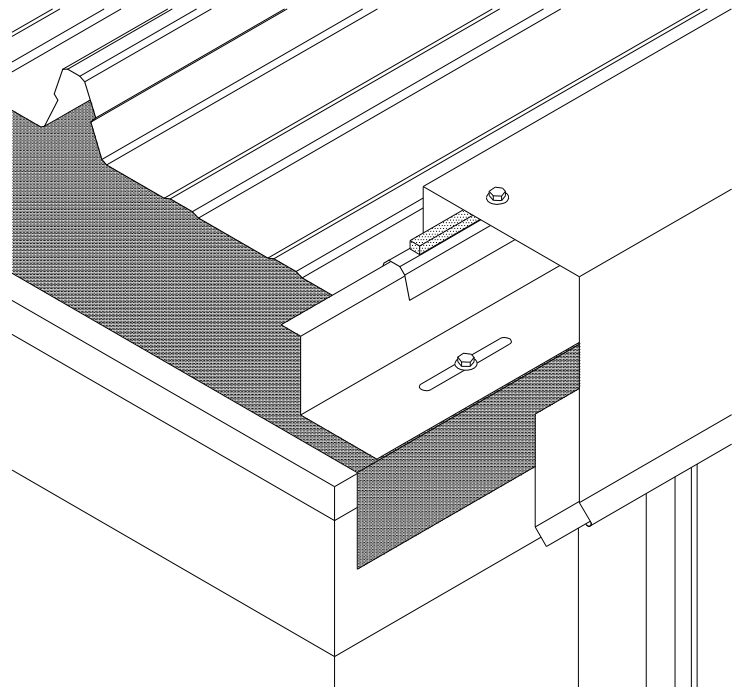
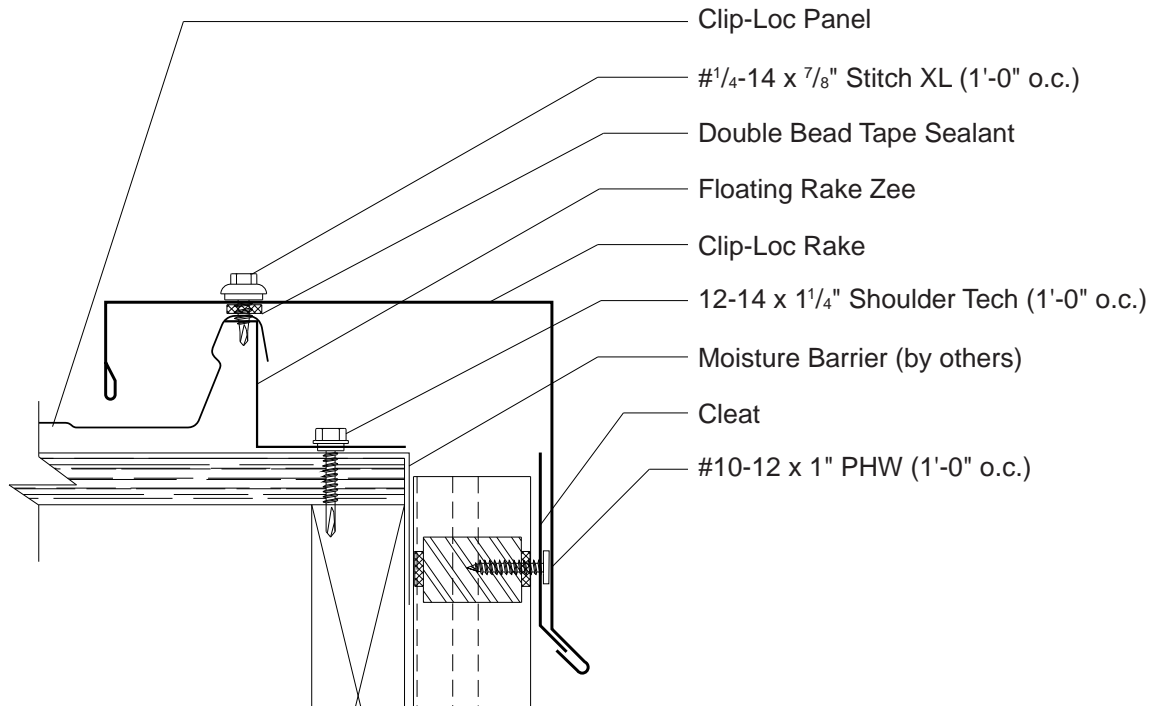
Clip-Loc Fastening Pattern

INSTALLATION NOTES

All Valley flashings must be installed prior to panel installation. If two or more valley flashings are required, valley must be installed working from eave to peak. It is recommended that ice and water shield be installed under valley flashing for added moisture protection.

1. Install Valley flashing against substrate. To hold Valley flashing in place, fasten to substrate with #10-12 x 1" Pancake Head fastener 4'-0" o.c.
2. Apply a row of Double Bead Tape Sealant across both sides of Valley flashing approximately 5" from center of valley.
3. Properly align and install Clip-Loc Inside Valley Closures to accommodate Clip-Loc panel rib alignment. Closures are designated "Left" or "Right". Closures must be installed on both sides of valley flashing and lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 6" placing two beads of tube sealant per side between the flashings.
5. Once panels have been installed, (see pages 21-22), fasten through panel, closure, and sealant into substructure with 6 fasteners per panel. Fasteners must penetrate closure and sealant to eliminate closure movement.

1:12 Slope
Minimum

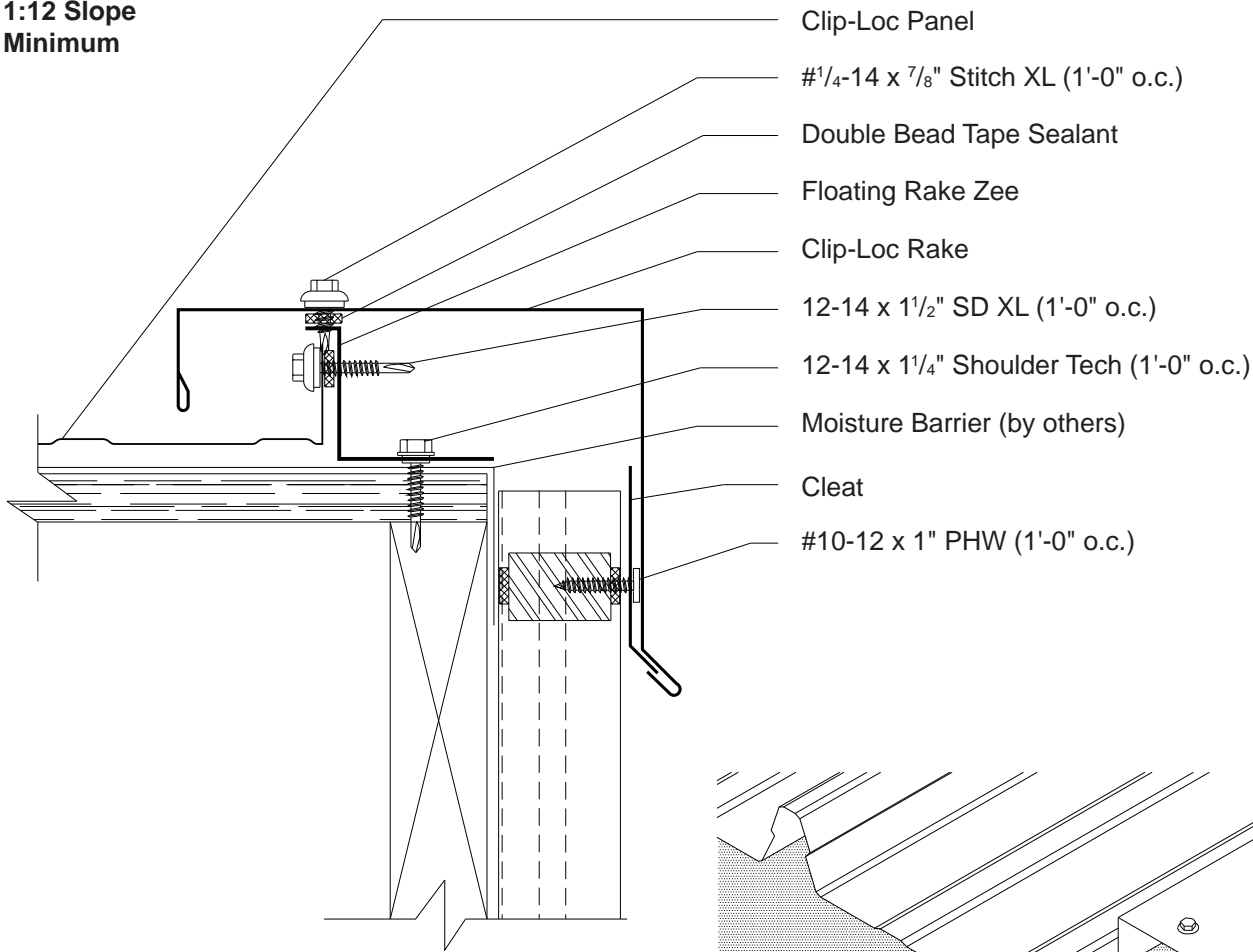


INSTALLATION NOTES

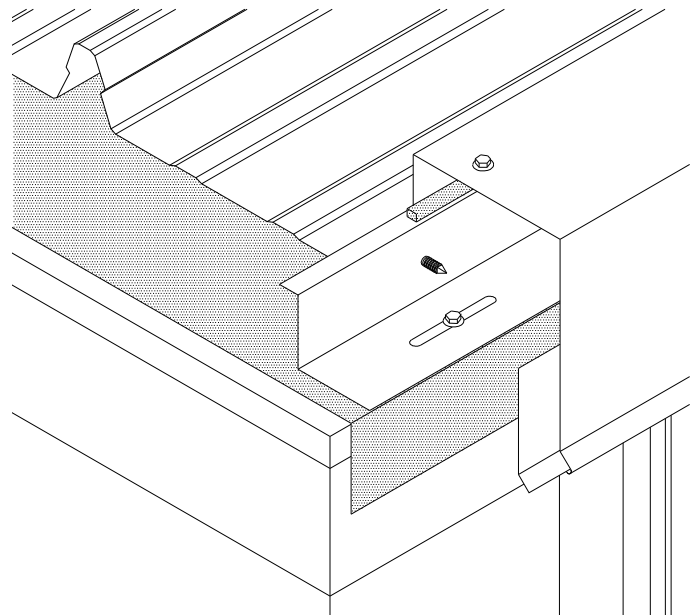
Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rake installation (see pages 21-22).

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat installation allows for proper Clip-Loc Rake attachment.
2. With Clip-Loc panel properly nested over top of Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of panel rib.
3. Install Clip-Loc Rake flashing by sliding open hem onto Cleat and resting the Clip-Loc Rake flashing on top of panel rib. Fasten through Clip-Loc Rake, sealant, roof panel, and into Clip-Loc Floating Rake Zee with $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 1'-0" o.c.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 $\frac{1}{2}$ " o.c.

1:12 Slope
Minimum



■ Field bend panel rib up 1⁵/₈"

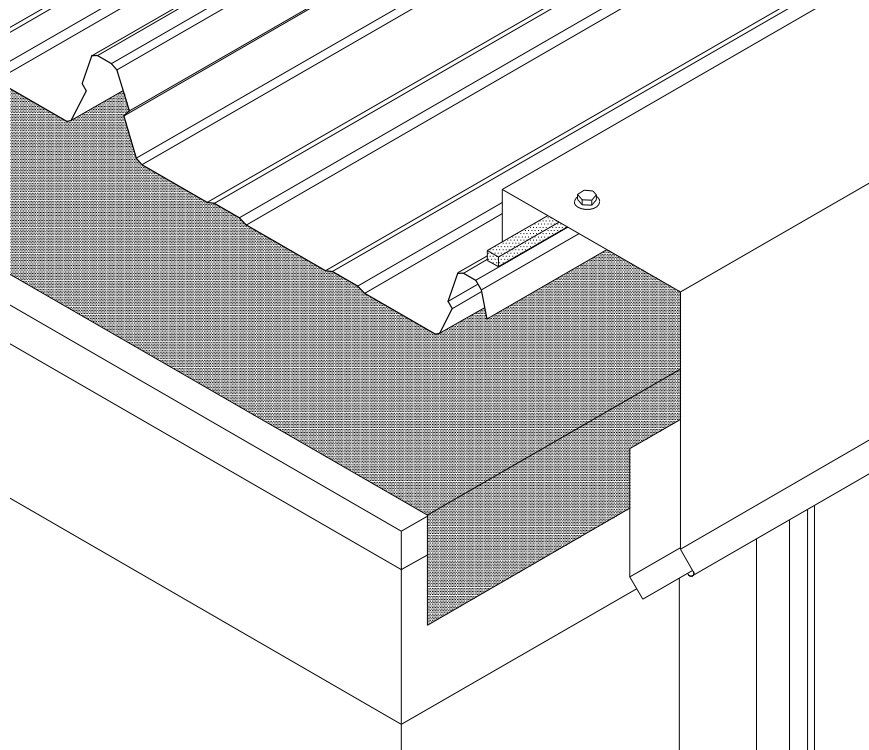
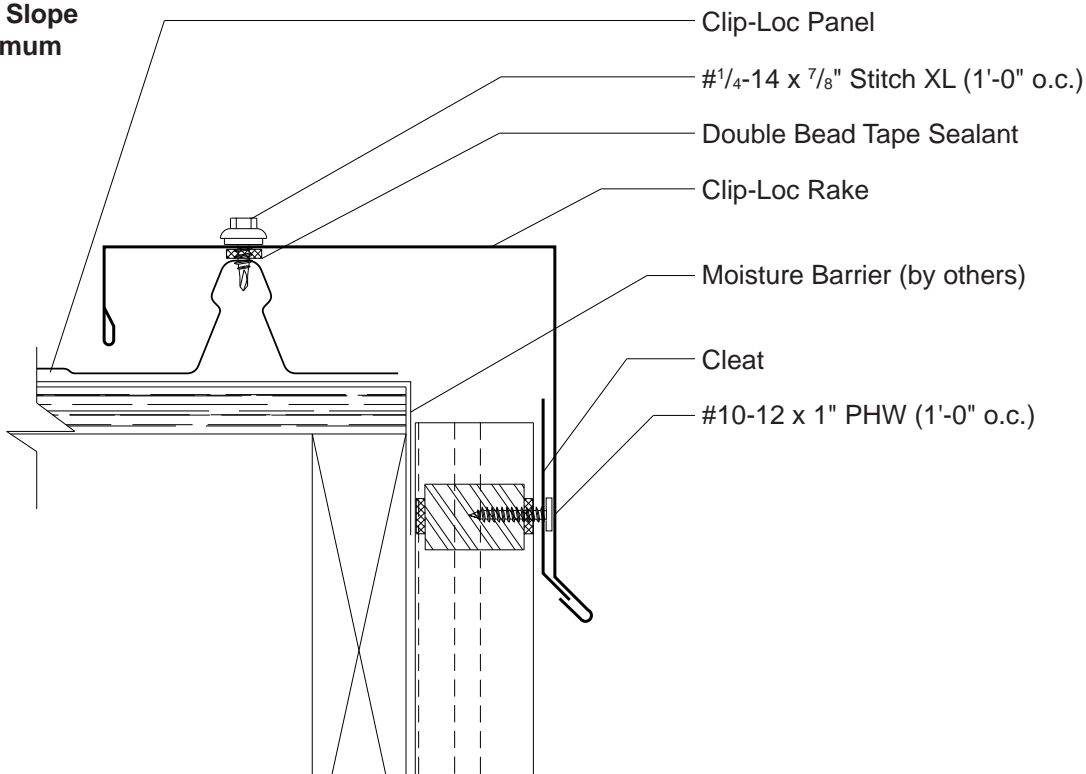


INSTALLATION NOTES

Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rake installation (see pages 21-22). Panel must be field bent up 1⁵/₈".

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat installation allows for proper Clip-Loc Rake attachment.
2. Apply a row of Double Bead Tape Sealant between Floating Rake Zee and field bent panel rib. Fasten field bent panel rib to Clip-Loc Floating Rake Zee with 12-14 x 1¹/₂" SD XL 1'-0" o.c.
3. With Clip-Loc panel properly fastened to Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of Floating Rake Zee.
4. Install Clip-Loc Rake flashing by sliding open hem onto Cleat and resting the Clip-Loc Rake flashing on top of Floating Rake Zee. Fasten through Clip-Loc Rake, sealant, and into Clip-Loc Floating Rake Zee with 1/4-14 x 7/8" Stitch XL 1'-0" o.c. Stagger Stitch fastener so that there is no interference with 12-14 x 1¹/₂" SD XL already installed.
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2¹/₂" o.c.

1:12 Slope
Minimum

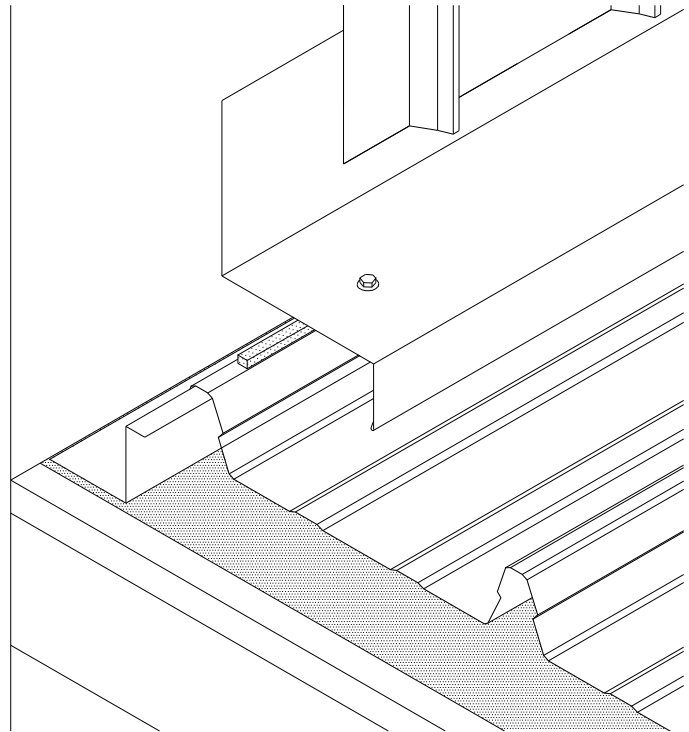
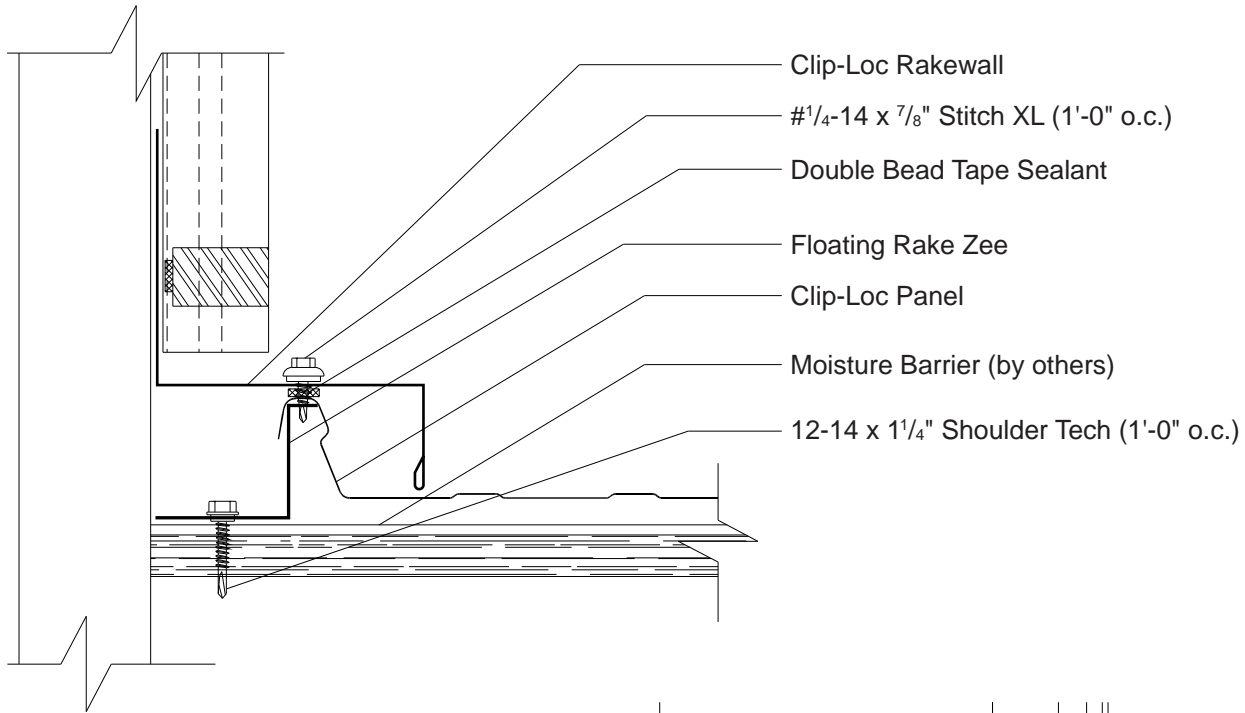


INSTALLATION NOTES

Clip-Loc panels must be installed prior to rake installation (see pages 21-22).

