

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 Metal Sales approved erection drawings, the approved 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 Seam-Loc 24 roofing system should be directed to your Metal Sales representative, (see pages 2 and 3).

Oil canning is not a cause for rejection. Oil canning can be described as the amount of waviness found in the flat areas of metal panels. Oil canning is an inherent characteristic of light gauge cold formed metal products, particularly those with broad flat areas. There are many factors which may contribute to oil canning that Metal Sales is not able to control. These factors include: misalignment of the support system, over driving of fasteners used on the panels, stress (whether inherent in the panel or induced), thermal expansion and contraction of the panel, material handling, width, gauge, length, color of panels, and installation (Reference Metal Construction Association "Oil Canning Position Paper" - Appendix A).

Exposure of metal roof and wall materials to areas subject to corrosive, harmful and aggressive environment condition but not limited to salt water regions, marine atmosphere, repeated salt spray, corrosive chemical, ash, fumes, chemical dust, corrosive vapors, animal waste, confinement, run off from non-compatible metal, can cause premature rusting and other failure of metal materials (including panels and trims) and therefore is not a cause for claim or rejection.

Consult Metal Sales representative for any additional information not outlined in this manual (see pages 2-3).

This manual is designed to be utilized as a guide when installing Seam-Loc 24 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.

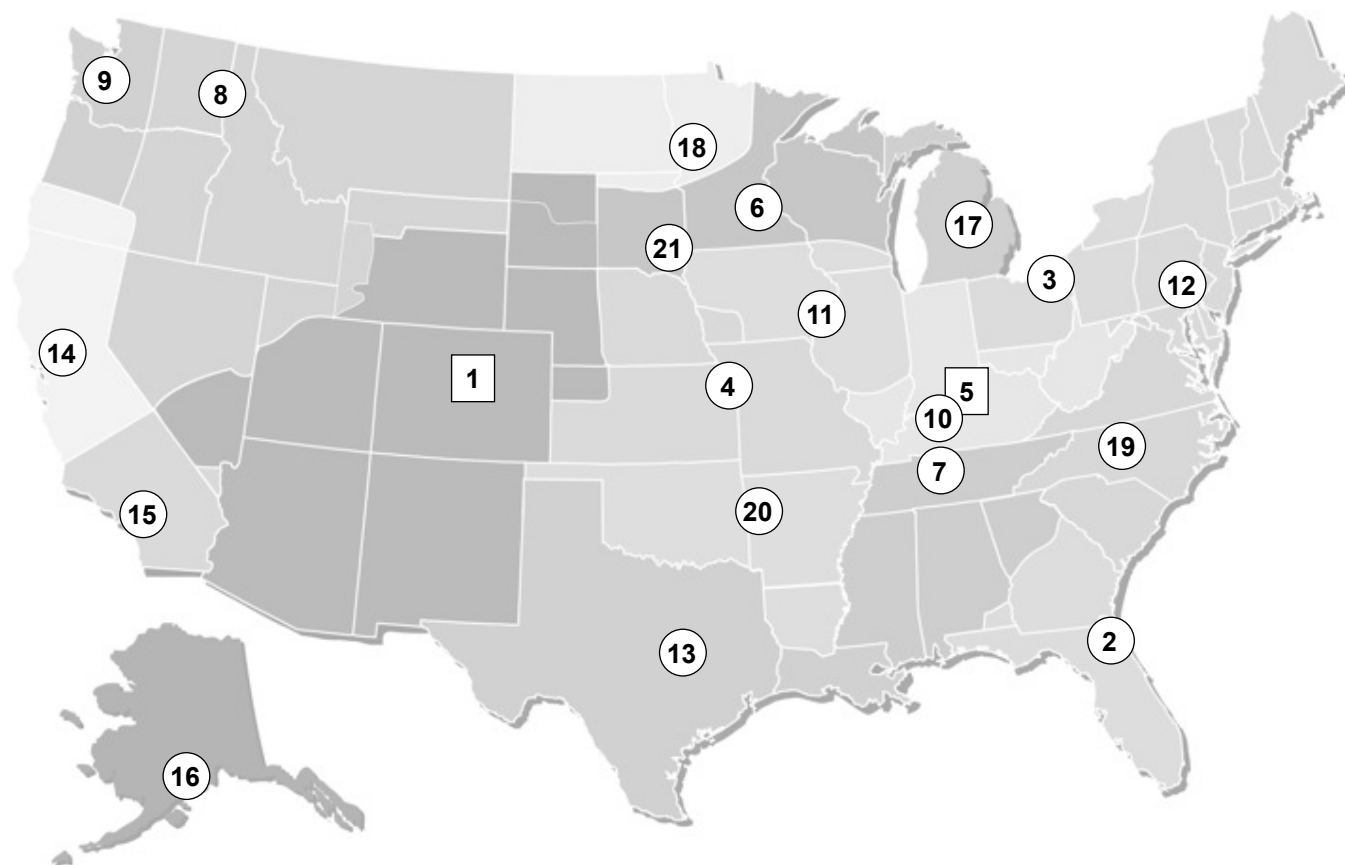
The installation of metal roof systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. **USE EXTREME CARE WHILE INSTALLING ROOF PANELS.** It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to 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 any part of a roof panel until the panel has been completely attached.



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



Indicates Metal Sales branch manufactures Seam-Loc Panels

Metal Sales offers a complete line of metal roof, wall, and fascia panel systems for the commercial, architectural, industrial, residential, and markets. Metal Sales offers over 75 profiles with a wide selection of widths, colors, and gauges - new construction or retrofit.

1.) DENVER BRANCH

7990 East I-25 Frontage Road
Longmont, CO 80504
303.702.5440 Phone
800.289.7663 Toll Free
800.289.1617 Toll Free Fax

2.) JACKSONVILLE BRANCH

7110 Stuart Avenue
Jacksonville, FL 32254
904.783.3660 Phone
800.394.4419 Toll Free
904.783.9175 Fax
800.413.3292 Toll Free Fax

3.) JEFFERSON BRANCH

352 East Erie Street
Jefferson, OH 44047
440.319.3779 Phone
800.321.5833 Toll Free
440.576.9242 Fax
800.233.5719 Toll Free Fax

4.) INDEPENDENCE BRANCH

1306 South Powell Road
Independence, MO 64057
816.796.0900 Phone
800.747.0012 Toll Free
816.796.0906 Fax

5.) SELLERSBURG BRANCH

7800 State Road 60
Sellersburg, IN 47172
812.246.1866 Phone
800.999.7777 Toll Free
812.246.0893 Fax
800.477.9318 Toll Free Fax

6.) ROGERS BRANCH

22651 Industrial Boulevard
Rogers, MN 55374
763.428.8080 Phone
800.328.9316 Toll Free
763.428.8525 Fax
800.938.9119 Toll Free Fax

7.) NASHVILLE BRANCH

4314 Hurricane Creek Boulevard
Antioch, TN 37013
615.229.6570 Phone
800.251.8508 Toll Free
615.283.4283 Fax
800.419.4372 Toll Free Fax

8.) SPOKANE BRANCH

East 2727 Trent Avenue
Spokane, WA 99202
509.536.6000 Phone
800.572.6565 Toll Free
509.534.4427 Fax

9.) SEATTLE BRANCH

20213 84th Avenue, South
Kent, WA 98032
253.872.5750 Phone
800.431.3470 Toll Free (Outside WA)
800.742.7900 Toll Free (Inside WA)
253.872.2008 Fax

10.) NEW ALBANY BRANCH

999 Park Place
New Albany, IN 47150
812.944.2733 Phone
812.944.1418 Fax

11.) ROCK ISLAND BRANCH

8111 West 29th Street
Rock Island, IL 61201
309.787.1200 Phone
800.747.1206 Toll Free
309.787.1833 Fax

12.) DEER LAKE BRANCH

29 Pinedale Industrial Road
Orwigsburg, PA 17961
570.366.2020 Phone
800.544.2577 Toll Free
570.366.1648 Fax
800.544.2574 Toll Free Fax

13.) TEMPLE BRANCH

3838 North General Bruce Drive
Temple, TX 76501
254.791.6650 Phone
800.543.4415 Toll Free
254.791.6655 Fax
800.543.4473 Toll Free Fax

14.) WOODLAND BRANCH

1326 Paddock Place
Woodland, CA 95776
530.668.5690 Phone
800.759.6019 Toll Free
530.668.0901 Fax

15.) FONTANA BRANCH

14213 Whittram Avenue
Fontana, CA 92335
909.829.8618 Phone
800.782.7953 Toll Free
909.829.9083 Fax

16.) ANCHORAGE BRANCH

4637 Old Seward Highway
Anchorage, AK 99503
907.646.7663 Phone
866.640.7663 Toll Free
907.646.7664 Fax

17.) BAY CITY BRANCH

5209 Mackinaw Road
Bay City, MI 48706
989.686.5879 Phone
888.777.7640 Toll Free
989.686.5870 Fax
888.777.0112 Toll Free Fax

18.) DETROIT LAKES BRANCH

1435 Egret Avenue
Detroit Lakes, MN 56501
218.847.2988 Phone
888.594.1394 Toll Free
218.847.4835 Fax
888.594.1454 Toll Free Fax

19.) MOCKSVILLE BRANCH

188 Quality Drive
Mocksville, NC 27028
704.859.0550 Phone
800.228.6119 Toll Free
704.859.0157 Fax
800.228.7916 Toll Free Fax

20.) FORT SMITH BRANCH

7510 Ball Road
Fort Smith, AR 72908
479.646.1176 Phone
877.452.3915 Toll Free
479.646.5204 Fax

21.) SIOUX FALLS BRANCH

2700 West 3rd Street, Suite 4
Sioux Falls, SD 57104
605.951.0367 Phone
888.299.0024 Toll Free

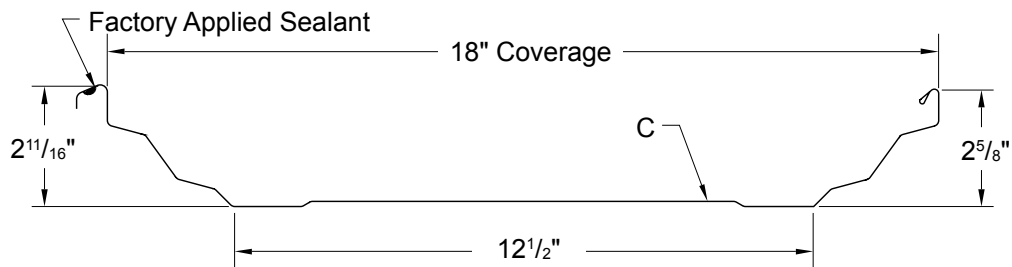
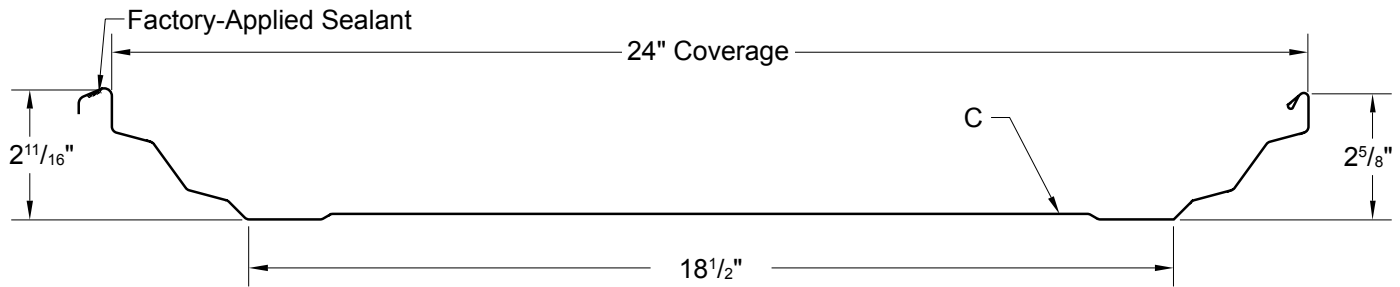
TECHNICAL SUPPORT**TECHNICAL SERVICES**

545 South 3rd Street, Suite 200
Louisville, KY 40202
502.855.4300 Phone
800.406.7387 Toll Free
502.855.4290 Fax
800.944.6884 Toll Free Fax

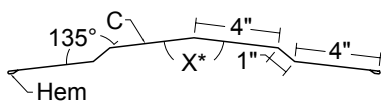
| General Information | PAGE NO. |
|--|-------------------|
| Important Information | 1 |
| Metal Sales' Locations | 2 |
| Customer Service | 3 |
| Table of Contents | 4 & 5 |
| Panel Profile | 6 |
| Flashing Profiles | 6 & 8 |
| Accessory Profiles | 9 & 10 |
| Fastener Selection Guide | 11 |
| Handling Material | |
| Receiving Material | 12 |
| General Handling | 12 |
| Mechanical Handling | 12 |
| Manual Handling | 13 |
| Storage | |
| General | 14 |
| Storage on Roof | 15 |
| Foot Traffic | 16 |
| Field Cutting and Touch-up | |
| Field Cutting | 17 |
| Touch-up Paint | 17 |
| Design / Installation Considerations | |
| Fastener Installation Technique | 18 |
| Condition of Substructure | 18 |
| Ventilation | 19 |
| Insulation | 19 |
| System Expansion / Contraction | 20 |
| Selection of System Components | 20 |
| Panel Endlapping Considerations | 21 & 22 |
| Installation Procedure Overview | 23 |
| Installation of Panel Over Open Framing | |
| <i>Installing Floating Rake Angle (Step 1)</i> | 24 |
| <i>Installing Eave Plate (Step 2)</i> | 25 |
| <i>Installing Metal Inside Closures (Step 3)</i> | 26 |
| <i>Installing First Panel (Step 4)</i> | 27 |
| <i>Installing Panel Clips (Step 5)</i> | 28 & 29 |
| <i>Installing Panel Endlaps (Step 6)</i> | 30 & 31 |
| <i>Installing Panel Sidelaps (Step 7)</i> | 32 & 33 |
| <i>Installing Panel Terminations (Step 8)</i> | 34 |
| <i>Seaming Panels</i> | 35 & 36 |
| Sculptured Eave | 37 |
| Sculptured Gutter | 38 |
| Endlap | 39 |
| SSR Sculptured Rake - Starting End | 40 |
| SSR Sculptured Rake - Finishing End | 41 |
| Rakewall - Starting End | 42 |
| Rakewall - Finishing End | 43 |
| Endwall | 44 |
| Expansion Joint | 45 |
| SSR Drop Valley | 46 |
| Sculptured High Side Eave | 47 |
| SSR Ridge | 48 |
| Vented Ridge | 49 |
| Installation of Metal Outside Closure | 50 |

| Installation of Panel Over Rigid Insulation | PAGE NO. |
|--|-----------------|
| Sculptured Eave | 51 |
| Sculptured Gutter | 52 |
| Endlap | 53 |
| SSR Sculptured Rake - Starting End | 54 |
| SSR Sculptured Rake - Finishing End | 55 |
| Rakewall - Starting End | 56 |
| Endwall | 57 |
| Expansion Joint | 58 |
| SSR Drop Valley | 59 |
| Sculptured High Side Eave | 60 |
| SSR Ridge | 61 |
| Clip Detail Over Rigid Insulation | 62 |
| Roof Penetrations | |
| General Notes | 63 |
| Installation Notes | 63 |
| Care and Maintenance | 64 |

PANEL PROFILE

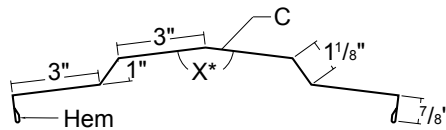


SSR RIDGE



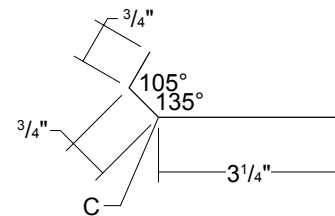
Length 10'-2" 20'-3"
*Specify Slope Angle

VENTED RIDGE COVER



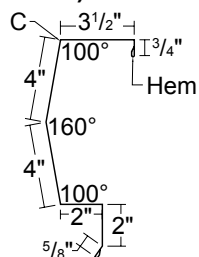
Length 10'-2" 20'-3"
*Specify Slope Angle

VENT DRIP



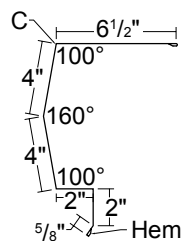
Length 10'-2"

SSR SCULPTURED RAKE (ON MODULE)



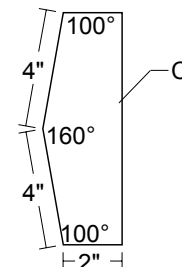
Length 10'-2" 20'-3"

SSR SCULPTURED RAKE (OFF MODULE)

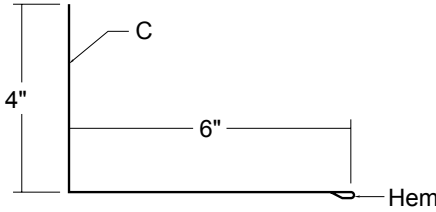


Length 10'-2" 20'-3"

SSR SCULPTURED RAKE END

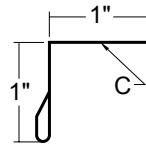


SSR RAKEWALL



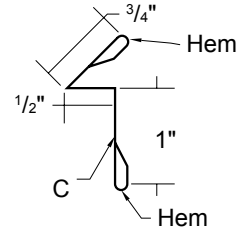
Length 10'-2"

SSR RAKE CLEAT



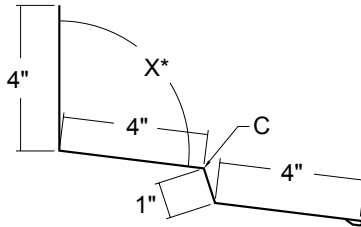
Length 10'-2"

SSR RAKE SLIDE



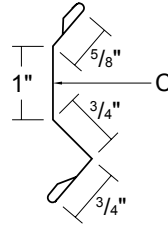
Length 10'-2"

SSR HIGH SIDE PITCH BREAK



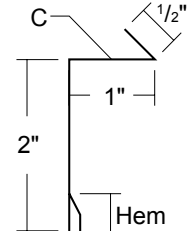
Length 10'-2" 20'-3" - *Specify Slope Angle

COUNTER FLASHING



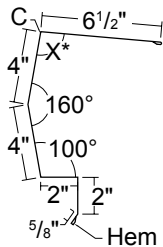
Length 10'-2"

REGLET



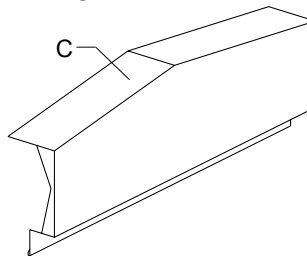
Length 10'-2"

SSR SCULPTURED HIGH SIDE EAVE



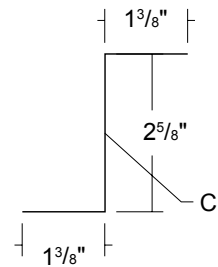
Length 10'-2" 20'-3" - *Specify Slope Angle

SSR SCULPTURED PEAK BOX



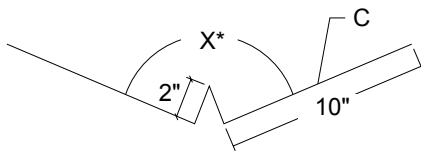
*Specify Slope Angle

SEAM-LOC 24 Z-CLOSURE



Length 10'-2"

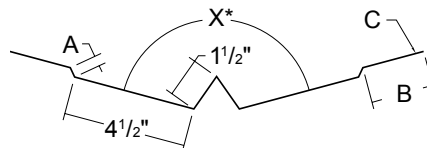
VALLEY



Length 10'-2" 20'-3" - *Specify Slope Angle
(For use with Utility System/Clip)

SSR 4.5" DROP VALLEY

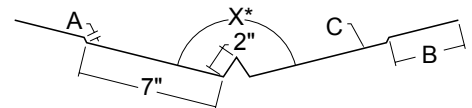
| SYSTEM | A | B |
|--------|--------|--------|
| LOW | 3/8" | 4 1/2" |
| HIGH | 1 3/8" | 3 1/2" |



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

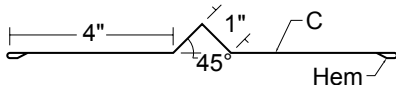
SSR 7" DROP VALLEY

| SYSTEM | A | B |
|--------|--------|--------|
| LOW | 3/8" | 4 1/2" |
| HIGH | 1 3/8" | 3 1/2" |



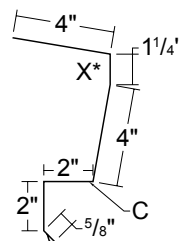
Length 10'-2" 20'-3" - *Specify Slope Angle

EXPANSION JOINT COVER



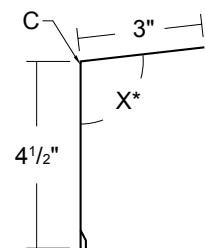
Length 10'-2"

SEAM-LOC 24 SCULPTURED EAVE



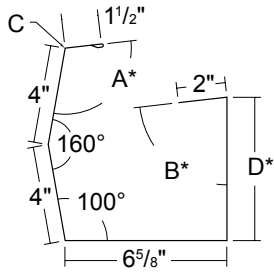
Length 10'-2" 20'-3" - *Specify Slope Angle

GUTTER DRIP



Length 10'-2" - *Specify Slope Angle

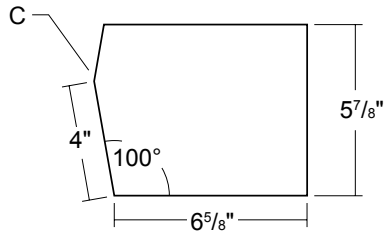
SCULPTURED GUTTER



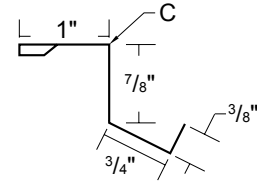
Length 10'-2" 20'-3"

*Specify Slope Angle For A and B, and Length for D.

SCULPTURED GUTTER END

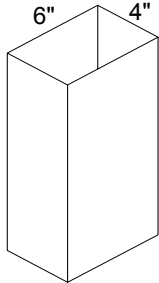


SSR GUTTER SUPPORT



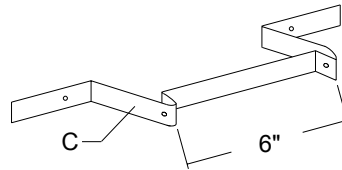
Length 0'-10"

4" x 6" DOWNSPOUT

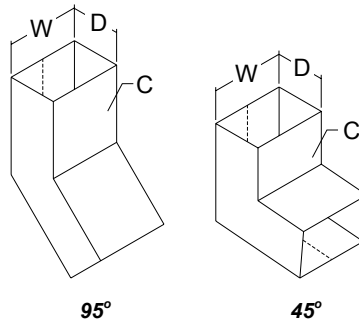


Lengths 10'-2" 20'-3"

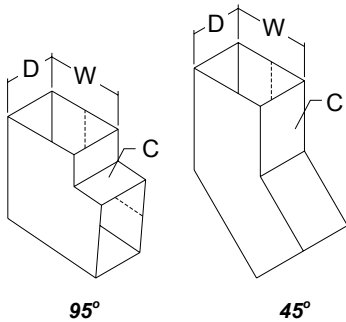
6" DOWNSPOUT STRAP



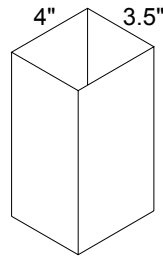
4" x 6" TYPE "A" ELBOW



4" x 6" TYPE "B" ELBOW

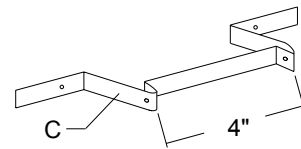


3.5" x 4" DOWNSPOUT

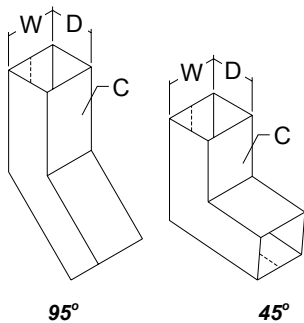


Lengths 10'-2" 20'-3"

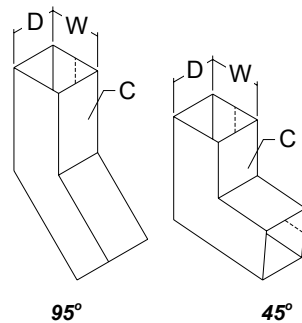
4" DOWNSPOUT STRAP



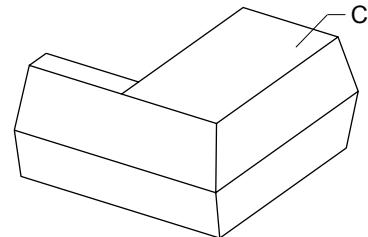
3.5" x 4" TYPE "A" ELBOW



3.5" x 4" TYPE "B" ELBOW



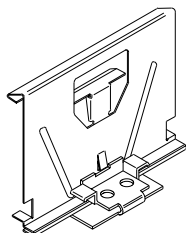
SSR SCULPTURED CORNER BOX



*Specify Slope Angle

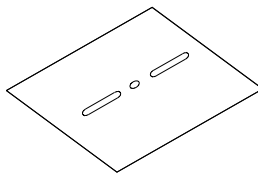
C- Indicates color side of flashing.