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat installation allows for proper Clip-Loc Rake attachment.
2. Apply a row of Double Bead Tape Sealant across top of Clip-Loc panel rib.
3. Install Clip-Loc Rake flashing by sliding open hem onto Cleat and resting the Clip-Loc Rake flashing on top of panel rib. Fasten through Clip-Loc Rake, sealant, and roof panel with 1/4-14 x 7/8" Stitch XL 1'-0" o.c.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

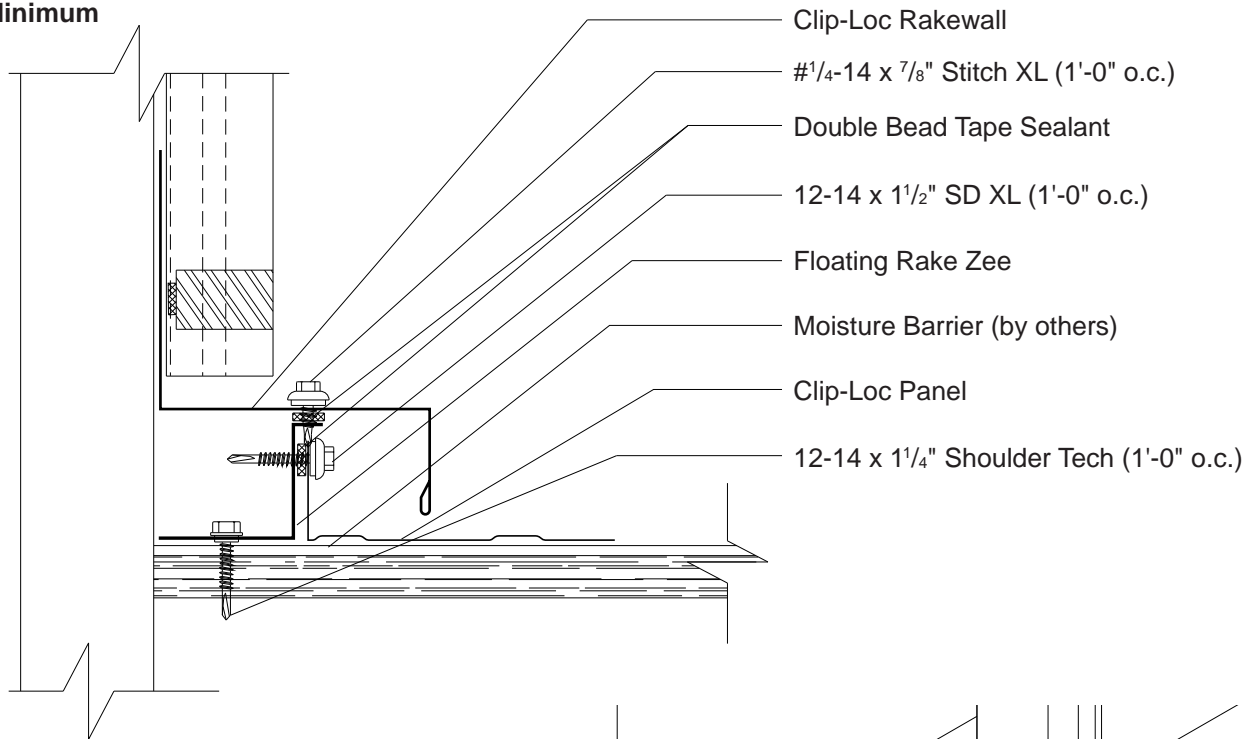


INSTALLATION NOTES

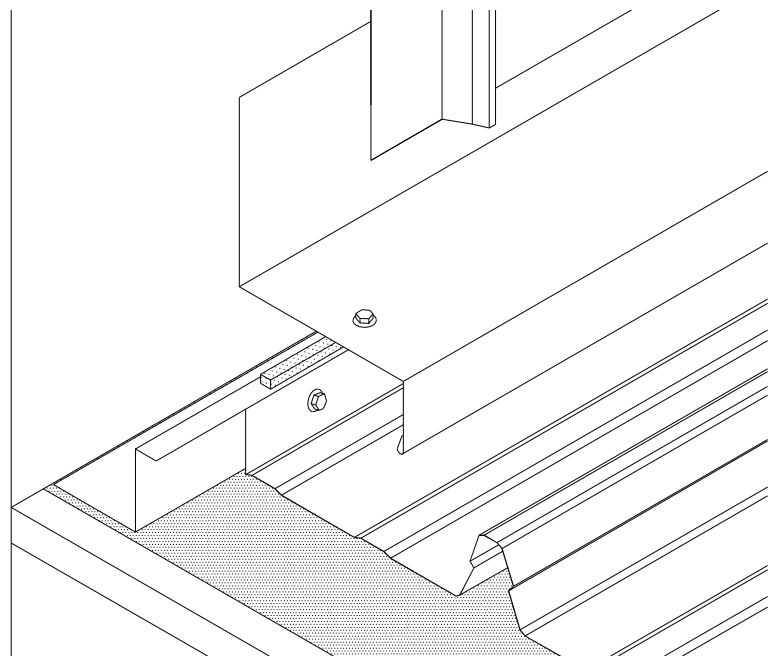
Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rakewall installation (see page 21-22).

1. With Clip-Loc panel properly nested over top of Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of panel rib.
2. Install Clip-Loc Rakewall flashing on top of panel rib. Fasten through Clip-Loc Rakewall, sealant, roof panel, and into Clip-Loc Floating Rake Zee with $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 1'-0" o.c.
3. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant. Do **NOT** fasten Clip-Loc Rakewall to wall.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum



■ Field bend panel rib up 1⁵/₈"

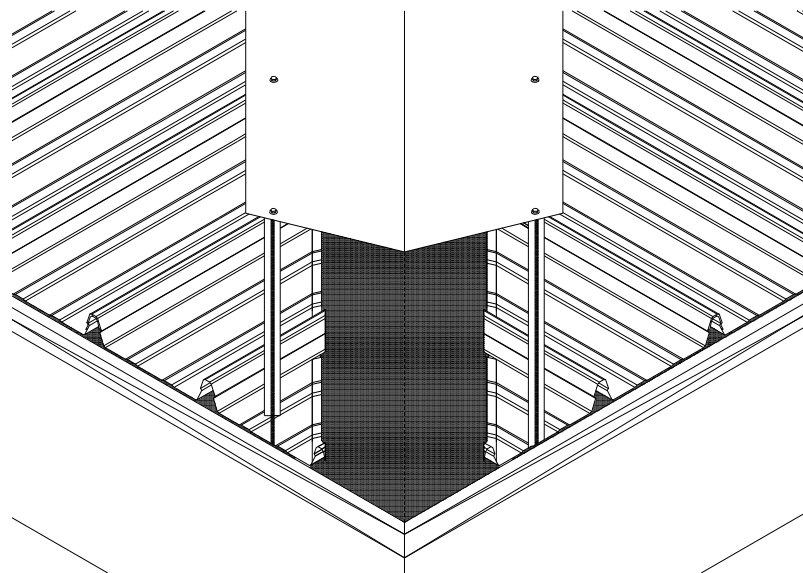
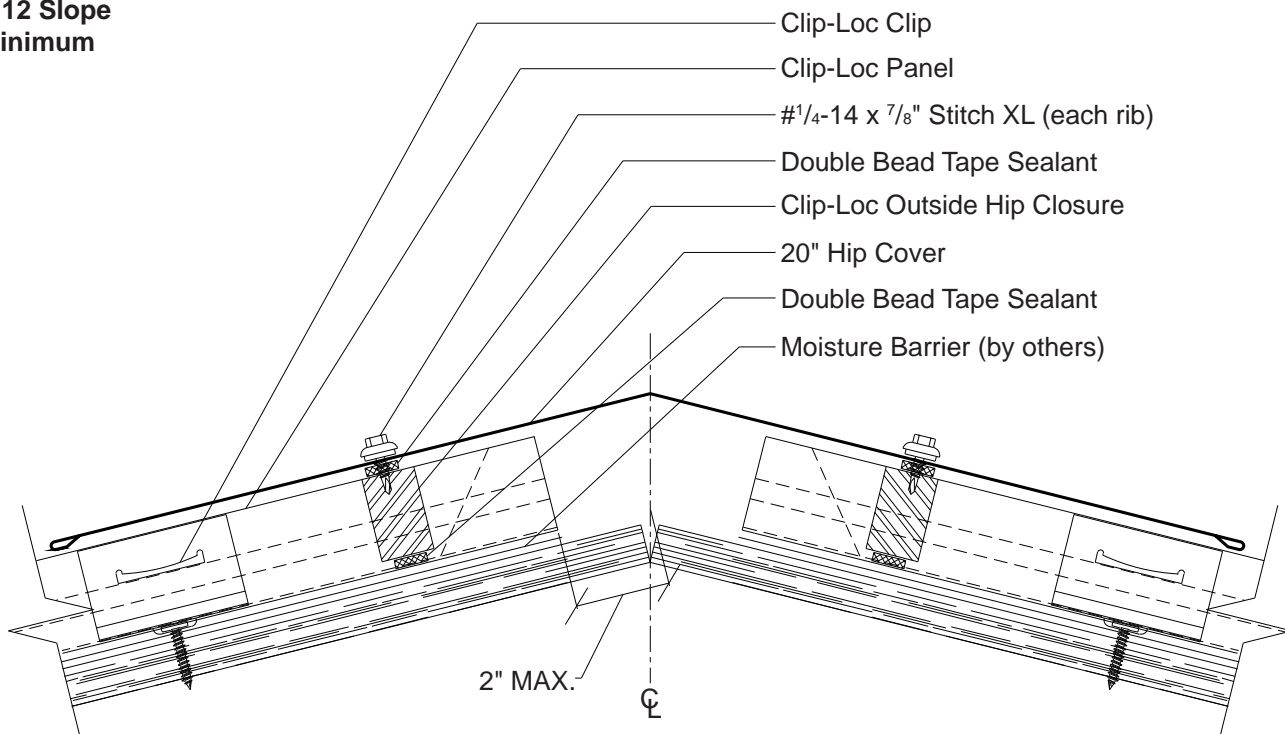


INSTALLATION NOTES

Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rakewall installation (see page 21-22). Panel must be field bent up 1⁵/₈".

1. Apply a row of Double Bead Tape Sealant between Floating Rake Zee and field bent panel rib. Fasten field bent panel rib to Clip-Loc Floating Rake Zee with 12-14 x 1¹/₂" SD XL 1'-0" o.c.
2. With Clip-Loc panel properly fastened to Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of Floating Rake Zee.
3. Install Clip-Loc Rakewall flashing on top of Floating Rake Zee. Fasten through Clip-Loc Rakewall, sealant, and into Clip-Loc Floating Rake Zee with 1/4-14 x 7/8" Stitch XL 1'-0" o.c. Stagger Stitch fastener so that there is no interference with 12-14 1¹/₂" SD XL already installed.
4. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant. Do **NOT** fasten Clip-Loc Rakewall to wall.
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2¹/₂" o.c.

1:12 Slope
Minimum

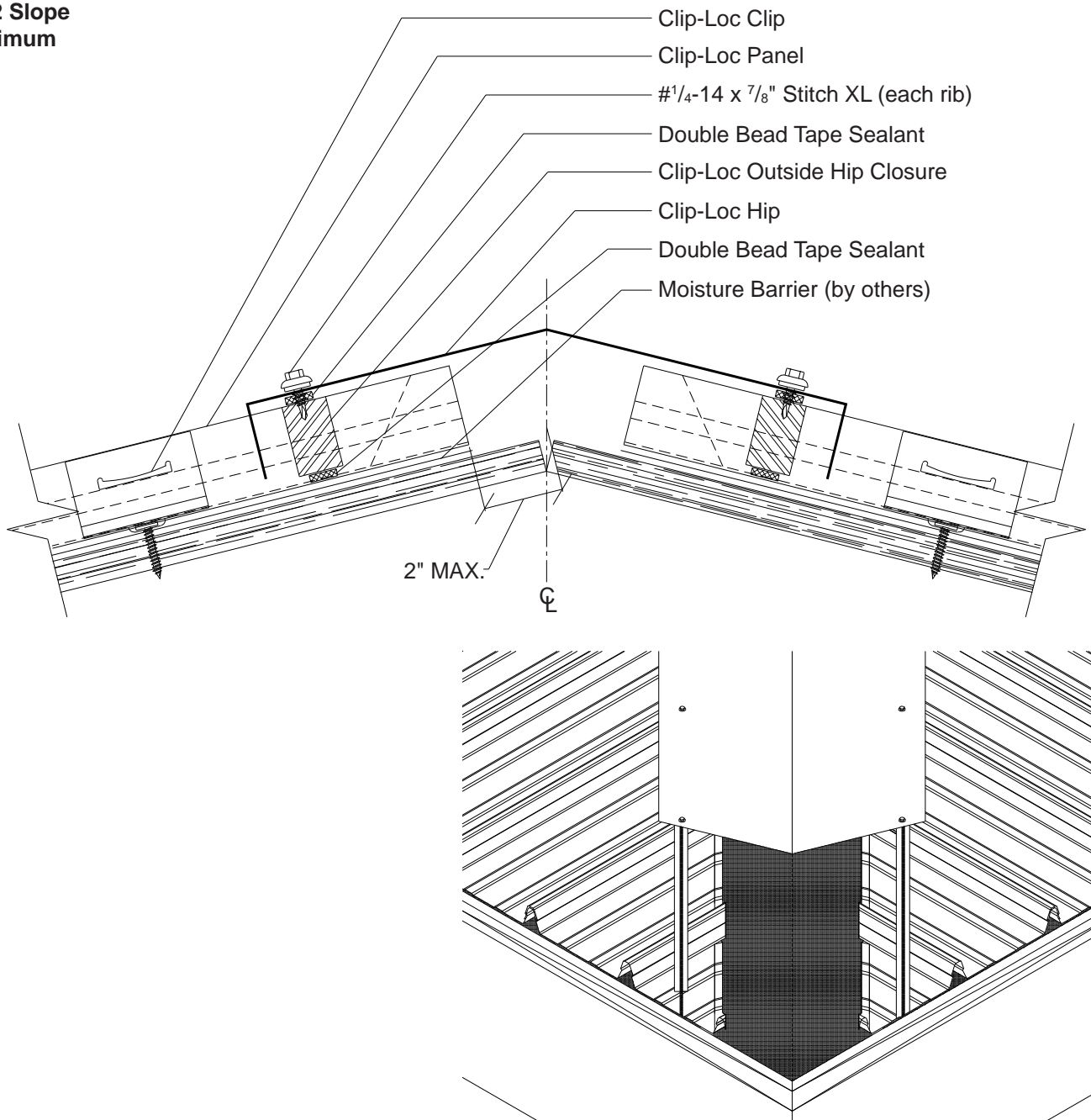


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of hip (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end on both sides of hip.
3. Install a Clip-Loc Outside Hip Closure over tape sealant. Before continuing make sure closure placement will accommodate 20" Hip flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of hip.
5. Install 20" Hip flashing and secure to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL at every rib.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

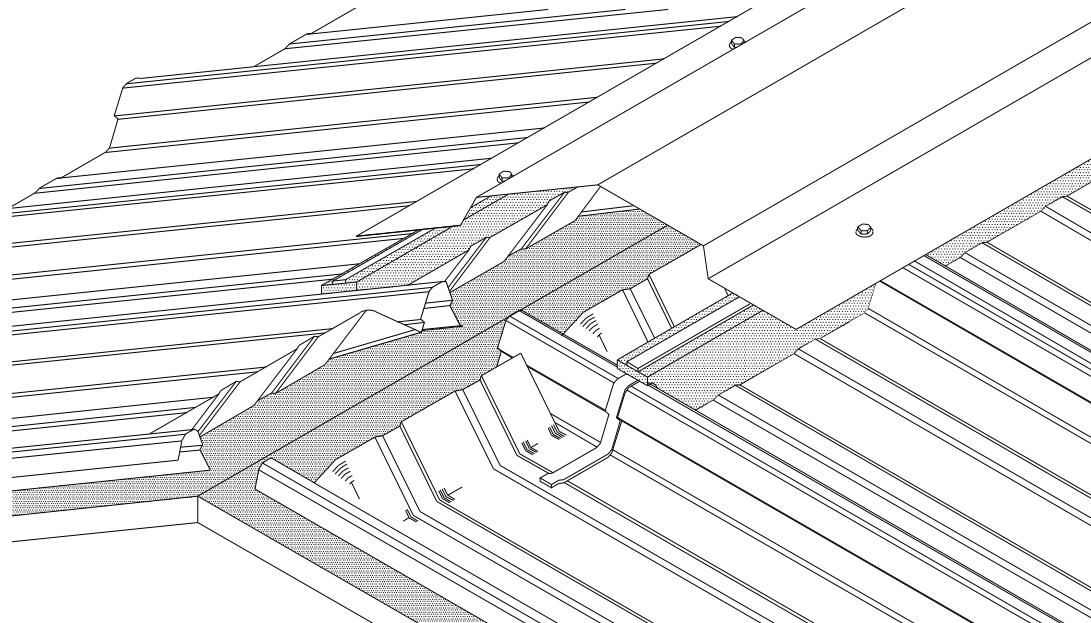
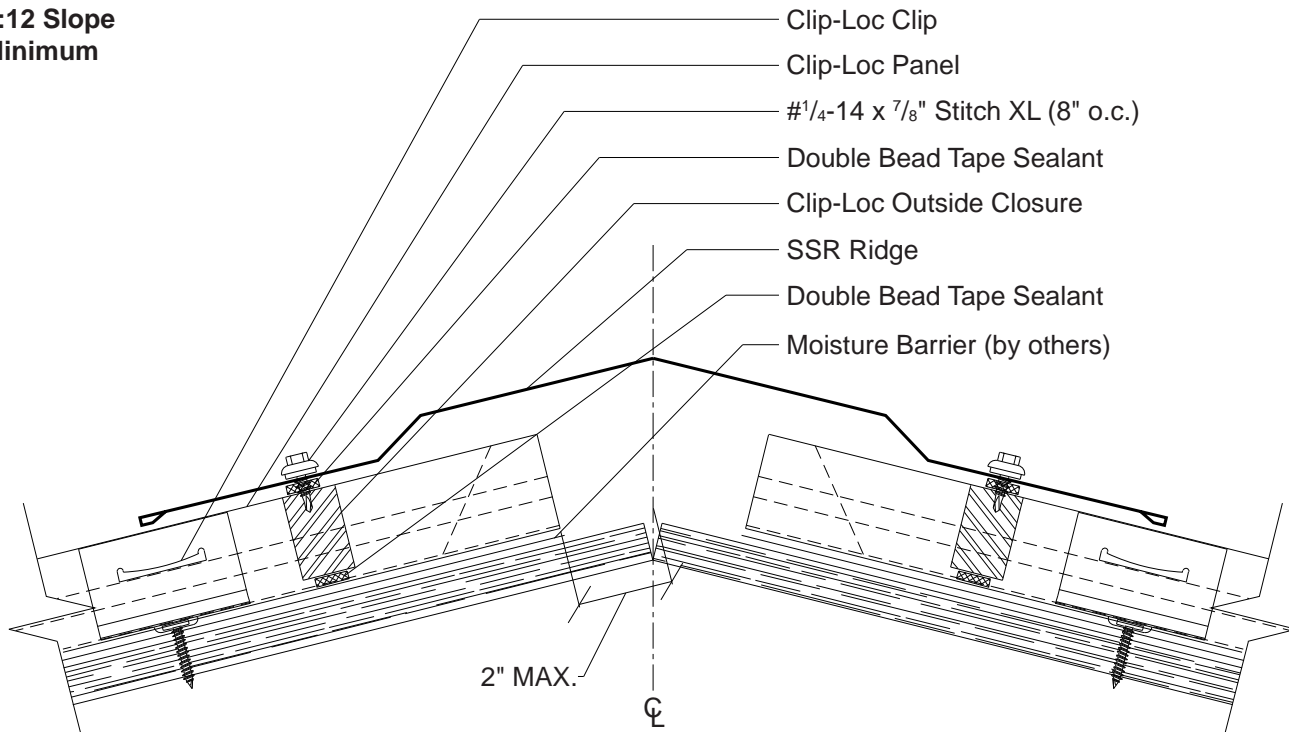


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of hip (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end on both sides of hip.
3. Install a Clip-Loc Outside Hip Closure over tape sealant. Before continuing make sure closure placement will accommodate Clip-Loc Hip flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of hip.
5. Place Clip-Loc Hip on top of panel ribs and mark the hip flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out hip flashing (see page 19).
6. Install Clip-Loc Hip flashing and secure to Clip-Loc panel rib with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL at every rib.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

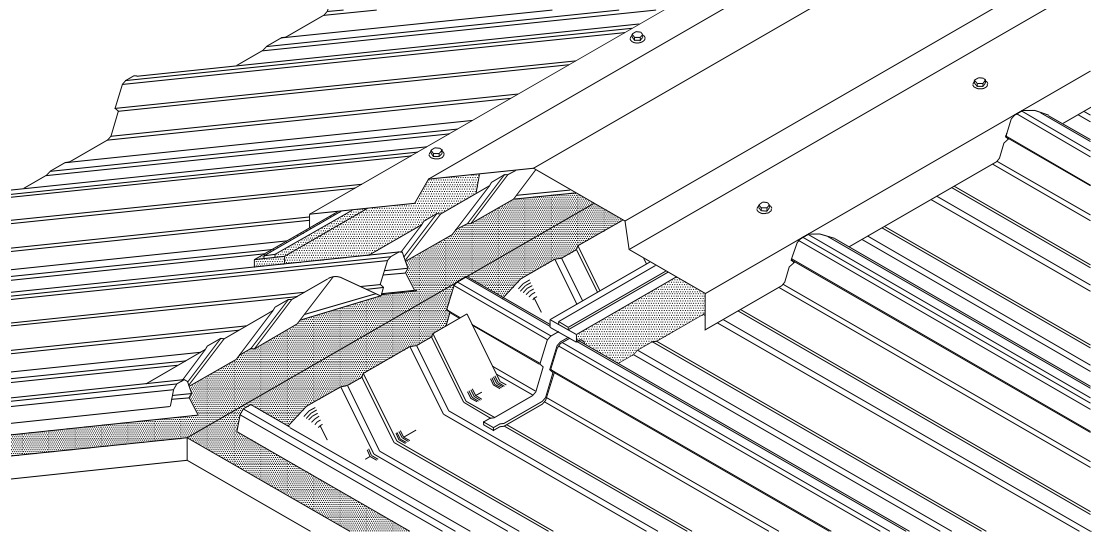
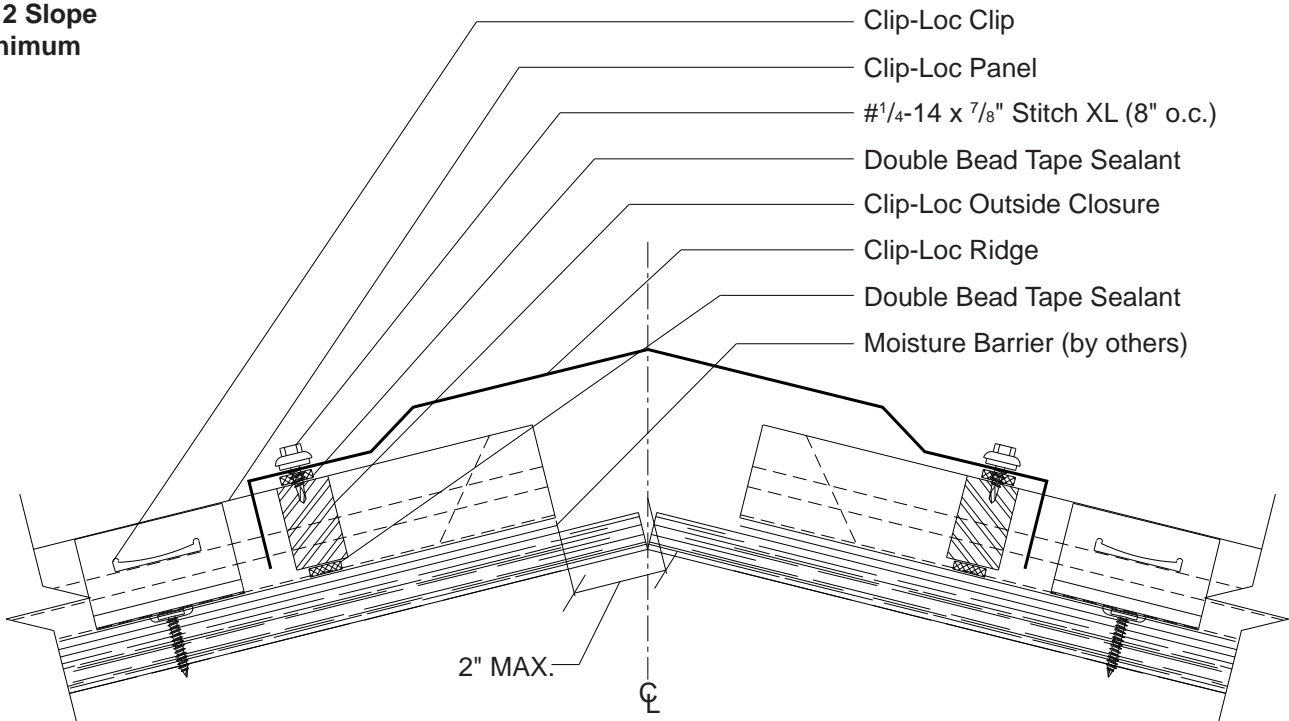


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of ridge (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 4"-6" from panel end on both sides of ridge.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate SSR Ridge flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of ridge.
5. Install SSR Ridge flashing and secure to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