SEAM-LOC 24 CLIP



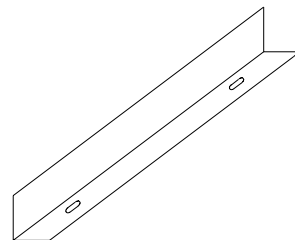
Galvanized
Height 2⁵/₈", 3¹/₈", 4¹/₈"

BEARING PLATE



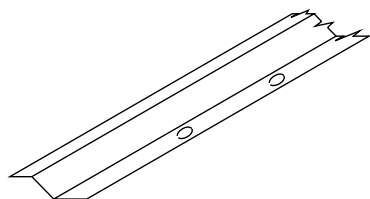
4" X 5"
20 Gauge - Galvanized

FLOATING RAKE ANGLE



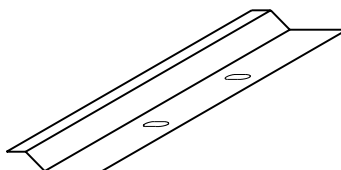
Length 10'-0" Galvanized
Height 2⁵/₈", 3¹/₈", 4¹/₈"

EAVE PLATE

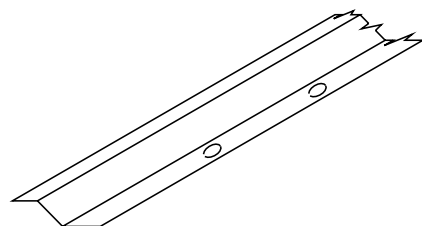


Length 10'-0" Galvanized
Height 3³/₈", 1³/₈"

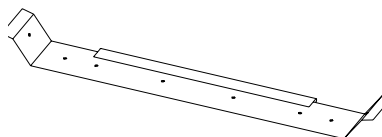
FLOATING EAVE PLATE



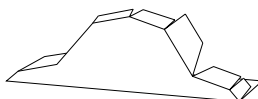
FIXED MID PLATE



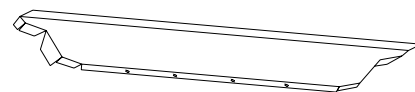
COMPRESSION PLATE



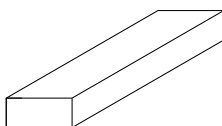
METAL INSIDE CLOSURE



METAL OUTSIDE CLOSURE

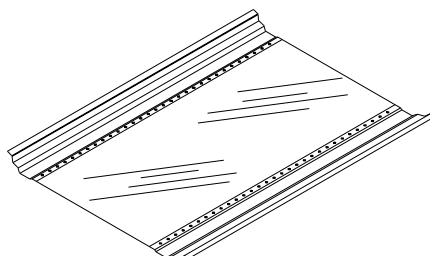


THERMAL BLOCK

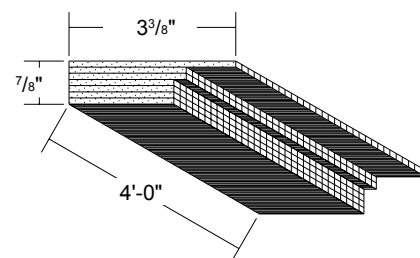


1" x 3" x 24"
Polystyrene Foam

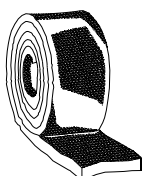
SEAM-LOC 24 LIGHT TRANSMITTING PANEL



VENT MATERIAL

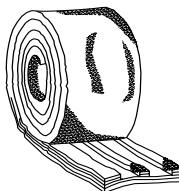


ENDLAP PAD

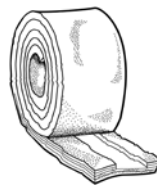


1¹/₂" x 3³/₃₂" x 30'

TAPE SEALANT

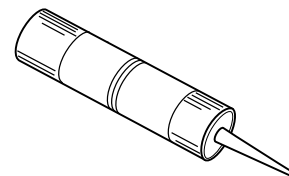


2 1/2" X 3/16" X 20'
Triple Bead



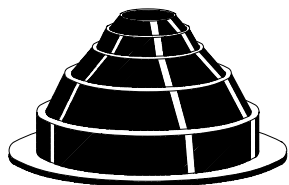
7/8" X 3/16" X 25'
Double Bead

TUBE SEALANT



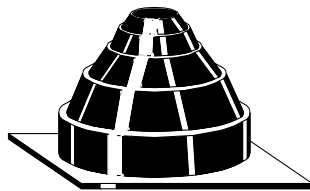
10.3 oz. Cartridge
Urethane

RUBBER ROOF JACK



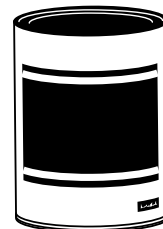
Mini ($\frac{1}{4}$ " to $1\frac{1}{8}$ " O.D. Pipe)
 #2 ($1\frac{3}{4}$ " to 3" O.D. Pipe)
 #4 (3" to 6" O.D. Pipe)
 #6 (6" to 9" O.D. Pipe)
 #8 (7" to 13" O.D. Pipe)

RETRO ROOF JACK



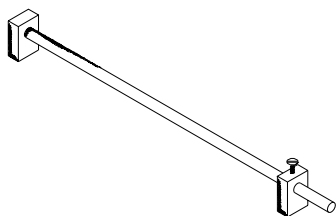
#801_{RETRO} ($\frac{3}{4}$ " to $2\frac{3}{4}$ " O.D. Pipe)
 #802_{RETRO} (2" to $7\frac{1}{4}$ " O.D. Pipe)
 #803_{RETRO} ($3\frac{1}{4}$ " to 10" O.D. Pipe)

TOUCH-UP PAINT

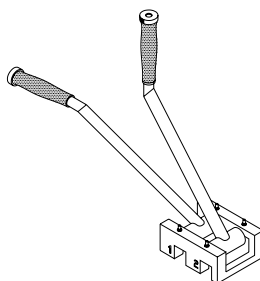


Available in Pints
 PVDF

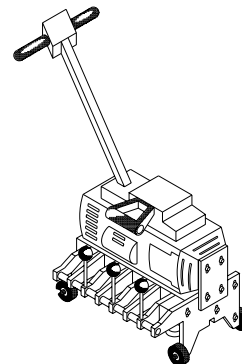
ADJUSTABLE SPACER BAR



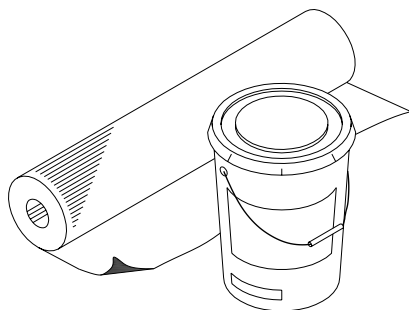
SEAM-LOC HAND CRIMPER



MECHANICAL SEAMER

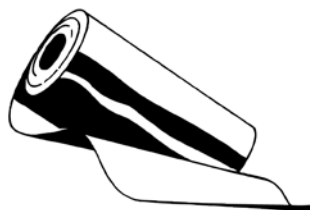


UNDERLAYMENT & PRIMER

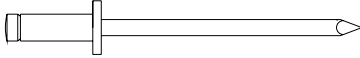
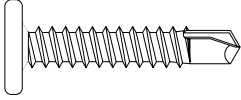
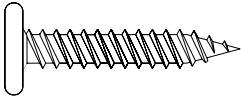
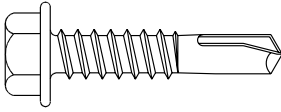
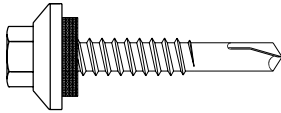
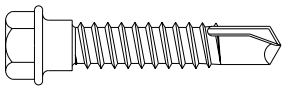
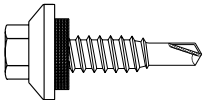
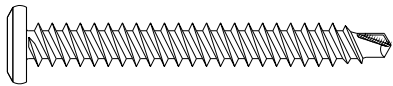


Contact Metal Sales for information

Flashing Kit



12" x 50'-0" Flash Kit
 18" x 50'-0" Flash Kit

| 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 |
| 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 WOOD SCREW | SIZE | TYPE | FINISH | APPLICATION |
| |  #10-12 x 1" | A | Plated | Panel/clip/flashing to wood substructure |
| SELF DRILLER NO WASHER | SIZE | TYPE | FINISH | APPLICATION |
| |  1/4"-14 x 1 1/2" | Driller | Plated | Panel clips to metal substructure |
| | #12-14 x 1" | Driller | Plated | Accessories to metal substructure and framing on Retrofit |
| | #12-24 x 1 1/4" | Driller (#4 point) | Plated | Panel clips to bar joists up to 3/8" thick |
| SELF DRILLER XL | SIZE | TYPE | FINISH | APPLICATION |
| |  #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 2" | Driller | Painted | |
| SHOULDER SELF DRILLER | SIZE | TYPE | FINISH | APPLICATION |
| |  1/4"-14 x 1 1/4" | Driller | Plated | For use with Floating Rake Angle to substructure |
| 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 |
| DECK SCREW | SIZE | TYPE | FINISH | APPLICATION |
| |  #14-13 x 2" | 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 | |

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 truck.

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 recrate them before lifting. To avoid damage please lift the bundle at its center of gravity.

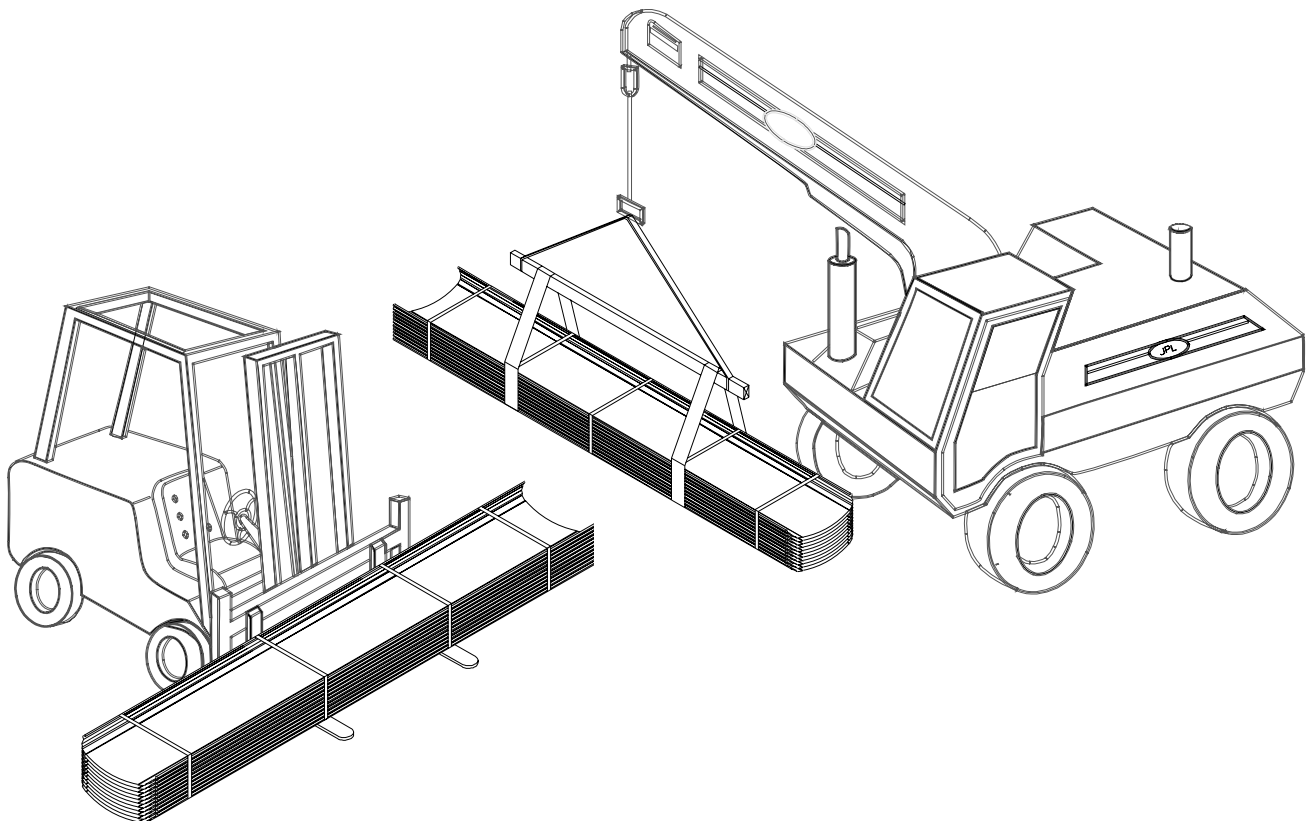
CAUTION

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.

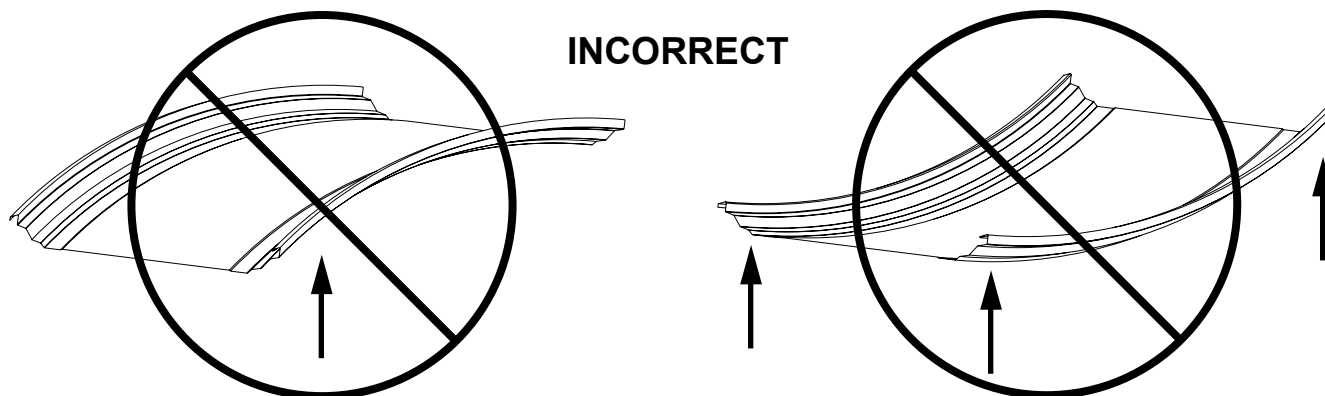
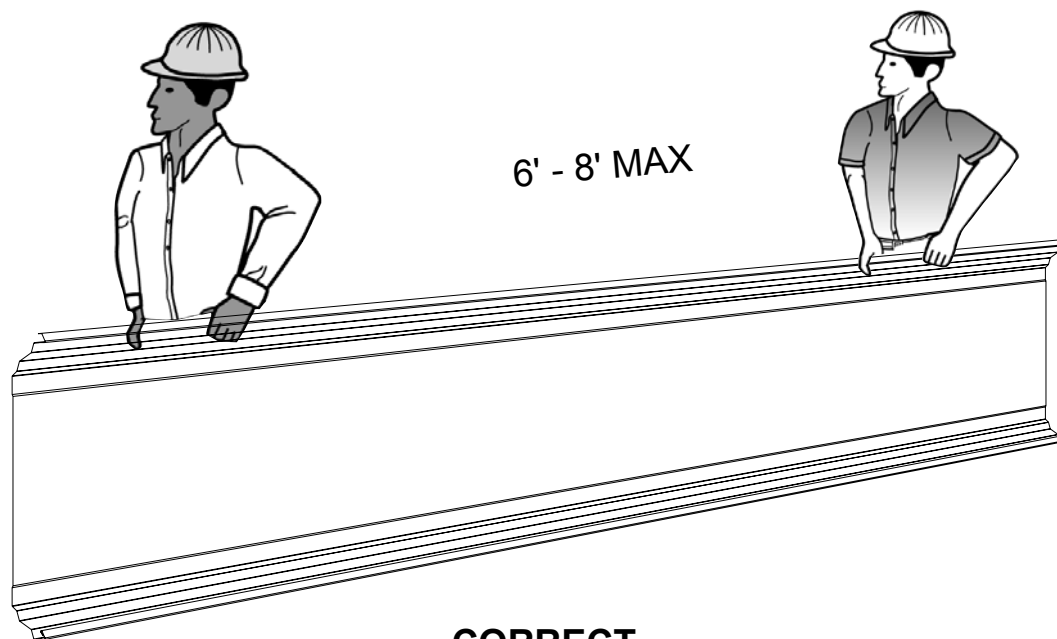


MANUAL HANDLING

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. Seam-Loc 24 panels should be carried by grasping the edge of the panel so that the Seam-Loc 24 panel is vertical to the ground. The Seam-Loc 24 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.

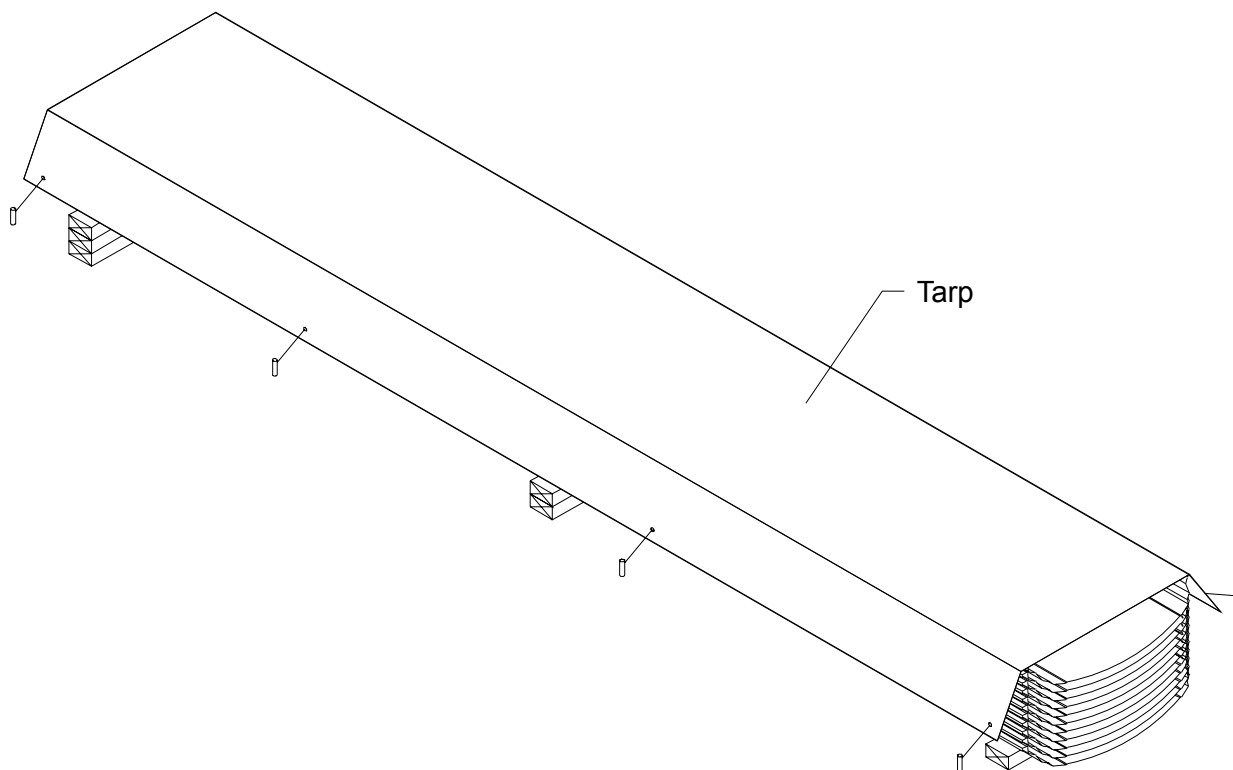
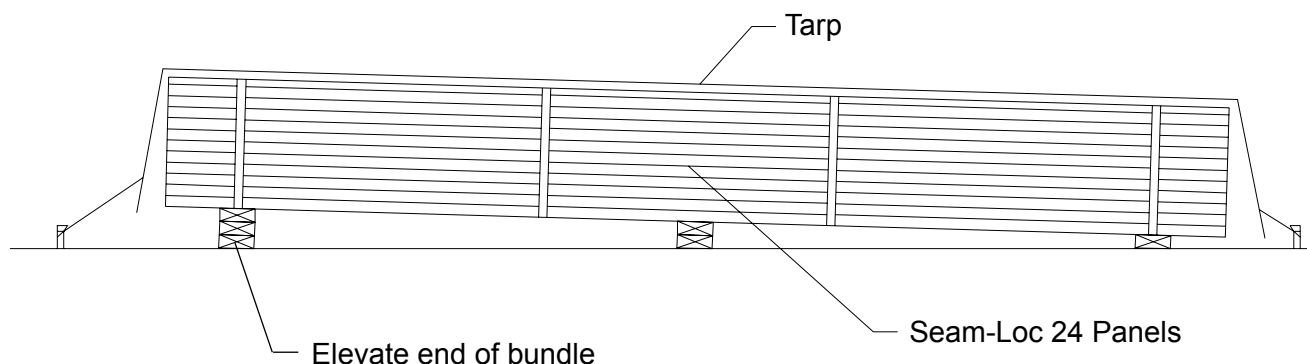
Normally individual panels can be handled by people placed every 6'-0" to 8'-0" along the length of the panel.



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 tarp. Do not use tight fitting plastic-type tarps 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, green, or treated lumber. These conditions will cause premature rusting of panels.**

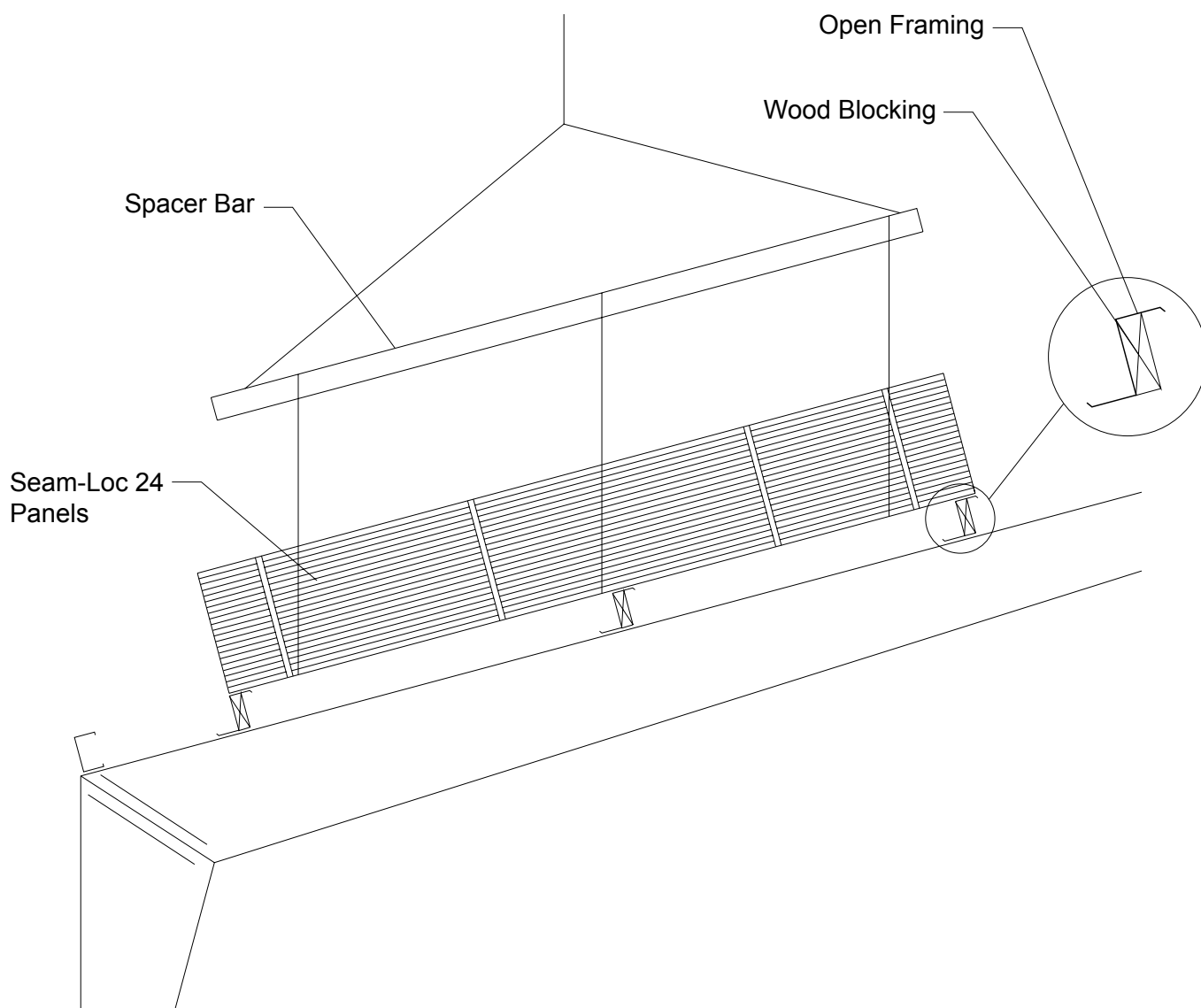


STORAGE ON ROOF

To facilitate the handling of Seam-Loc 24 panels, panel bundles can be lifted and placed on the roof. Loading capabilities of the structure must be checked. Bundles must be adequately secured to the roof.

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.

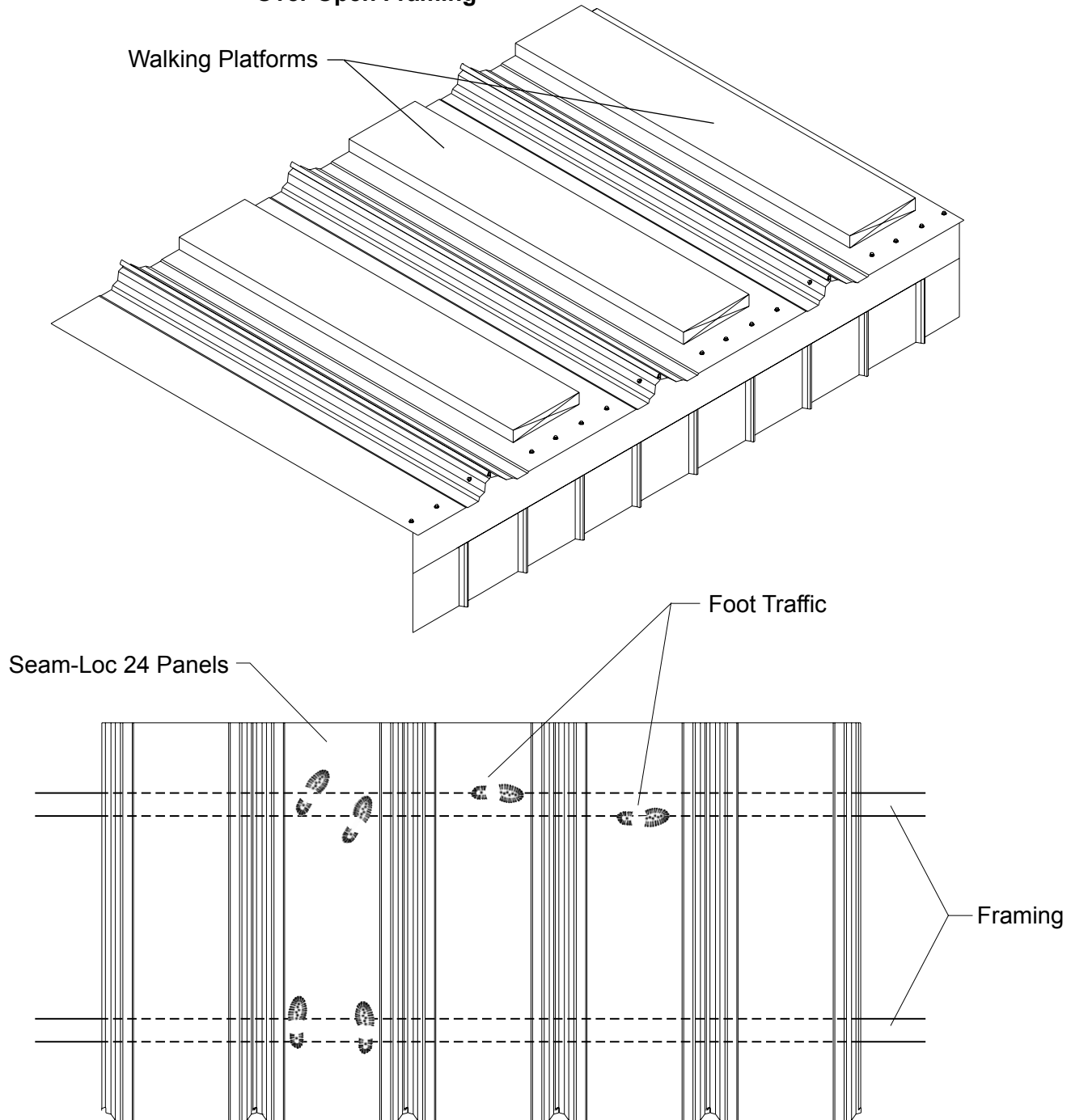


Care of metal panels and flashings must be exercised throughout erection. Foot traffic can cause distortion of panel and damage to finish. Traffic over the installed system must be kept to an absolute minimum. If continuous foot traffic is necessary for maintenance over certain areas of the roof, then 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. Treated lumber is not recommended for use as walking platforms.

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 Seam-Loc 24 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 tools are recommended for field cutting Seam-Loc 24 panels. Cutting the steel generates slivers or metal chips. These slivers and metal chips must be immediately removed from the Seam-Loc 24 panels because they will damage the finish and shorten the life of the product.

One method of preventing this problem is to flip the Seam-Loc 24 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 Seam-Loc 24 panels, goggles must be worn for eye protection.

CAUTION

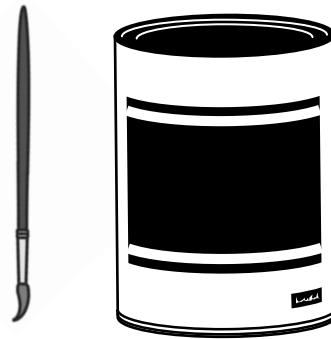
All product surfaces should be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface, voiding the warranty.

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

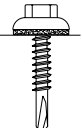
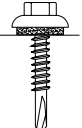
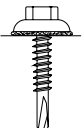

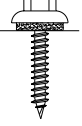
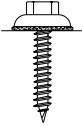


TOUCH-UP PAINT

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.