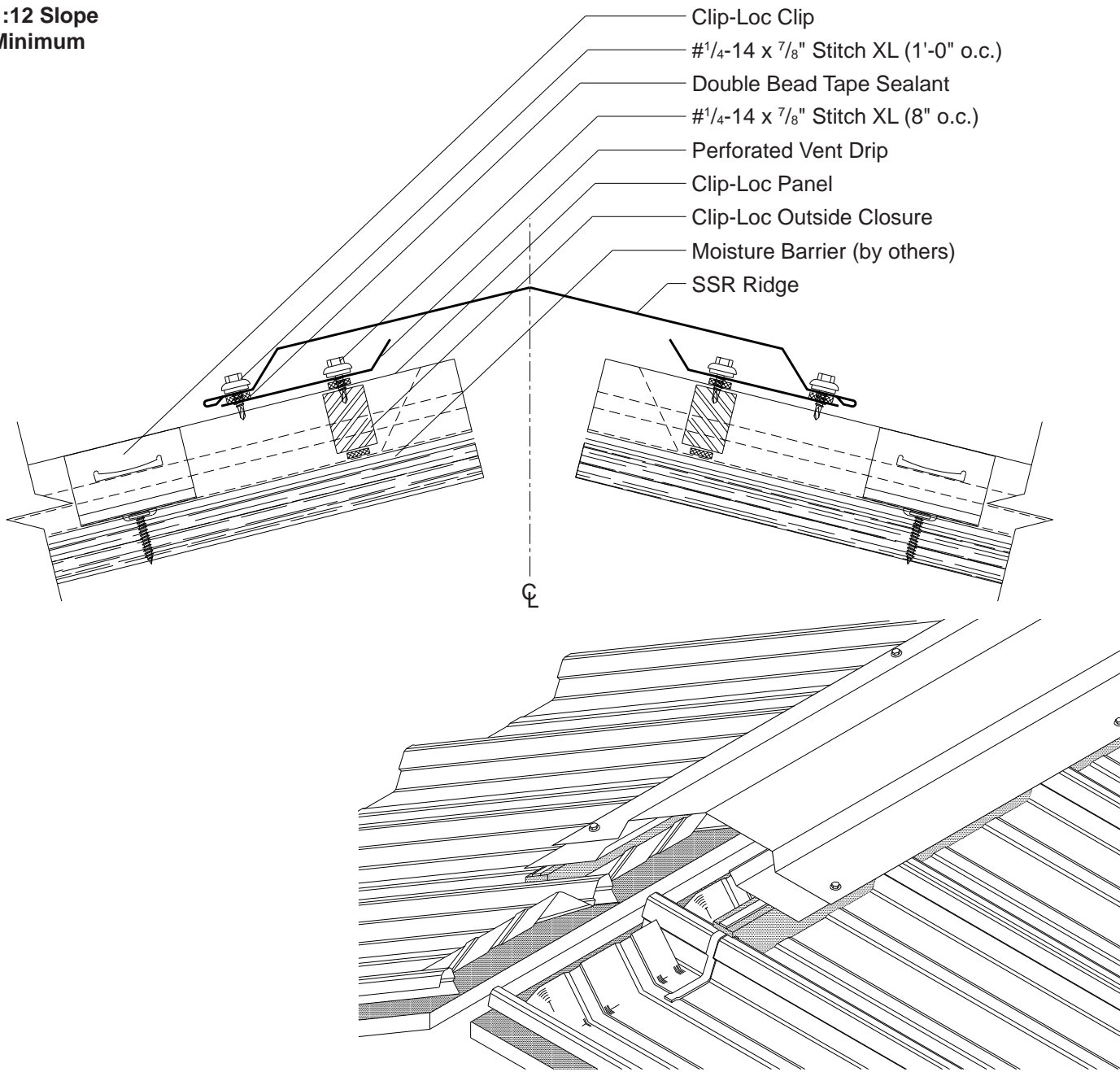


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of ridge (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 4"-6" from panel end on both sides of ridge.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate Clip-Loc Ridge flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of ridge.
5. Place Clip-Loc Ridge on top of panel ribs and mark the ridge flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out ridge flashing (see page 19).
6. Install ridge flashing and secure to Clip-Loc panel rib with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 8" o.c. at every rib.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

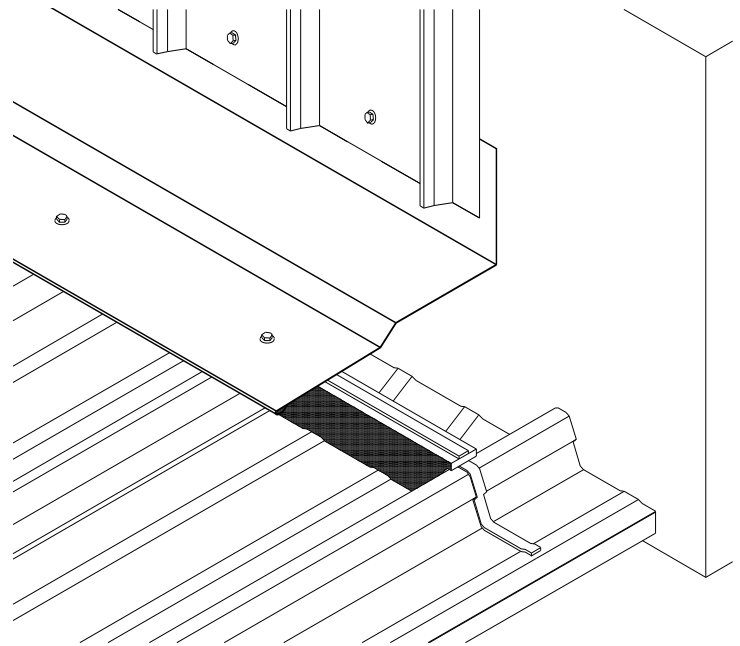
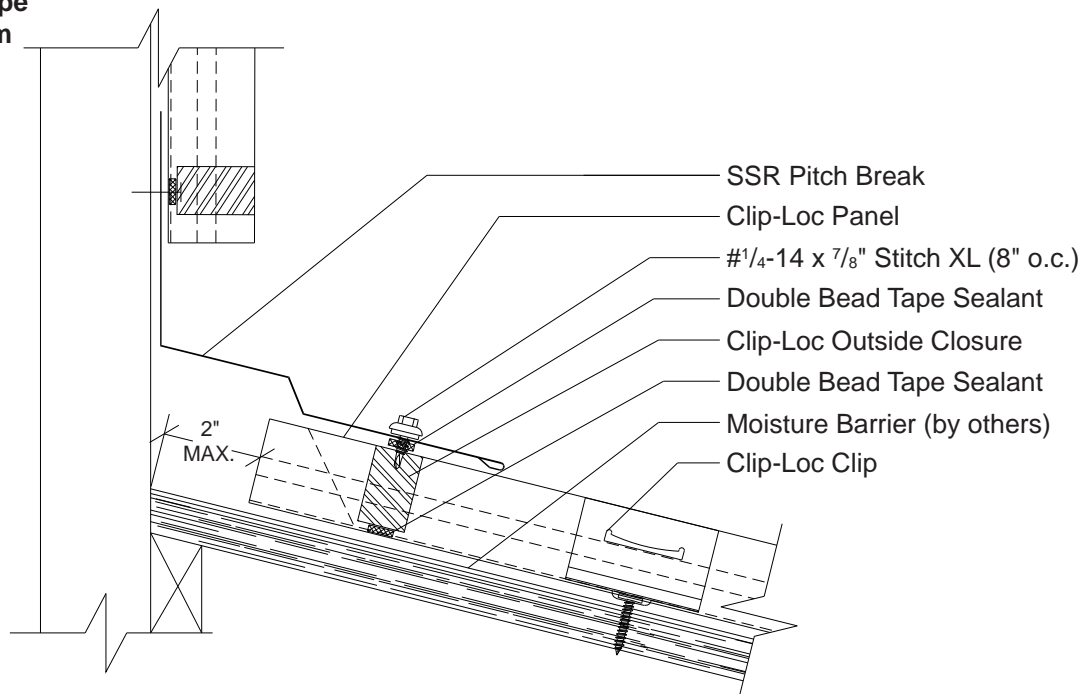


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of ridge (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end on both sides of ridge.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate 13" Step Ridge Cover and Perforated Vent Drip. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of ridge.
5. Install Perforated Vent Drip and properly align for 13" Step Ridge Cover. Once Perforated Vent Drip has been properly aligned, secure Perforated Vent Drip to panel ribs with $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 8" o.c. at every rib.
6. Apply a row of Double Bead Tape Sealant across end of Perforated Vent Drip.
7. Install ridge flashing and secure to Perforated Vent Drip with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL at 1'-0" o.c. avoiding panel ribs.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 $\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

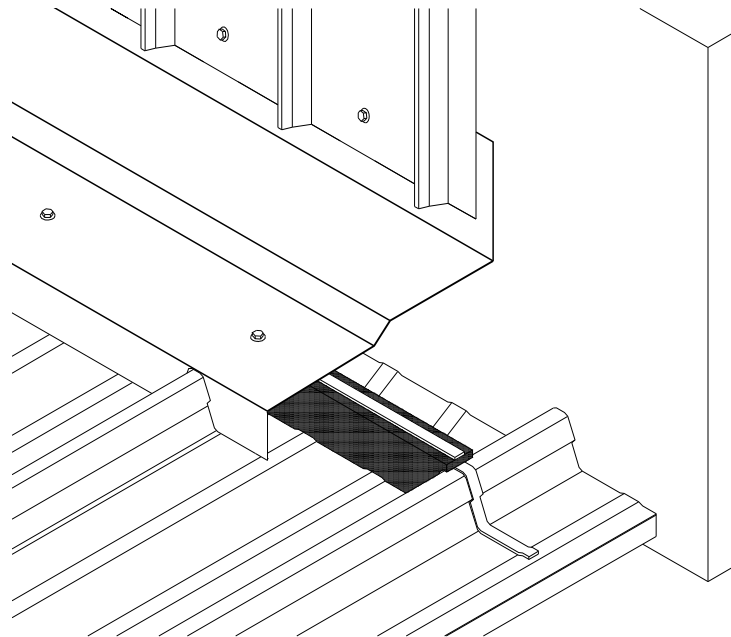
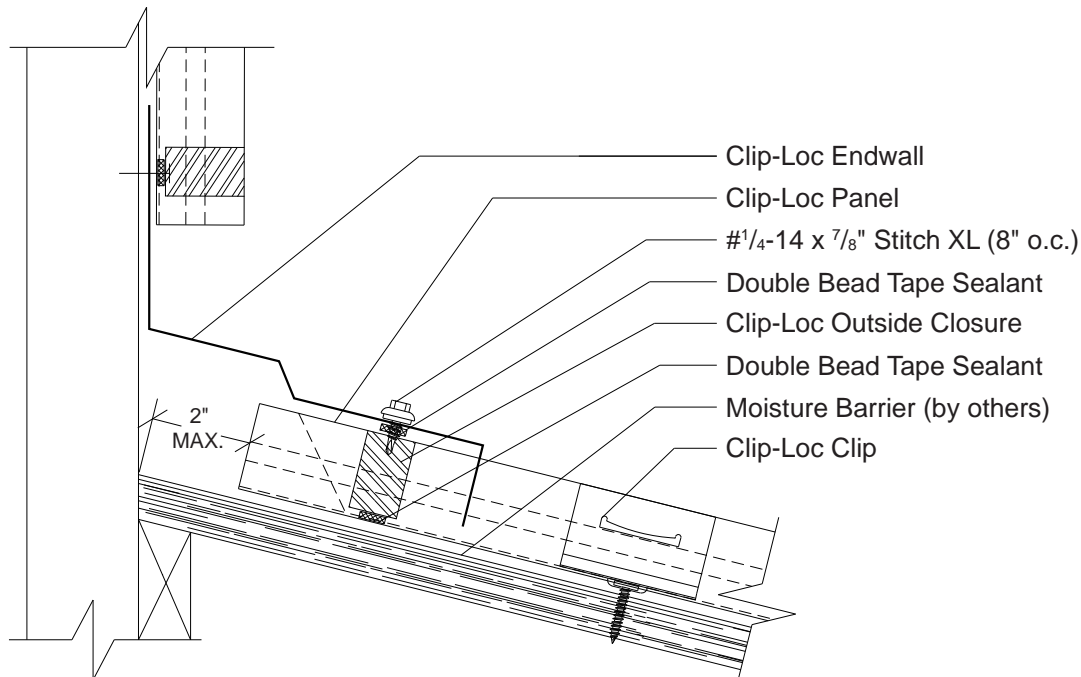


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate SSR Pitch Break flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Install SSR Pitch Break flashing, secure to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib.
6. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

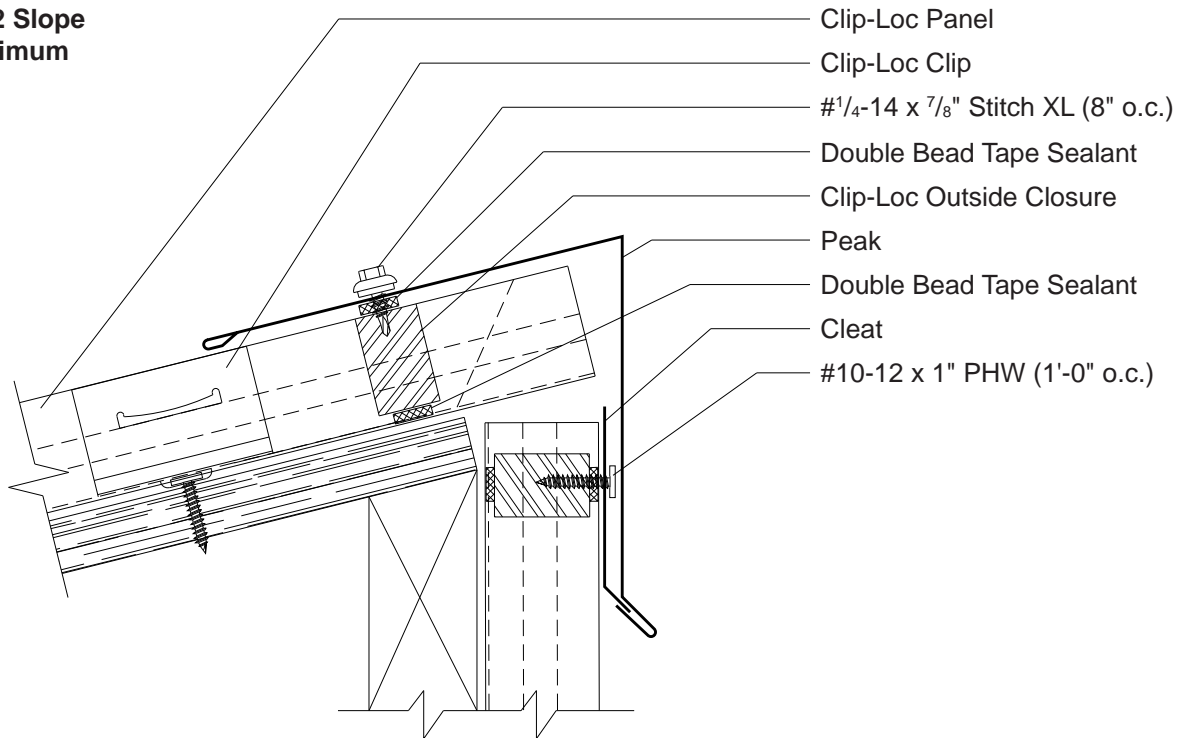


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

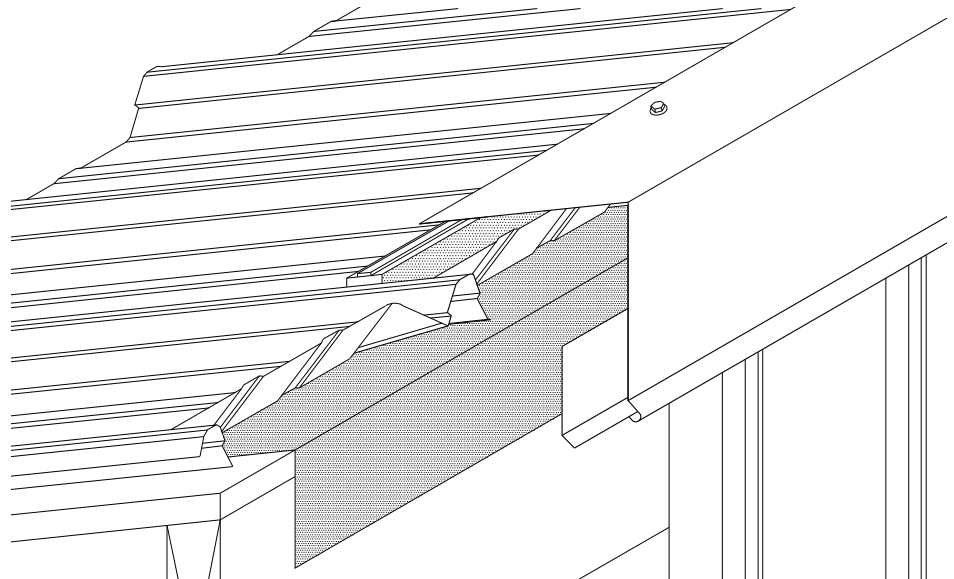
INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate Clip-Loc Endwall flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Place Clip-Loc Endwall on top of panel ribs and mark the endwall flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out endwall flashing (see page 19).
6. Install endwall flashing and secure to Clip-Loc panel rib with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 8" o.c. at every rib
7. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 12" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

**1:12 Slope
Minimum**



Clip-Loc Panel
Clip-Loc Clip
#1/4-14 x 7/8" Stitch XL (8" o.c.)
Double Bead Tape Sealant
Clip-Loc Outside Closure
Peak
Double Bead Tape Sealant
Cleat
#10-12 x 1" PHW (1'-0" o.c.)

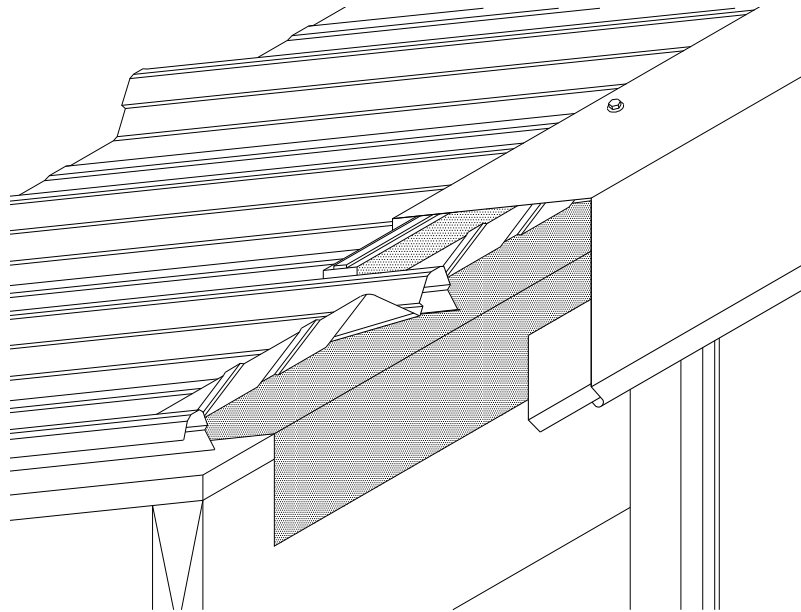
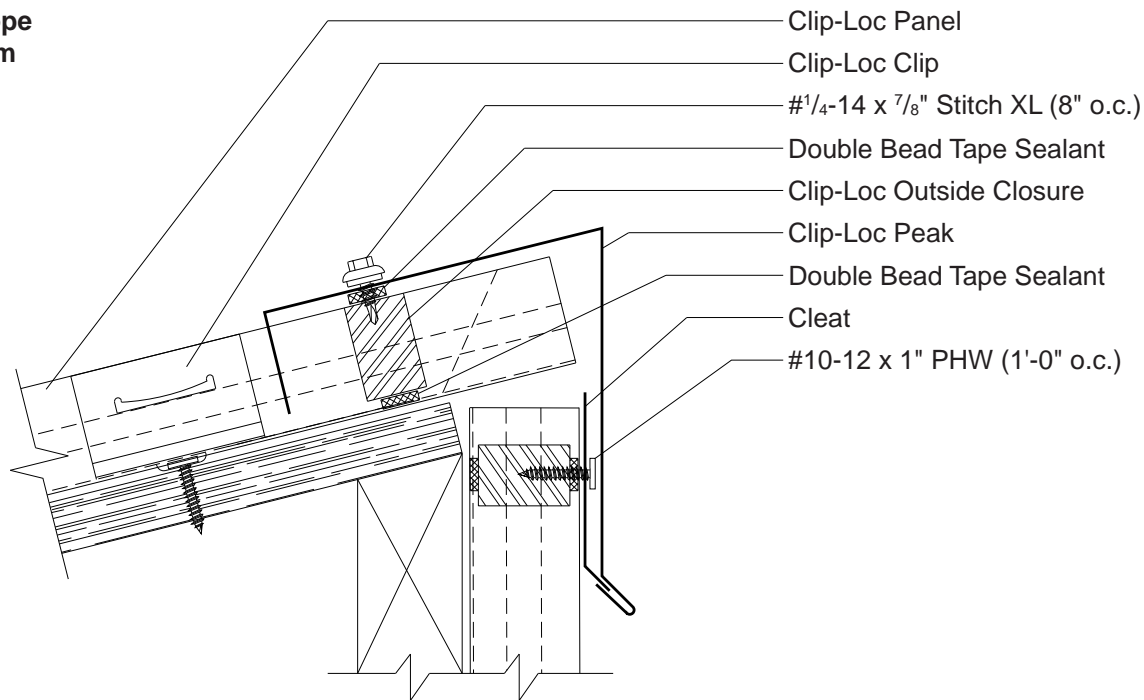


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate Peak flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper Peak attachment.
6. Install Peak flashing by sliding open hem onto Cleat and resting the Peak flashing back over roof panel.
7. Fasten Peak flashing to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum



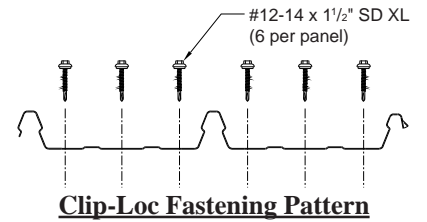
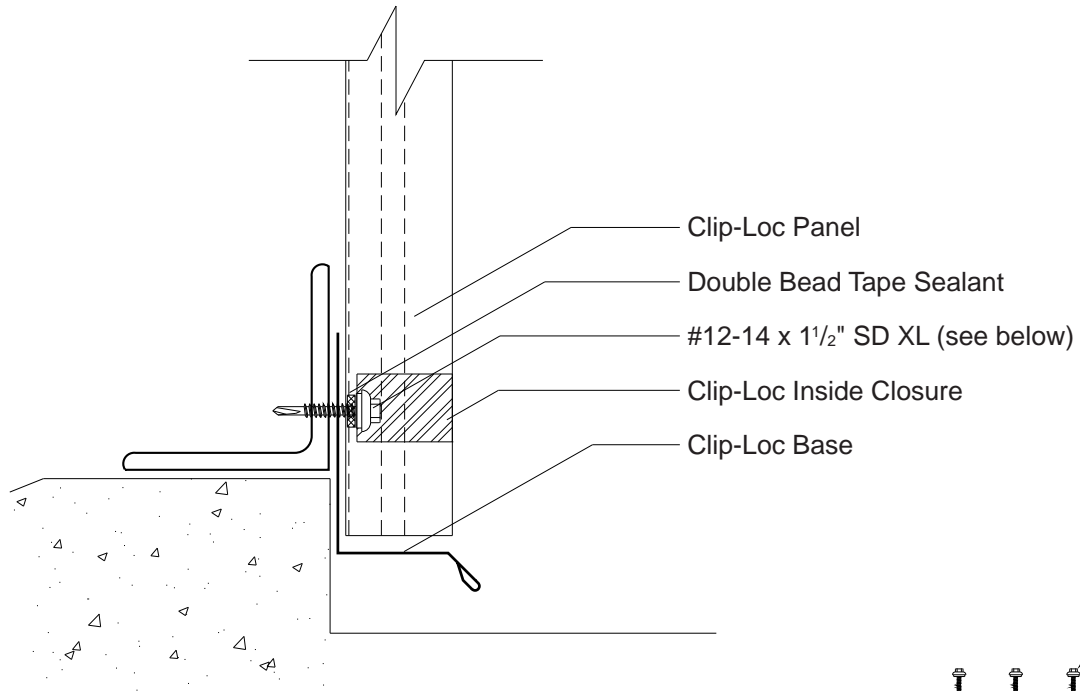
■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate Clip-Loc Peak flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Place Clip-Loc Peak on top of panel ribs and mark the peak flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out peak flashing (see page 19).
6. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper peak attachment.
7. Install Clip-Loc Peak flashing by sliding open hem onto Cleat and resting the peak flashing back over roof panel.
8. Fasten Clip-Loc Peak flashing to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib
9. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

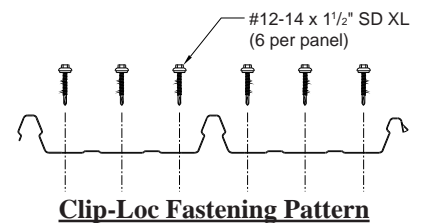
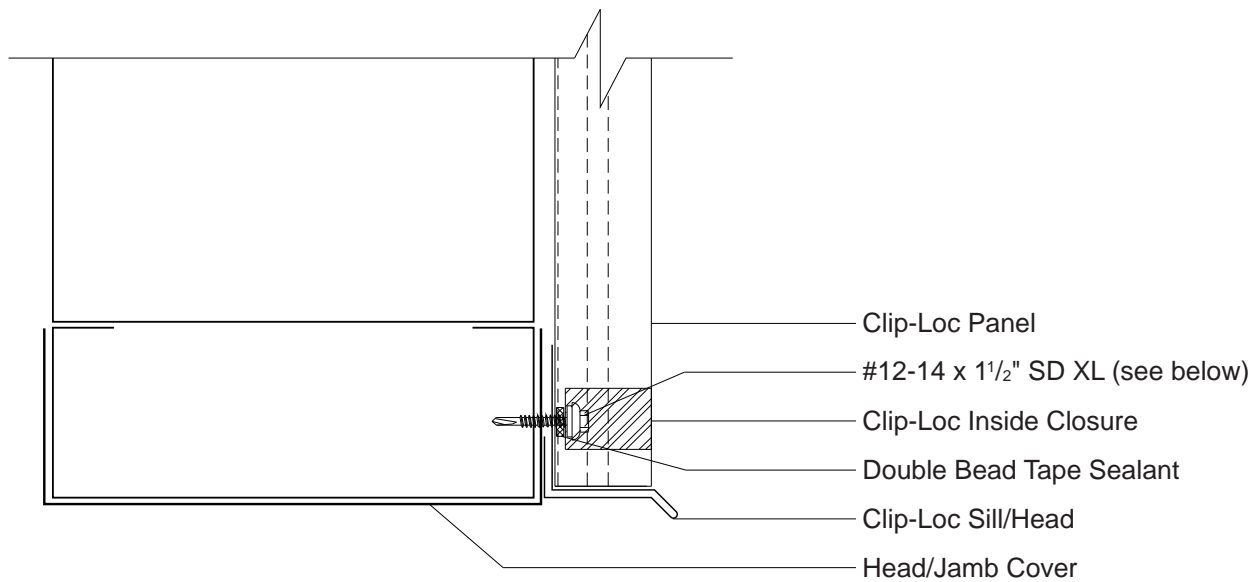
CLIP-LOC

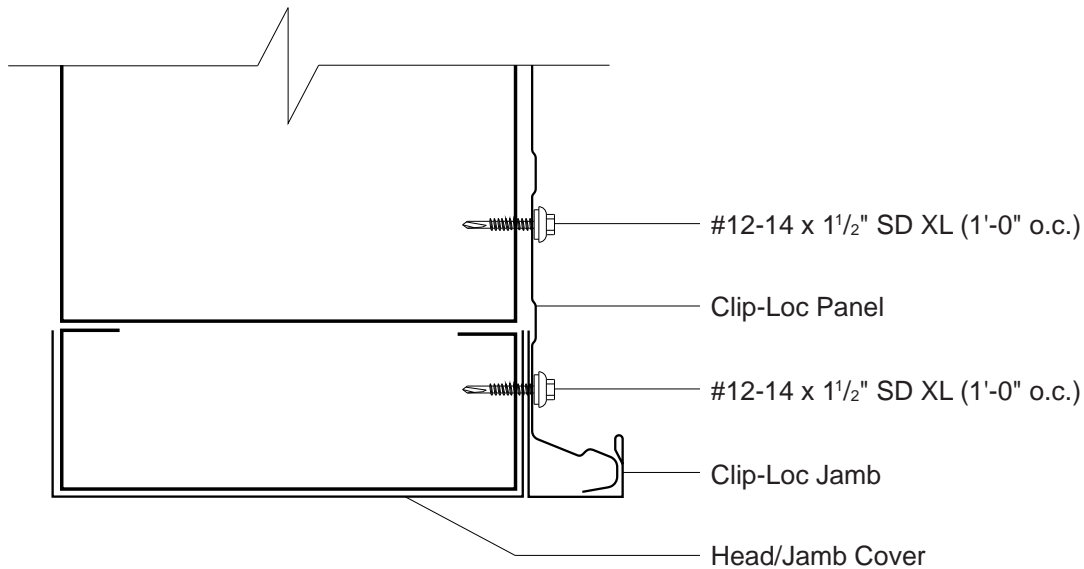
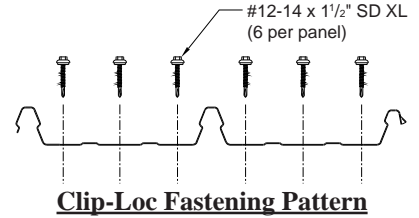
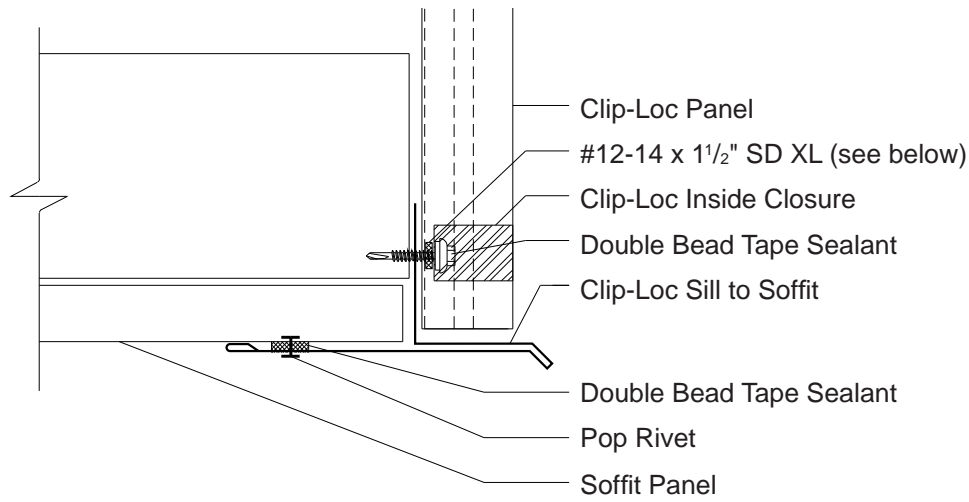
BASE

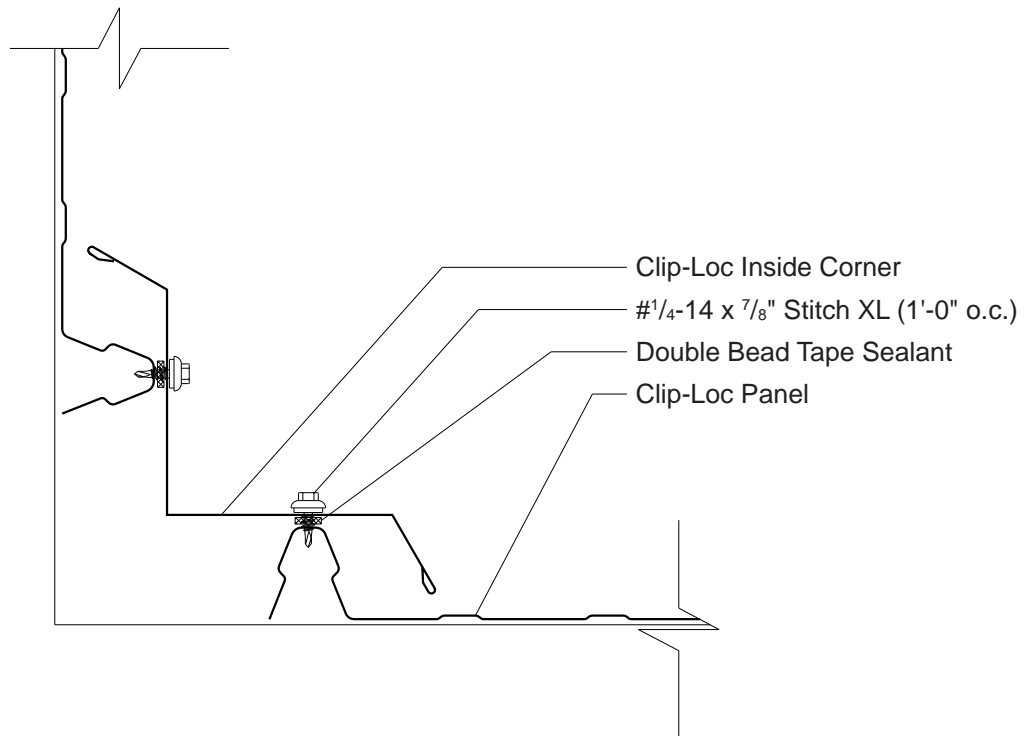
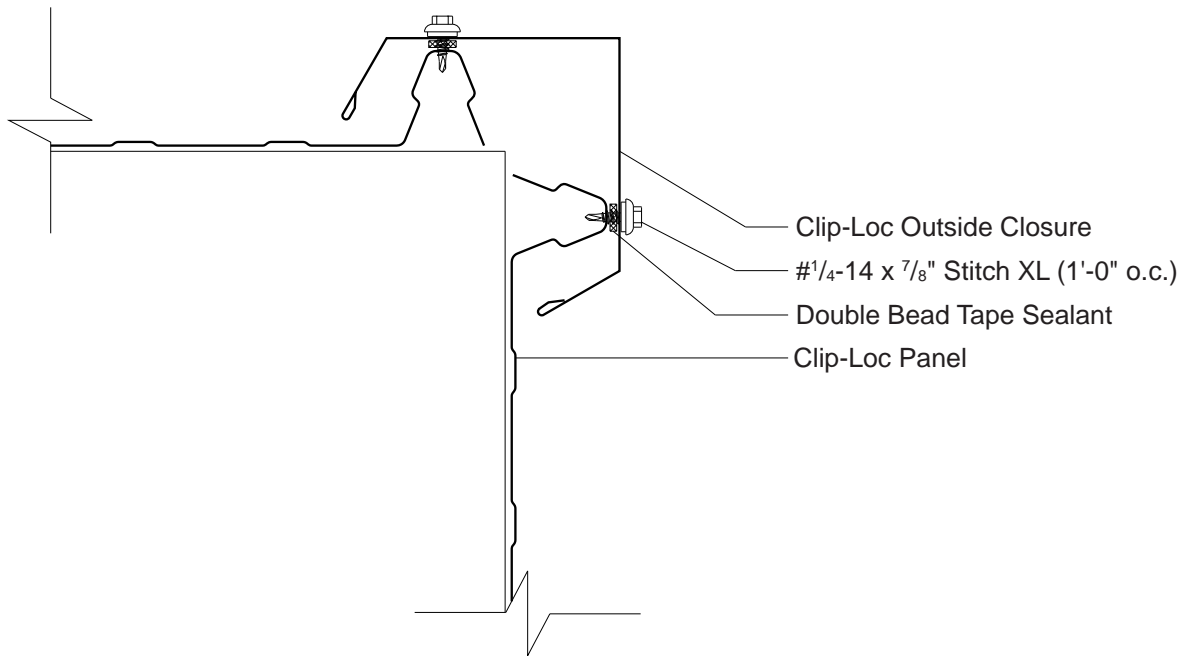


CLIP-LOC

SILL HEAD





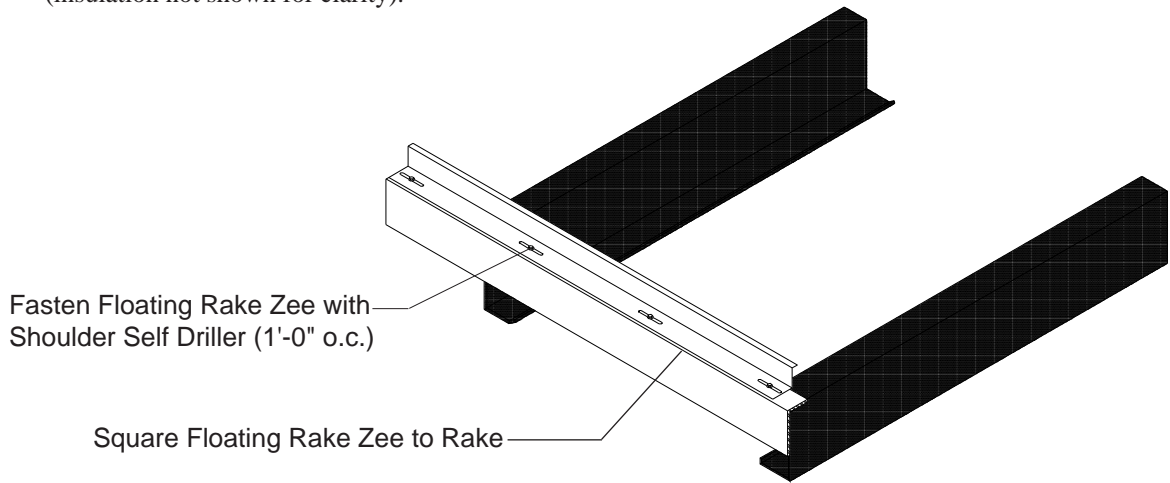


INSTALLING FLOATING RAKE ZEE (OPTIONAL)

STEP 1

Note: Insulation, eave, gutter, and valley flashings must first be installed before panel installation can begin (see pages 46-49). Clip-Loc panels can be installed going from either left to right or right to left looking from eave to peak.

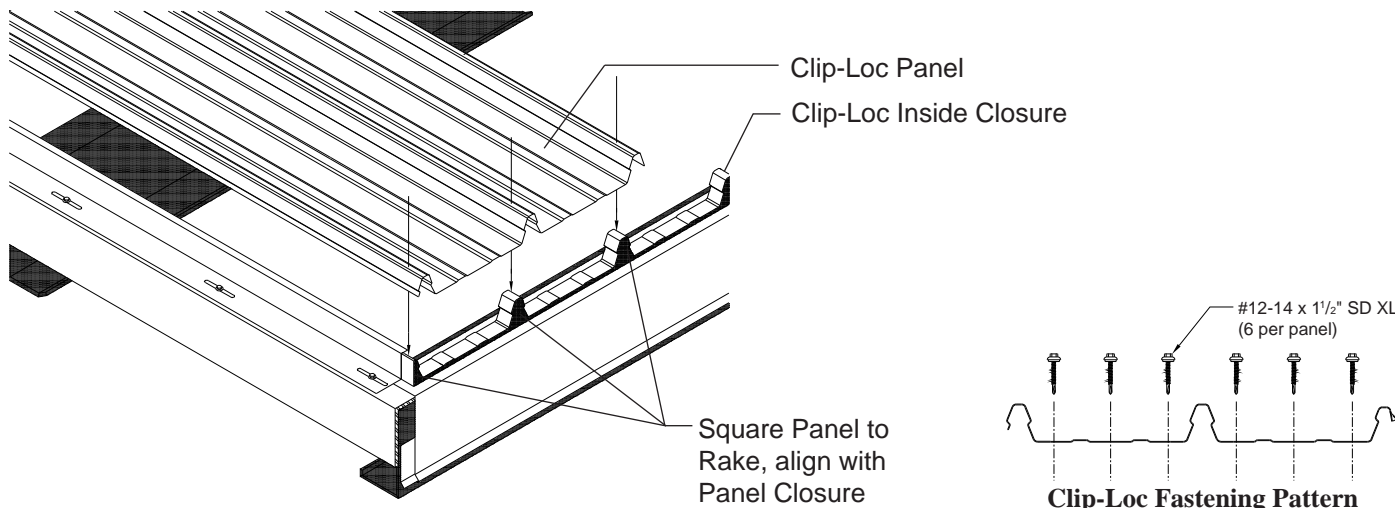
1. If Floating Rake Zee is not used, go to STEP 2 else proceed.
2. Install Floating Rake Zee at all rake and rake parapet conditions. Square Floating Rake Zee to rake condition. **It is critical that Floating Rake Zee be square to building as this will control lignment of panels.**
3. Fasten to framing with #12-14 x 1 1/4" Shoulder Self Driller screws at 1'-0" o.c. **Do not over tighten screws for it is imperative that the Clip-Loc roof system be allowed to float.**
4. If two or more Floating Rake Zees are required, butt ends. **Do not overlap Floating Rake Zees.**
5. After applying Floating Rake Zees, insulation can be installed. Roll out insulation eave to peak laying side of insulation on Floating Rake Zees. Avoid sidelap of insulation directly beneath sidelap of panel (insulation not shown for clarity).



INSTALLING FIRST PANEL

STEP 2

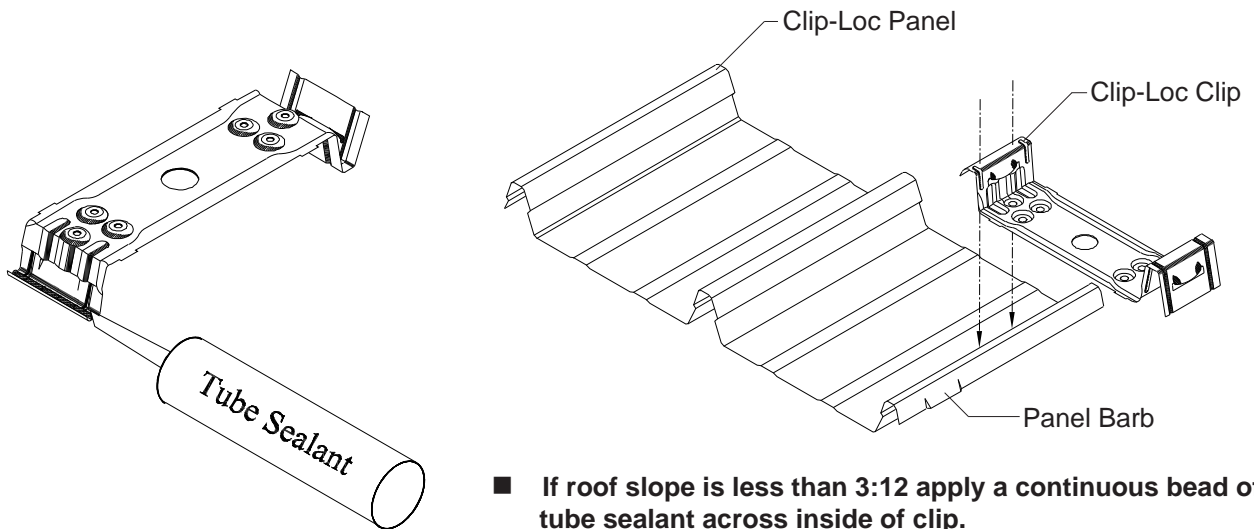
1. If Floating Rake Zee is not used, panel clips are required under first panel, see STEP 3. Apply a row of Double Bead Tape Sealant across Eave flashing approximately 2" from face of Eave flashing.
2. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
3. If Floating Rake Zee is not used, square panel to rake condition. If Floating Rake Zee is used, position the first panel so female leg is on top of rake zee, panel ribs are aligned with inside closures, and panel is at desired overhang. Additional overhang must be considered for wall panels.
4. Fasten through panel, closure, and sealant into framing with (6) #12-14 x 1 1/2" Self Driller XL fasteners per panel. See pattern below. **Fasteners must penetrate closure and sealant.**



INSTALLING CLIP-LOC CLIP

STEP 3

1. If roof slope is less than 3:12, apply a continuous bead of tube sealant on inside of clip leg as shown. Clip is not required at panel eave end.
2. Install clip over male leg of panel as shown. Make sure short leg of clip is over male leg of panel. Clip spacing is determined from chart on (page 18) or from project design wind uplift requirements. Design requirements take precedence. Bend down panel barb if necessary for clip to fit male rib.
3. Fasten clip to purlins with number of recommended fasteners shown in chart on (page 18).
4. Refer to chart on (page 18) if installing over rigid insulation.

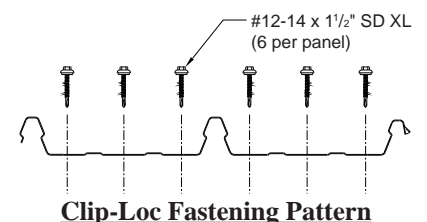
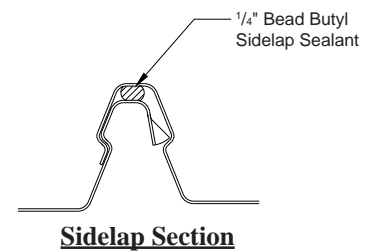
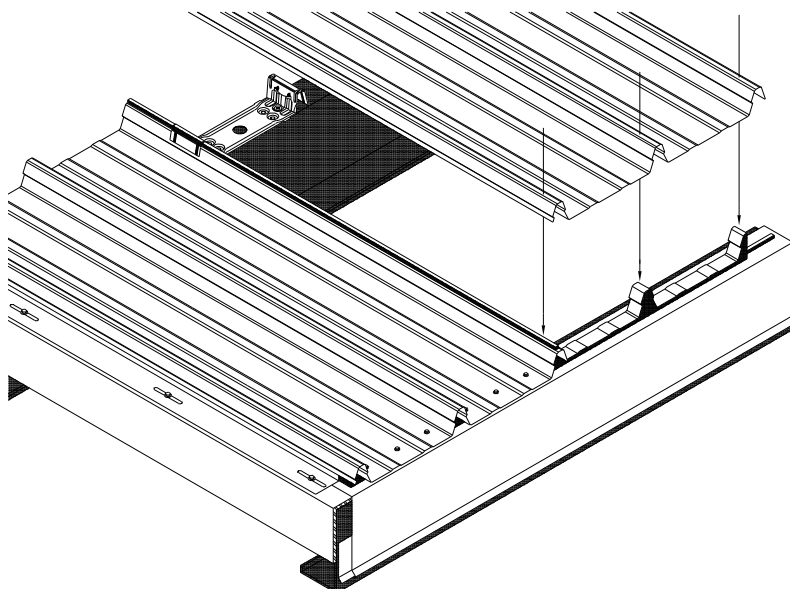


- If roof slope is less than 3:12 apply a continuous bead of tube sealant across inside of clip.