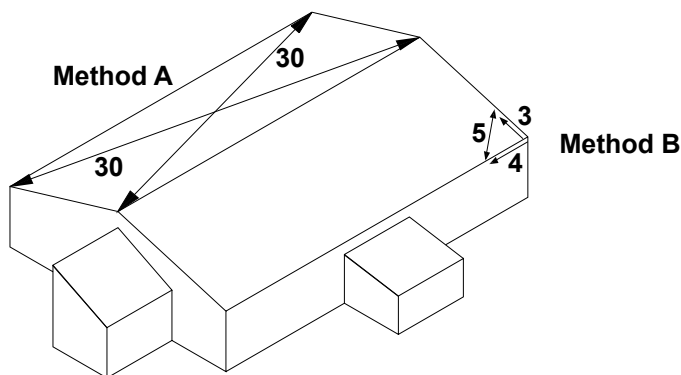
CONDITION OF SUBSTRUCTURE

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 Vertical Seam 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.



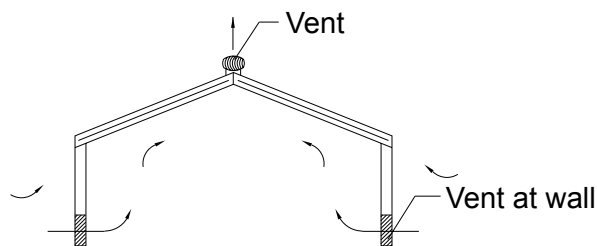
VENTILATION

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.

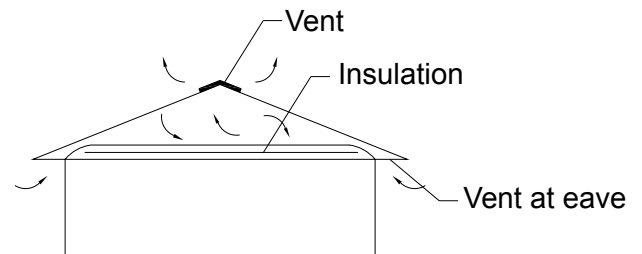
Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal buildings; these problems are common to all types of construction.

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)



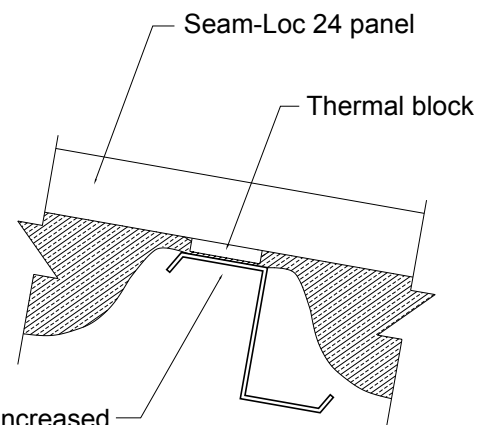
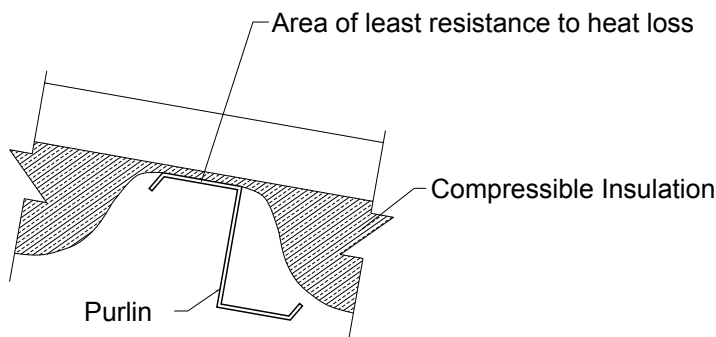
Building with attic or retrofitted

INSULATION

In most cases insulation is installed directly under roof panels. Insulation is recommended on all applications to act as a sound barrier, prevent condensation, and increase insulating value of a roof system.

Many different types of insulation can be used with the metal roof panels. Please contact your insulation supplier for specific recommendations on installation of insulation and vapor barriers.

When applying a compressible type of insulation over open framing members. Rigid thermal blocks can be used to help eliminate heat lost at purlin locations.

**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 roof temperature to building structural temperature must be considered when designing a Seam-Loc 24 roof system. The clips for the Seam-Loc 24 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.

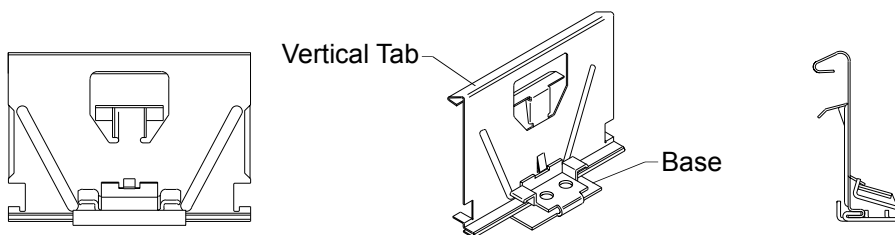
SELECTION OF SYSTEM COMPONENTS

The following information should be used to determine system components needed once insulation thickness has been selected. Refer to pages 16-17 for appropriate fastener selections.

SYSTEM COMPONENTS

| SYSTEM | CLIP | EAVE PLATE | RAKE ANGLE | THERMAL BLOCK | INSULATION |
|---------|---|--------------------------------------|---|---------------|--------------------|
| UTILITY | 2 ⁵ / ₈ " UTILITY | NONE REQUIRED | 2 ⁵ / ₈ " UTILITY | NONE REQUIRED | 1/2" TO 4" BLANKET |
| LOW | 3 ¹ / ₈ " LOW | 3/8" LOW | 3 ¹ / ₈ " LOW | NONE REQUIRED | 4" TO 6" BLANKET |
| HIGH | 4 ¹ / ₈ " HIGH | 1 ³ / ₈ " HIGH | 4 ¹ / ₈ " HIGH | 1" | 4" TO 6" BLANKET |

Seam-Loc 24 Panel Clips- The floating clips allow the roof surface (panels) to move independently of the roof substructure to allow for thermal expansion and contraction. These clips are designed with a vertical tab that slides along the base section of the clip. Clips are placed along the male leg of each panel prior to installing adjacent panels. Design wind uplift requirements must be considered for proper clip spacing.

**SEAM-LOC 24 PANEL CLIP**

The following chart should be used to determine proper fasteners required for clip installation on the selected applications. (See Product General Information page 11 for other fasteners available.)

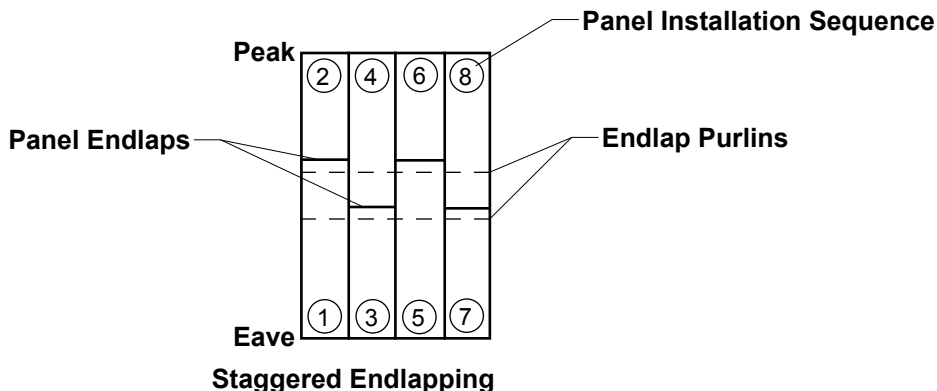
| APPLICATION | **CLIP SPACING | TYPE OF FASTENER | NUMBER REQUIRED |
|--|----------------|------------------------------------|-----------------|
| CLIPS OVER PURLINS (16 GA. MIN) | 5'-0" O.C. | 1/4"-14 x 1 1/2" SELF DRILLER N/W | 2 FASTENERS |
| CLIPS OVER 5/8" WOOD DECK | BY DESIGN | #10 X 1" PANCAKE HEAD WOODSCREW | 2 FASTENERS |
| CLIP OVER RIGID INSULATION / METAL DECK | 4'-0" O.C. | DECK SCREW #14-13* | 2 FASTENERS |

* Length of deck screw will vary depending on the total thickness of the rigid insulation and metal deck (see page 11).

** Based on UL 580. 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).

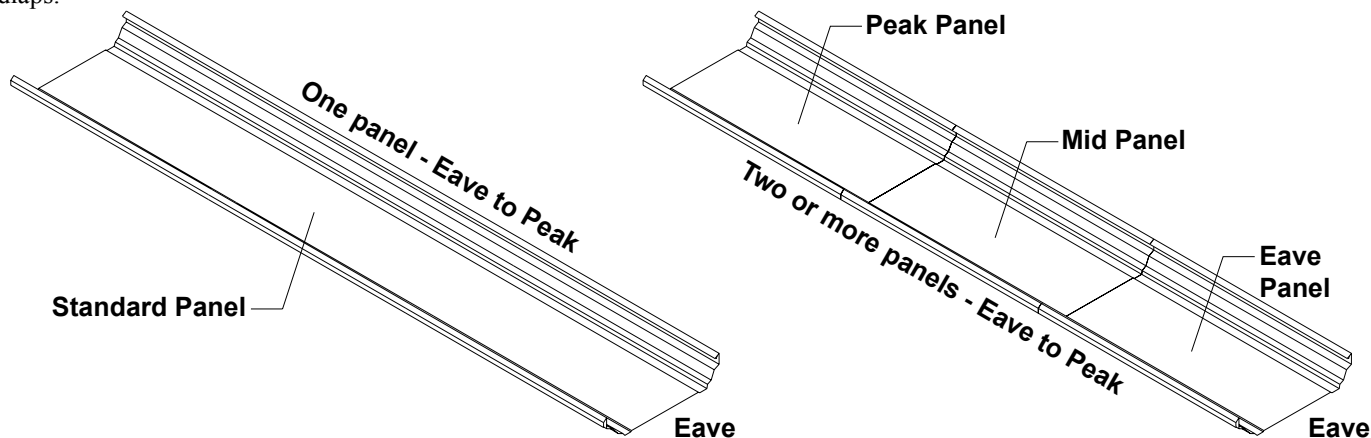
PANEL ENDLAPPING

If panel endlapping is required, endlaps must be staggered. This prevents material build-up and aids in overall structural performance.



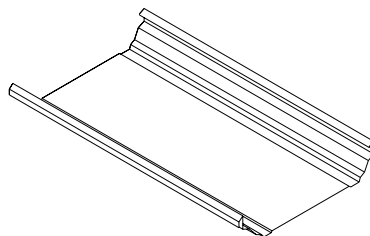
FACTORY NOTCHED / PUNCHED PANELS

Metal Sales can provide factory notched/punched panel ends to eliminate reliance on field notching for weathertight seams at panel endlaps.



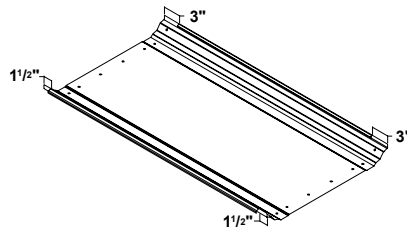
STANDARD PANEL:

- ▶ Used when endlapping of panels is not required
- ▶ One panel from eave to peak of roof
- ▶ No notching/punching
- ▶ 18" and 24" produced in Sellersburg, IN & Denver, CO
- ▶ Not recommended for endlap conditions



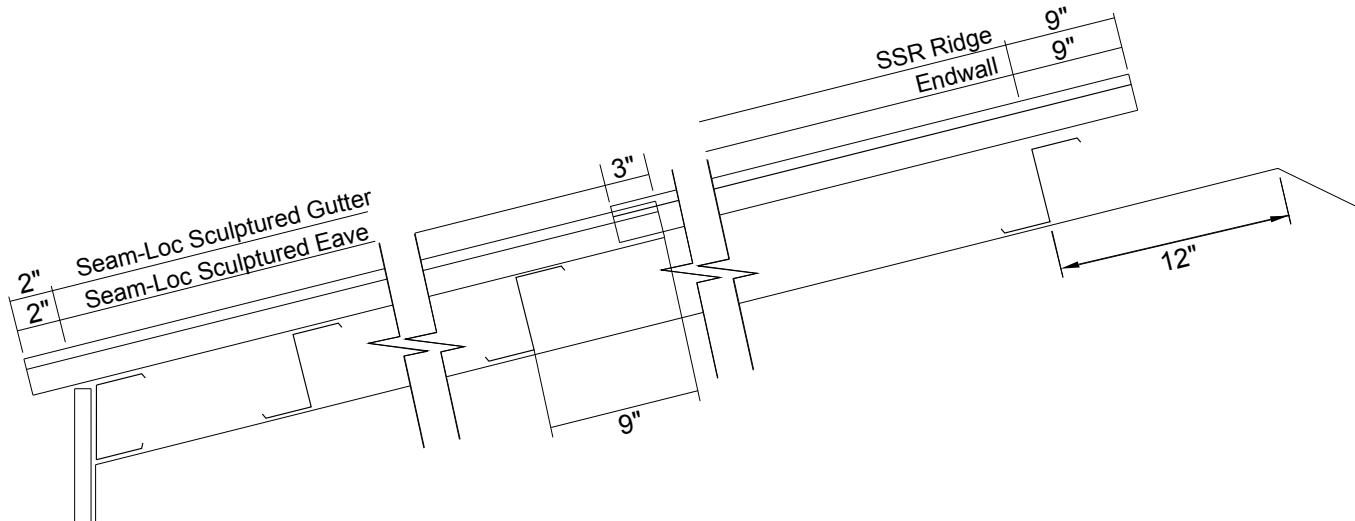
NOTCHED PANEL:

- ▶ Used when endlapping of panels is required
- ▶ Notching and punching
- ▶ 24" produced in Denver, CO
- ▶ 18" and 24" produced in Sellersburg, IN



*See next page for panel length considerations at endlaps.

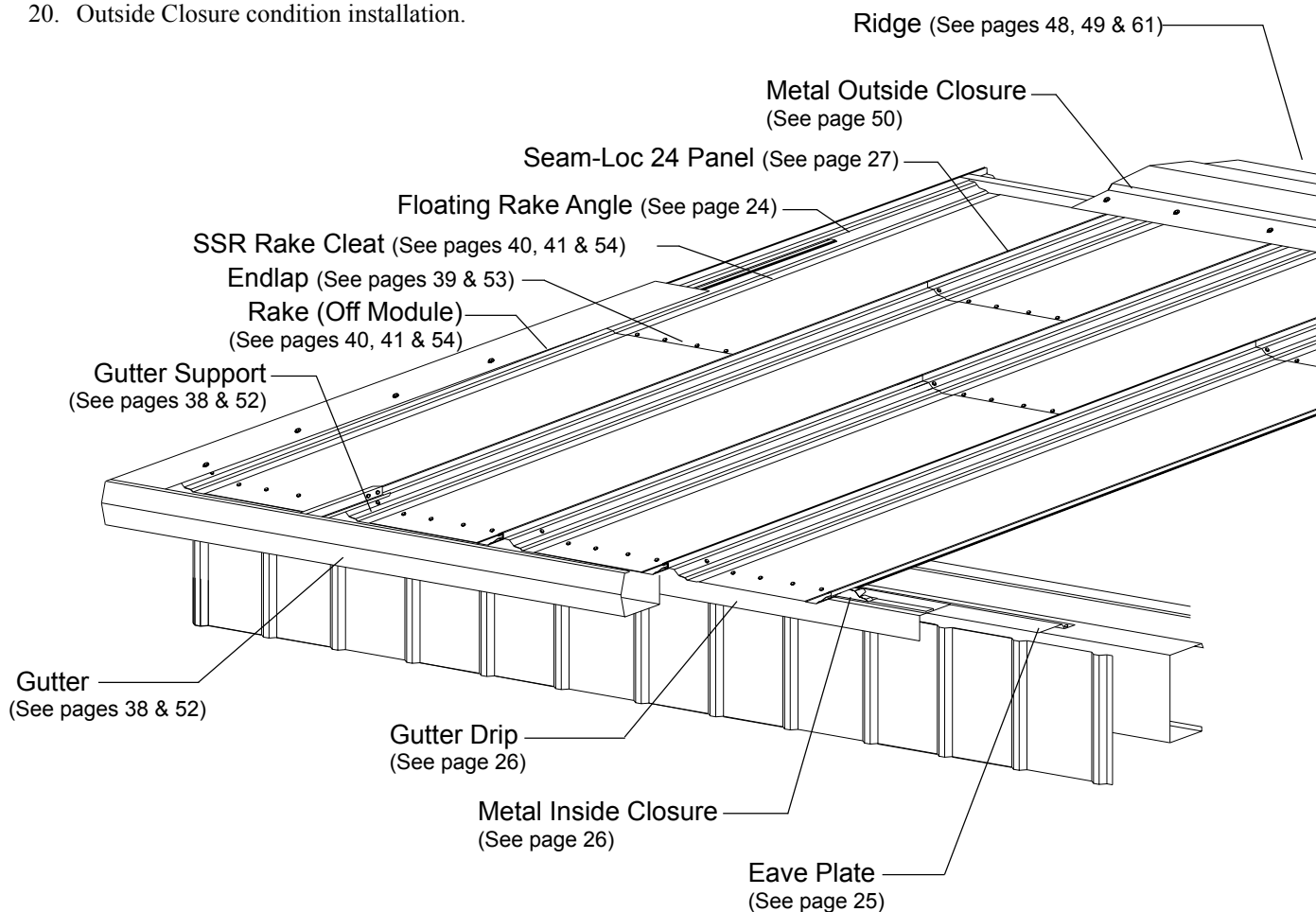
LENGTH CONSIDERATIONS FOR PANELS



The following procedures (pages 24-36) are presented as a general guide for installing Seam-Loc 24 panels, flashings, and accessories on a typical building or residence. Details are shown for installing Seam-Loc 24 and related flashings over open framing and over rigid insulation. For other applications please contact your nearest Metal Sales location (See pages 2 and 3).

The installation procedures will involve:

1. Installation of Floating Rake Angle.
2. Installaton of Eave Plate.
3. Installing Metal Inside Closures.
4. Installing First Panel.
5. Installing Panel Clips.
6. Endlapping of Panel.
7. Sidelapping of Panel.
8. Installing Panel Terminations.
9. Seaming Panels.
10. Eave condition installation.
11. Gutter condition installation.
12. Valley condition installation.
13. Endlap condition installation.
14. Rake condition installation.
15. Rakewall condition installation.
16. Expansion Joint condition installation.
17. Endwall condition installation.
18. High Side Eave condition installation.
19. Ridge / Hip condition installation.
20. Outside Closure condition installation.

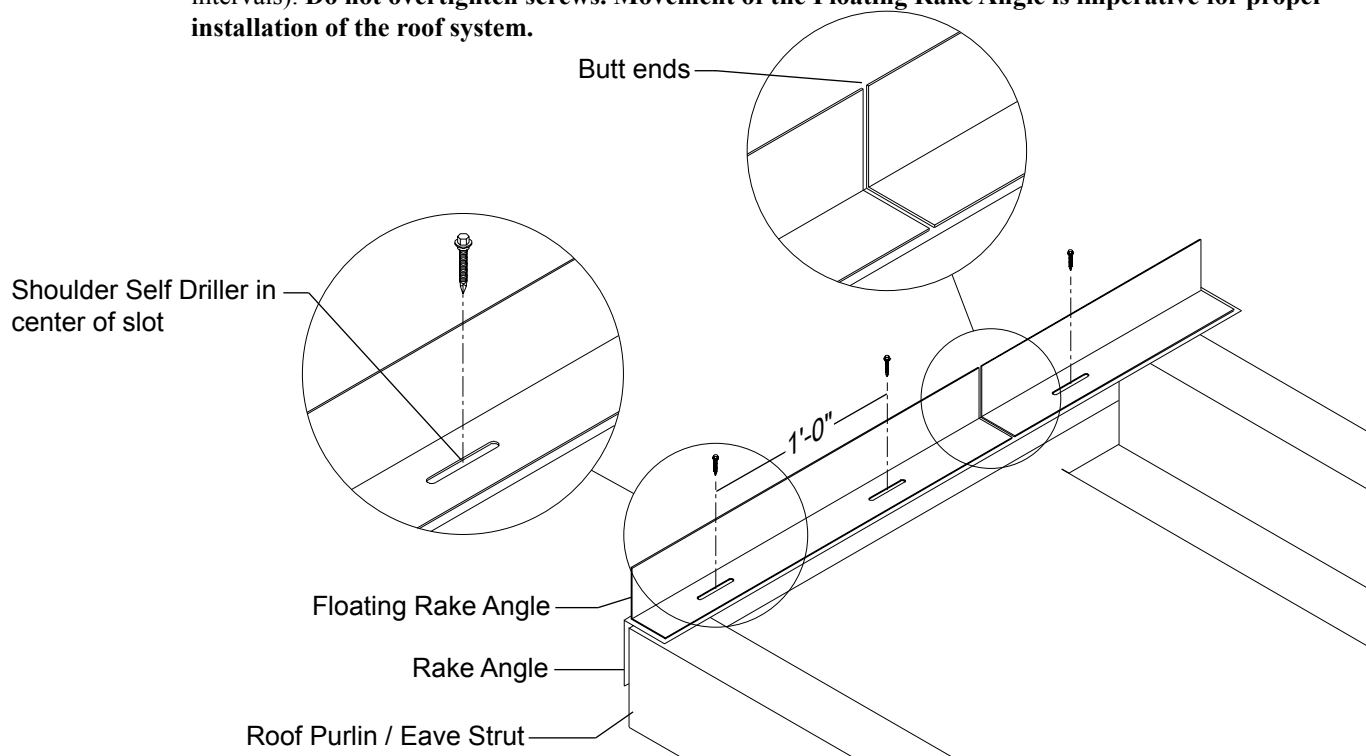


INSTALLING FLOATING RAKE ANGLE

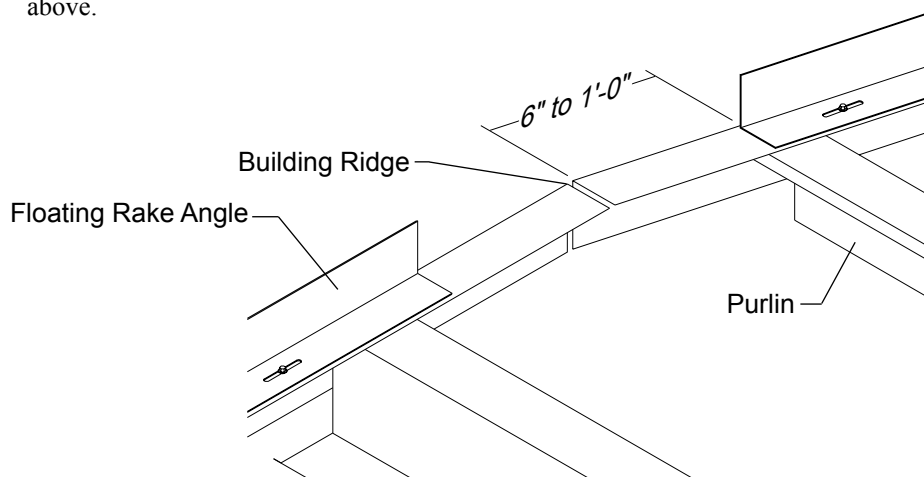
STEP
1

Note: The Floating Rake Angle must be attached to the framing member along the rake and rakewall. Size of Floating Rake Angle can vary, (see System Components list on page 20).

1. Determine the location and orientation of the Floating Rake Angle to maintain modularity and avoid Step 8 on page 34.
2. Starting on the left or right hand side, at the eave of the building (looking eave to peak), align the Floating Rake Angle flush with the existing rake angle/framing. **It is critical that the Floating Rake Angle be straight and square with the building as it controls the alignment of the roof panels.**
3. Fasten Floating Rake Angle with 1/4"-14 x 1 1/4" Shoulder Self Driller screws into the center of each slot, (1'-0" intervals). **Do not overtighten screws. Movement of the Floating Rake Angle is imperative for proper installation of the roof system.**



4. If two or more Floating Rake Angles are required, butt ends of Floating Rake Angles (**Do not overlap**) and continue fastening.
5. If necessary, field-cut Floating Rake Angle to terminate 1'-0" from peak of building.
6. Install Floating Rake Angle on the opposite end where the panels terminate using the same procedures as above.



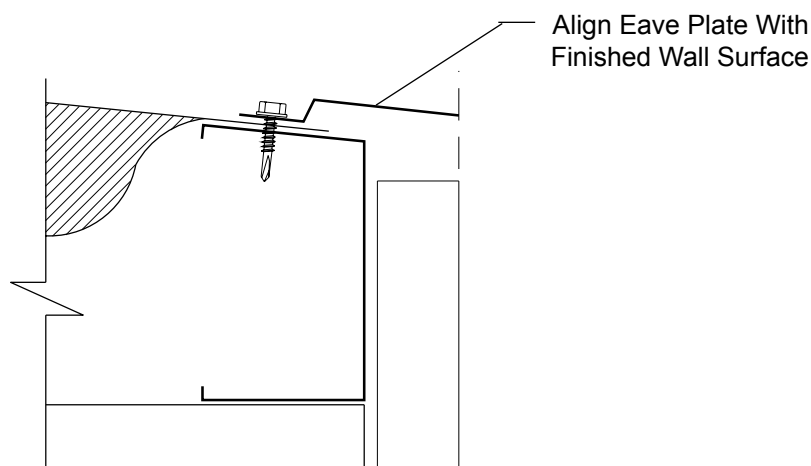
7. After applying Floating Rake Angle, insulation (if required) can be installed. Roll out insulation eave to peak, laying side of insulation on Floating Rake Angles.
8. Avoid side lap of insulation from occurring directly beneath side lap of panel.

INSTALLING EAVE PLATE

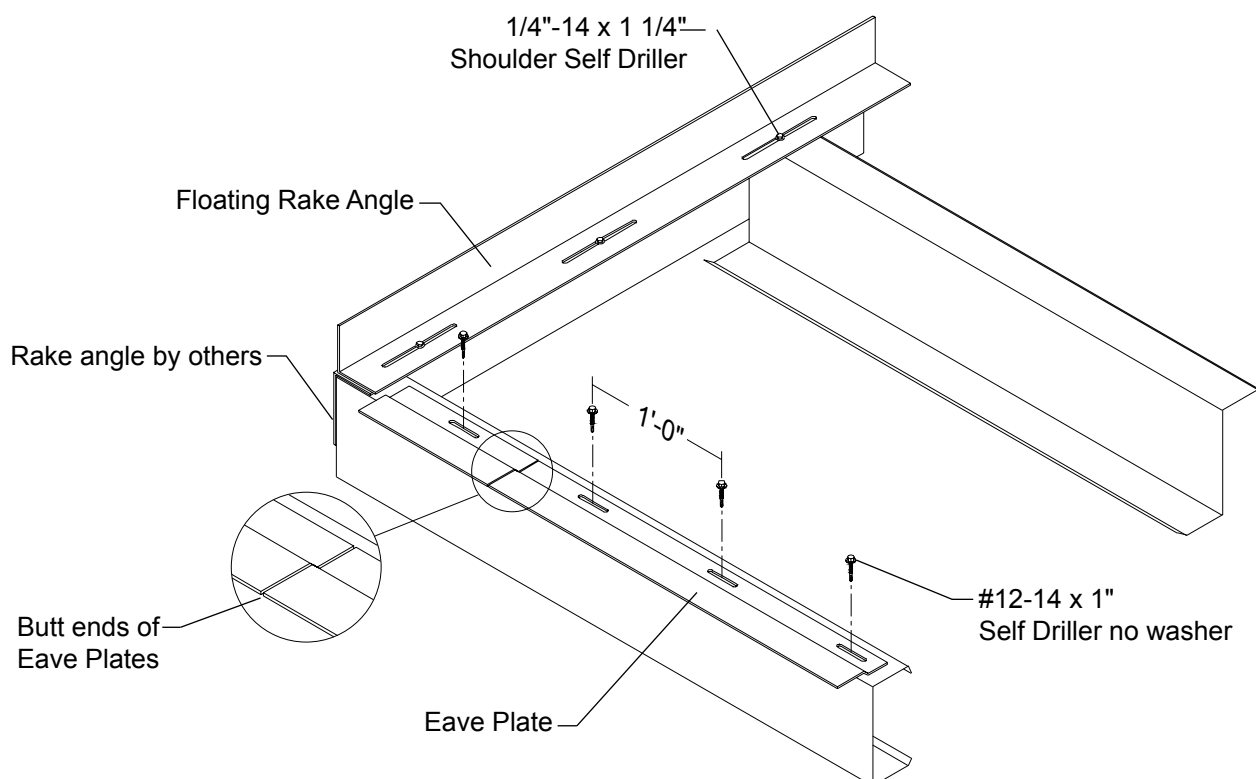
STEP
2

Note: The Eave Plate serves as an extension of the structure to support and fasten the panel at the eave and valley on applications using the Low or High Floating Clip Systems. Size of Eave Plate can vary (see System Components list on page 20). The Eave Plate is not used on applications involving the utility clip system.

1. If using blanket insulation, the Eave Plate may be used to secure the insulation at the eave. Be sure to remove the fiberglass and fasten only the vapor barrier to avoid wicking.
2. Place pre-punched leg of Eave Plate on top of eave framing member. Align the top leg of the Eave Plate flush with the finished wall surface at the eave of the building.



3. Fasten Eave Plate to eave framing member with #12-14 x 1" Self Driller No Washer screws 1'-0" o.c.
Do not fasten through Eave Plate into Floating Rake Angle. Movement of the Floating Rake Angle is imperative for proper installation of roof system.
4. If two or more Eave Plates are required, butt ends of the Eave Plates (**Do Not Overlap**) and continue fastening.



INSTALLING METAL INSIDE CLOSURES

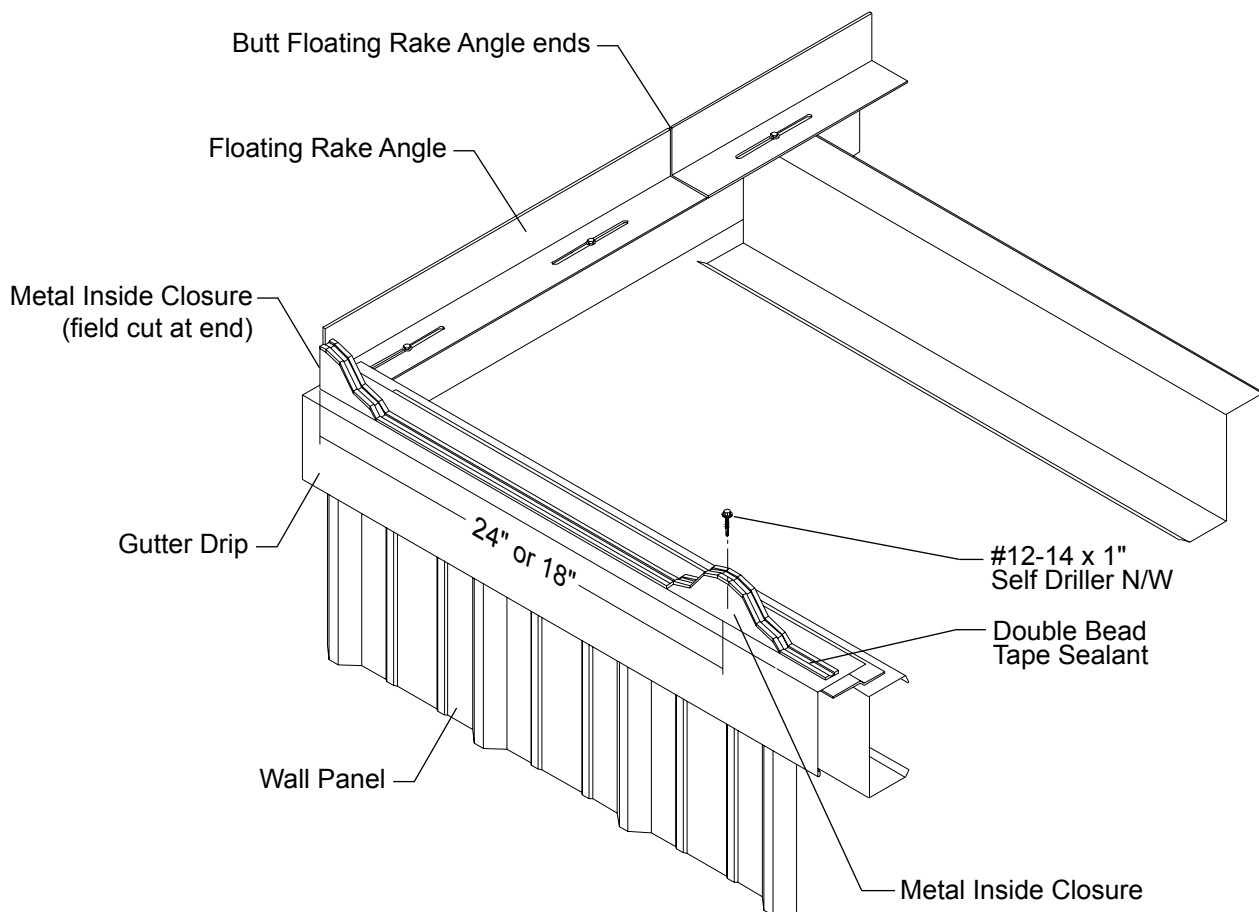
STEP
3

The following steps are for installing the Seam-Loc 24 Panel to accommodate Seam-Loc 24 Sculptured Gutter and Gutter Drip.

Note: Eave, Gutter Drip, Valley, or any low side flashing must be installed prior to installation of Metal Inside Closure. The following steps are for installing Seam-Loc 24 from left to right On Module (full panel width). Seam-Loc 24 may be installed from right to left if endlapping of panels is not required. See page 34 for Off Module panel installation.

Metal Inside Closures can be installed prior to panel installation or as the panel installation occurs. The following steps are based on installing Metal Inside Closures as installation of each panel occurs.

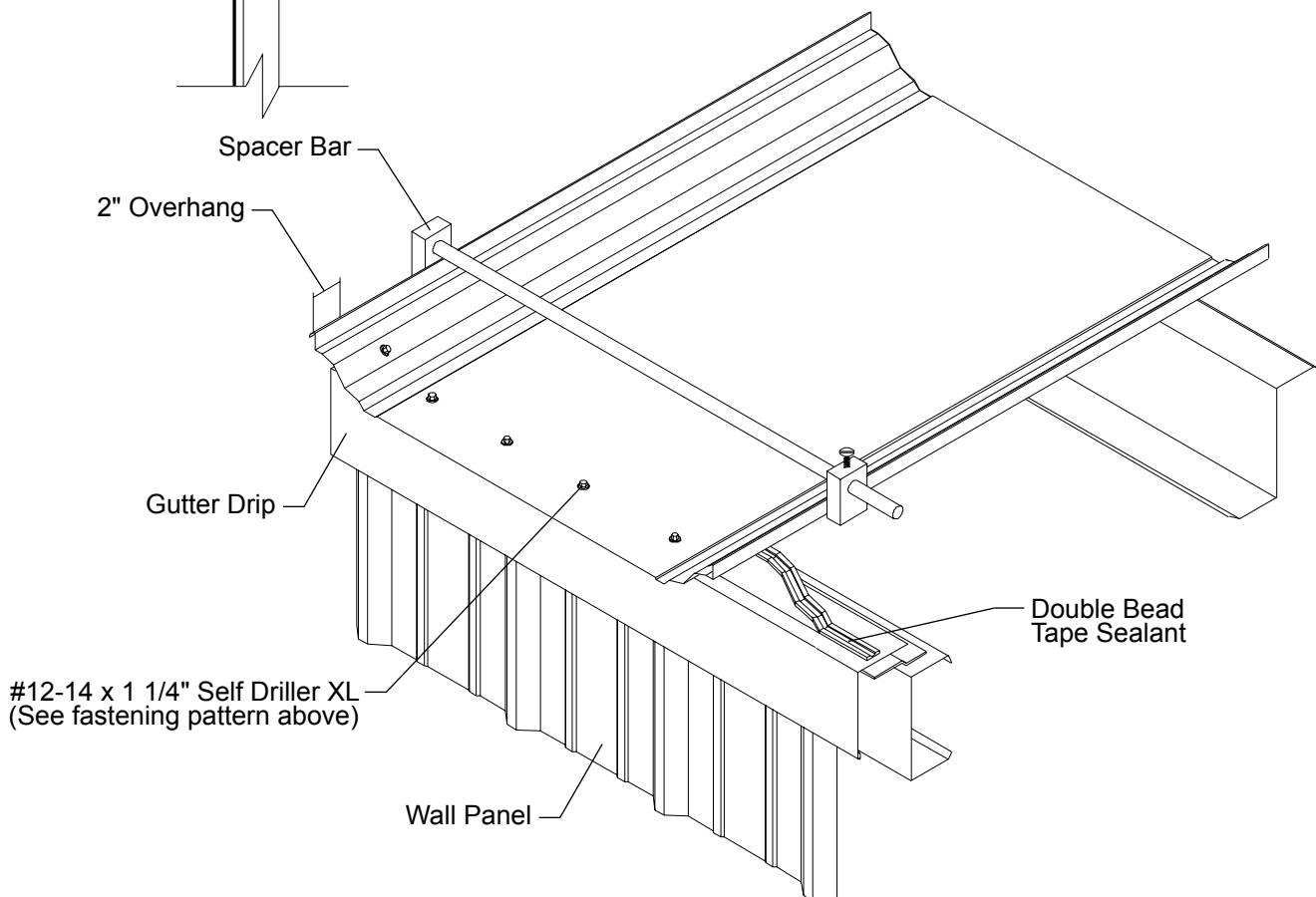
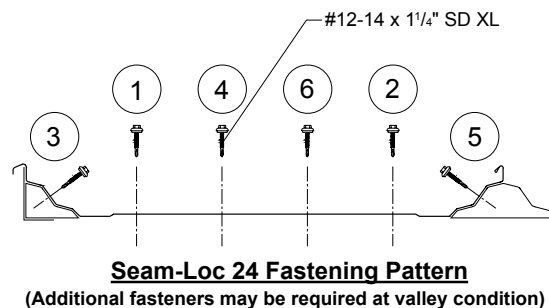
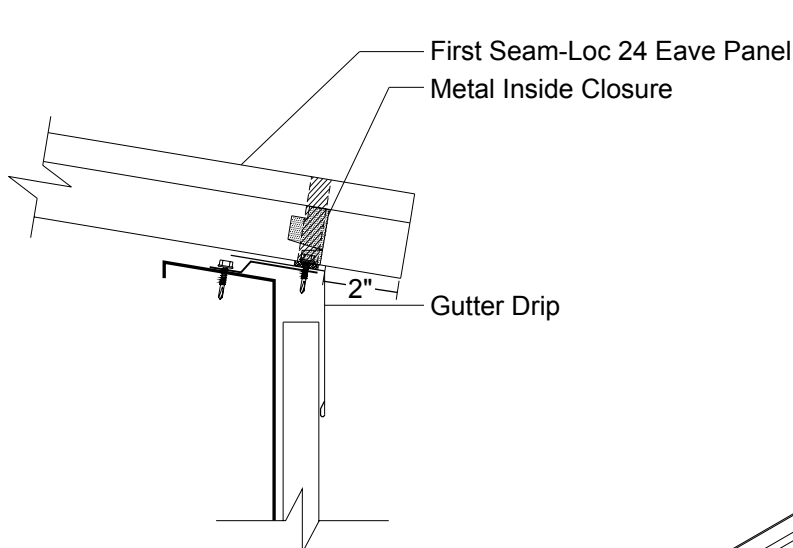
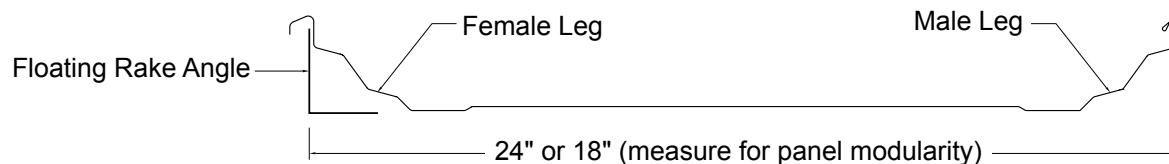
1. Install Gutter Drip back against the previously installed Eave Plate, (see page 25 for Eave Plate installation). to hold the Gutter Drip in place fasten it to the Eave Plate with #10-16 x 1" Pancake Head Self Drillers 4'-0" o.c.
2. Place a row of Double Bead Tape Sealant across top of Gutter Drip. Be sure to place tape sealant where panel fasteners will be placed over the top flange of the Eave Plate.
3. Starting at the left hand side of the building (looking eave to peak) measure from the vertical leg of the Floating Rake Angle along the Gutter Drip and mark every 24" or 18" depending on panel width. Care should be taken in measuring as this helps determine panel modularity.
4. Strip off the paper backing on the Double Bead Tape Sealant a few inches past the first mark.
5. Field-cut a Metal Inside Closure in half and place on top of the Double Bead Tape Sealant flush with the end of the Gutter Drip and Floating Rake Angle. Place next Metal Inside Closure so that the hole at the base of the closure lines up with the first 24" or 18" mark.
6. Fasten both Metal Inside Closures to the Gutter Drip and Eave Plate with #12-14 x 1" Self Driller No Washer screws.
7. Apply Double Bead Tape Sealant across the top of the Metal Inside Closures and remove the paper backing.



INSTALLING FIRST PANEL

STEP 4

1. Position the first panel so the female leg is against the vertical leg of the Floating Rake Angle.
2. Slide the panel over the Gutter Drip flashing, 2" past finished wall surface.
3. Use a C-Clamp to hold the panel against the vertical leg of the Floating Rake Angle.
4. Recheck the panel overhang dimension at Eave, Ridge and Endlap.
5. Fasten panel through the Double Bead Tape Sealant and Gutter Drip flashing into the Eave Plate using (4) #12-14 x 1 1/4" Self Driller XL screws. Fasten panel rib through Double Bead Tape Sealant to Metal Inside Closures with (2) #12-14 x 1 1/4" Self Driller XL screws.

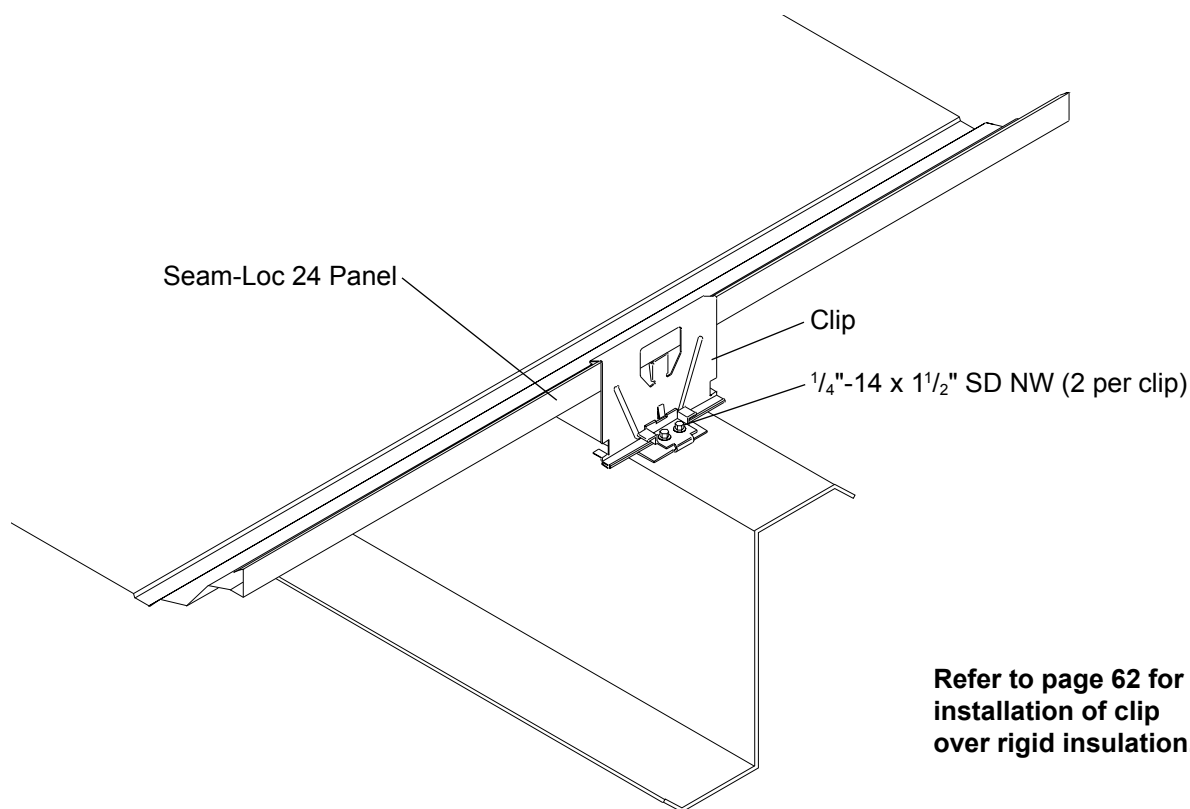
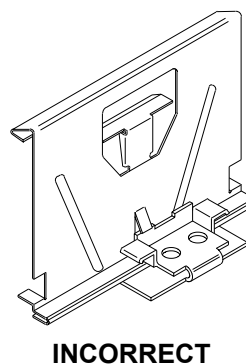
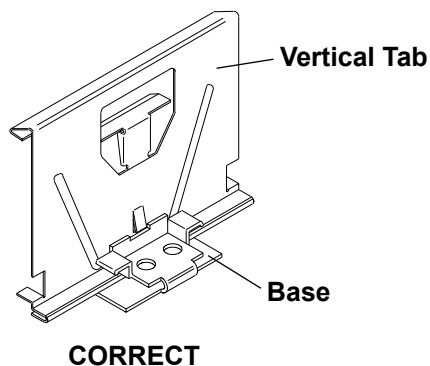


INSTALLING PANEL CLIPS

STEP
5

Note: The following procedures are based on installing panel clips over steel purlins. For fastening clips to a substructure other than steel, (see page 20). Design wind uplift requirements and insulation thickness must be considered for proper selection of clip type, size and spacing (see Systems Components chart on page 20).

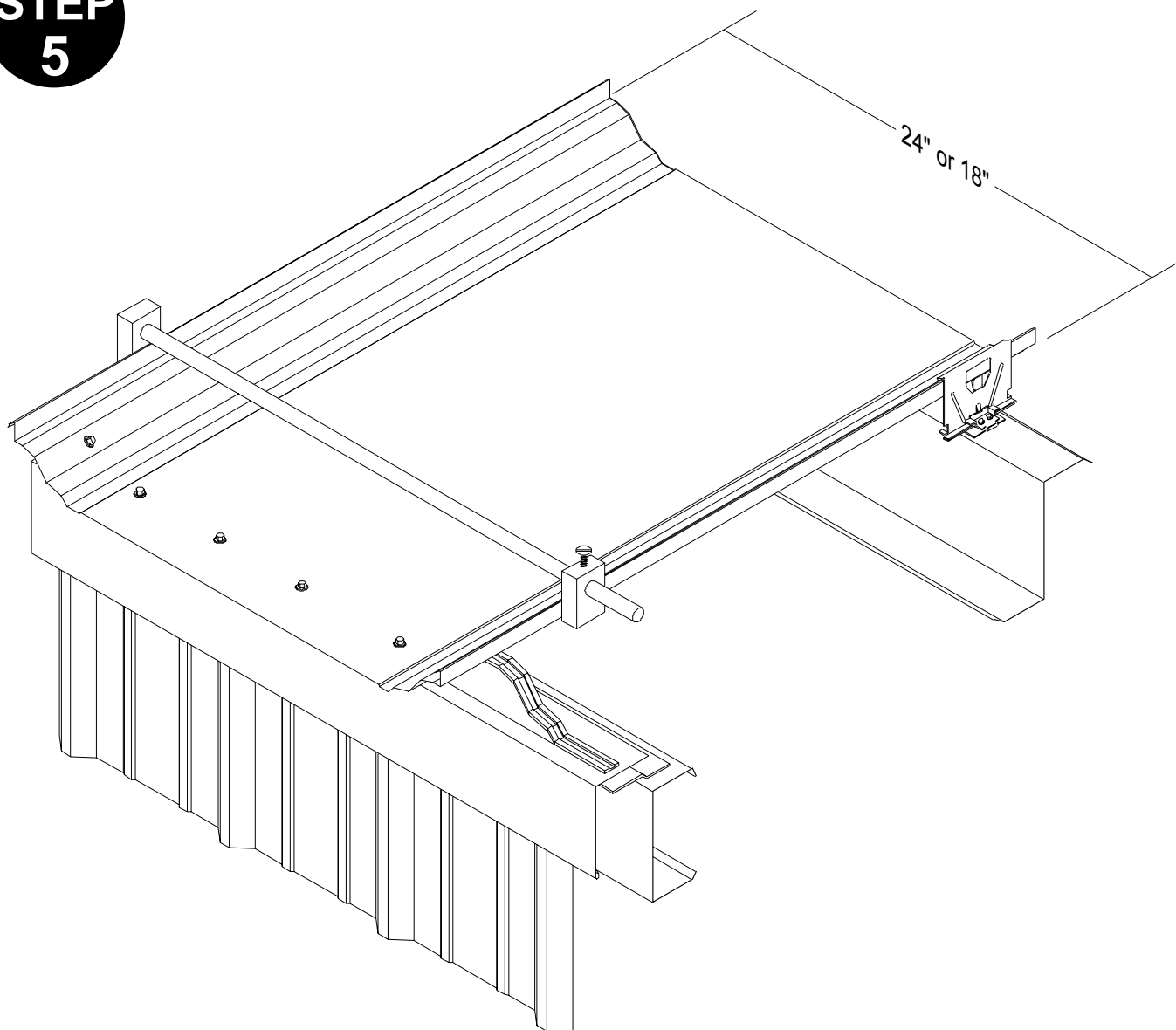
1. Place the panel clip over the male leg of panel and center the base of the clip with the center of the top flange of the purlin.
2. Rotate the clip to a vertical position so that the base of the clip rests on the top flange of the purlin.
3. After installing clips along the male leg of the panel, measure across the pan of the panel to confirm panel modularity. Use the Spacer Bar to hold panel modularity.



**Refer to page 62 for
installation of clip
over rigid insulation.**

INSTALLING PANEL CLIPS (CONT.)

continued
STEP
5



4. If Thermal Blocks are required, slide thermal block under panel before installing clips.
5. Fasten clip to purlin with (2) $\frac{1}{4}$ "-14 x $1\frac{1}{2}$ " Self Driller No Washer screws.
6. Clips should be installed at all purlin intersections. **Clips are not required at eave framing members.**
7. If installing over insulation, some method of finding the purlins for clip location must be used. Insulation should be installed as panels are installed allowing for ease of locating purlins.

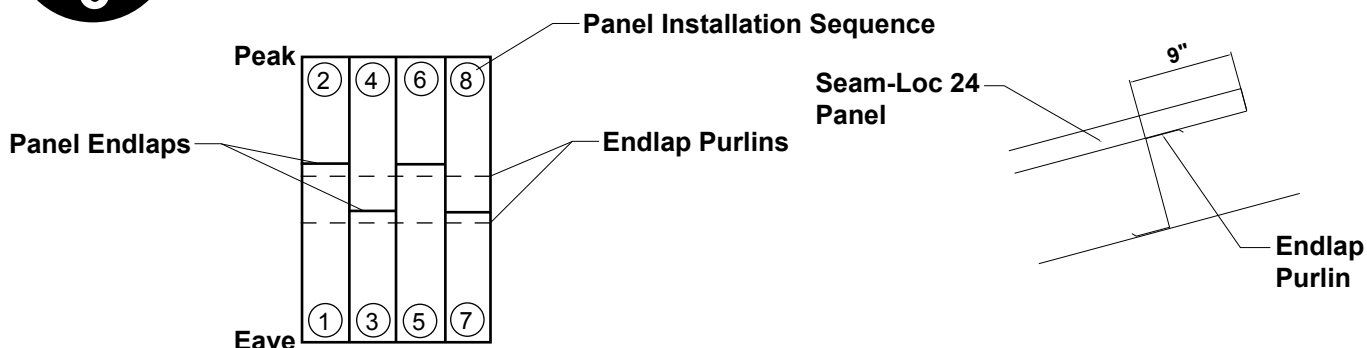
CAUTION

If a fastener strips out, you must remove the clip and reposition so the fastener can drill a new hole at least $\frac{3}{8}$ " from the stripped hole or install an oversized fastener in the stripped hole. Failure to do this will result in weakening the roof wind uplift resistance.

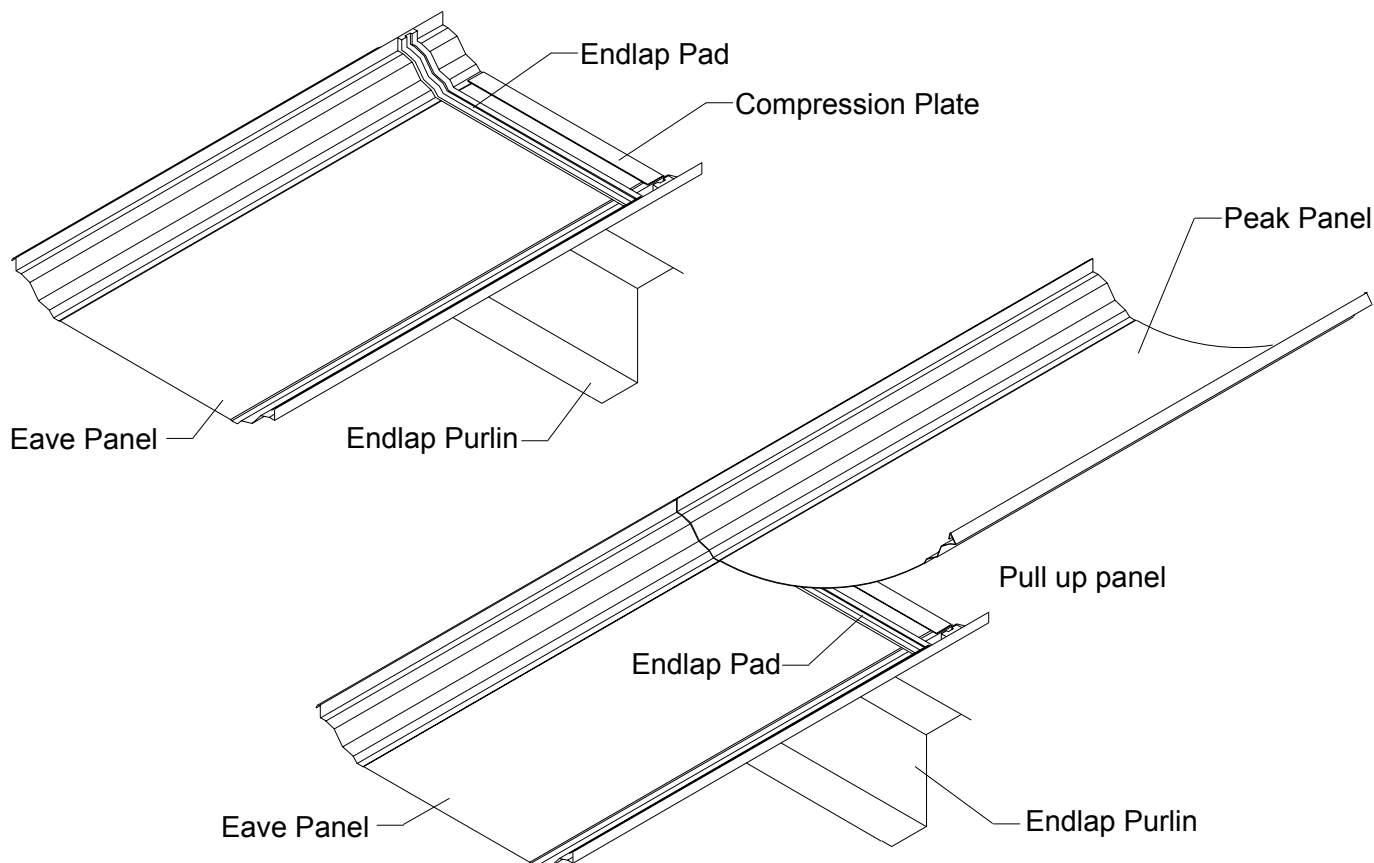
ENDLAPPING OF PANEL

STEP
6

Note: It is critical that purlins at the ridge and endlap be exactly located as detailed on construction drawings. Panels with endlaps are typically fixed at the eave. Endlap splices are to be staggered as shown. The following procedures also apply to panel runs with multiple laps. See detail on page 39.