INSTALLING SECOND PANEL

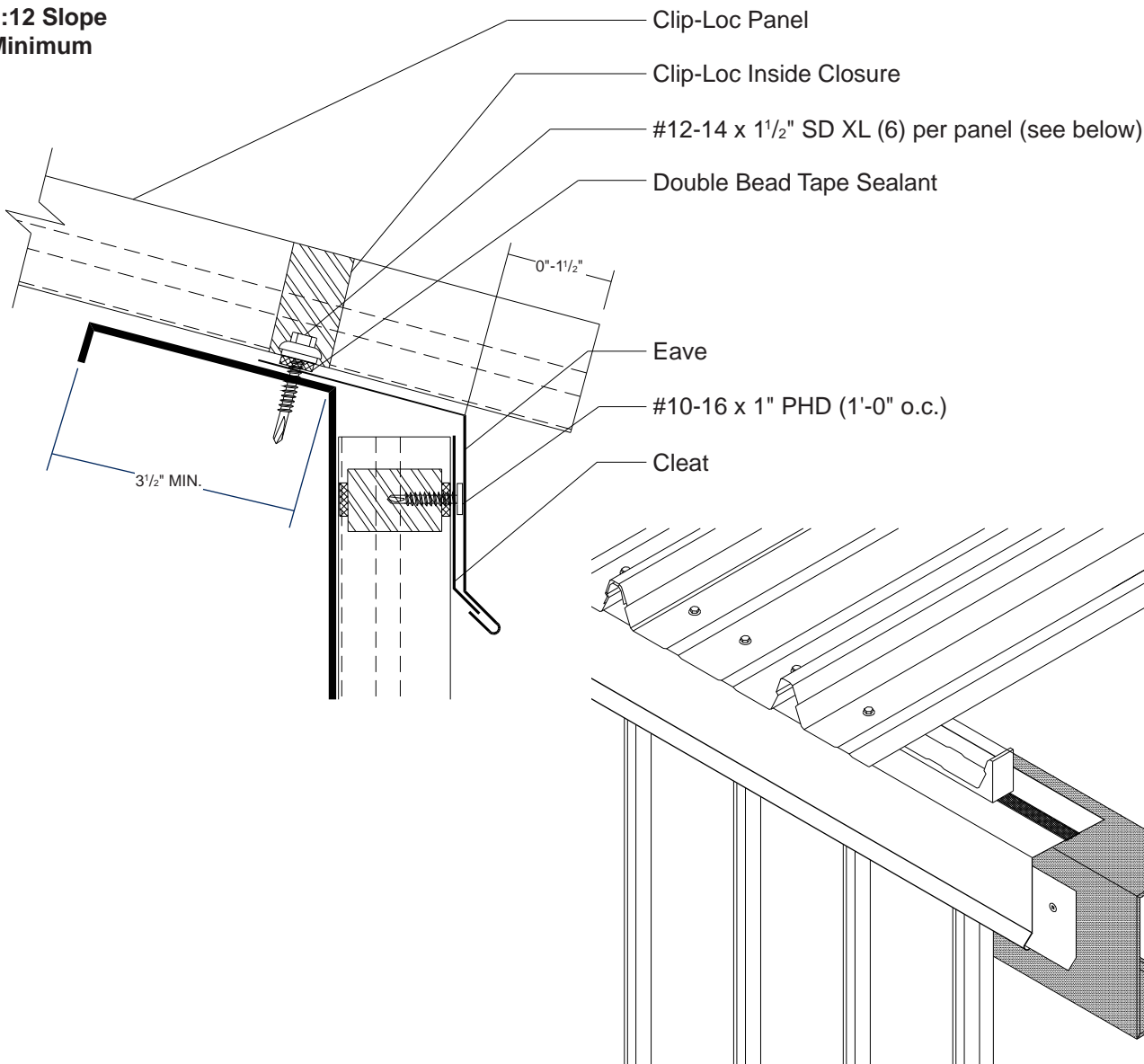
STEP 4

1. If roof slope is less than 3:12, 1/4" Bead Butyl Sidelap Sealant must be placed on top of male leg in sidelap.
2. Place the second panel on top of previously installed panel so that panel ends are flush at eave.
3. Clip-Loc center rib must be snapped in place first followed by female rib. Start snapping panel at one end and working to other.
4. Fasten at eave through panel, closure, and sealant into framing with (6) #12-14 x 1 1/2" Self Driller XL fasteners per panel. **Fasteners must penetrate closure and sealant.**
5. Repeat steps 3 and 4 for remaining panels.



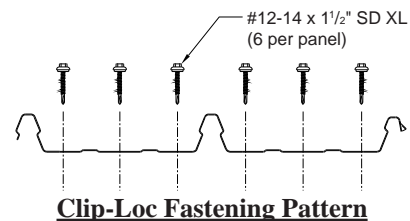
- If roof slope is less than 3:12 apply a continuous row of 1/4" Bead Butyl Sidelap Sealant on top of male leg.

**1:12 Slope
Minimum**



CAUTION

Additional screws may be required for high snow loading and steep slopes.

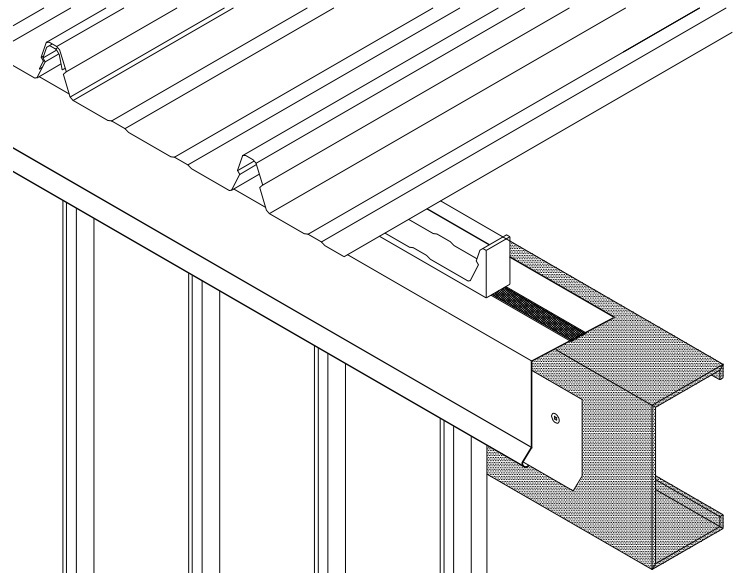
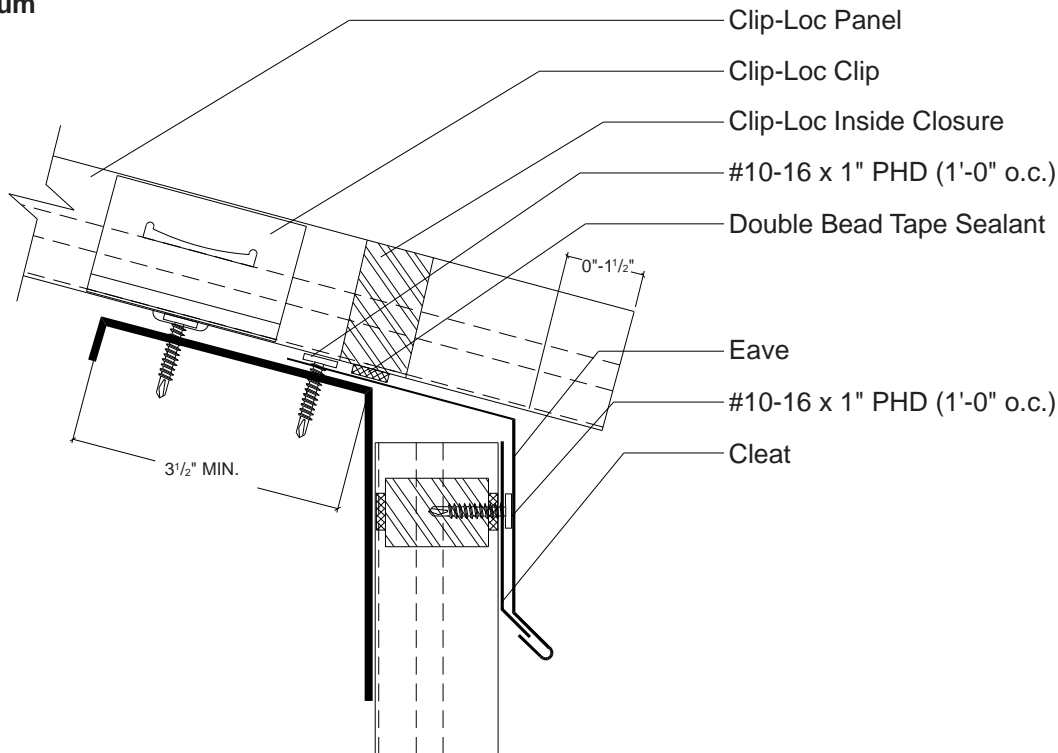


INSTALLATION NOTES

All eave flashings must be installed prior to panel installation.

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper Eave attachment.
2. Install Eave flashing by sliding open hem onto Cleat and resting the Eave flashing back against substrate. To hold Eave flashing in place fasten to substrate with #10-16 x 1" Pancake Head Woodscrew 4'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Eave flashing approximately 2" from face of Eave flashing.
4. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.
6. Once panels have been installed, see (pages 44-45), fasten through panel, closure, and sealant into substructure with 6 fasteners per panel. Fasteners must penetrate closure and sealant to eliminate closure movement.

1:12 Slope
Minimum



■ Clip-Loc Clip must be installed at eave for this floating eave detail.

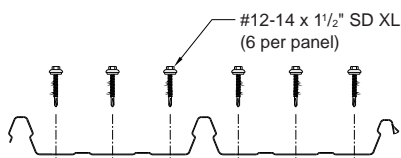
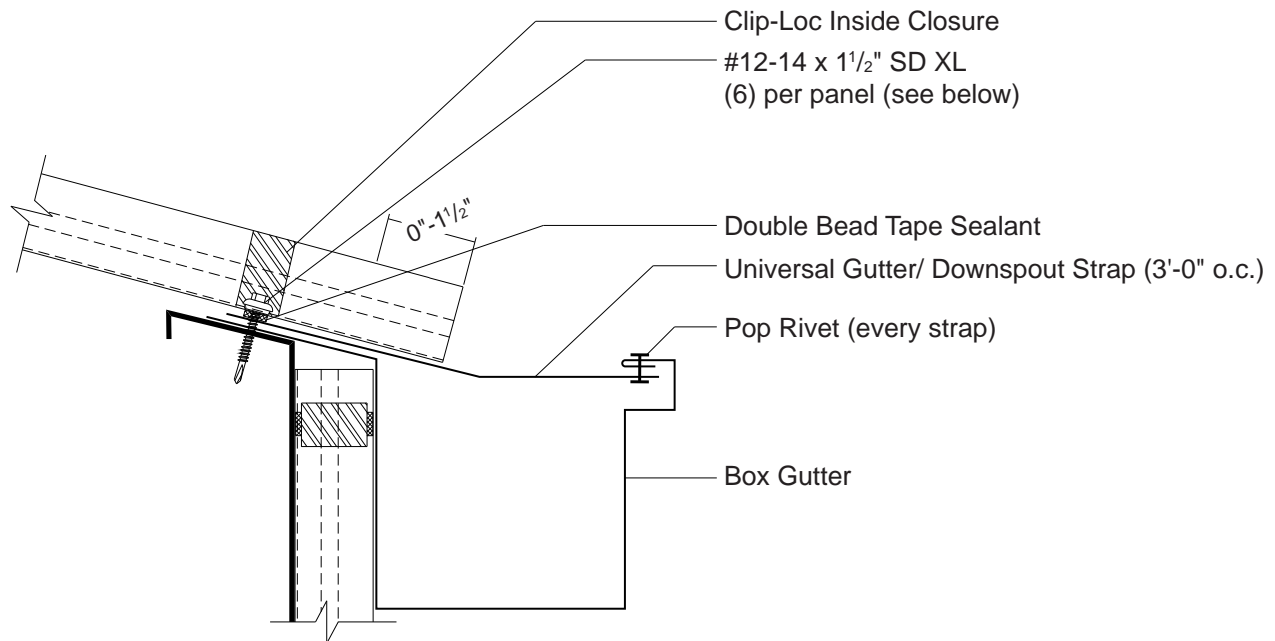
■ Clip-Loc panel must be anchored to open framing behind outside closure at all ridge, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

All eave flashings must be installed prior to panel installation.

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper Eave attachment.
2. Install Eave flashing by sliding open hem onto Cleat and resting the Eave flashing back against eave strut. To hold Eave flashing in place fasten to substrate with #10-16 x 1" Pancake Head Driller at 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Eave flashing approximately 2" from face of Eave flashing.
4. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2¹/₂" o.c.

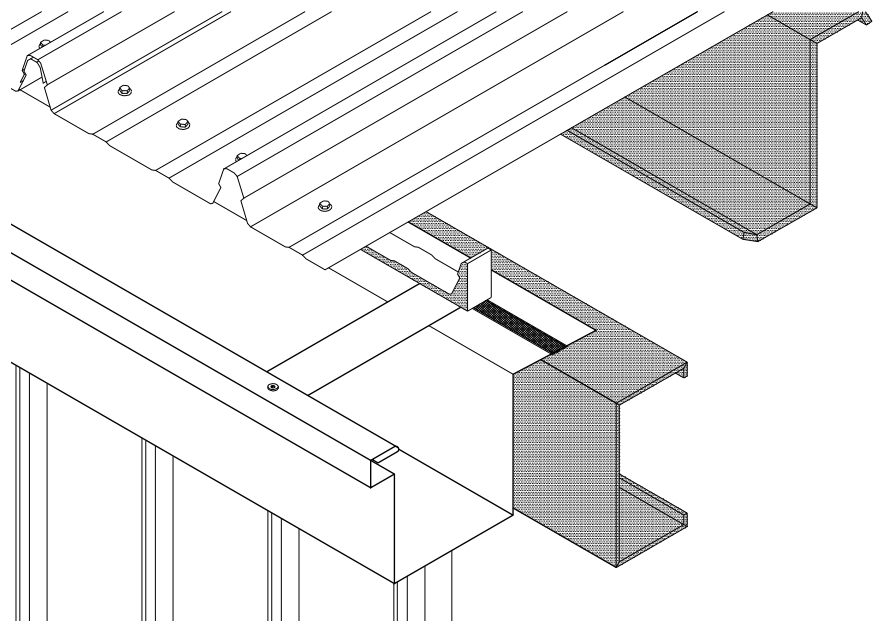
**1:12 Slope
Minimum**



Clip-Loc Fastening Pattern

CAUTION

In locations where heavy rainfall or severe ice and snow may occur, Metal Sales' standard gutters may not be suitable for use.

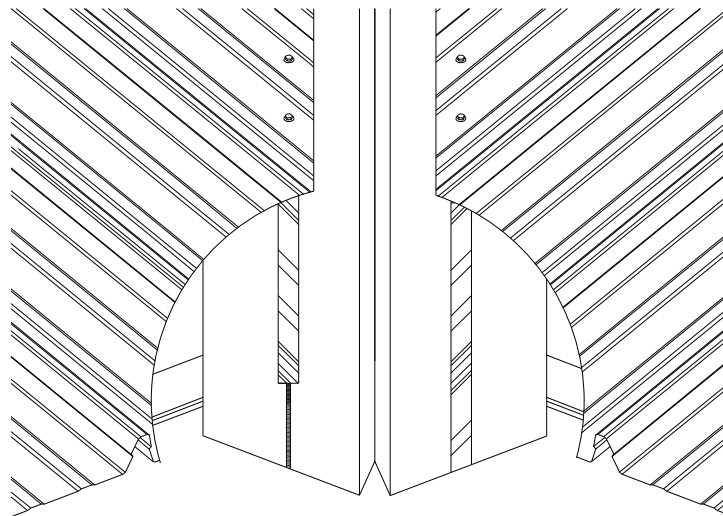
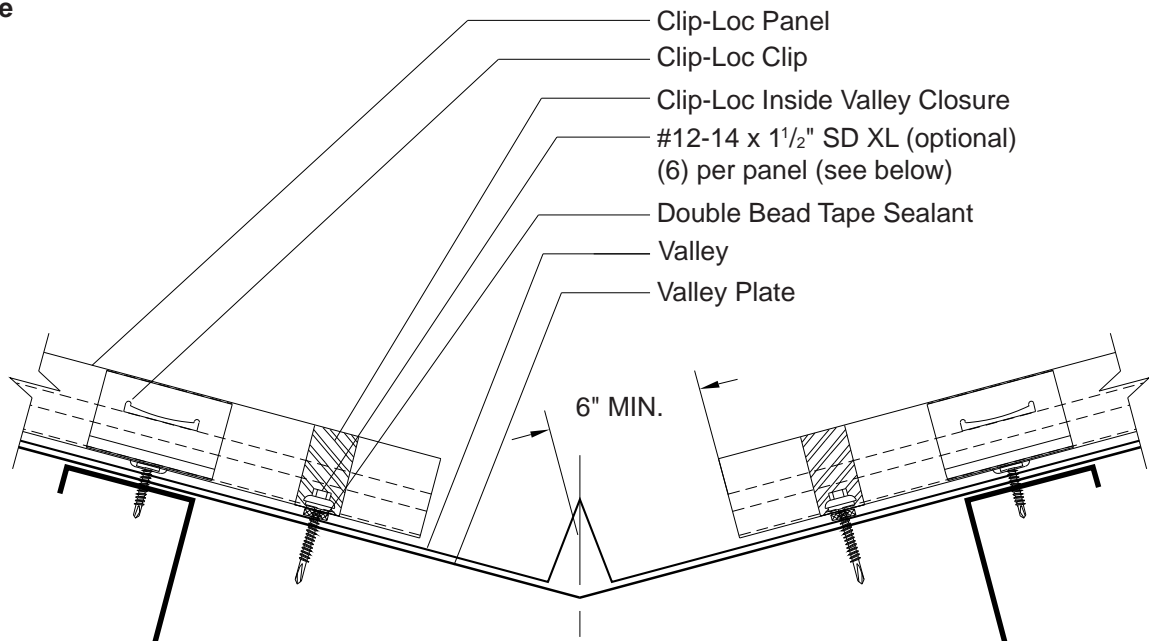


INSTALLATION NOTES

All gutter flashings must be installed prior to panel installation.

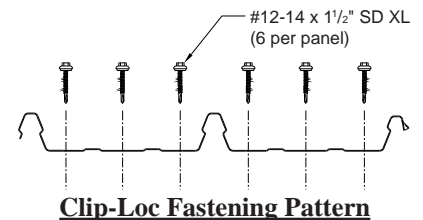
1. Install Box Gutter flashing back against eave strut. To hold Box Gutter flashing in place fasten to substrate with #10-16 x 1" Pancake Head Driller at 4'-0" o.c.
2. Install Universal Gutter/Downspout Straps every 3'-0" of gutter length. Before continuing make sure strap placement is such that strap can be fastened to eave strut with panel fasteners. See note #6. Pop Rivet Universal Gutter/Downspout Strap to Box Gutter.
3. Apply a row of Double Bead Tape Sealant across Box Gutter flashing approximately 2" from backside of gutter flashing.
4. Properly align and install Clip-Loc Inside Closures to accommodate Clip-Loc panel rib alignment. Closures must be lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.
6. Once panels have been installed, (see pages 44-45), fasten through panel, closure, and sealant into eave strut with 6 fasteners per panel. Before continuing make sure at least one fastener secures Universal Gutter/Downspout Strap to substrate. Fasteners must penetrate closure and sealant to eliminate closure movement.

**1:12 Slope
Minimum**



CAUTION

Additional screws may be required for high snow loading and steep slopes.

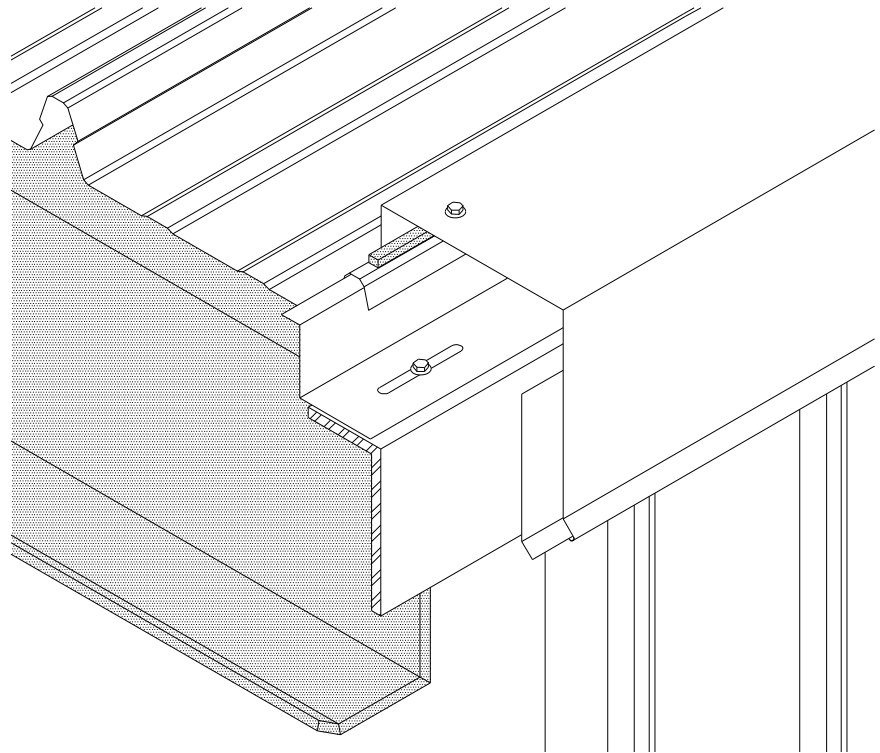
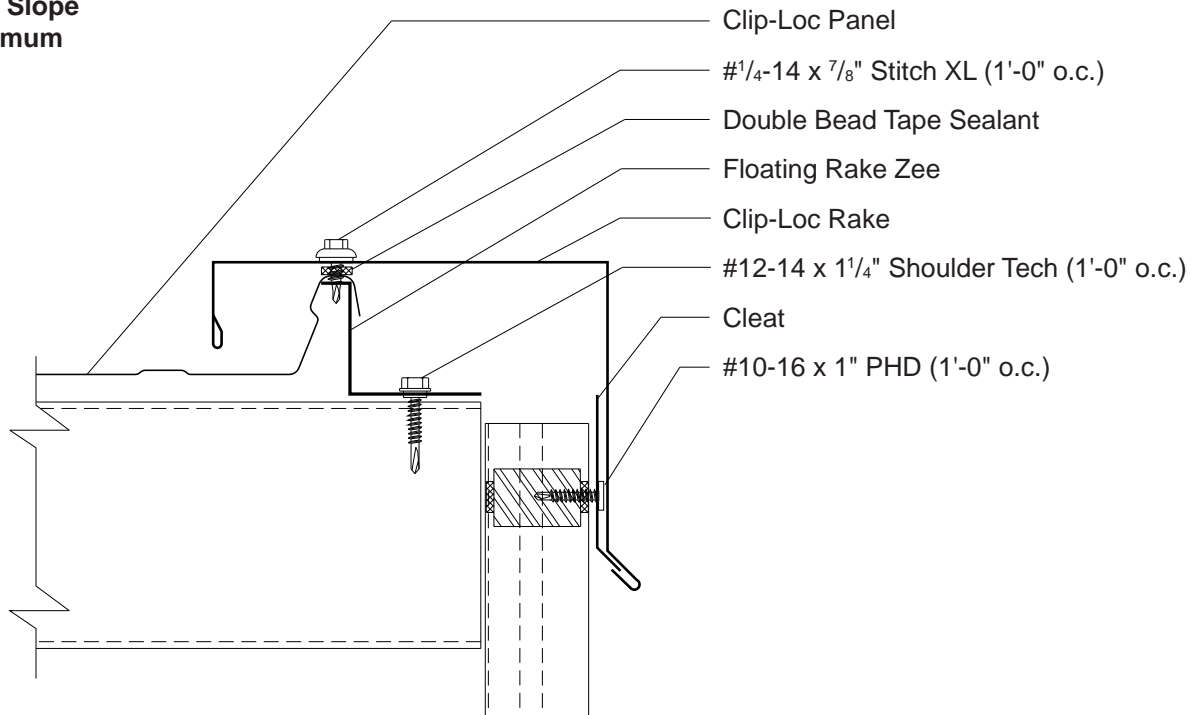


INSTALLATION NOTES

All valley flashings must be installed prior to panel installation. If two or more valley flashings are required, valley must be installed working from eave to peak.