**Staggered Endlapping**

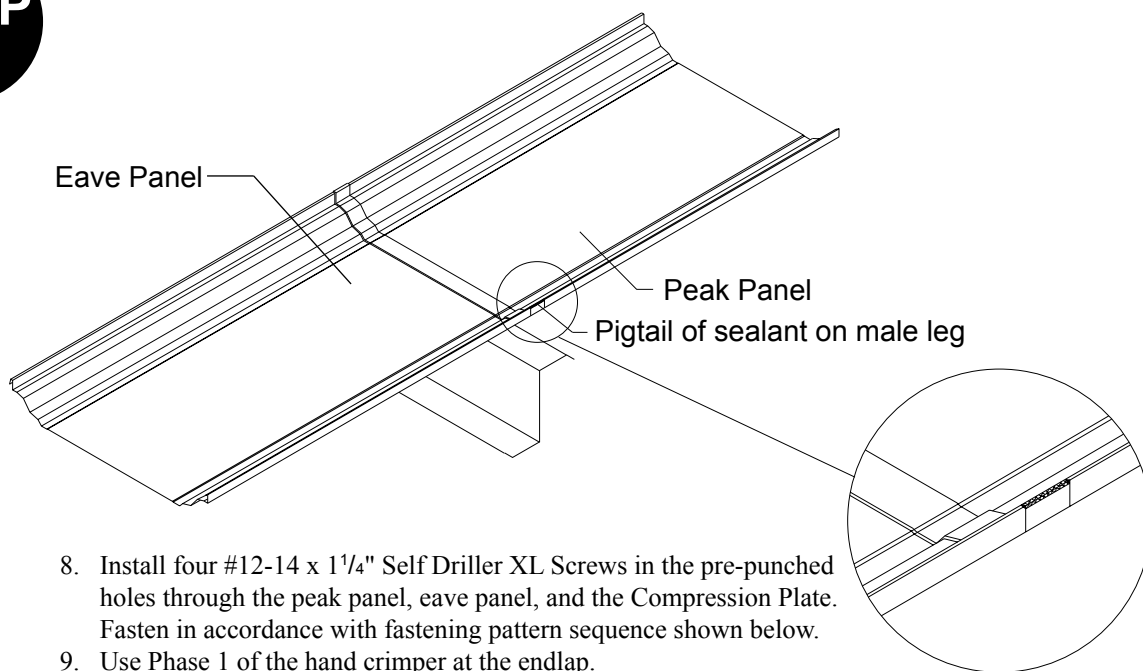
1. The installed eave panel should measure 9" from the web of the endlap purlin to the end of the eave panel. This dimension must be verified. If the panel exceeds this, verify that the eave overhang dimension is correct.
2. Slide Compression Plate on upper end of eave panel in center of endlap. C-Clamp the Compression Plate down slope at the panel lap to hold it in place for attachment.
3. The male and female legs of the upper end of the eave panel are factory notched to allow the peak panel to nest inside the eave panel.
4. Apply Endlap Pad on the notched end of the eave panel down male leg, across panel flat, and up the female leg $\frac{1}{2}$ " to $\frac{3}{4}$ " from the end of the panel. The Endlap Pad will have to be cut for installation with 18" panel.
5. Lap the female leg of the peak panel into the female leg so that the notches butt together and the notches on the male leg lap.



ENDLAPPING OF PANEL (CONT.)

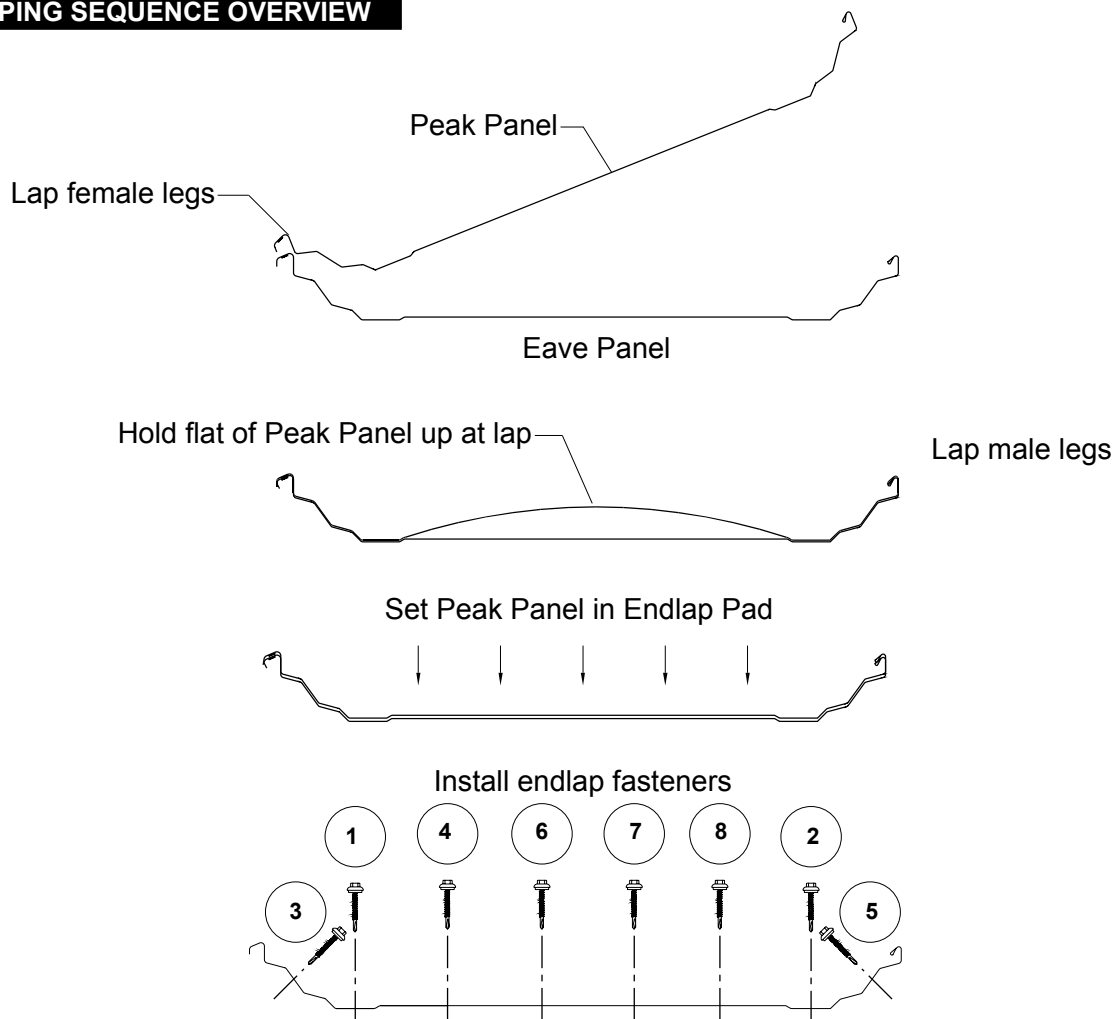
continued STEP 6

6. Nest the flat of the peak panel into the eave panel.
7. Apply a pig tail of Endlap Pad on the top side of the male leg where panel notch occurs.



8. Install four #12-14 x 1 1/4" Self Driller XL Screws in the pre-punched holes through the peak panel, eave panel, and the Compression Plate. Fasten in accordance with fastening pattern sequence shown below.
9. Use Phase 1 of the hand crimper at the endlap.

ENDLAPPING SEQUENCE OVERVIEW

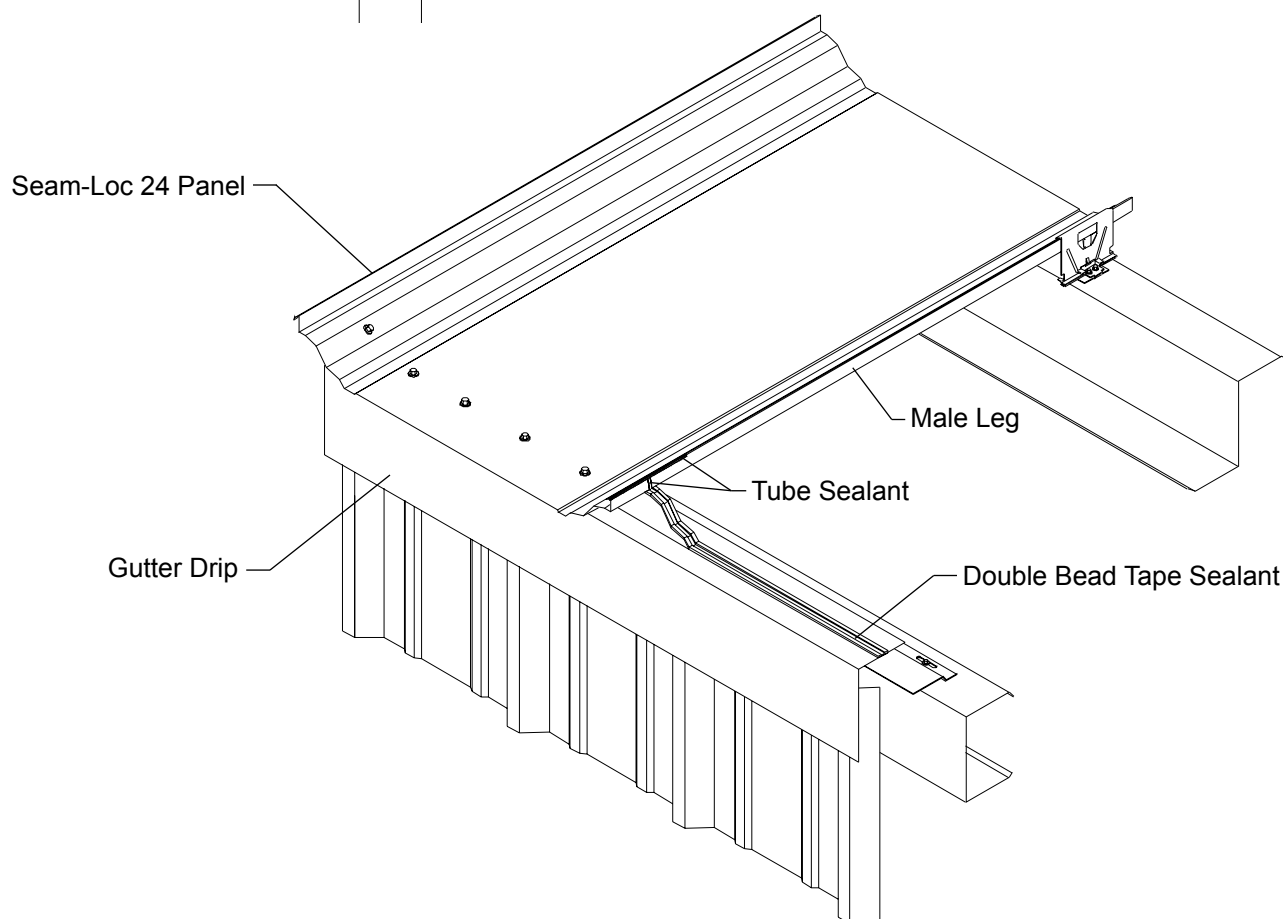
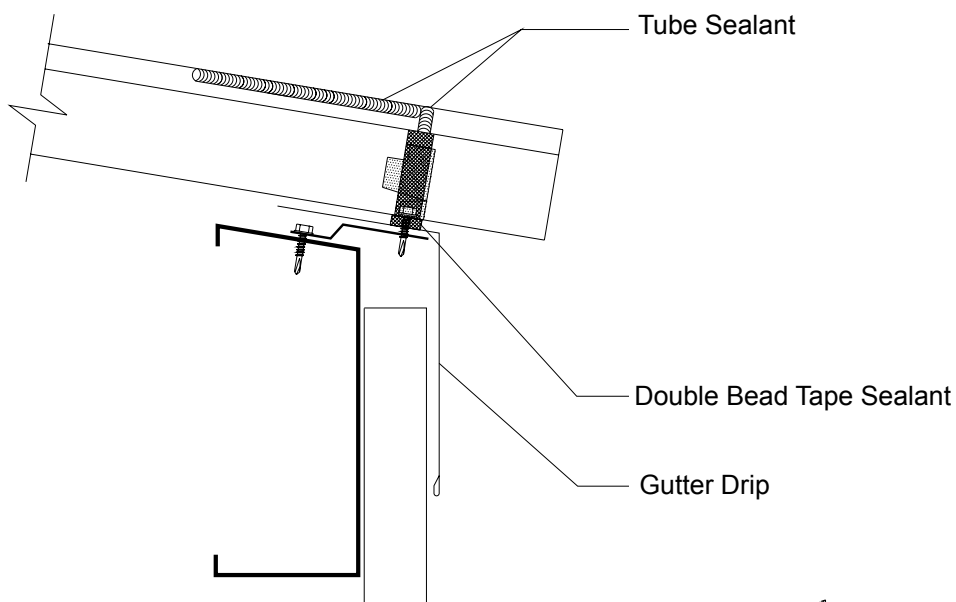


SIDELAPPING OF PANEL

**STEP
7**

Note: It is critical that sealants be properly placed to prevent moisture leakage.

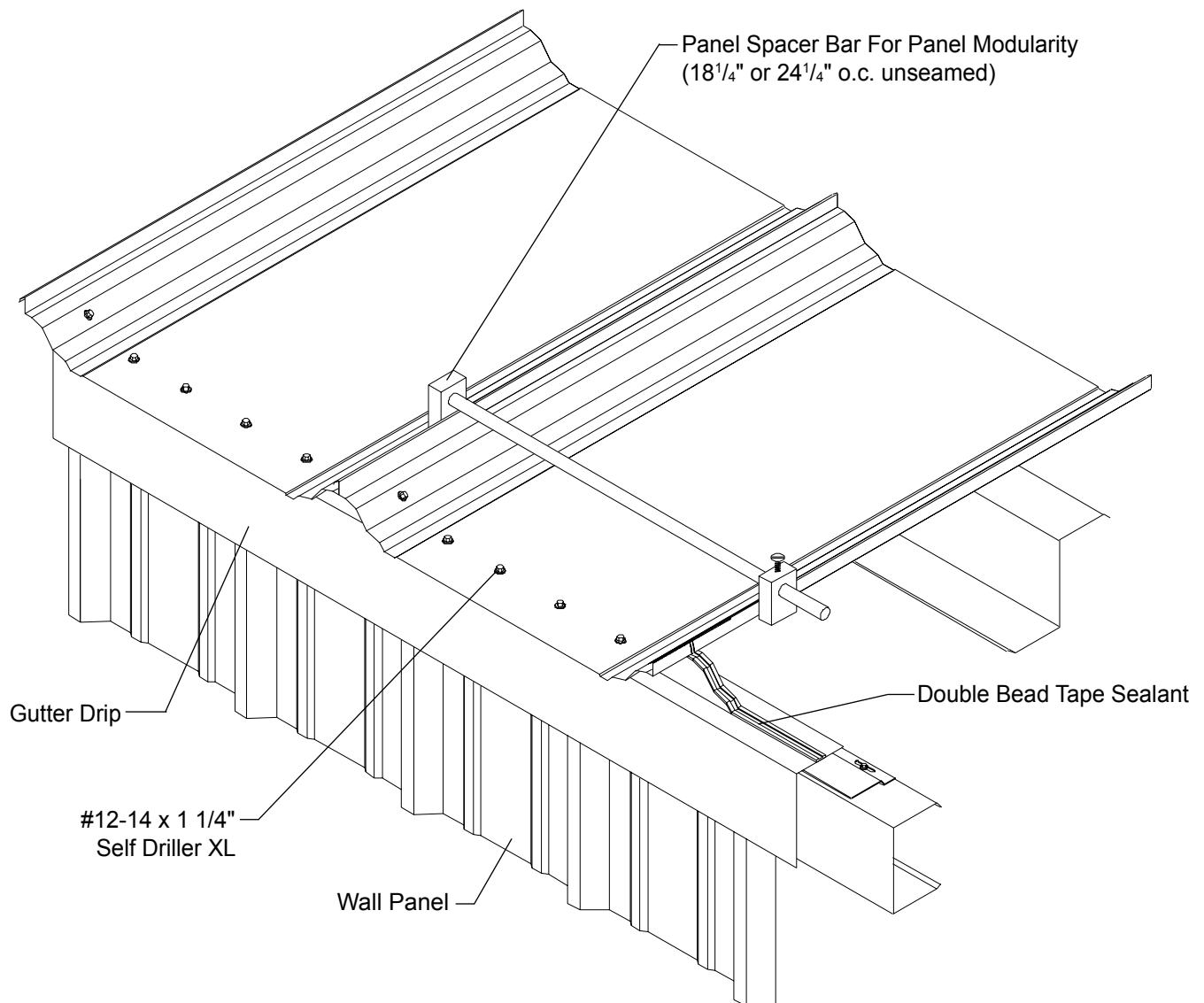
1. Apply a $\frac{3}{8}$ " bead of Tube Sealant along the vertical male leg of the panel directly over the Double Bead Tape Sealant on the metal inside closure. Be sure the Tube Sealant joins with the Double Bead Tape Sealant.
2. Apply a $\frac{3}{8}$ " bead of Tube Sealant 6" long across to top of the male leg.
3. Peel back the paper backing covering the Double Bead Tape Sealant on the Gutter Drip previously installed.



SIDELAPPING OF PANEL (CONT.)

continued
STEP
7

4. Roll the female leg of the second panel into place over the male leg of the first panel so their ends are flush. Do not let the flat of the second panel touch the Double Bead Tape Sealant at the eave until the ends are flush.
5. Use C-Clamps to hold the two vertical legs of the panel seams together.
6. Fasten panel through the Double Bead Tape Sealant and Gutter Drip flashing into the Eave Plate using #12-14 x 1 1/4" Self Driller XL screws. Fasten panel rib through Double Bead Tape Sealant to Metal Inside Closures with #12-14 x 1 1/4" Self Driller XL screws. See page 27 for quantity, order and locations.
7. Measure the distance from the female leg of the first panel installed. This dimension should be an even multiple of 18 1/4" or 24 1/4" for every four panels. It is very important that the dimension from the start panel to the last male leg, at the eave and peak, be the same dimension within 1/4" of each other.
8. Make certain that all clips are properly installed and that the panel sidelaps are properly positioned to be seamed.

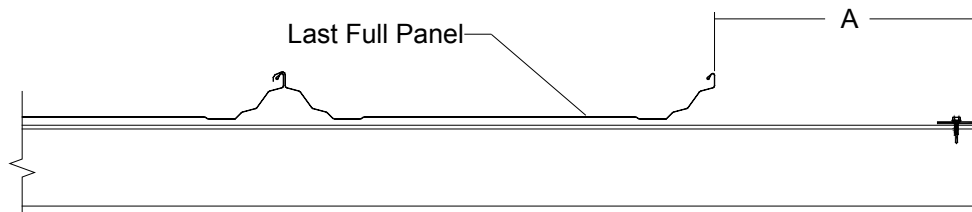


TERMINATION OF OFF MODULE PANEL

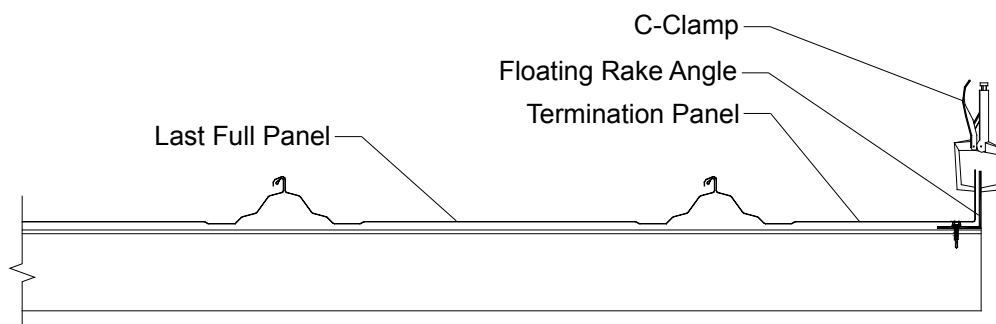
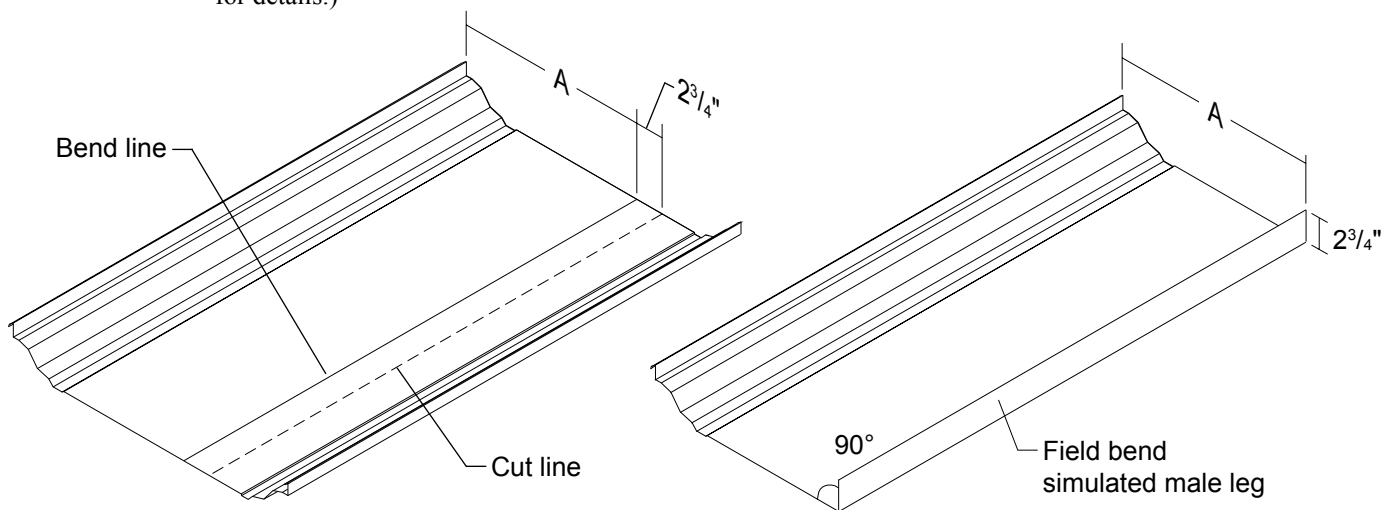
STEP
8

Note: The following steps are for terminating a panel run when the pan width exceeds the width of the building. This detail may be avoided by using 18" panels at the ends to improve modularity.

1. When the roof panel installation has reached the opposite end of the roof, the last panel run may need to be field modified to attach to the Floating Rake Angle previously installed.
2. Measure the distance between the vertical leg of the last full panel run and the vertical leg of the Floating Rake Angle at the eave, endlap, and peak. See dimension "A".
3. Determine if a full panel will fit between the last full run and the Floating Rake Angle. In most cases it will not fit. If the full panel will fit, then continue with the installation of the roof. When the last panel is installed the vertical leg of the male side must fit flush with the Floating Rake Angle.



4. If a full panel is too wide to fit between the last full panel run and the Floating Rake Angle, a panel will have to be field cut and bent to simulate a male leg.
5. Use the dimension "A" and mark a line on the last panel to serve as the bend line. Mark a second line 2 3/4" past the bend line to be the cut line.
6. Field bend the pan of the roof panel up 90 degrees to form a vertical leg.
7. Place termination panel between last full panel and vertical leg of Floating Rake Angle making sure the panel fits properly.
8. Clamp termination panel to leg of Floating Rake Angle until Rake Detail is to be installed. (See page 41 for details.)



SEAMING PANELS

Note: The Seam-Loc 24 panel system requires the use of a mechanical seamer for proper installation. The mechanical seamer runs from ridge to eave with Seam-Loc 24 panels laid from left to right. This necessary seamer is designed to seam the panel clips and the vertical legs of the panel together for weathertightness and resistance to wind uplift loads.

- Rental or purchase of the Seam-Loc 24 mechanical seamer and hand crimpers for field seaming are the responsibility of the installer. Mechanical seamers and hand crimpers can be acquired from Quality Roof Seamers. Phone No. (662) 895-1222.
- Read the field manual that is enclosed in the case with the seamer. The operator should adhere to all instructions for proper use of the seamer. Failure to follow the required instructions may result in damage to the panel and/or seamer. Metal Sales Manufacturing Corporation will not be responsible for damage incurred by improper use of the seamer.

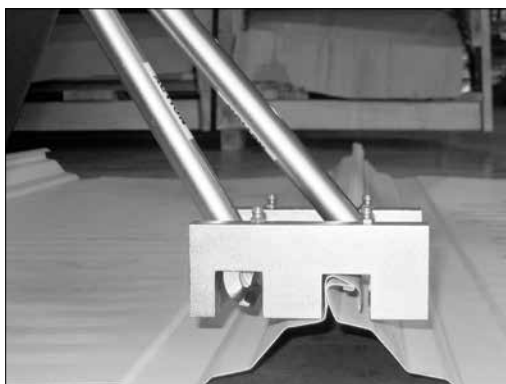
Preparation Notes:

1. Check to insure all components are in the shipping container:
Electric Seamer, Handle Assembly and Hand Crimper.
2. Read instructions completely and then check roof system for proper installation.
3. Clean and remove all construction debris to avoid damage.
4. Panels **MUST** be hand crimped 6"-8" per Step 1 at the start end of each panel row and endlaps. Metal Sales recommends panels be seamed as soon as possible to prevent wind damage.
5. If panels are installed from left to right (looking from eave to ridge), electric seamer will run down slope from ridge to eave.
6. Panels may be hand crimped per Step 1, only at clips, until electric seamer is used.

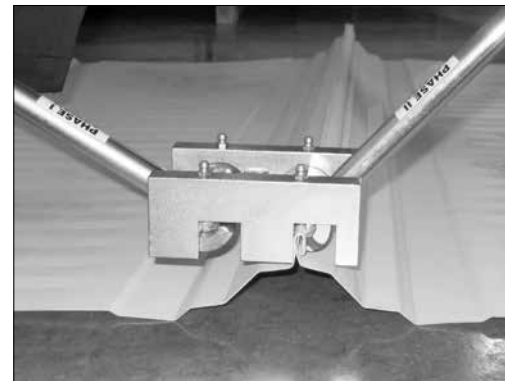
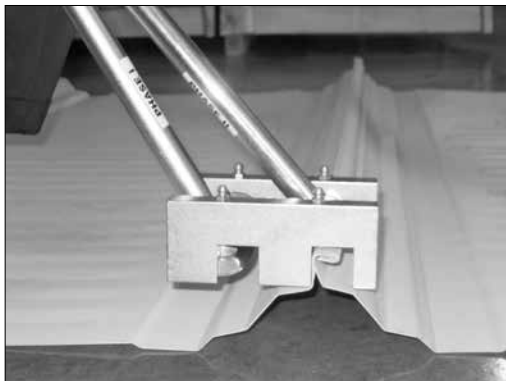
STEP 1 - Required Hand Crimping Before Seaming:

Begin at the seaming start end of the panel. Place the "Phase 1" slot of the hand crimper over the panel rib with the "Phase 1" handle on the open side of the panel rib. Engage the tool to a fully closed position. Hand crimp the first 6-8 inches. In high wind situations, Step 1 can be done at clip locations to hold panels in place until electric seamer is used. Make sure hand crimper does not flatten rib of panel. Step 1 should also be applied at all endlap conditions.

NOTE: Step 1 should be applied at each panel clip location if you are NOT going to run the mechanical seamer immediately after you apply each panel. Metal Sales recommends that panel ribs be mechanically seamed before the end of each working day.

**STEP 2 - Required hand Crimping only at the START END of the panel to be seamed:**

Place the "Phase 2" slot onto the open side of the panel rib at the very end of the panel to be seamed, and engage the handle to a fully closed condition as shown. Hand crimp only the first 3-4 inches. Do not use "Phase 2" slot at a clip condition prior to using the Electric Seamer.



SEAMING PANELS (CONT.)**STEP 3 - Electric Seaming:**

A. Place the electric seamer in position at the start end of the panel and engage the three handles to the fully locked position. Pull the handles in order of #1, #2, and #3 (See Photo 3A). Make sure the forming rolls are on the open side of the panel rib. Start the electric seamer and let run for 2'-0". Stop electric seamer and check seam. Continue if seam is correct.

B. Stop electric seamer before endlap screws in panel at endlap condition (See Photo 3B). Failure to stop before these screws will cause electric seamer wheels to hit screws and disengage electric seamer. Disengage the electric seamer from the panel and hand crimp endlap condition and 8-10 inches past endlap per Step 1 and Step 2. Move electric seamer to other side of endlap and continue seaming.

C. Disengage the electric seamer from the panel and move it to the start of the next panel rib.

NOTE: The Seam-Loc 24 electric seamer is a single direction machine. If panels are installed from left to right (looking from eave to ridge), electric seamer will run down slope from ridge to eave. If panels were installed on a gable building from one side of the building to the other, the seamer will start at the ridge on one side of the building and start at the eave on the other side of the building.

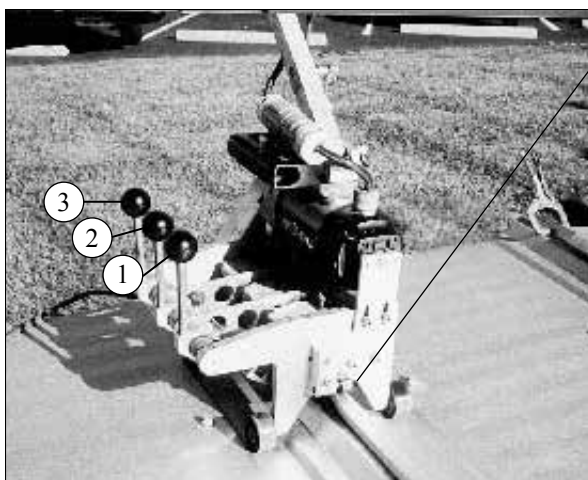


Photo 3A Electric Seaming



Photo 3B Electric Seaming near endlap

Panel ends, panel endlap conditions or any other areas, that the electric seamer did not seam will need to be hand crimped to complete seam as outlined in Step 1 and 2.

NOTE: Do NOT hand crimp per Step 2 at any panel clips.

NOTE: Keep the forming rolls on the seamer CLEAN.

At completion of seaming, repack tool and return to:

Quality Roof Seamers

8265 Highway 178

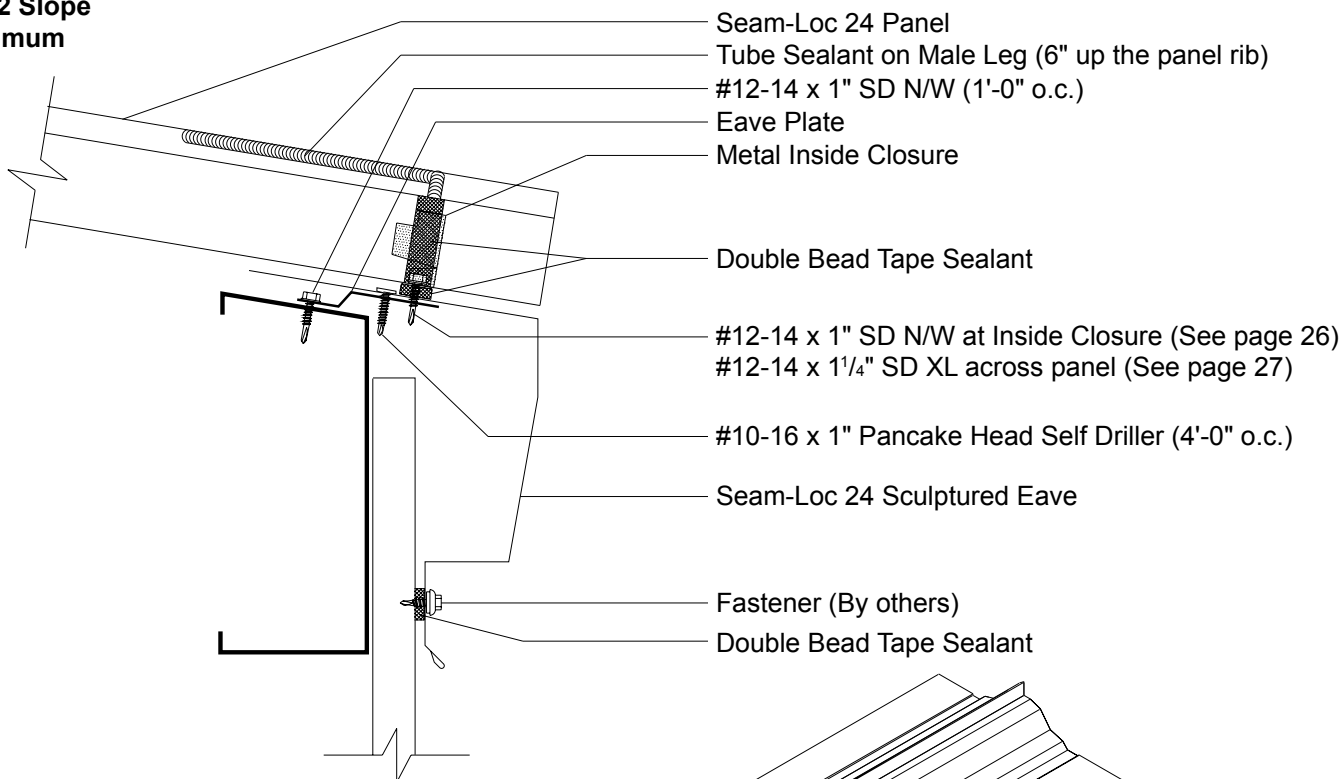
Olive Branch, MS 38654

Phone No. (662) 895-1222, Fax No. (662) 890-4775

CAUTION

Do not run the seamer off the end of the panel. If the seamer is run off the end of the roof it could cause injury to personnel and damage the roof or the seamer (see seamer instructions enclosed in the case for additional information about the proper handling of the seamer).

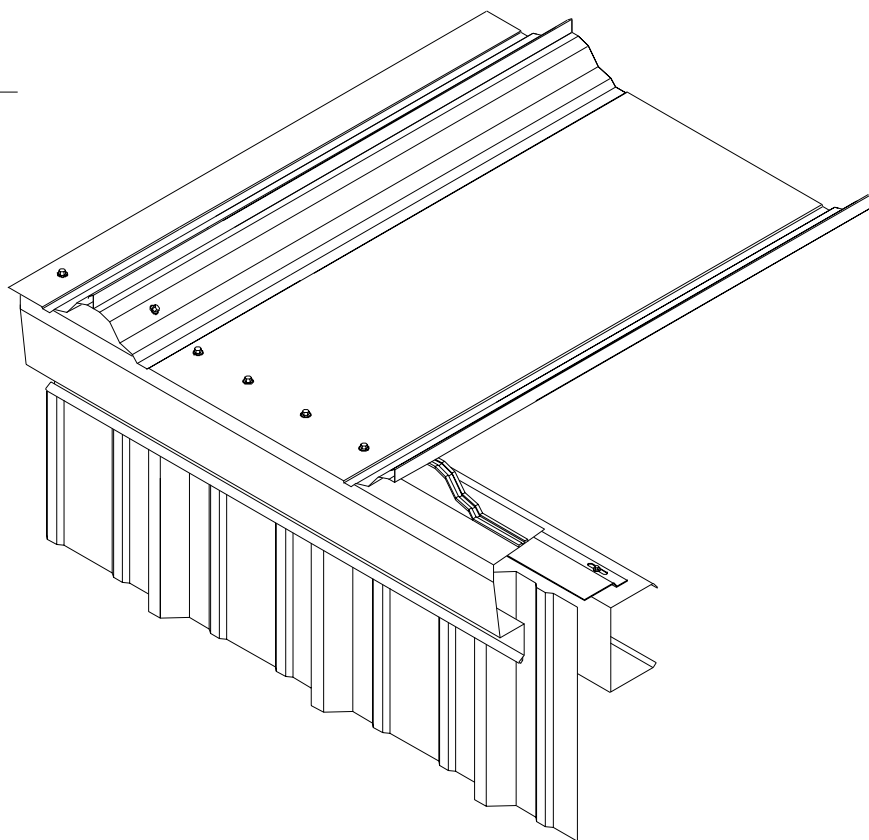
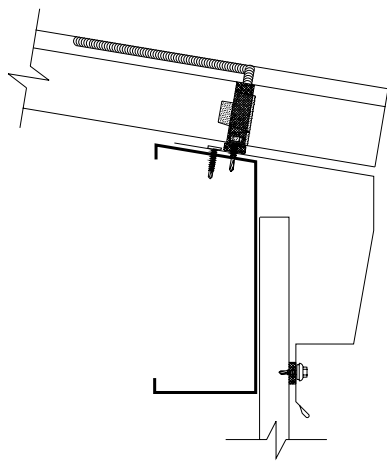
**1/4:12 Slope
Minimum**



NOTE

When using the Utility Clip system with the Seam-Loc 24 panel the Eave Plate is not used.

Sculptured Eave Utility Option

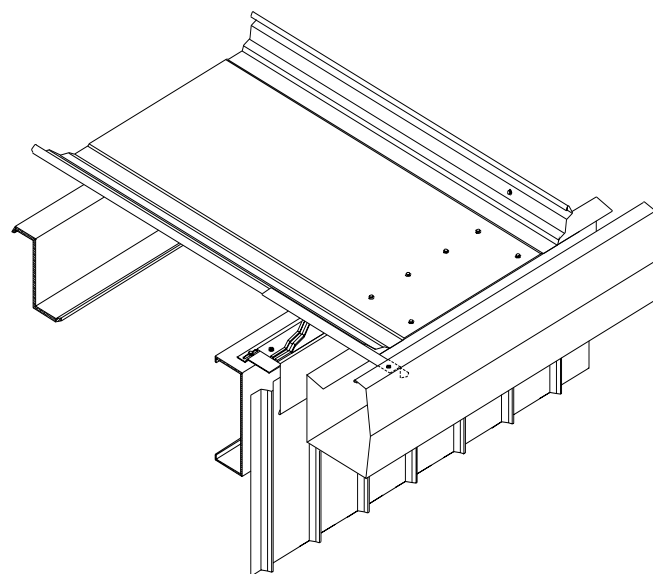
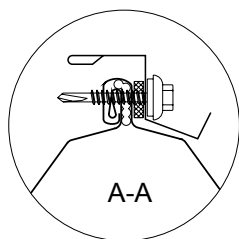
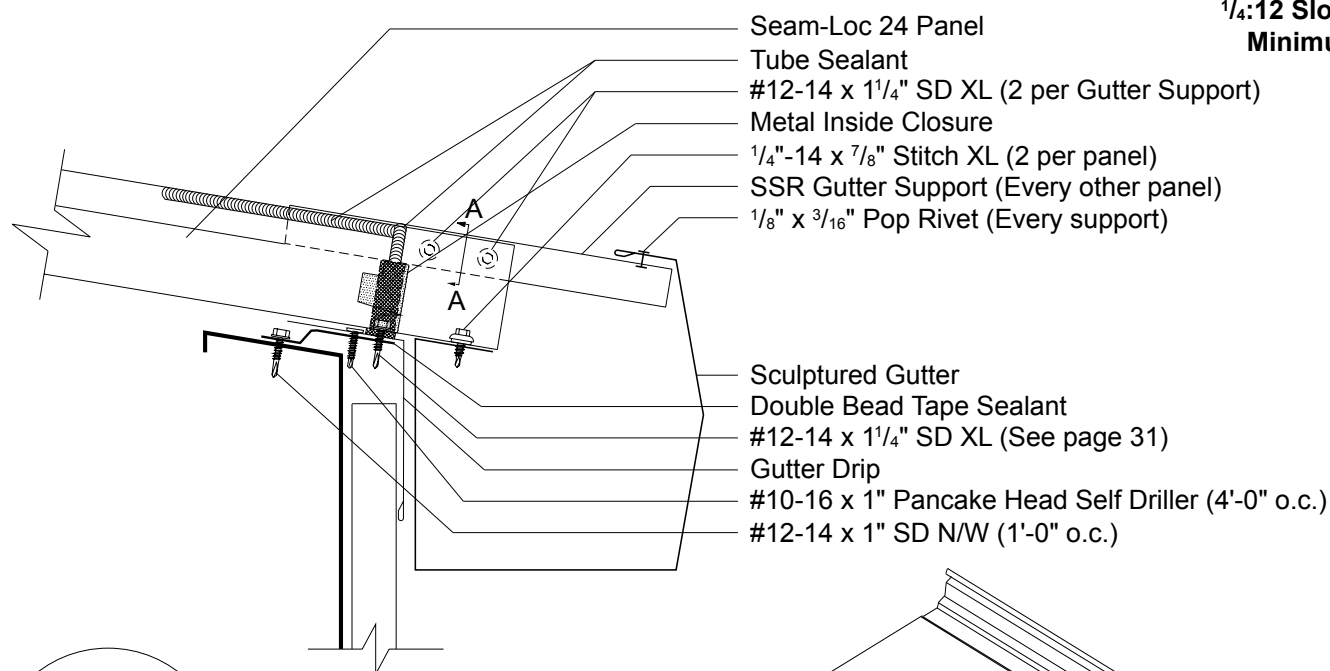


INSTALLATION NOTES

All eave flashings must be installed prior to panel installation.

1. Install Seam-Loc 24 Sculptured Eave back against previously installed Eave Plate, (See page 25 for Eave Plate installation). To hold Seam-Loc 24 Sculptured Eave in place fasten to Eave Plate with #10-16 x 1" Pancake Head Drillers, 4'-0" o.c.
2. Fasten Seam-Loc 24 Sculptured Eave to wall with appropriate fastener, 1'-0" o.c. max.
3. Apply a row of Double Bead Tape Sealant across Seam-Loc 24 Sculptured Eave, centered over top leg of Eave Plate.
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 and Metal Inside Closures have been installed and properly sealed, (See page 26), fasten through panel, Double Bead Tape Sealant and Sculptured Eave into Eave Plate with #12-14 x 1 1/4" Self Driller XL screws as shown on page 27.

**1/4:12 Slope
Minimum**



CAUTION

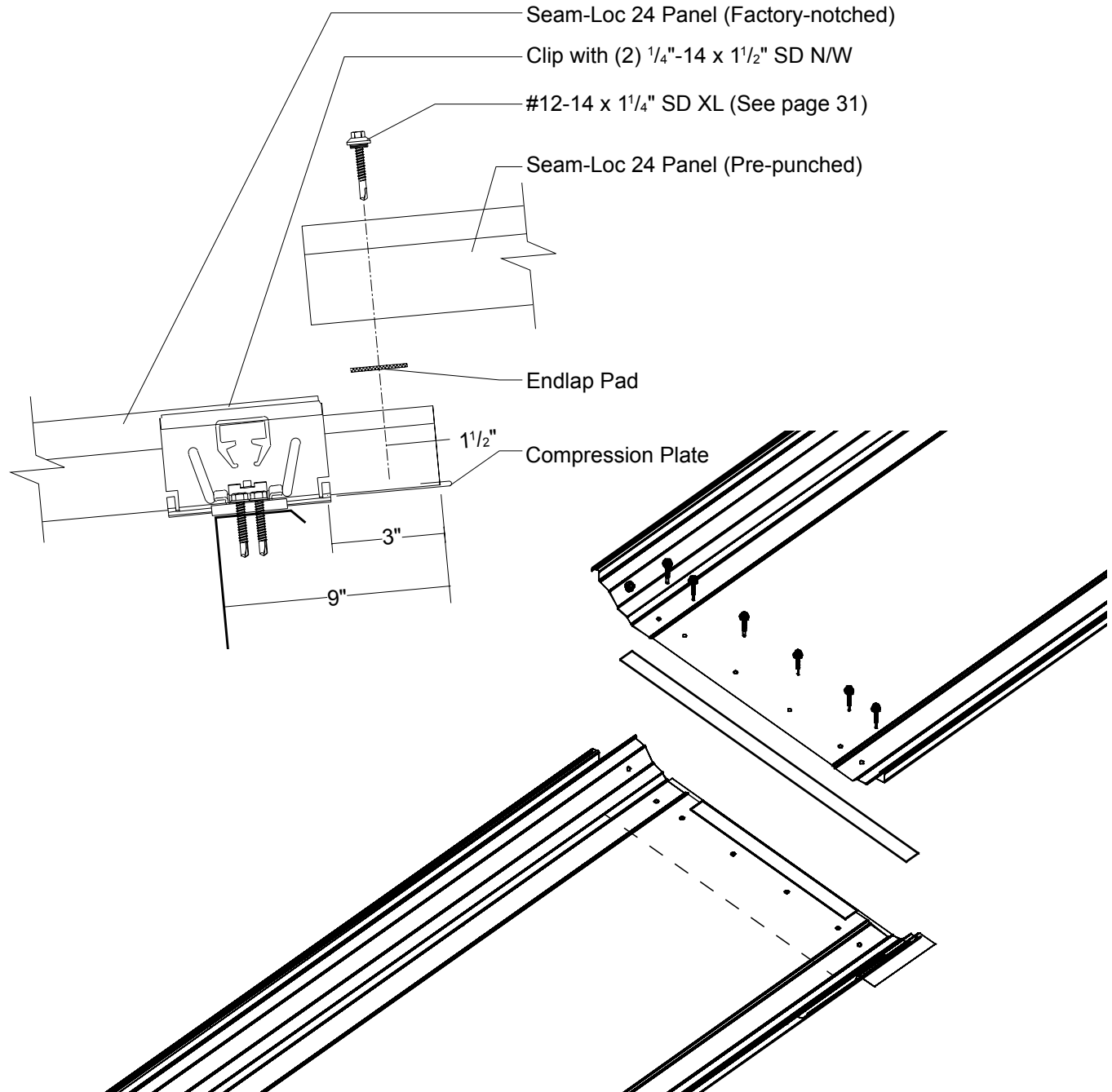
In locations where heavy rainfall or severe ice and snow may occur, Metal Sales' standard gutters may not be suitable for use.

INSTALLATION NOTES

Gutter Drip must be installed prior to panel installation.

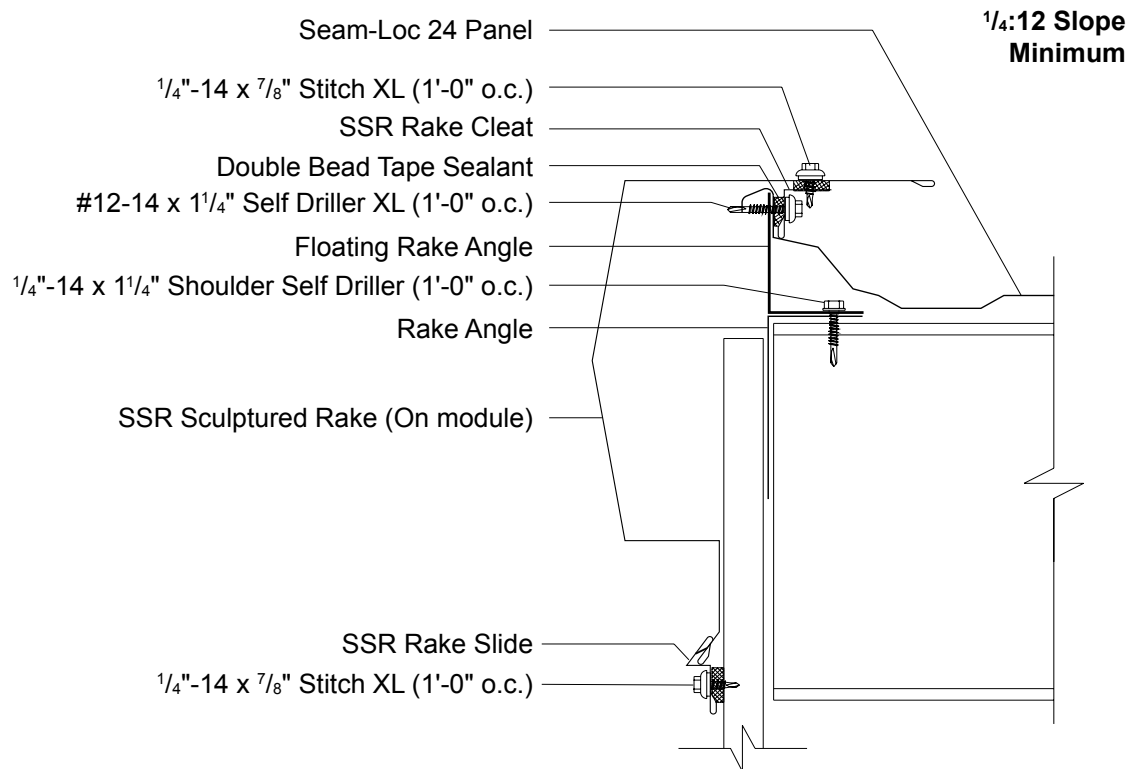
1. Install Gutter Drip back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Gutter Drip in place fasten to Eave Plate with #10-16 x 1" Pancake Head Driller, 4'-0" o.c.
2. Apply a row of Double Bead Tape Sealant across Gutter Drip so that sealant is centered over top leg of Eave Plate.
3. 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.
4. Once Metal Inside Closures and panels have been installed and properly sealed, (See page 26), fasten through panel, Double Bead Tape Sealant and Gutter Drip into Eave Plate with #12-14 x 1 1/4" Self Driller XL screws as shown on Page 27.
5. Attach the SSR Gutter Support to every other panel rib (48" o.c.) with (2) #12-14 x 1 1/4" Self Driller XL screws. Fasteners must be applied down slope of the sealant line. Do not apply screws upslope of the sealant line. The SSR Gutter Supports can be adjusted in or out to allow the gutter to be installed in a straight line, even if the edge of the roof is not straight.
6. Prepare the first gutter section with a Sculptured Gutter End. Consider rake to gutter connection for proper placement of Sculptured Gutter End and the Sculptured Gutter. Fasten with (8) 1/4"-14x7/8" Stitch XL screws or Pop Rivets.
7. Position the Sculptured Gutter over the SSR Gutter Supports with one end against the Rake flashing and rotate into position.
8. Clamp the top of the back lip of the gutter in position with a C-Clamp. Install a 1/4"-14 x 7/8" Stitch XL screw or Pop Rivet where the front lip of the gutter rests on the SSR Gutter Support, and fasten the back lip of the Sculptured Gutter to the panel flat with (2) 1/4"-14 x 7/8" Stitch XL screws per panel.
9. Field-miter the Rake to fit the Sculptured Gutter at the corner of the building or install a SSR Sculptured Corner Box.
10. 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 1/4"-14 x 7/8" Stitch XL screws or Pop Rivets, 2 1/2" o.c.

**1/4:12 Slope
Minimum**

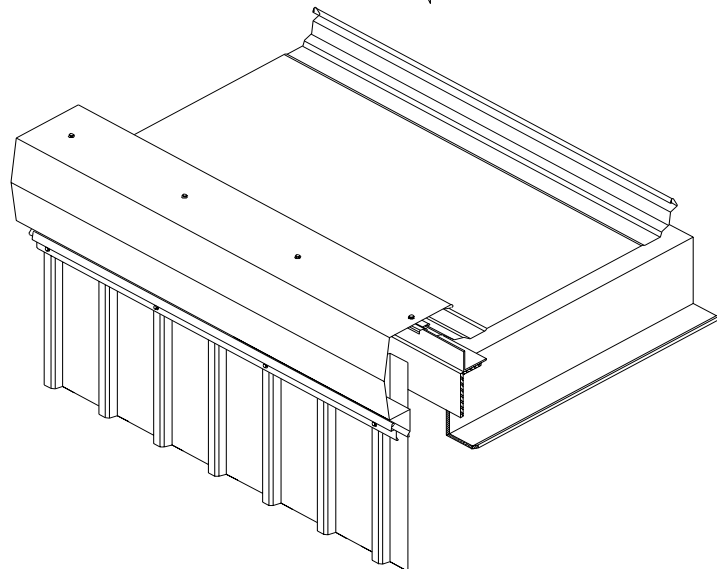
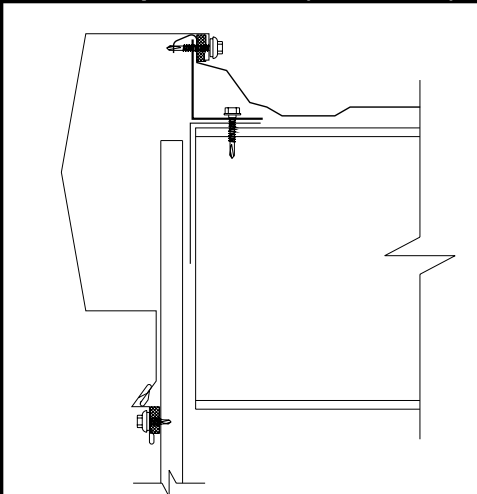


INSTALLATION NOTES

1. Once the eave panel has been installed, (see pages 30-31), slide a Compression Plate under upper edge of panel. The Compression Plate should be flush with edge of Seam-Loc 24 eave panel. Use C-Clamps downslope of the panel lap to hold Compression Plate in place.
2. Apply an Endlap Pad across flat pan, up and over all ribs of eave panels. The Endlap Pad should be flush with edge of the eave panel. Triple Bead Tape Sealant can be used in lieu of the Endlap Pad.
3. Roll Seam-Loc 24 peak panel into place and nest with eave panel so that the factory-notch is completely covered. (See page 30 for complete details on installing endlapped panels.)
4. With peak panel in place, fasten panel endlap with #12-14 x 1 1/4" Self Driller XL screws per endlap through factory-punched holes and into the Compression Plate. See pages 30 and 31. A screwdriver can be used to help align the panel holes with the Compression Plate holes.
5. Apply a pig tail of Endlap Pad, approximately 2 1/2", over factory-notched section of male legs.