1. Install Valley flashing against valley plate. To hold Valley flashing in place fasten to substrate with #10-16 x 1" Pancake Head Driller at 4'-0" o.c.
2. Apply a row of Double Bead Tape Sealant across both sides of Valley flashing approximately 5" from center of valley.
3. Properly align and install Clip-Loc Inside Valley Closures to accommodate Clip-Loc panel rib alignment. Closures are designated "Left" or "Right". Closures must be installed on both sides of valley flashing and lined up with panel ribs for proper seal. **Do not apply tape sealant on top of closure.**
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.
5. Once panels have been installed, (see pages 44-45), fasten through panel, closure, and sealant into valley plate with 6 fasteners per panel. Fasteners must penetrate closure and sealant to eliminate closure movement.

1:12 Slope
Minimum

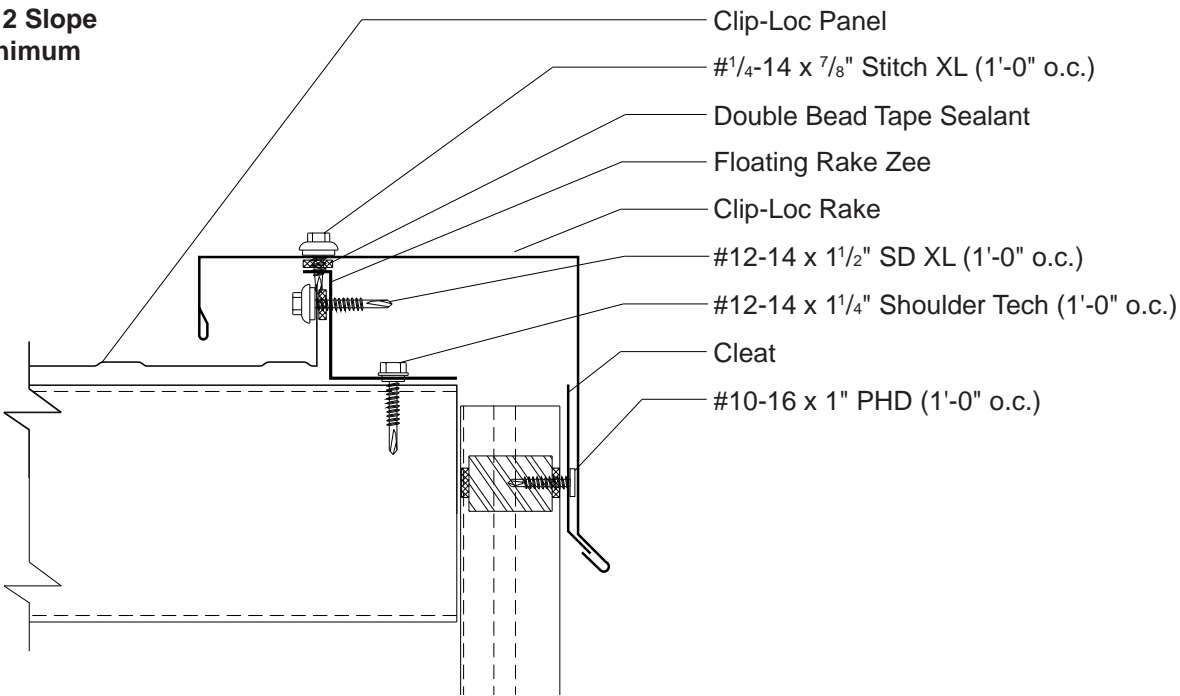


INSTALLATION NOTES

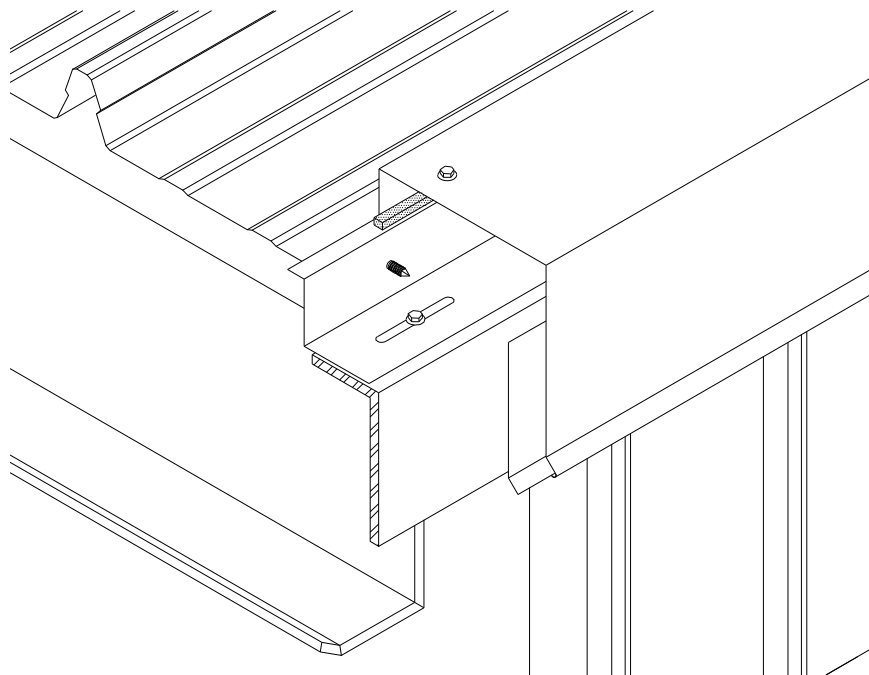
Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rake installation (see pages 44-45).

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat installation allows for proper Clip-Loc Rake attachment.
2. With Clip-Loc panel properly nested over top of Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of panel rib.
3. Install Clip-Loc Rake flashing by sliding open hem onto Cleat and resting the Clip-Loc Rake flashing on top of panel rib. Fasten through Clip-Loc Rake, sealant, roof panel, and into Clip-Loc Floating Rake Zee with $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 1'-0" o.c.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum



■ Field bend Panel Rib up 1⁵/₈"

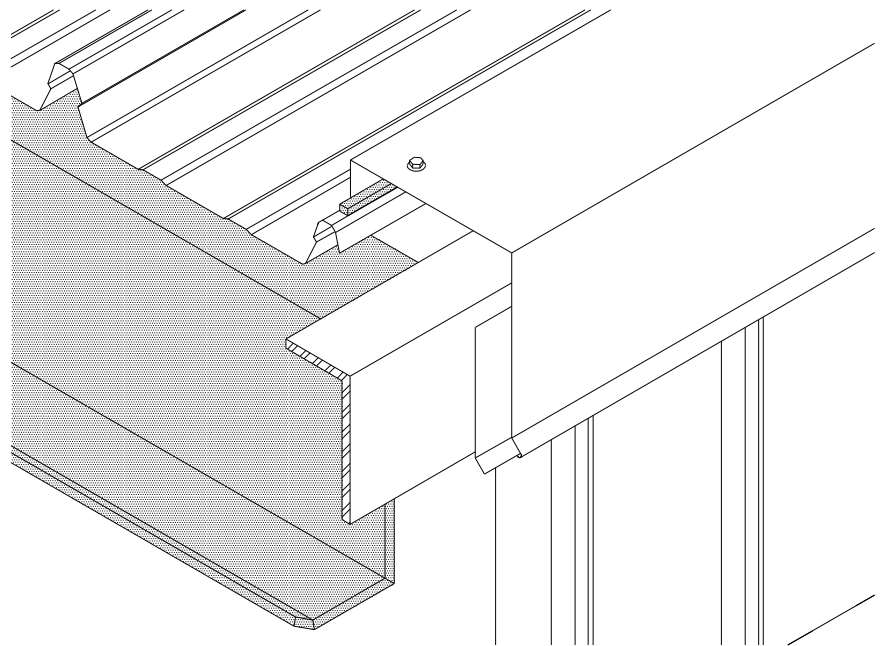
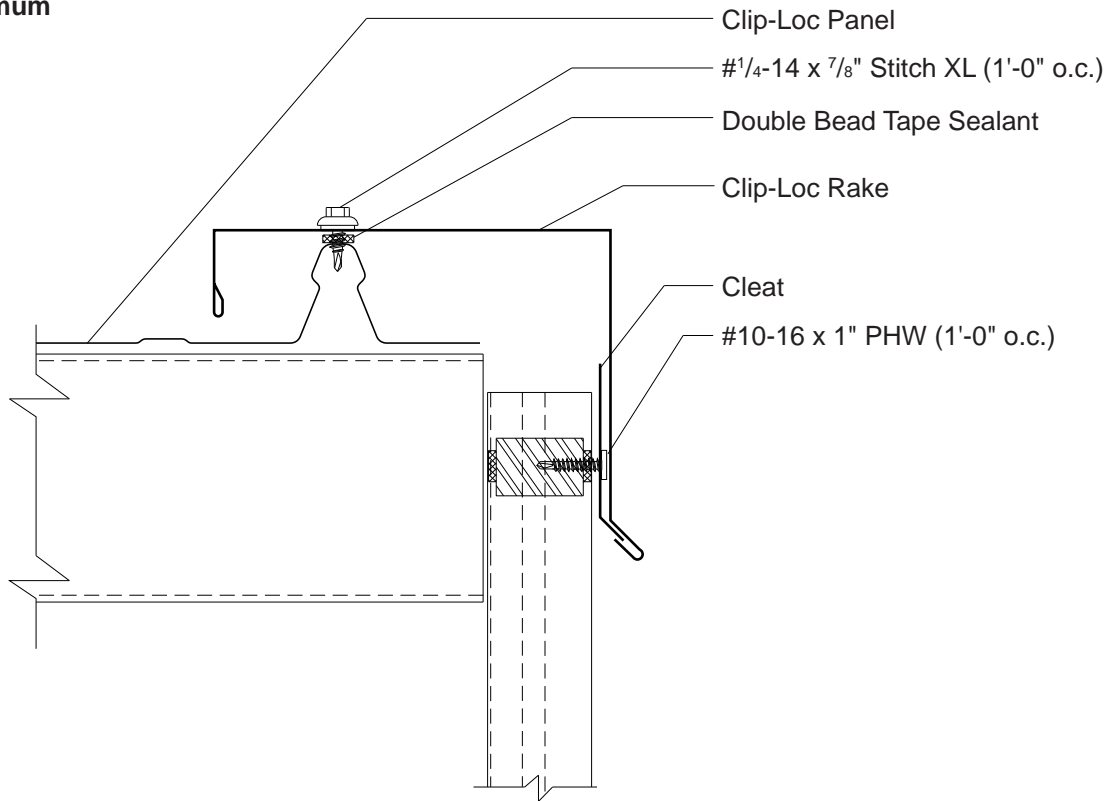


INSTALLATION NOTES

Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rake installation (see page 44-45). Panel must be field bent up 1⁵/₈".

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat installation allows for proper Clip-Loc Rake attachment.
2. Apply a row of Double Bead Tape Sealant between Floating Rake Zee and field bent panel rib. Fasten field bent panel rib to Clip-Loc Floating Rake Zee with 12-14 x 1¹/₂" SD XL 1'-0" o.c.
3. With Clip-Loc panel properly fastened to Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of Floating Rake Zee.
4. Install Clip-Loc Rake flashing by sliding open hem onto Cleat and resting the Clip-Loc Rake flashing on top of Floating Rake Zee. Fasten through Clip-Loc Rake, sealant, and into Clip-Loc Floating Rake Zee with 1/4-14 x 7/8" Stitch XL 1'-0" o.c. Stagger Stitch fastener so that there is no interference with 12-14 x 1¹/₂" SD XL already installed.
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2¹/₂" o.c.

1:12 Slope
Minimum

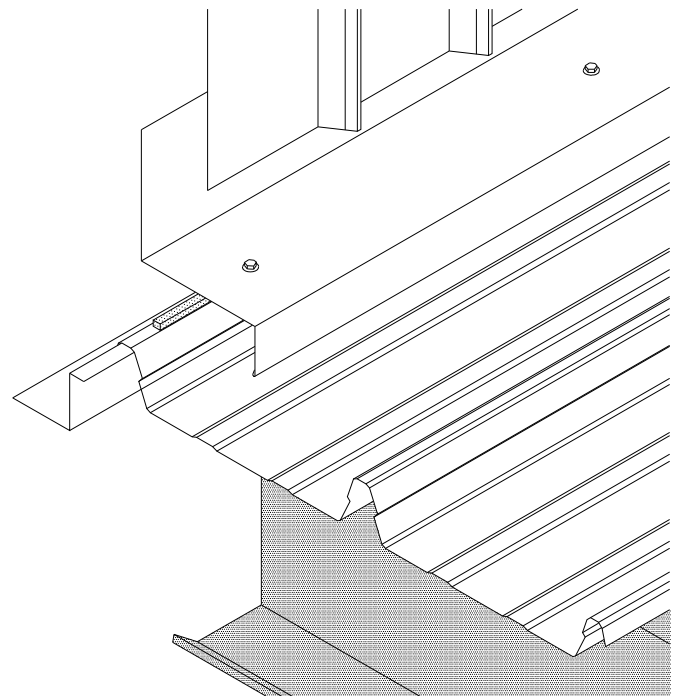
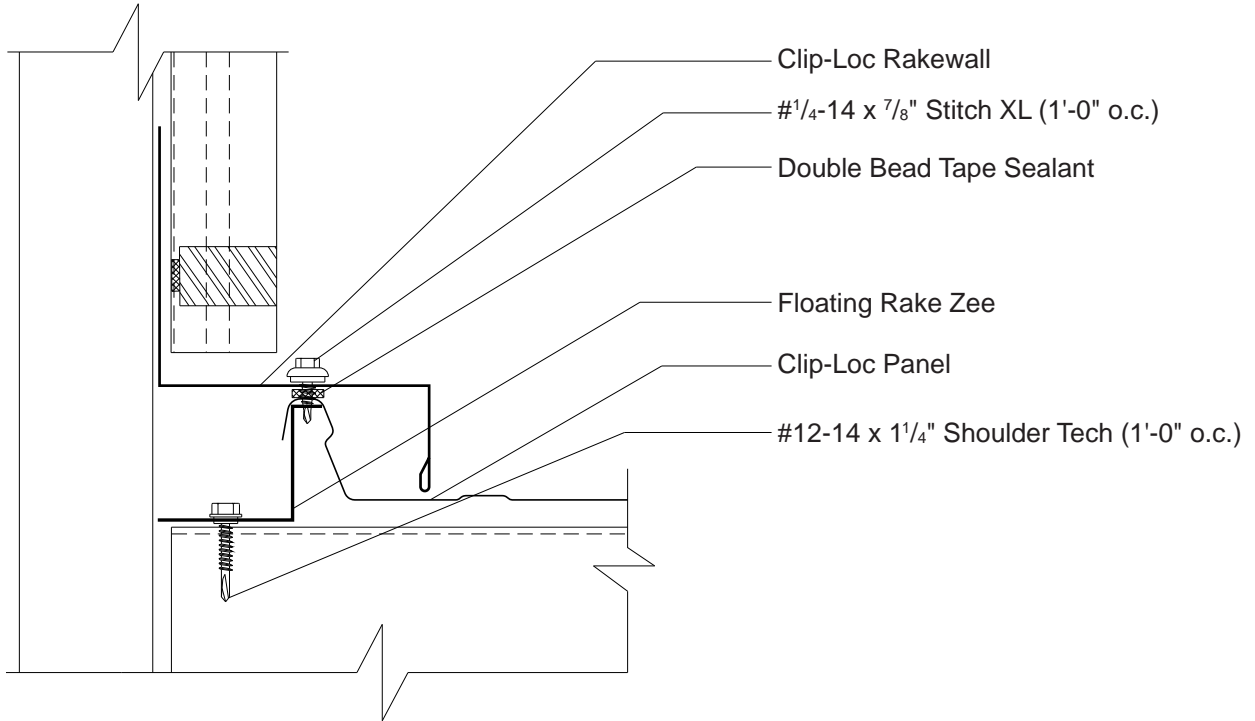


INSTALLATION NOTES

Clip-Loc panels must be installed prior to rake installation (see page 44-45).

1. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat installation allows for proper Clip-Loc Rake attachment.
2. Apply a row of Double Bead Tape Sealant across top of Clip-Loc panel rib.
3. Install Clip-Loc Rake flashing by sliding open hem onto Cleat and resting the Clip-Loc Rake flashing on top of panel rib. Fasten through Clip-Loc Rake, sealant, and roof panel with 1/4-14 x 7/8" Stitch XL 1'-0" o.c.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

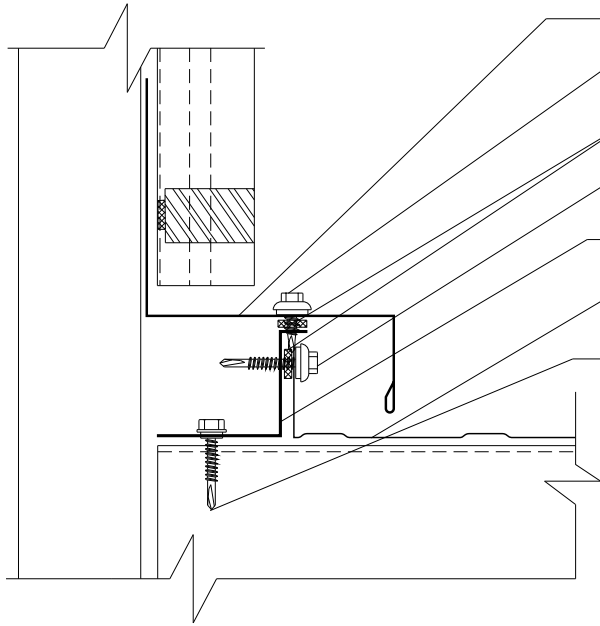


INSTALLATION NOTES

Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rakewall installation (see pages 44-45).

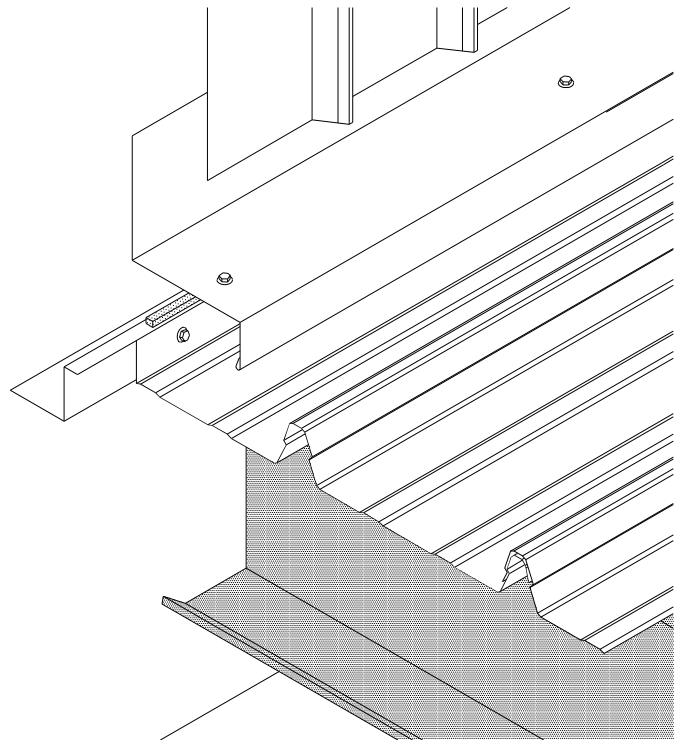
1. With Clip-Loc panel properly nested over top of Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of panel rib.
2. Install Clip-Loc Rakewall flashing on top of panel rib. Fasten through Clip-Loc Rakewall, sealant, roof panel, and into Clip-Loc Floating Rake Zee with $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 1'-0" o.c.
3. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant. **Do Not Fasten Clip-Loc Rakewall to wall.**
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum



- Clip-Loc Rakewall
- #1/4-14 x 7/8" Stitch XL (1'-0" o.c.)
- Double Bead Tape Sealant
- #12-14 x 1 1/2" SD XL (1'-0" o.c.)
- Floating Rake Zee
- Clip-Loc Panel
- #12-14 x 1 1/4" Shoulder Tech (1'-0" o.c.)

■ Field bend Panel Rib up 1 5/8"

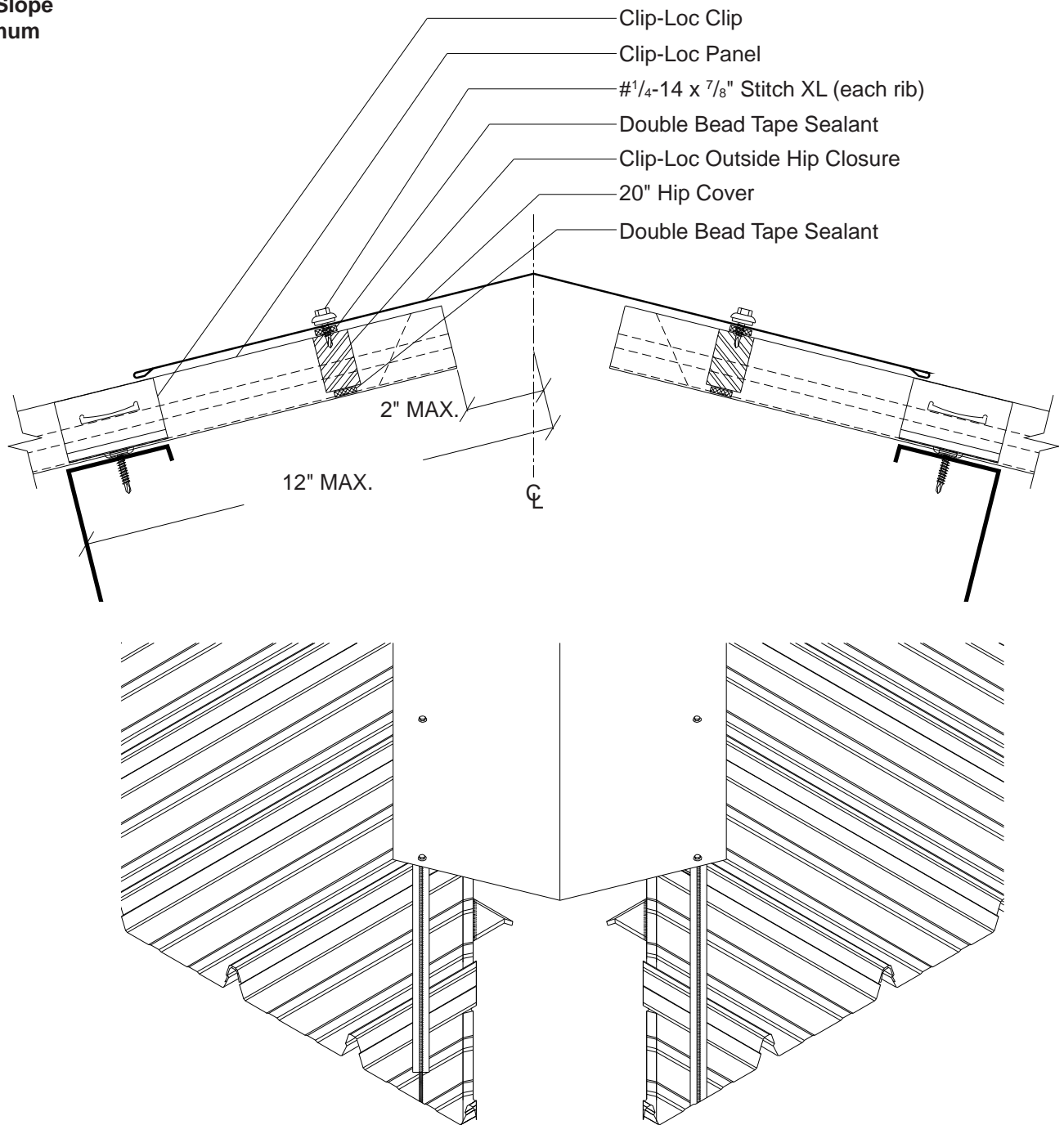


INSTALLATION NOTES

Clip-Loc Floating Rake Zee and Clip-Loc panels must be installed prior to rakewall installation (see pages 44-45). Panel must be field bent up 1 5/8".

1. Apply a row of Double Bead Tape Sealant between Floating Rake Zee and field bent panel rib. Fasten field bent panel rib to Clip-Loc Floating Rake Zee with 12-14 x 1 1/2" SD XL 1'-0" o.c.
2. With Clip-Loc panel properly fastened to Clip-Loc Floating Rake Zee, apply a row of Double Bead Tape Sealant across top of Floating Rake Zee.
3. Install Clip-Loc Rakewall flashing on top of Floating Rake Zee. Fasten through Clip-Loc Rakewall, sealant, and into Clip-Loc Floating Rake Zee with 1/4-14 x 7/8" Stitch XL 1'-0" o.c. Stagger Stitch fastener so that there is no interference with 12-14 x 1 1/2" SD XL already installed.
4. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant. **Do Not Fasten Clip-Loc Rakewall to wall.**
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

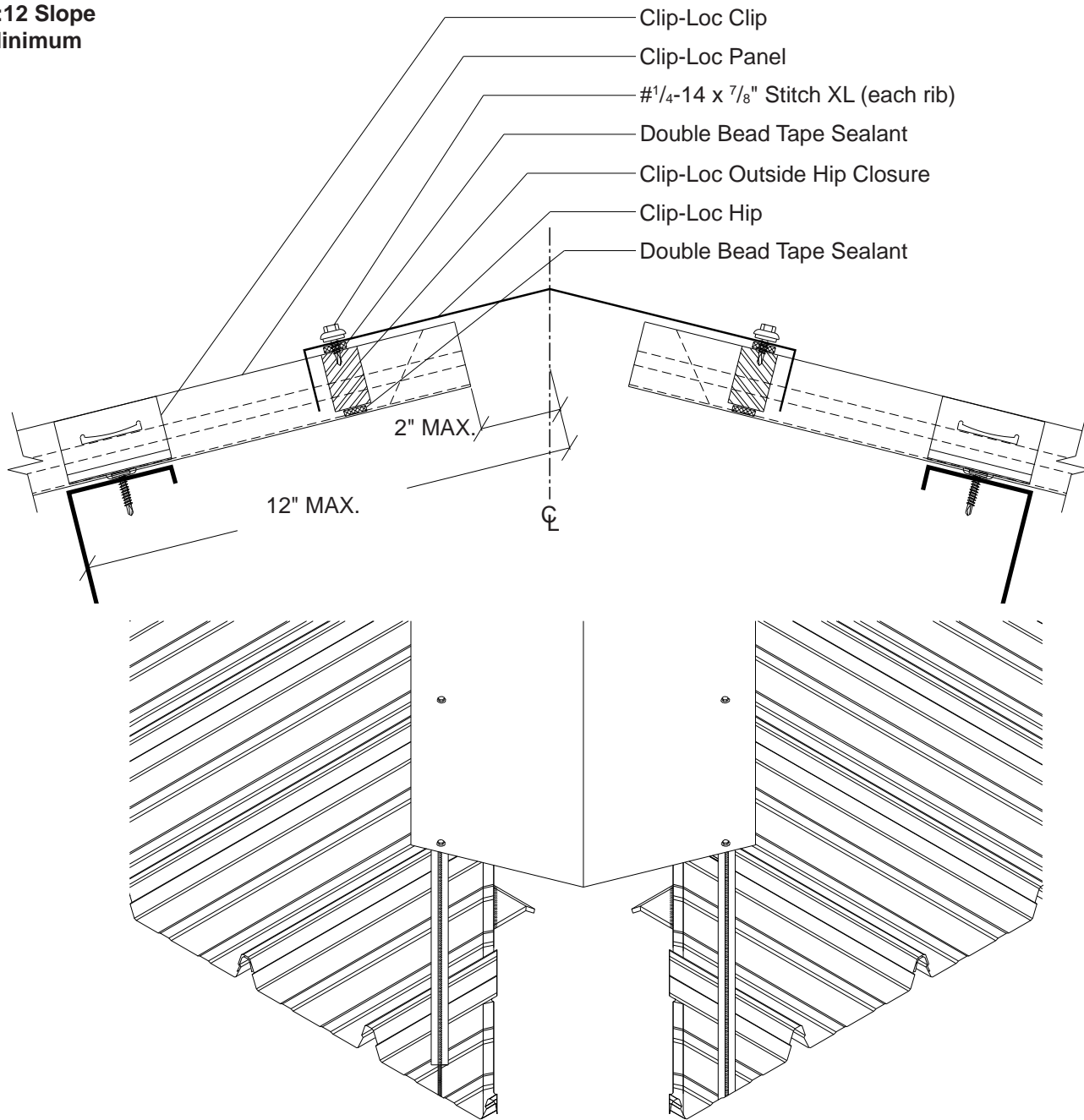


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of hip (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end on both sides of hip.
3. Install a Clip-Loc Outside Hip Closure over tape sealant. Before continuing, make sure closure placement will accommodate 20" Hip flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of hip.
5. Install 20" Hip flashing and secure to Clip-Loc panel rib with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL at every rib.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 $\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

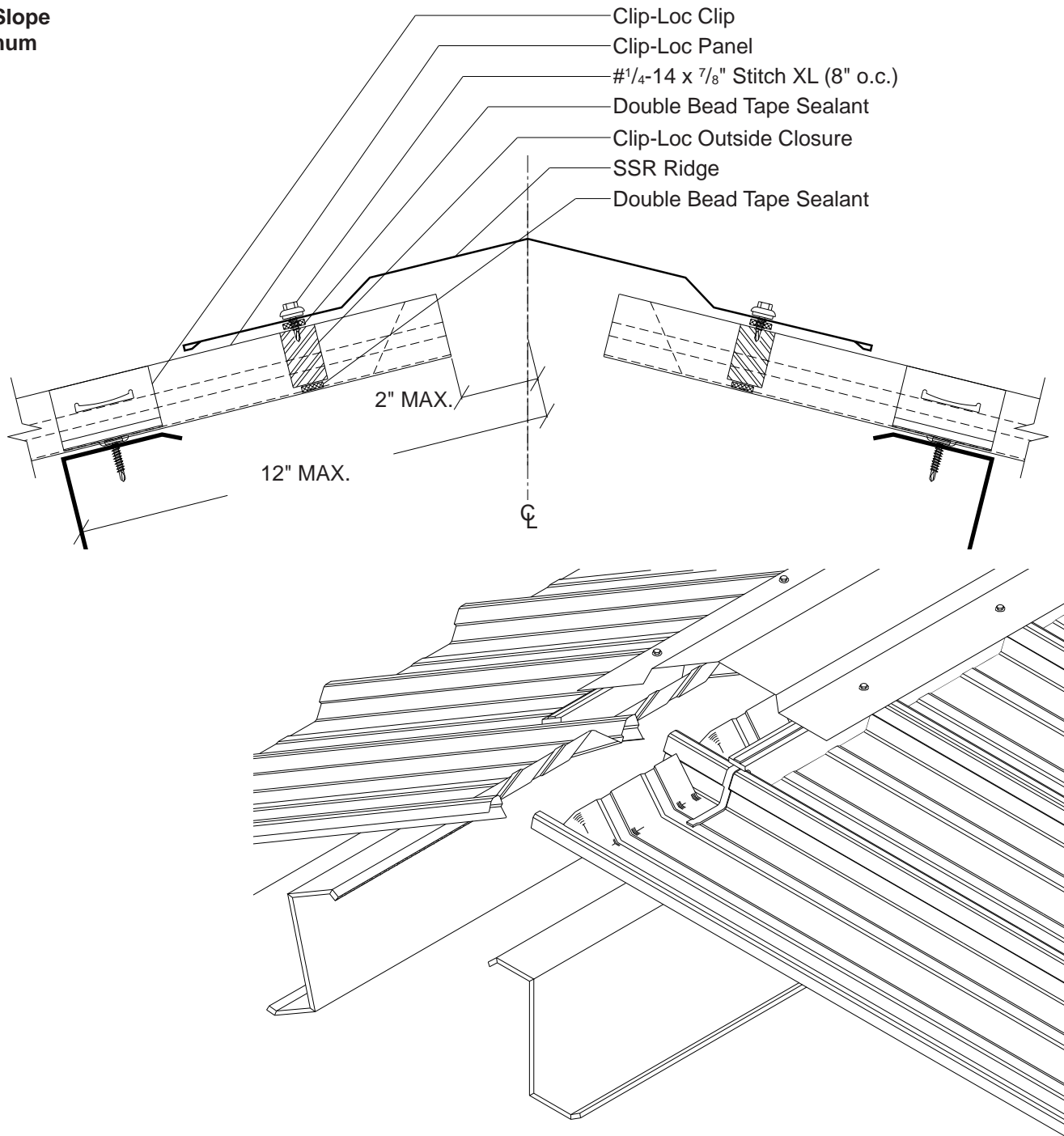


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of hip. (See page 19.)
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end on both sides of hip.
3. Install a Clip-Loc Outside Hip Closure over tape sealant. Before continuing make sure closure placement will accommodate Clip-Loc Hip flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of hip.
5. Place Clip-Loc Hip on top of panel ribs and mark the hip flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out hip flashing. (See page 19.)
6. Install Clip-Loc Hip flashing and secure to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL at every rib.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

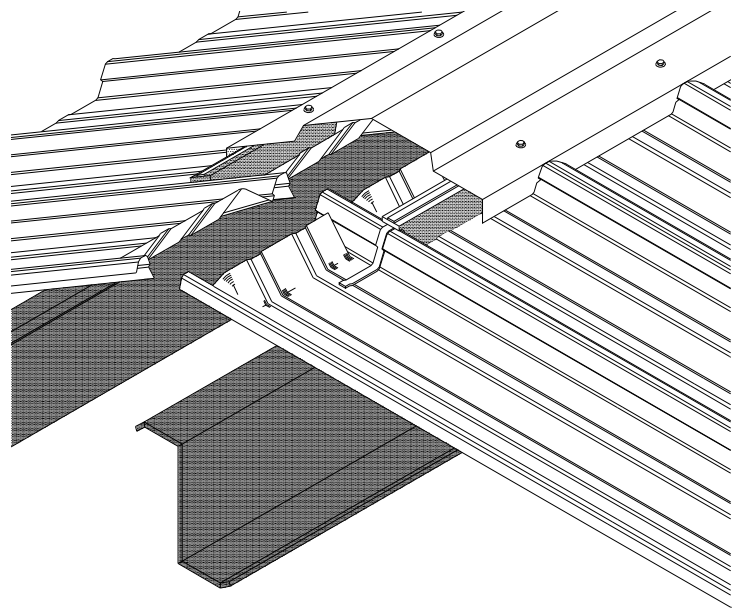
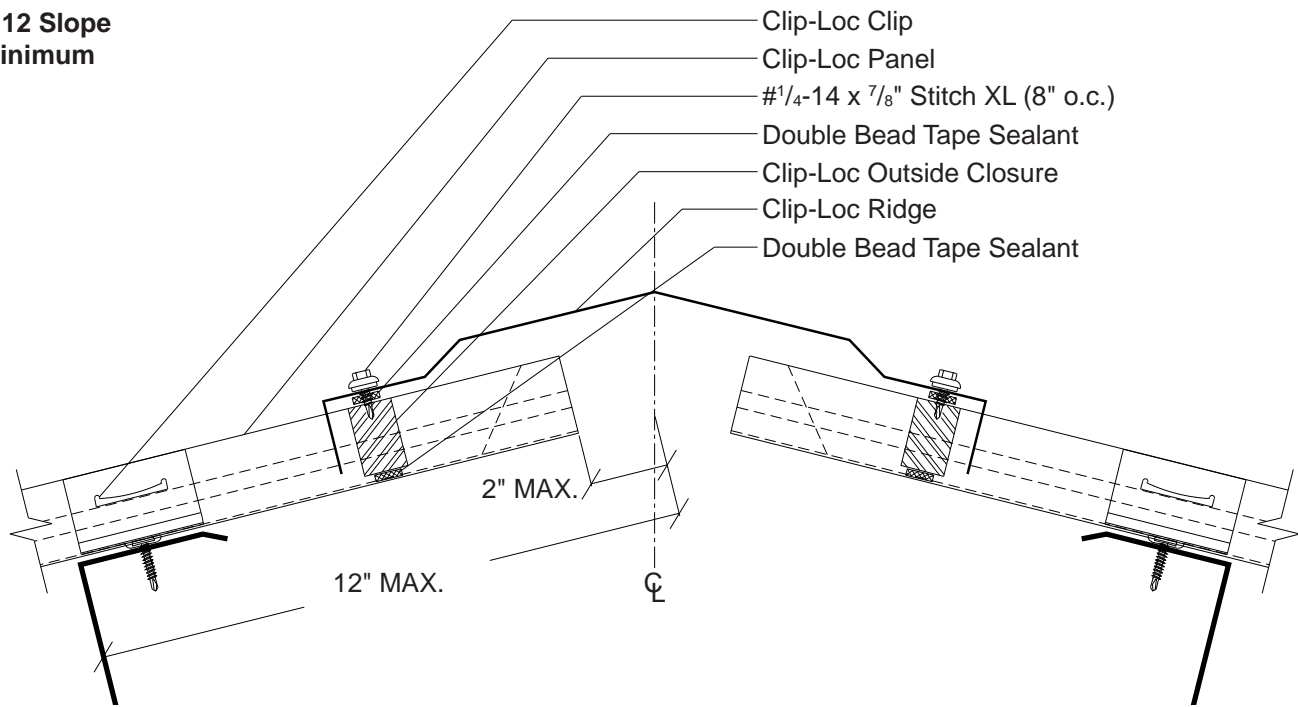


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of ridge (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 4"-6" from panel end on both sides of ridge.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing make sure closure placement will accommodate SSR Ridge flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of ridge.
5. Install SSR Ridge flashing and secure to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

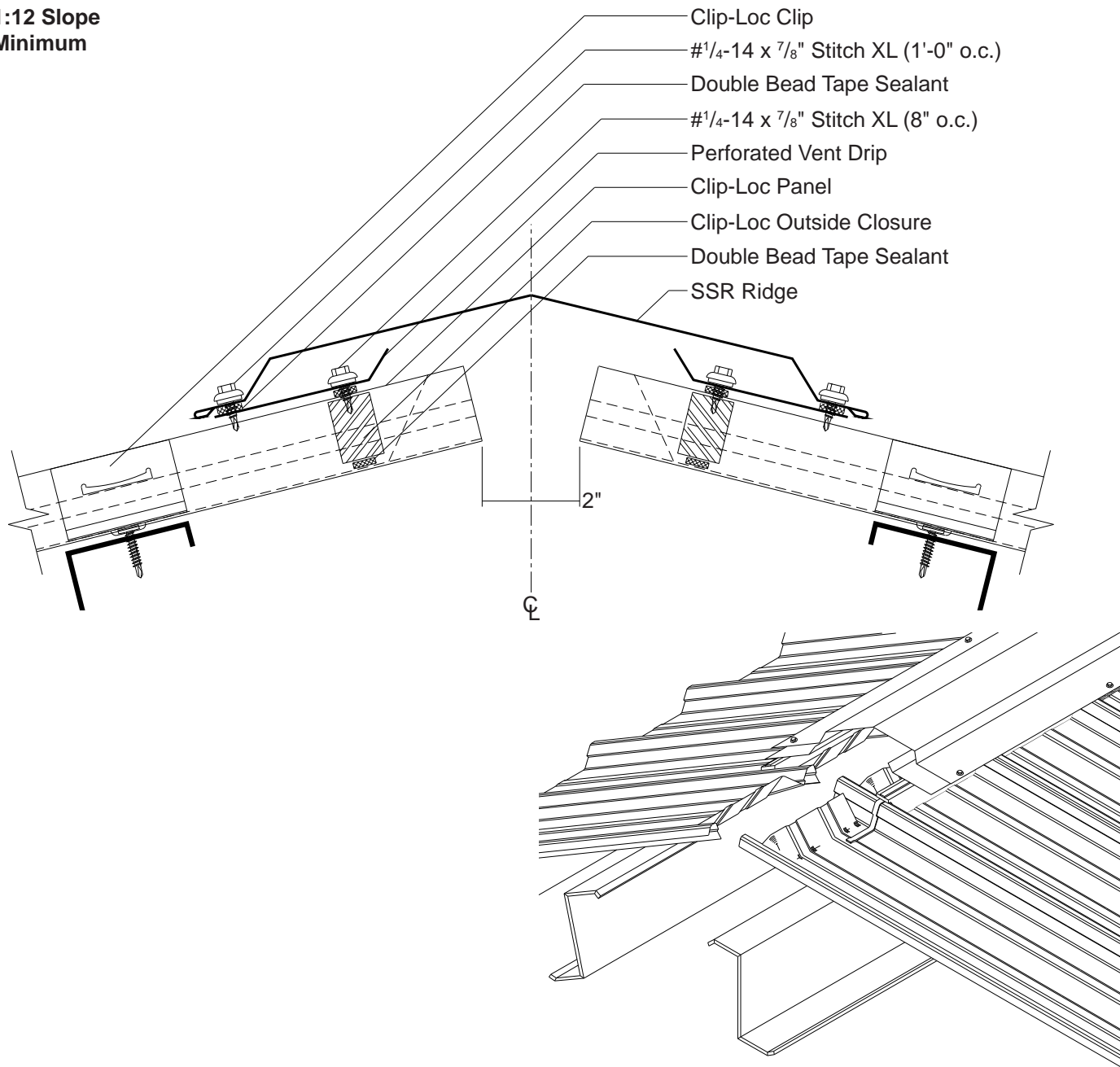


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of ridge (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 4"-6" from panel end on both sides of ridge.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing, make sure closure placement will accommodate Clip-Loc Ridge flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of ridge.
5. Place Clip-Loc Ridge on top of panel ribs and mark the ridge flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out ridge flashing (see page 19).
6. Install ridge flashing and secure to Clip-Loc panel rib with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 8" o.c. at every rib.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

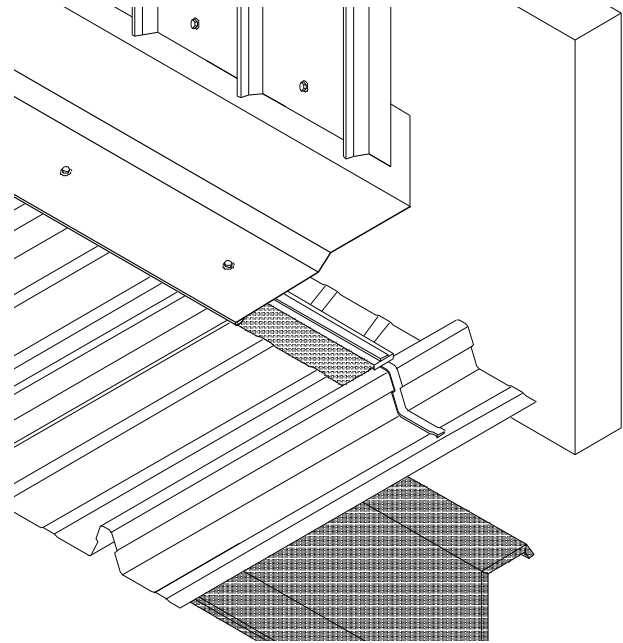
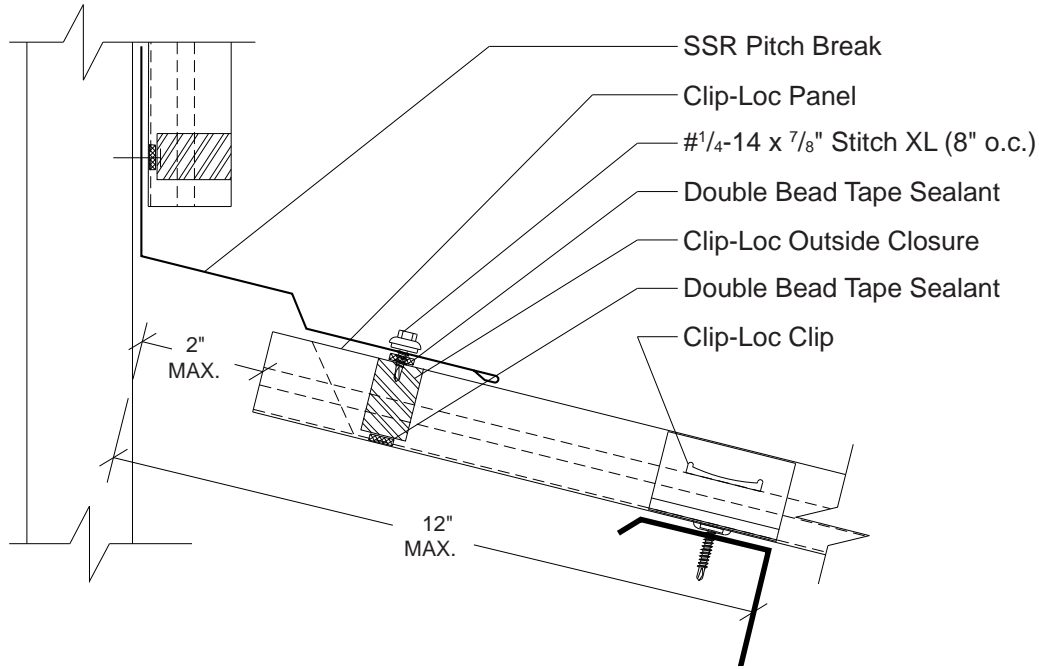