SSR Sculptured Rake (On Module)

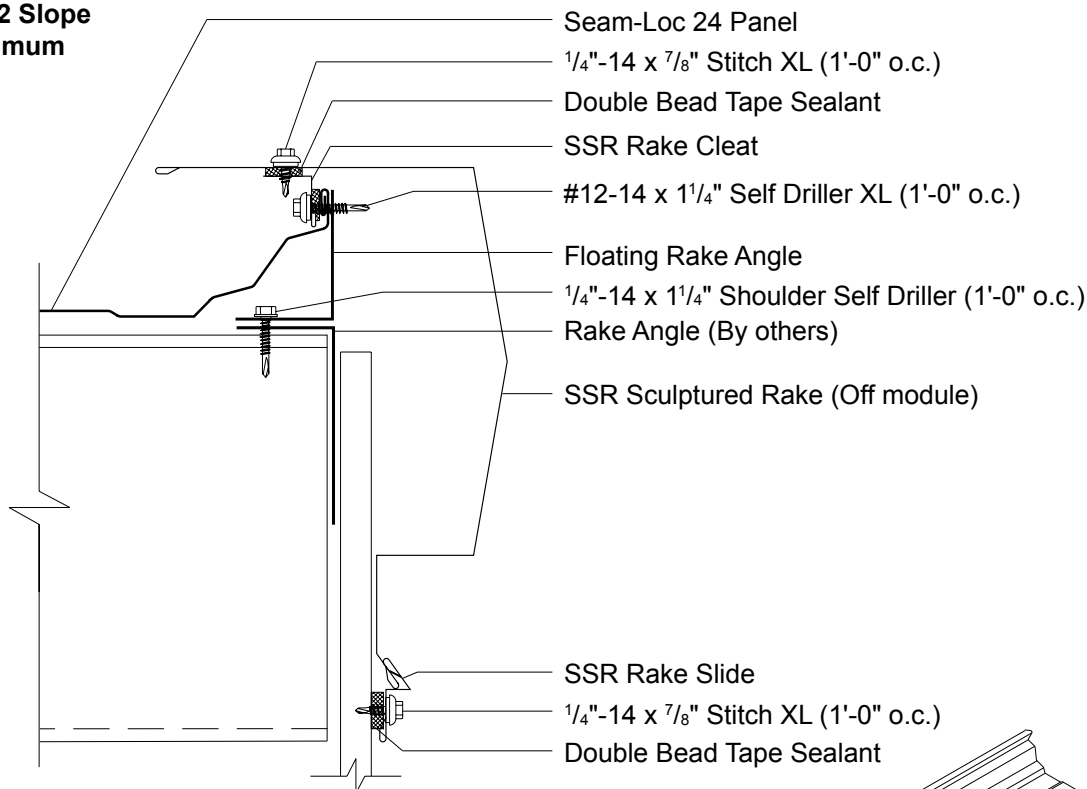


INSTALLATION NOTES

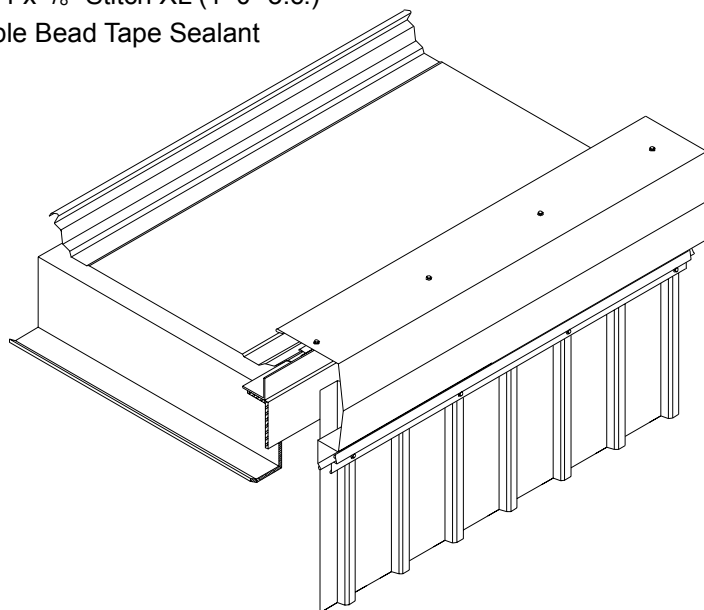
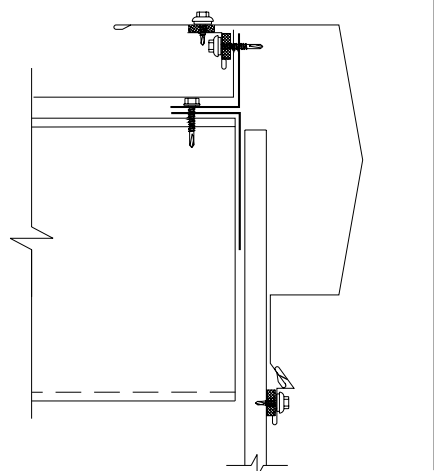
Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See Pages 24-36).

1. With the Seam-Loc 24 panel nested against the Floating Rake Angle, apply a row of Double Bead Tape Sealant across the back of the panel rib.
2. Install the SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake so that the horizontal leg of the flashing is on top of the SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Position and apply a row of Double Bead Tape Sealant across wall just below lower leg of SSR Sculptured Rake flashing.
6. Install SSR Rake Slide over lower leg of SSR Sculptured Rake flashing and Double Bead Tape Sealant. Fasten with the appropriate fastener 1'-0" o.c. max.
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.

**1/4:12 Slope
Minimum**



SSR Sculptured Rake (Off Module)

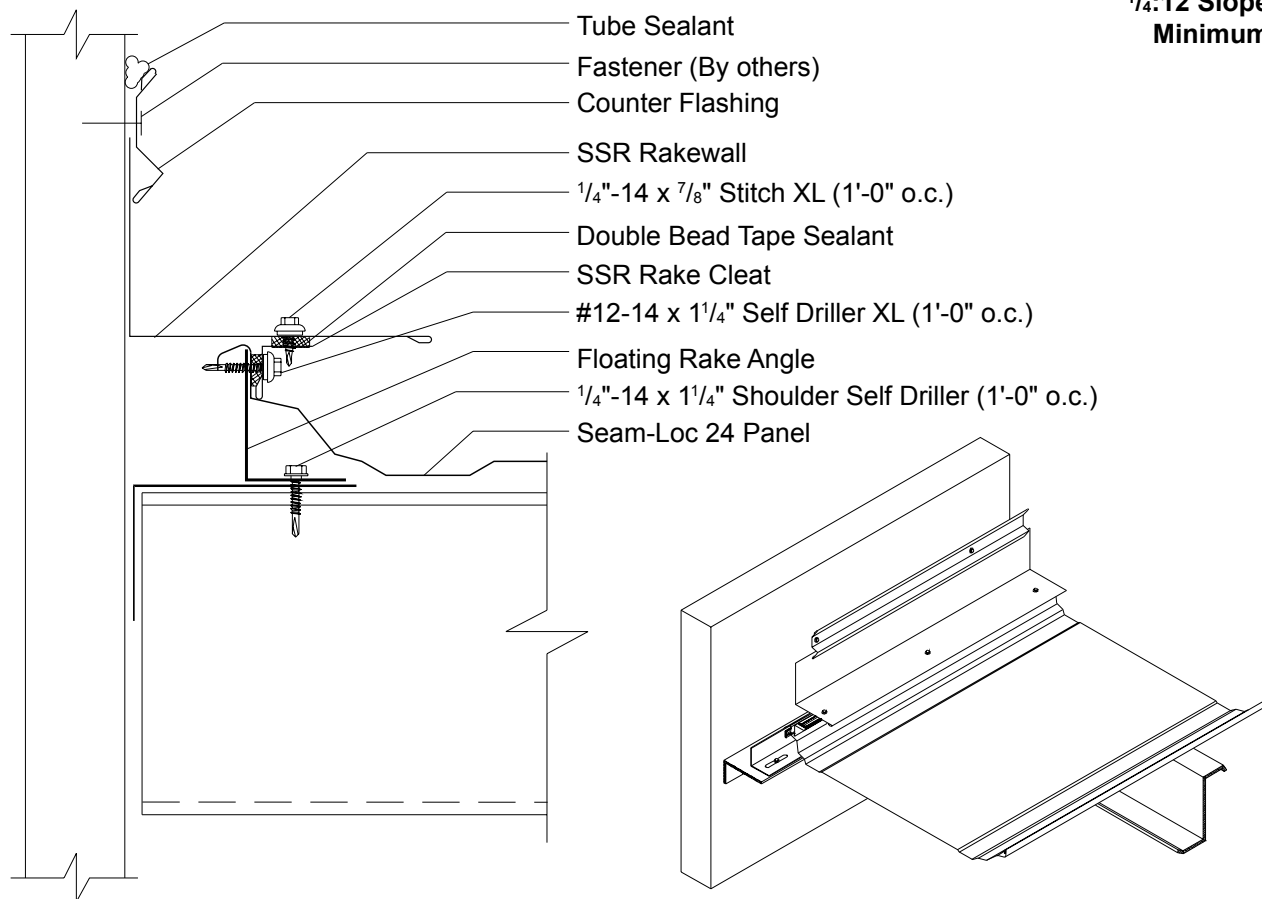


INSTALLATION NOTES

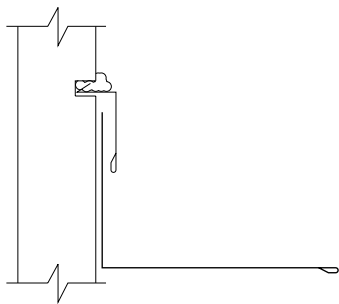
Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See pages 24-36).

1. With the Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, bend flange of male rib down to vertical, apply a row of Double Bead Tape Sealant across the male flange panel rib.
2. Install the SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake so that the horizontal leg of the flashing is on top of the SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Install SSR Rake Slide over lower leg of SSR Rake and Double Bead Tape Sealant. Fasten with the appropriate fastener 1'-0" o.c. max.
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.

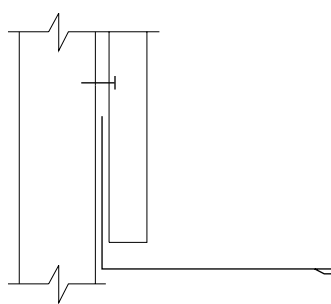
**1/4:12 Slope
Minimum**



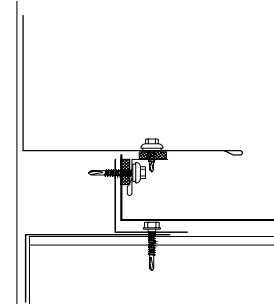
Rakewall with Reglet Option



Rakewall with Wall Panel Option



Rakewall Off Module Option

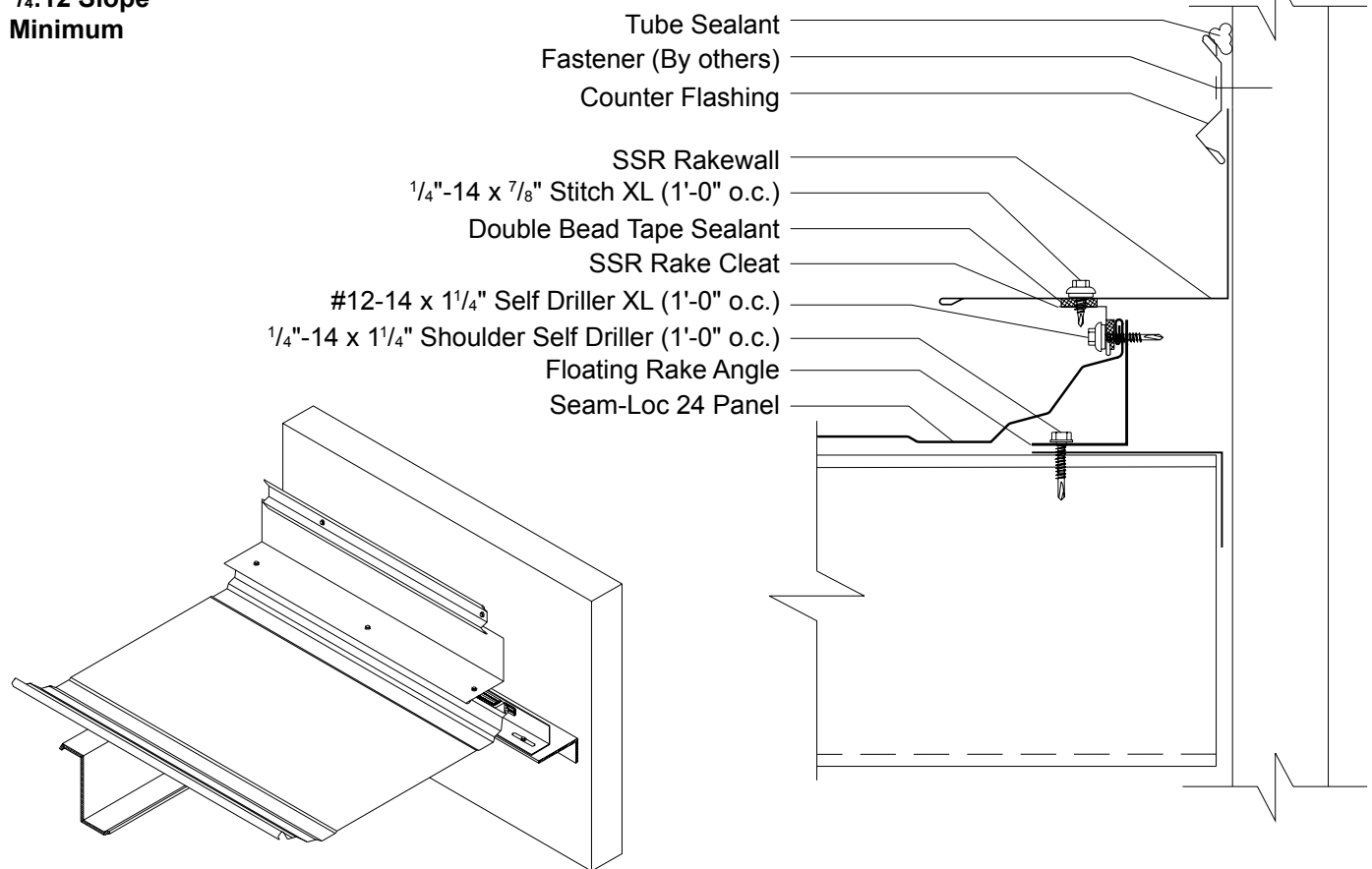


INSTALLATION NOTES

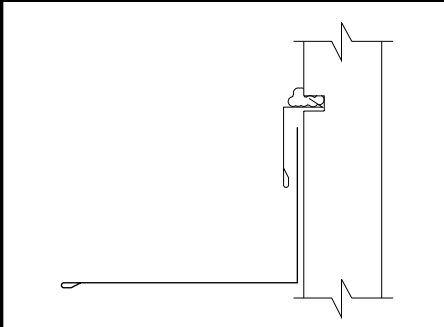
Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Rakewall installation (See pages 24-36).

1. With Seam-Loc 24 panel properly nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rakewall so that the horizontal leg is on top of the SSR Rake Cleat and the panel rib. Fasten through the SSR Rakewall, Double Bead Tape Sealant and into the SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. 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 SSR Rakewall to parapet wall.
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.

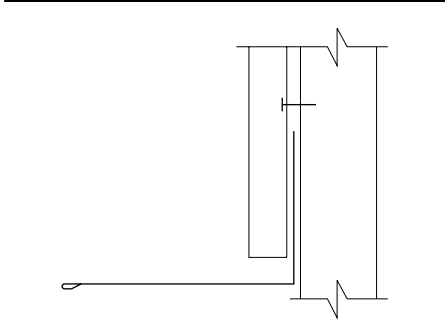
**1/4:12 Slope
Minimum**



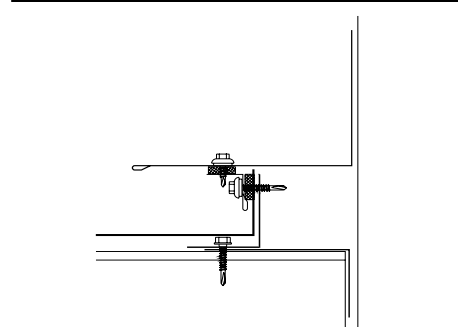
Rakewall with Reglet Option



Rakewall with Wall Panel Option



Rakewall Off Module Option

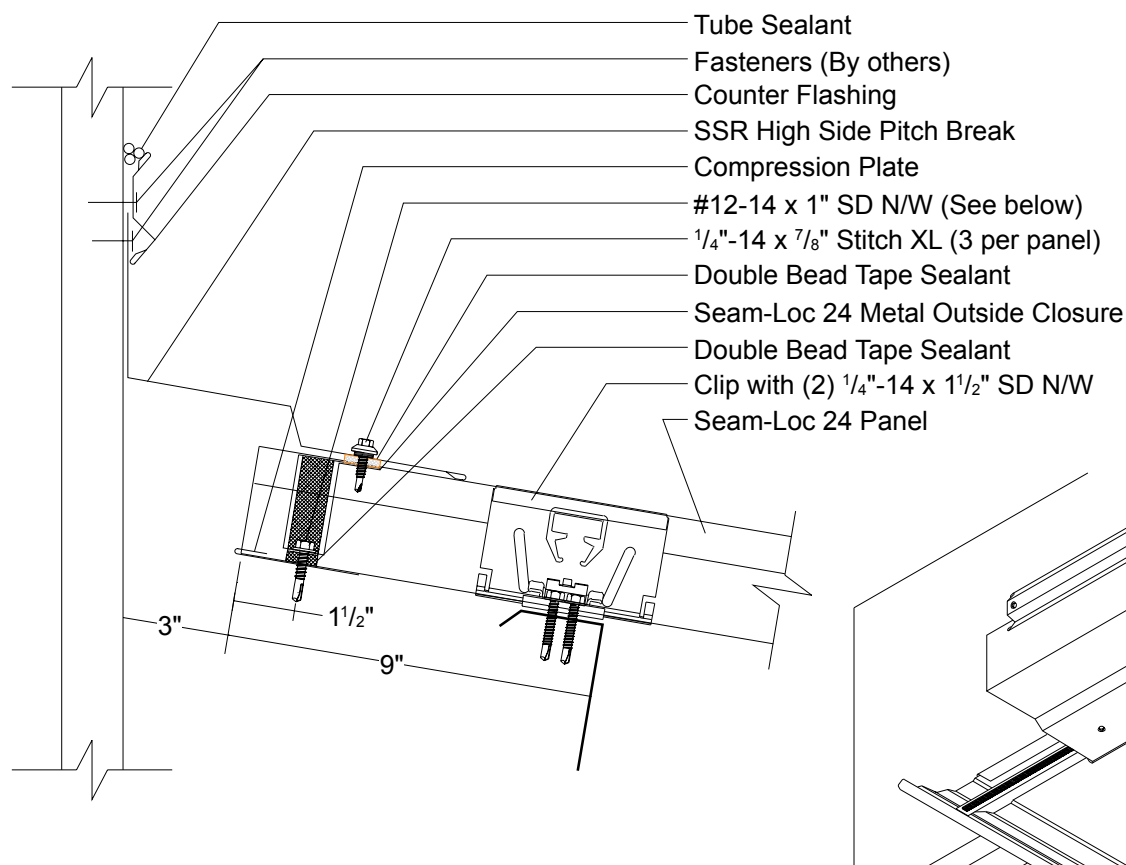


INSTALLATION NOTES

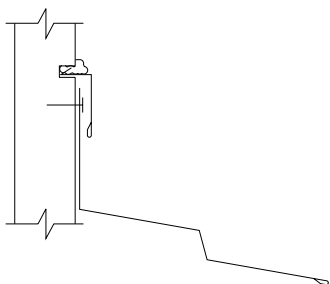
Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Rakewall installation (See pages 24-36).

1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of field-bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rakewall so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Rakewall, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. 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 SSR Rakewall to parapet wall.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a min. of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

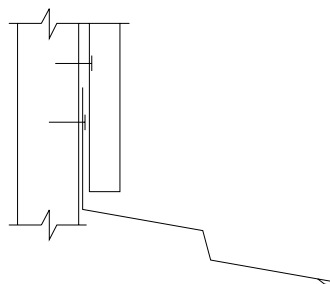
**1/4:12 Slope
Minimum**



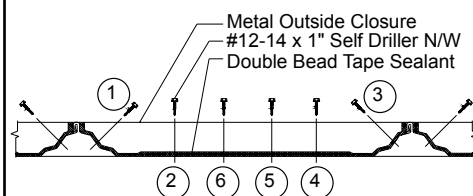
Endwall with Reglet Option



Endwall with Wall Panel Option



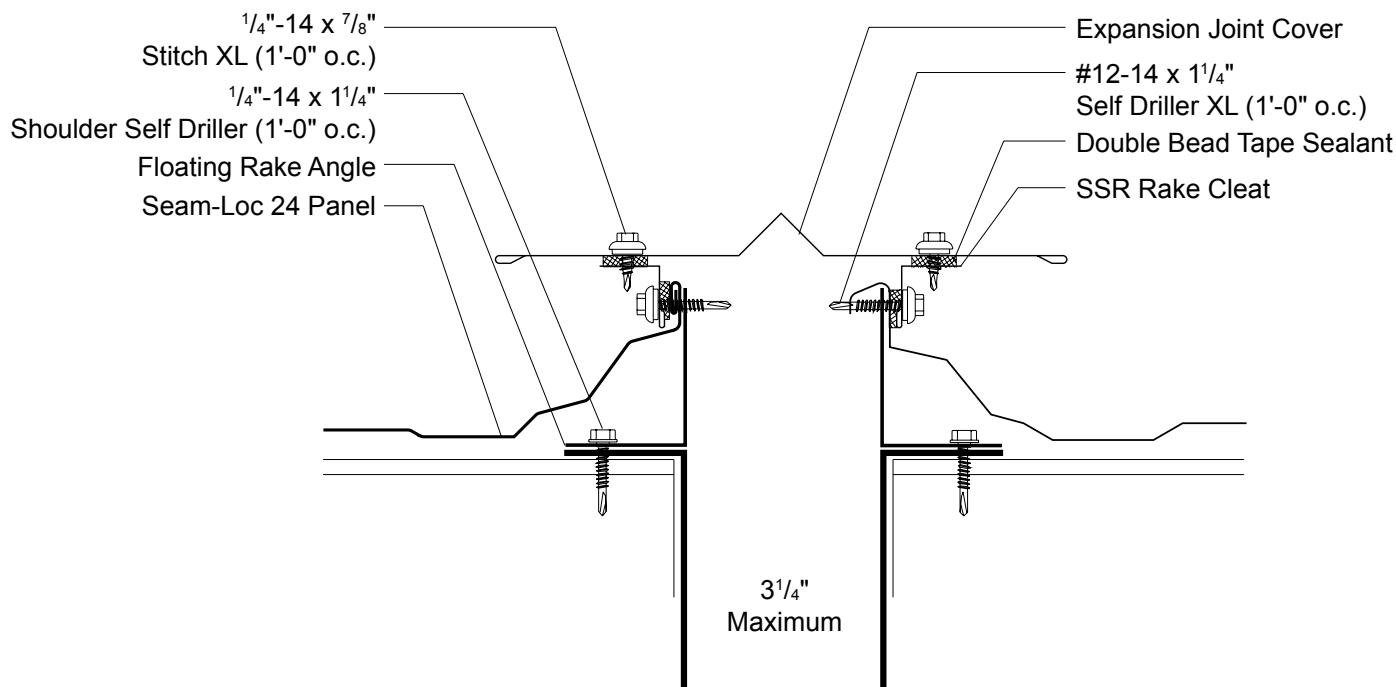
Tape Sealant at Outside Closure



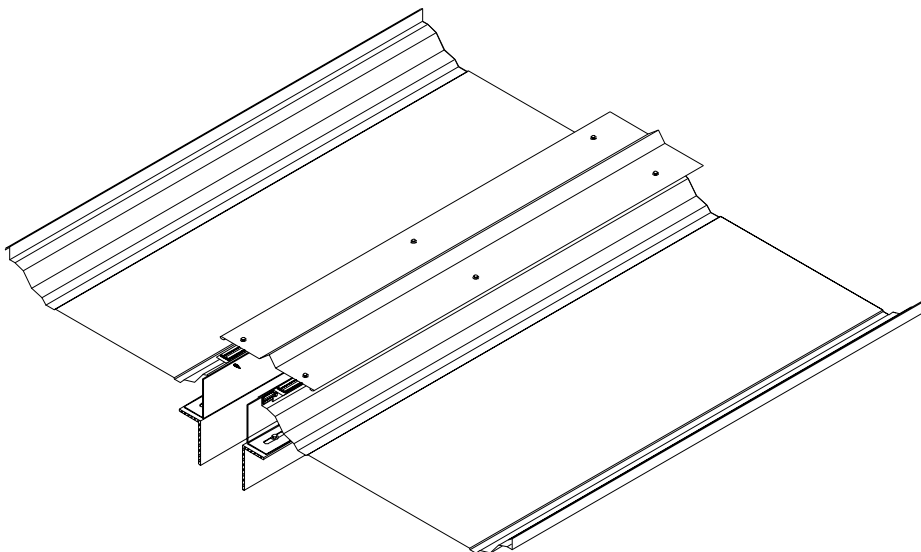
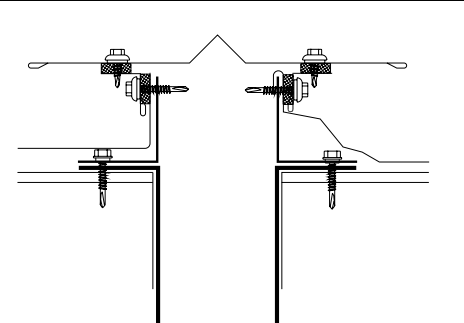
INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Metal Outside Closures over Tape Sealant. Before continuing make sure Metal Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once Metal Outside Closure is set in Double Bead Tape Sealant, fasten through Metal Outside Closure, Double Bead Tape Sealant, Seam-Loc 24 panel and into Compression Plate with #12-14 x 1" SD N/W screws. C-Clamps may be removed once Metal Outside Closures have been fastened. (See page 50)
5. After Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures. Tube Sealant must be used to fill gaps around the Metal Outside Closures.
6. Install SSR High Side Pitch Break and secure to the top leg of the Metal Outside Closures with 1/4"-14 x 7/8" Stitch XL screws, 3 per panel as shown on page 50. Attach SSR High Side Pitch Break to parapet wall with appropriate fastener, 1'-0" o.c. max.
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.

**1/4:12 Slope
Minimum**



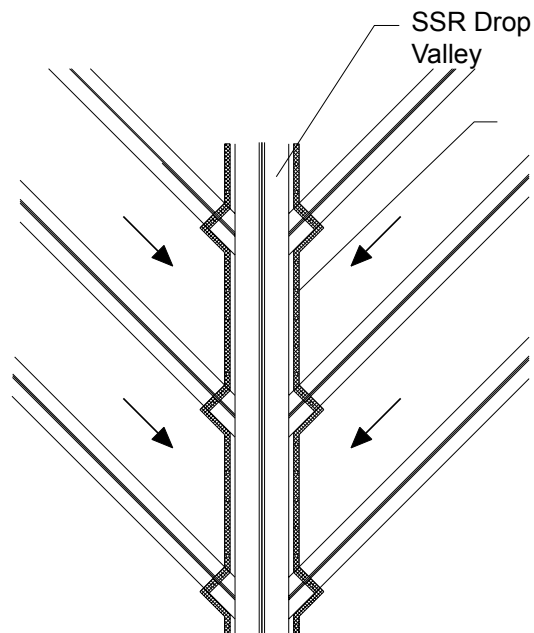
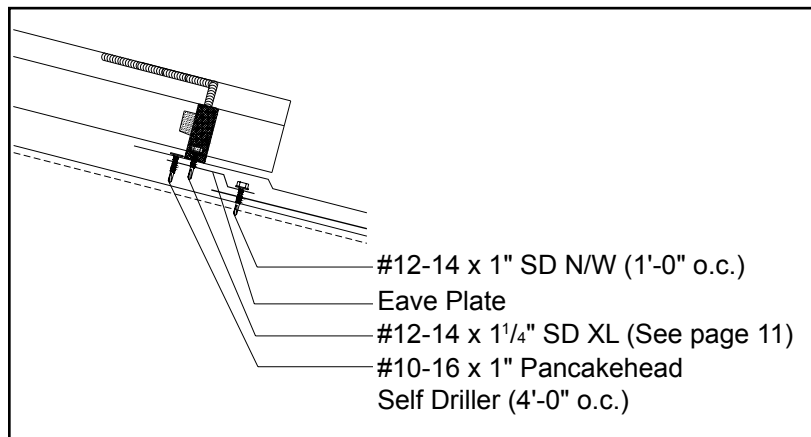
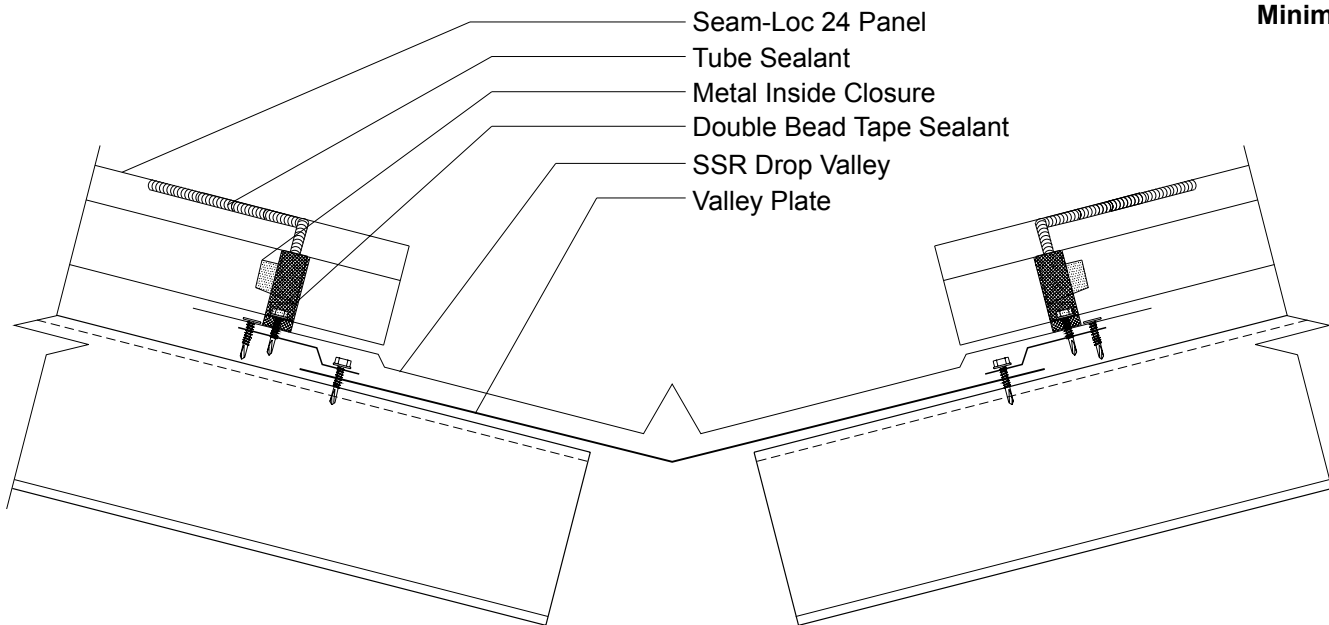
Exp. Joint with Off Module Option



INSTALLATION NOTES

Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Expansion Joint installation (See pages 24-36).