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans on both sides of ridge (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end on both sides of ridge.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing, make sure closure placement will accommodate 13" Step Ridge Cover and Perforated Vent Drip. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures on both sides of ridge.
5. Install Perforated Vent Drip and properly align for 13" Step Ridge Cover. Once Perforated Vent Drip has been properly aligned, secure Perforated Vent Drip to panel ribs with $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 8" o.c. at every rib.
6. Apply a row of Double Bead Tape Sealant across end of Perforated Vent Drip.
7. Install ridge flashing and secure to Perforated Vent Drip with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL at 1'-0" o.c. avoiding panel ribs.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 $\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

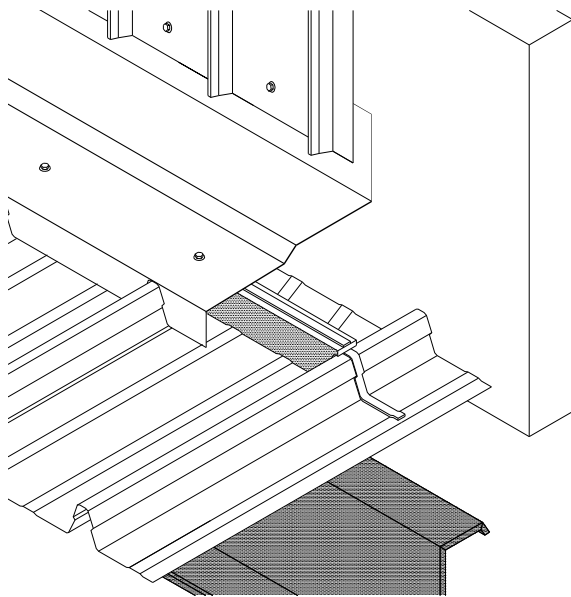
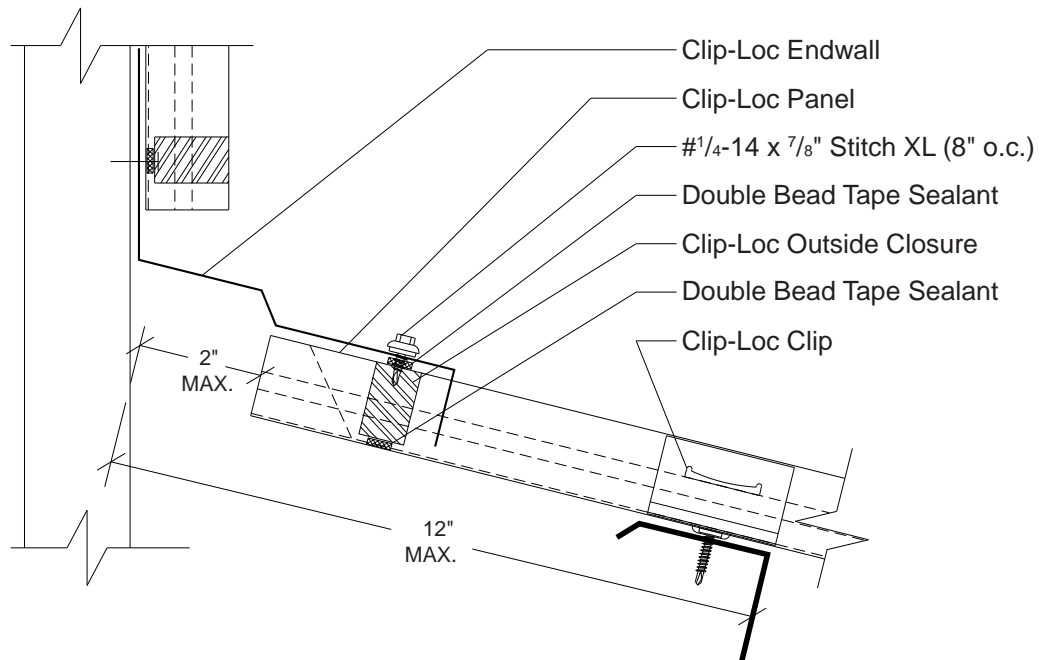


■ **Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.**

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing, make sure closure placement will accommodate SSR Pitch Break flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Install SSR Pitch Break flashing, secure to Clip-Loc panel rib with a $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL 8" o.c. at every rib.
6. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used seal to parapet wall with tube sealant.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets $2\frac{1}{2}$ " o.c.

1:12 Slope
Minimum

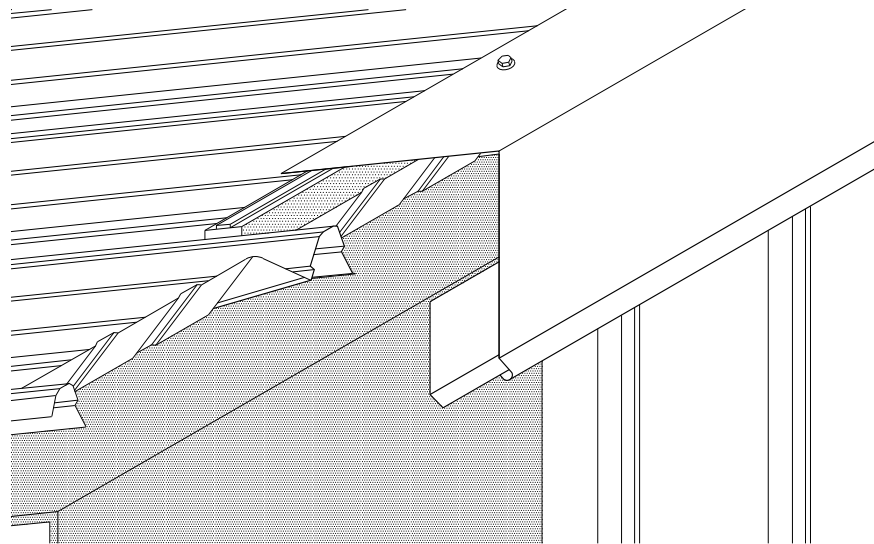
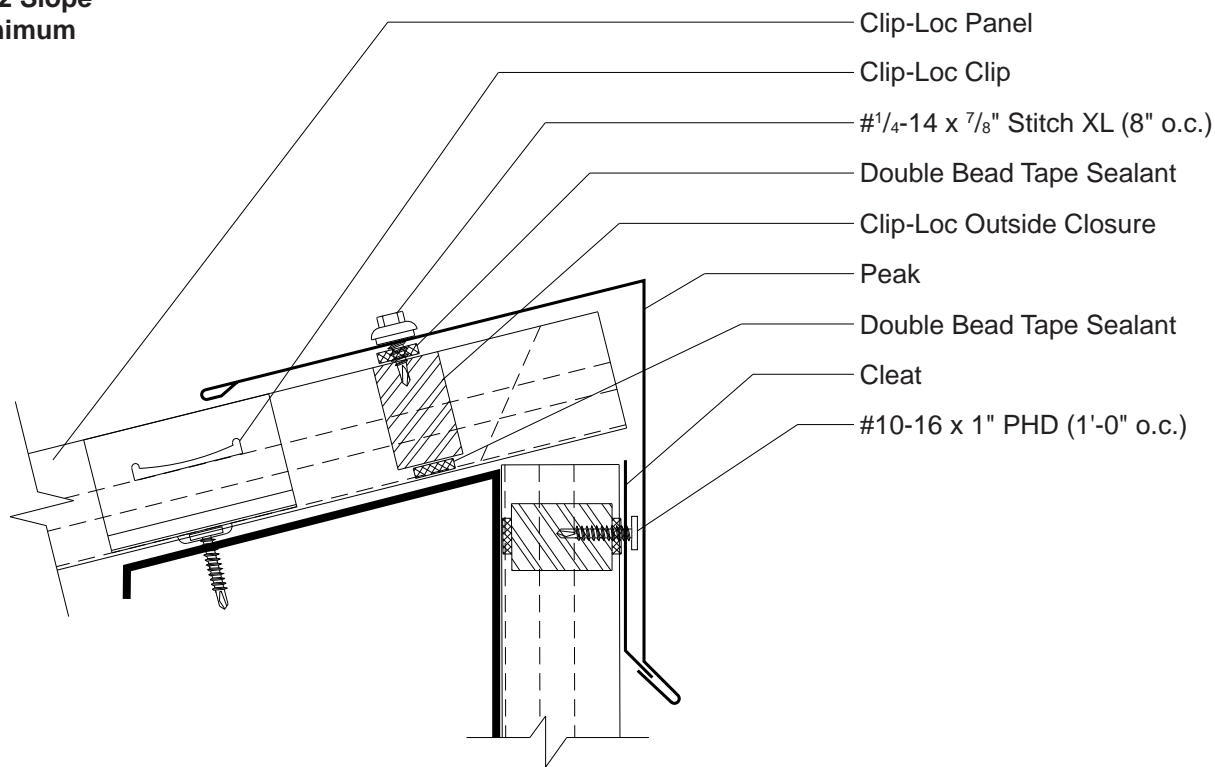


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing, make sure closure placement will accommodate Clip-Loc Endwall flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Place Clip-Loc Endwall on top of panel ribs and mark the endwall flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out endwall flashing (see page 19).
6. Install endwall flashing and secure to Clip-Loc panel rib with a 1/4-14x7/8" Stitch XL 8" o.c. at every rib
7. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with tube sealant.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

1:12 Slope
Minimum

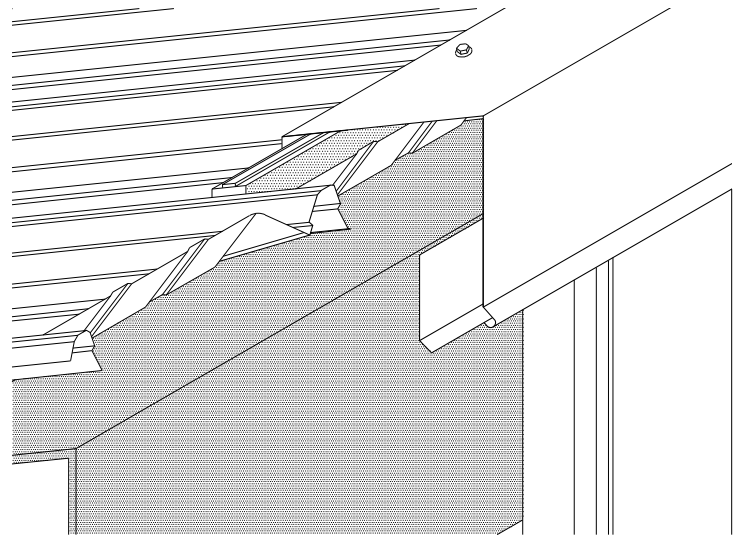
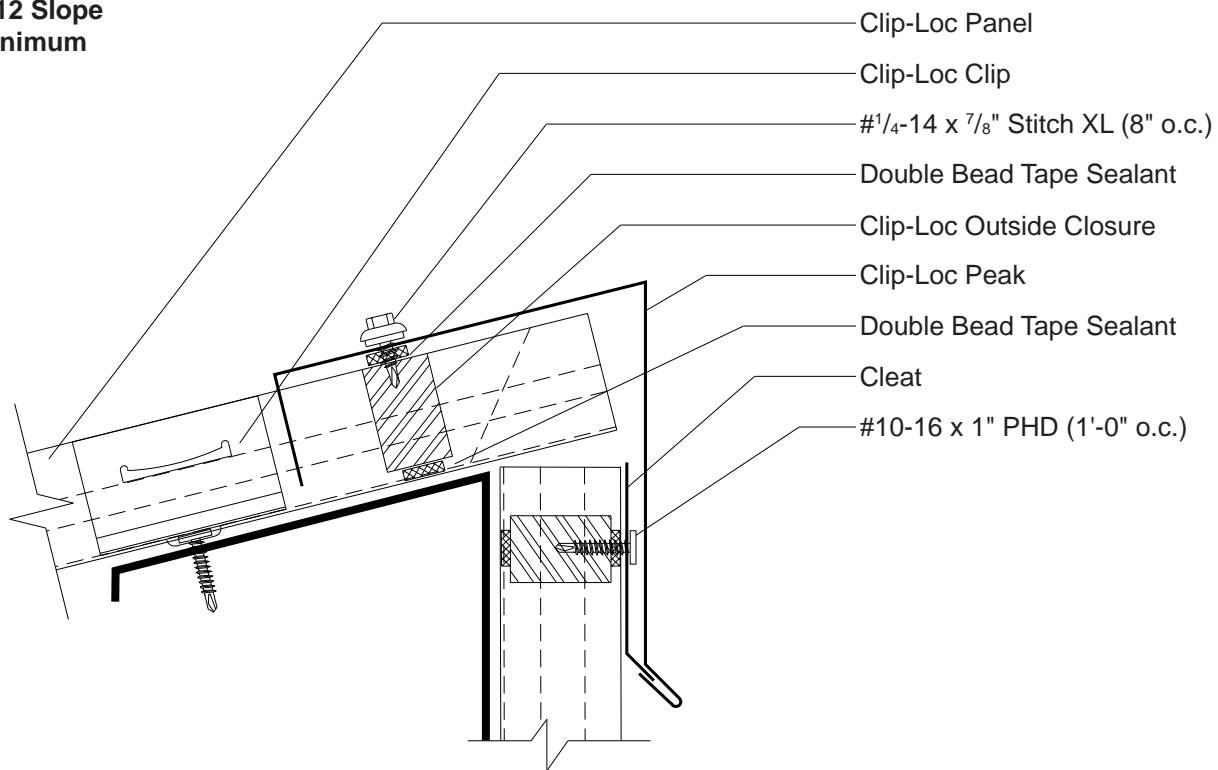


■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing, make sure closure placement will accommodate Peak flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper Peak attachment.
6. Install Peak flashing by sliding open hem onto Cleat and resting the Peak flashing back over roof panel.
7. Fasten Peak flashing to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.

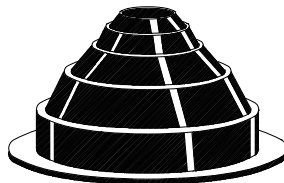
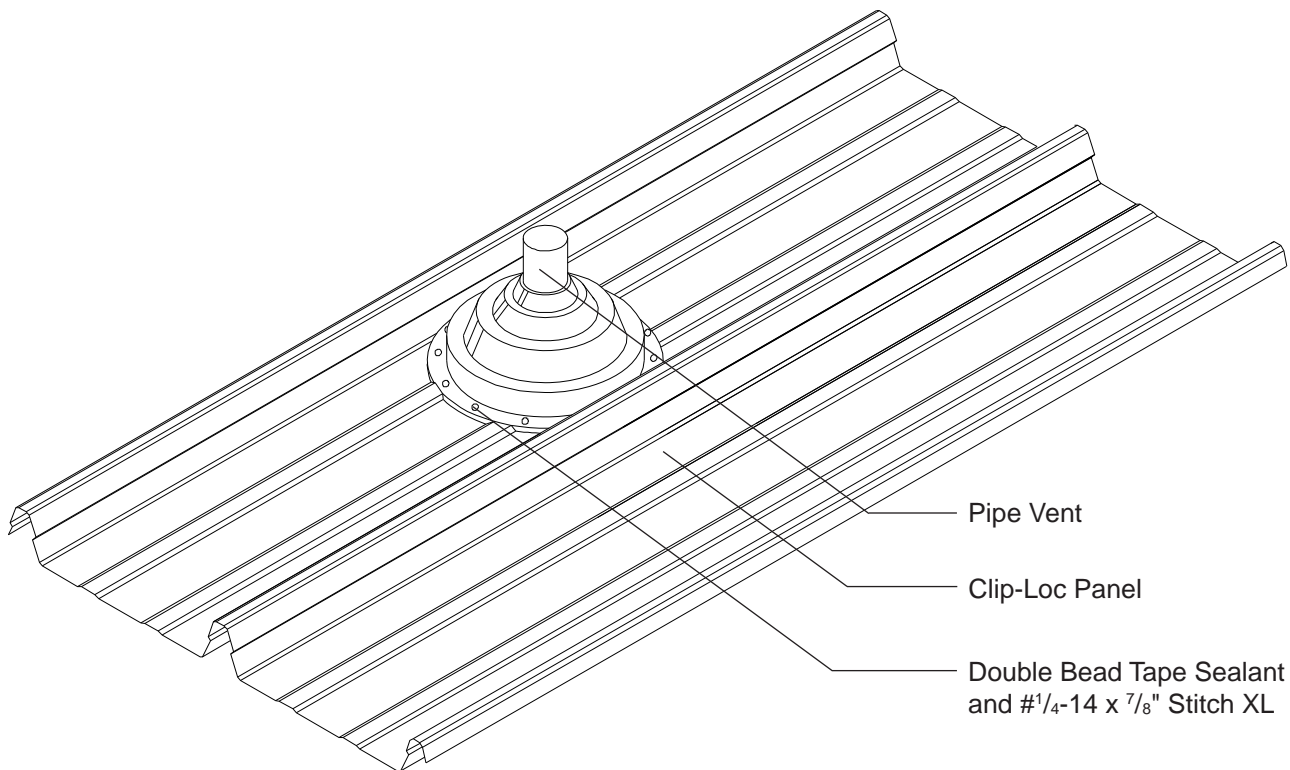
1:12 Slope
Minimum



■ Clip-Loc panel must be anchored to solid deck behind outside closure at all ridge, hip, endwall, and peak conditions to fix the panel when using this floating eave detail.

INSTALLATION NOTES

1. Once panels have been installed, slide Clip-Loc Turn-up Tool over end of panel and bend pan up until flush with top of panel rib. Turn up all Clip-Loc pans (see page 19).
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 2"-4" from panel end.
3. Install a Clip-Loc Outside Closure over tape sealant. Before continuing, make sure closure placement will accommodate Clip-Loc Peak flashing. Set closure in tape sealant.
4. Once all closures have been installed, place a row of Double Bead Tape Sealant across the top of closures.
5. Place Clip-Loc Peak on top of panel ribs and mark the peak flashing at the center of each panel rib as a guide for notching. Use Clip-Loc Notching Tool to notch out peak flashing (see page 19).
6. Position and install Cleat to wall with appropriate fastener, 1'-0" o.c. Make sure Cleat allows for proper peak attachment.
7. Install Clip-Loc Peak flashing by sliding open hem onto Cleat and resting the peak flashing back over roof panel.
8. Fasten Clip-Loc Peak flashing to Clip-Loc panel rib with a 1/4-14 x 7/8" Stitch XL 8" o.c. at every rib
9. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of tube sealant between the flashings and securing with pop rivets 2 1/2" o.c.



#2 (1 $\frac{3}{4}$ " TO 3" O.D. Pipe)
 #4 (3" TO 6" O.D. Pipe)

TEMP RANGE: -30° to +250°

GENERAL NOTES

Size and location of all roof penetrations should be an important consideration. Areas around roof vents or rooftop units may show that corrosive fumes are emitted from a process within the building.

INSTALLATION NOTES

Note: The following procedures are for vent pipes 6" or less and not transmitting extremely hot or caustic materials. When installing vent pipes abide by the local plumbing codes.

1. Determine the size and length of the vent pipe to be raised.
2. Take the appropriate measurements for the vent location and mark them on the Clip-Loc panel. The vent pipe must extend through the flat of the roof panel. If the vent pipe extension cannot be raised directly into the flat of the new roof panel, elbows should be used to offset the pipe. Cut the panel to fit the vent pipe properly.
3. Use a light gauge angle to secure and plumb the vent pipe to the framing system.
4. Flash the vent pipe with a Rubber Roof Jack or similar pipe flashing.
5. Apply Tube Sealant between the panel and the base of the Rubber Roof Jack as well as the top where the boot meets the pipe.
6. Attach the base of the Rubber Roof Jack to the panel using # $\frac{1}{4}$ -14 x $\frac{7}{8}$ " Stitch XL fasteners.

Though factory applied prepainted finishes are very durable and will last many years, eventually it may be desirable to thoroughly clean or repaint them.

Dirt pickup may cause apparent discoloration of the paint when it has been exposed in some dirt laded atmospheres for long periods of time. In areas of strong sunlight, slight chalking may cause some change in appearance. A good cleaning will often restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will help maintain a good appearance.

In many cases, simply washing the building with plain water using a hose or pressure sprayer will be adequate. In areas where heavy dirt deposits dull the surface, a cloth or soft bristle brush and solution of water and detergent ($\frac{1}{3}$ cup of laundry detergent per gallon of water for example) may be used. This should be followed by an adequate rinse of water. Do not use wire brushes, abrasives, or cleaning tools which will abrade the coating surface.

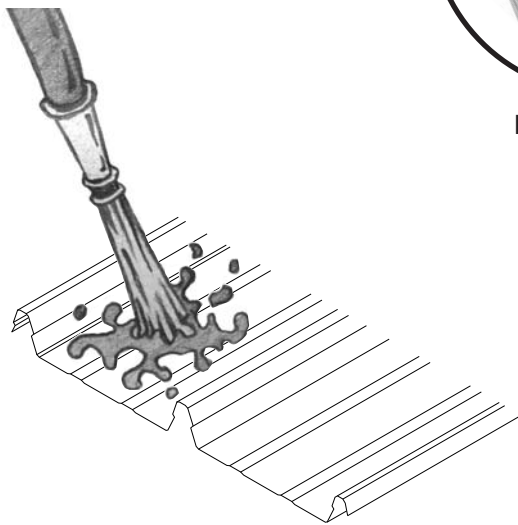
Mildew may occur in areas subject to high humidity but is not normally a problem due to the high inherent mildew resistance of the baked finish that is used. However, mildew can grow on dirt and spore deposits in some cases. To remove mildew along with the dirt, the following solution is recommended.

- $\frac{1}{3}$ cup detergent (Tide® or equivalent)
- $\frac{2}{3}$ cup trisodium phosphate (Solex® or equivalent)
- 1 quart of 5% sodium hypochlorite solution (Clorox® or equivalent)
- 3 quarts of water

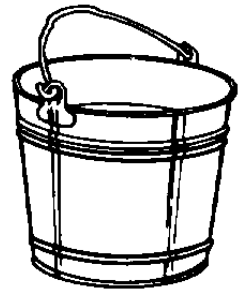
Strong solvents and abrasive type cleaners should be avoided. Most organic solvents are flammable and toxic and must be handled accordingly. When using a solvent, consult maintenance professionals and label instructions for proper handling and disposal of washings. If required, a mild solvent such as mineral spirits can be used to remove caulking compounds, oil, grease, tars, wax, and similar substances. Use a cloth dampened with mineral spirits and apply only to areas which are contaminated. Follow up the use of this mild solvent with detergent cleaning and rinsing.



**DO NOT USE A
WIRE BRUSH**



**HOSE OR PRESSURE SPRAY
FOR ADEQUATE CLEANING**



**USE MILD DETERGENT AND WATER
FOR HEAVY DIRT DEPOSITS**

Longmont, Colorado
800.289.7663

Jacksonville, Florida
800.394.4419

Jefferson, Ohio
800.321.5833

Independence, Missouri
800.747.0012

Sellersburg, Indiana
800.999.7777

Rogers, Minnesota
800.328.9316

Antioch, Tennessee
800.251.8508

Spokane, Washington
800.572.6565

Kent, Washington
800.431.3470

Rock Island, Illinois
800.747.1206

Orwigsburg, Pennsylvania
800.544.2577

Temple, Texas
800.543.4415

Woodland, California
800.759.6019

Fontana, California
800.782.7953

Anchorage, Alaska
866.640.7663

Bay City, Michigan
888.777.7640

Detroit Lakes, Minnesota
888.594.1394

Mocksville, North Carolina
800.228.6119

www.metalsales.us.com

metal sales
manufacturing corporation