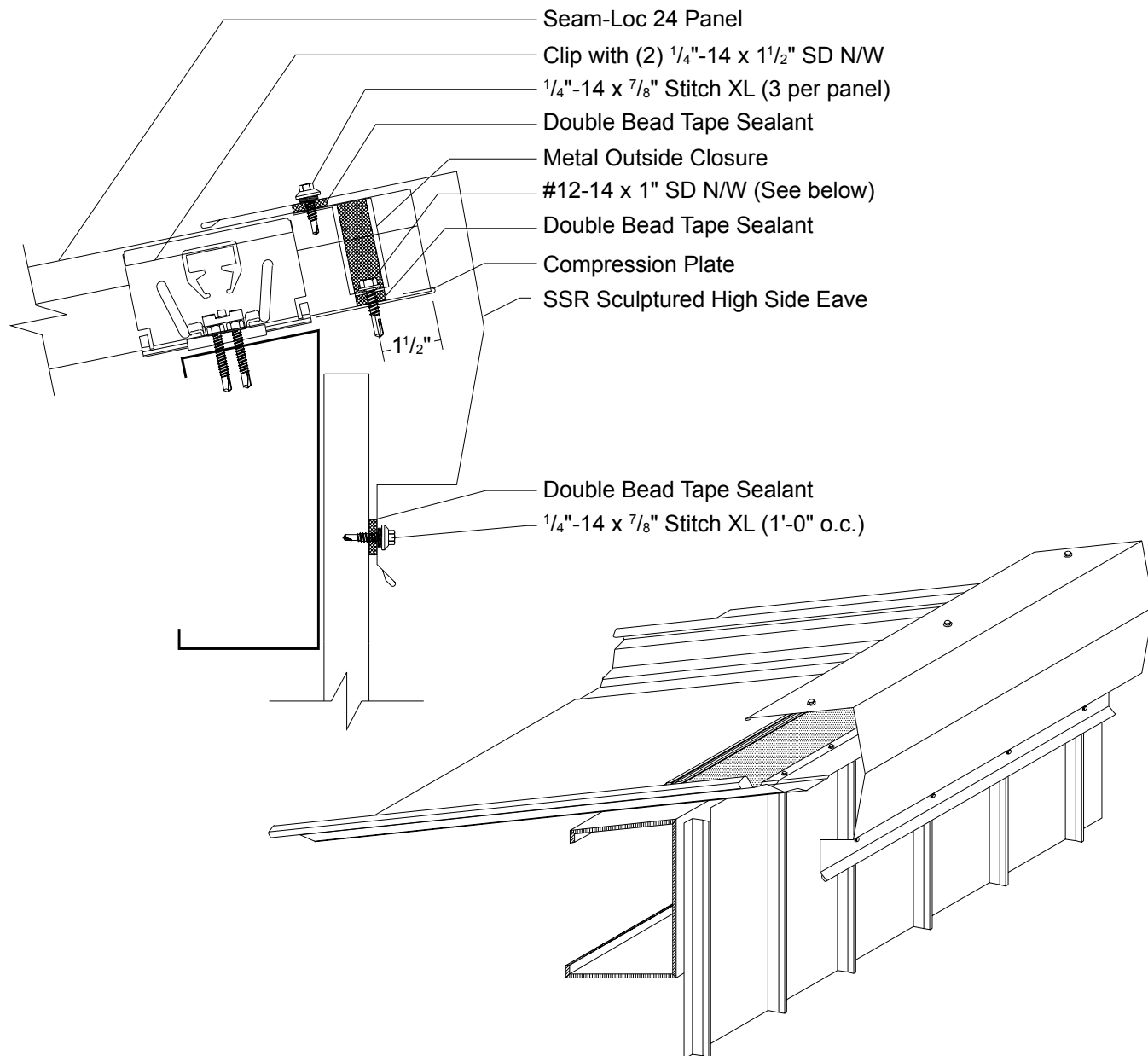
1. With Seam-Loc 24 panels nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel ribs on both sides of Expansion Joint Cover. (See page 34 for proper bending of panel if off module.)
2. Install SSR Rake Cleats over Double Bead Tape Sealant on both sides. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c. on both sides.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleats.
4. Install Expansion Joint Cover on top legs of SSR Rake Cleats. Fasten through Expansion Joint Cover, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c. on both sides of Expansion Joint Cover.
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.

6:12 Slope
Minimum**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 ms-HT underlayment be installed under Valley flashing for added moisture protection.

1. Install SSR Drop Valley back against previously installed Eave Plates. To hold SSR Drop Valley in place, fasten to Eave Plate with #10-16 x 1" Pancake Head Driller, 4'-0" o.c. into top leg of Eave Plate.
2. Apply a row of Double Bead Tape Sealant across both sides of the SSR Drop Valley so that the sealant is centered over the top leg of the Eave Plate.
3. 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.
4. Once Metal Inside Closures and panels have been installed and properly sealed, (See pages 26 and 27) fasten panel, Double Bead Tape Sealant and SSR Drop Valley into Eave Plate with #12-14 x 1 1/4" Self Driller XL screws. See page 27.

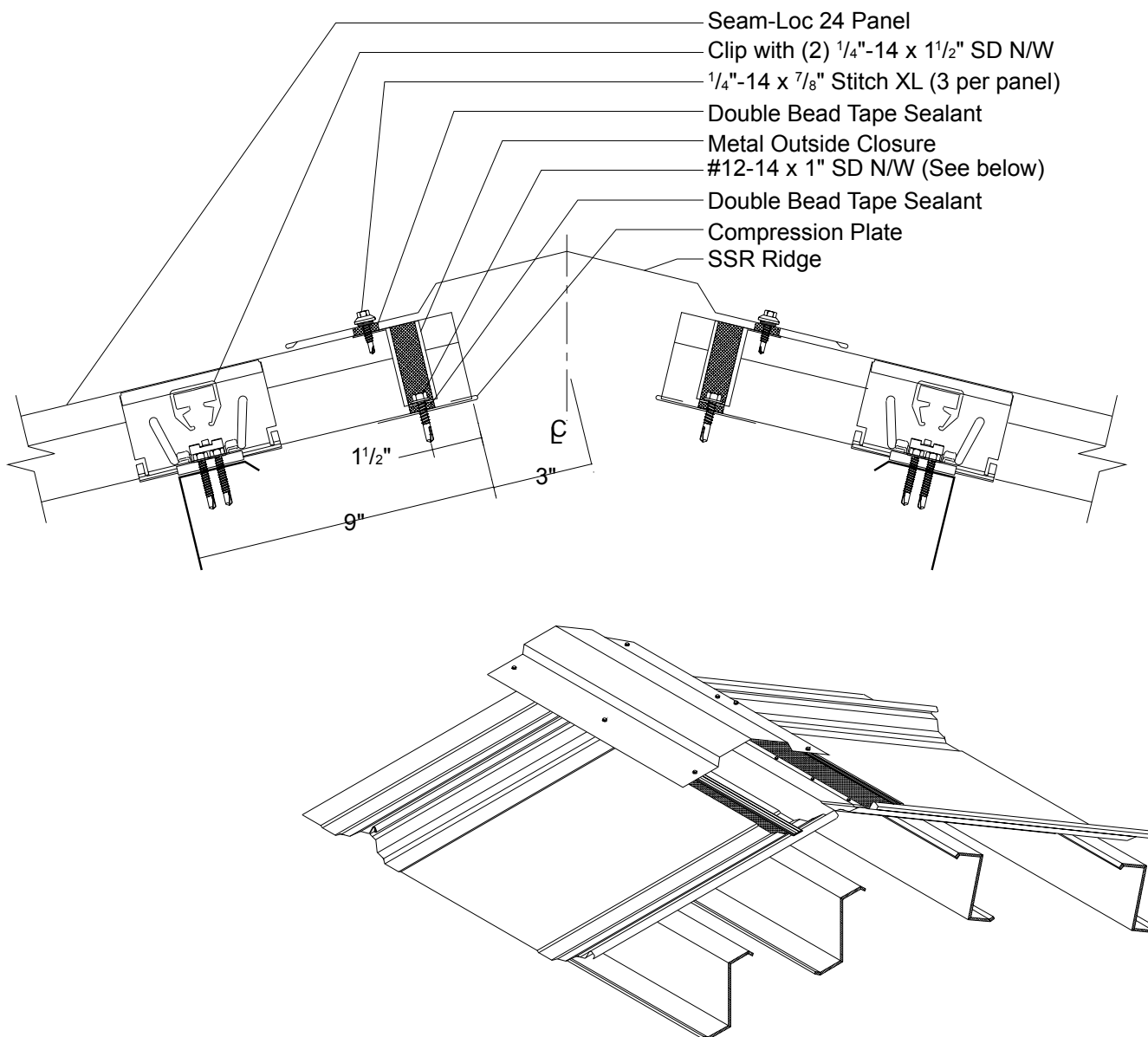
**1/4:12 Slope
Minimum**



INSTALLATION NOTES

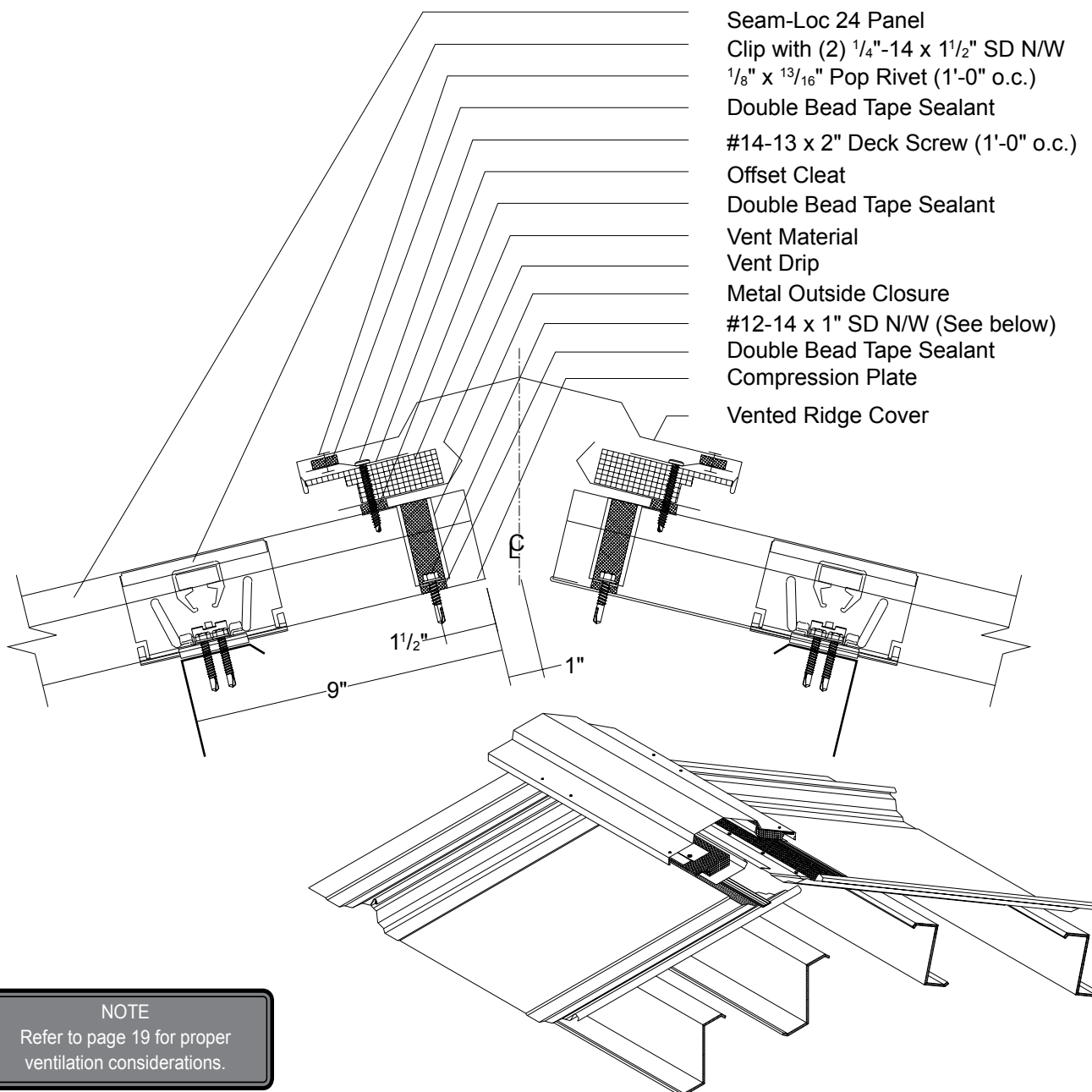
1. Once panels have been installed, slide Compression Plate under upper edge of panel. Position Compression Plate to allow for proper installation of High Side Eave assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Metal Outside Closures over Double Bead Tape Sealant. Before continuing make sure Metal Outside Closure placement will accommodate SSR Sculptured High Side Eave flashing.
4. Once Metal Outside Closure is set in Double Bead Tape Sealant, fasten through Metal Outside Closure, Double Bead Tape Sealant, Seam-Loc 24 panel and into Compression Plate with #12-14 x 1" SD N/W screws. C-Clamps may be removed once Metal Outside Closures have been fastened.
5. Once all Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures. Tube Sealant must be used to fill gaps around the Metal Outside Closures.
6. Install SSR Sculptured High Side Eave and secure to top leg of Metal Outside Closures with 1/4"-14 x 7/8" Stitch XL screws, 3 per panel as shown on page 50.
7. Fasten SSR Sculptured High Side Eave to finished wall with appropriate fastener, 1'-0" o.c. max.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead

1/4:12 Slope
Minimum



INSTALLATION NOTES

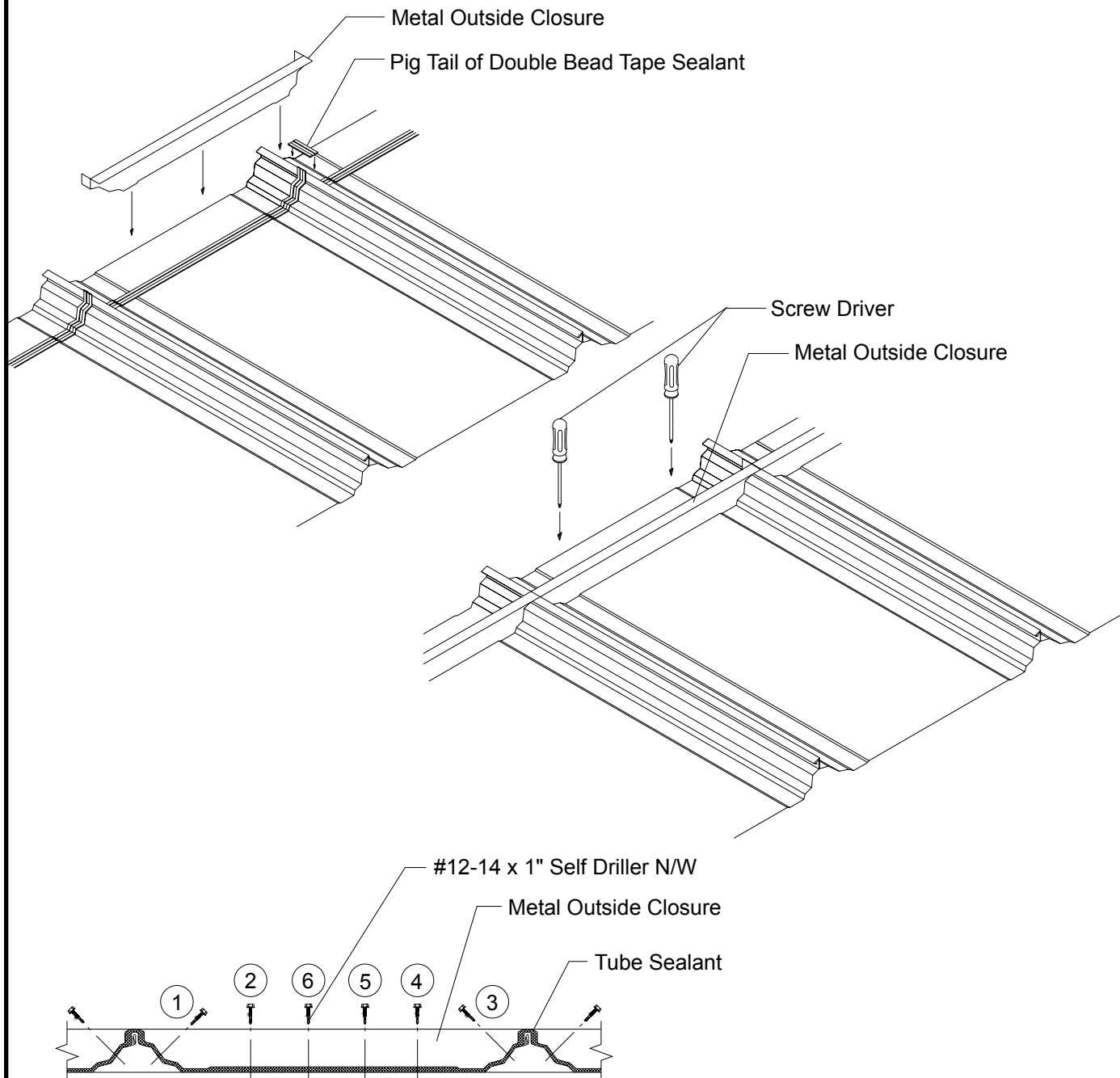
1. Once panels have been installed, slide Compression Plate under upper edge of panel. Position Compression Plate to allow for proper installation of ridge assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end on both sides of ridge.
3. Install Metal Outside Closures over Double Bead Tape Sealant. Before continuing, make sure Metal Outside Closure placement will accommodate SSR Ridge.
4. Once Metal Outside Closure is set in Double Bead Tape Sealant, fasten through the Metal Outside Closure, Double Bead Tape Sealant, Seam-Loc 24 panel and into Compression Plate with #12-14 x 1" SD N/W screws. C-Clamps may be removed once Metal Outside Closures have been fastened.
5. After all of the Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures on both sides of ridge. Tube Sealant must be used to fill gaps around Metal Outside Closures.
6. Install SSR Ridge and secure to top leg of Metal Outside Closures with 1/4"-14 x 7/8" Stitch XL screws, 3 per panel as shown on page 50.
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.



NOTE
Refer to page 19 for proper ventilation considerations.

INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under the upper edge of panel. Position Compression Plate to allow for proper installation of vented ridge assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs 1 1/2" from panel end on both sides of ridge.
3. Install Metal Outside Closures over Double Bead Tape Sealant. Before continuing make sure Metal Outside Closure placement will accommodate Vented Ridge Cover.
4. Once Metal Outside Closures is set in Double Bead Tape Sealant, fasten through Metal Outside Closure, Double Bead Tape Sealant, Seam-Loc 24 panel and into Compression Plate with (6) #12-14 x 1" SD N/W per panel. C-Clamps may be removed once Metal Outside Closures have been fastened.
5. Once all Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures on both sides of ridge. Tube Sealant must be used to fill gaps around Metal Outside Closures.
6. Install Vent Drip, Vent Material and Offset Cleat (in order) and fasten to top leg of Metal Outside Closure with #14-13x2" Deck Screws at 1'-0" o.c.
7. Apply a row of Double Bead Tape Sealant across outer leg of Offset Cleat.
8. Install Vented Ridge Cover and secure to outer leg of Offset Cleat with Pop Rivets at 1'-0" o.c.
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.

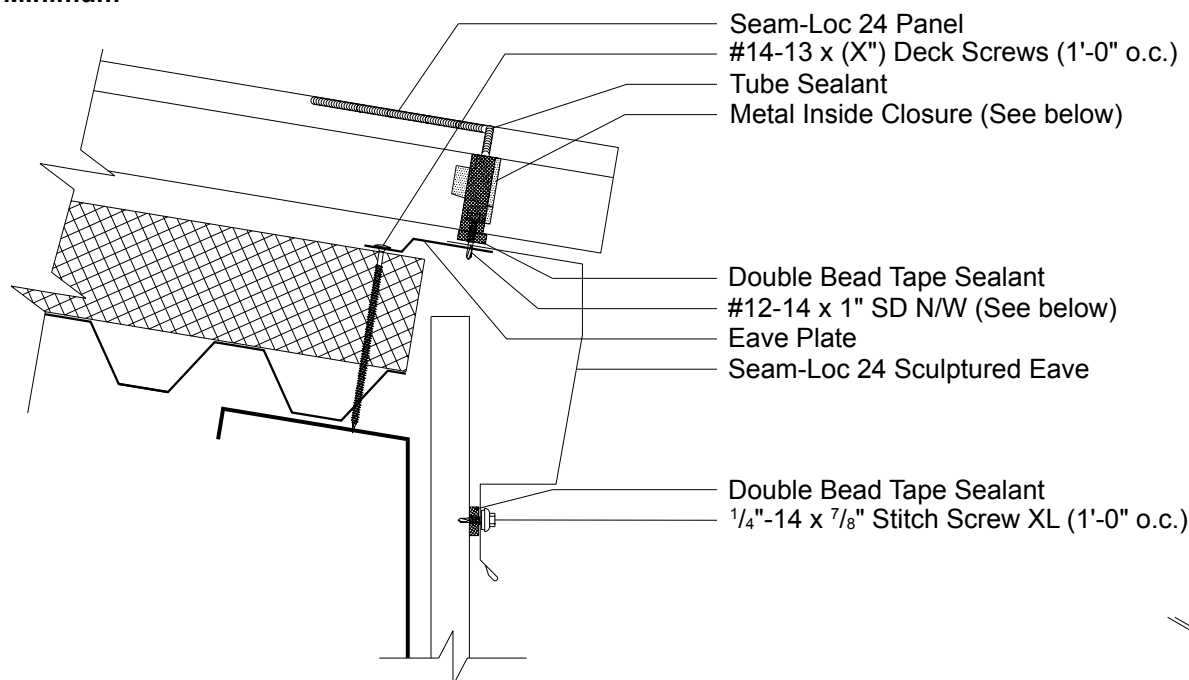


INSTALLATION NOTES

Note: The Metal Outside Closure is used to close off the high end of the panel applications. Before installation of Metal Outside Closure can begin, all roof panels must be seamed. (See seaming panels on pages 35 and 36 for proper seaming instructions.)

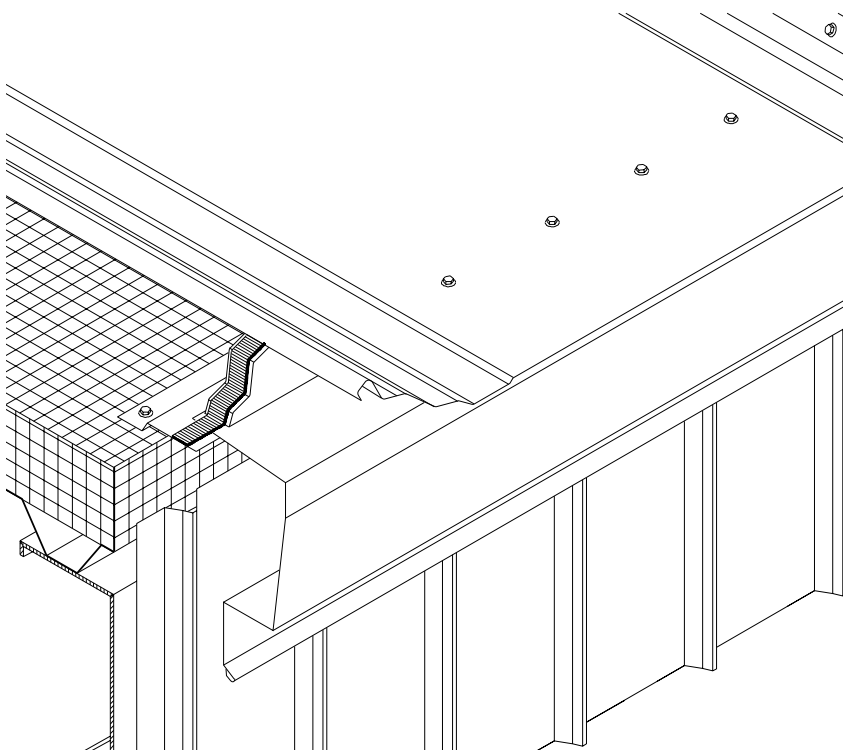
1. Once panels have been installed and seamed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of flashing assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply Double Bead Tape Sealant down the female leg, across the panel and up the male leg $1\frac{1}{2}$ " from the end of the panel.
3. Place the Metal Outside Closure on Double Bead Tape Sealant making sure the punched lower leg is towards the ridge. The punched lower leg should be $1\frac{1}{2}$ " from the end of the panel. Use screw driver to properly align panel, Metal Outside Closure and Compression Plate.
4. Fasten the Metal Outside Closure with (6) #12-14 x 1" SD NW screws. Fasteners must penetrate the Metal Outside Closure, Double Bead Tape Sealant, panel and Compression Plate.
5. Apply a continuous $\frac{3}{8}$ " diameter bead of Tube Sealant (if necessary) where the Metal Outside Closure meets the panel seams to fill gaps around Metal Outside Closures.

**1/4:12 Slope
Minimum**



**Note: Length of Deck Screws
is dependent on the assembly
thickness
(See page 11 for lengths).**

**Note: Blocking beneath the
Eave Plate may be necessary
for high snow loads, panel
lengths or roof slope.**

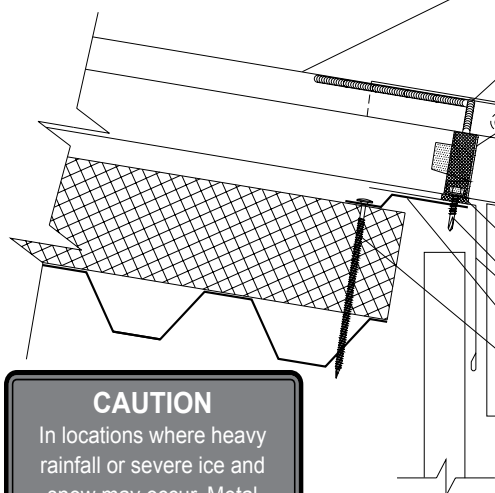
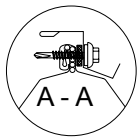


INSTALLATION NOTES

All Eave flashings must be installed prior to panel installation.

1. Install Seam-Loc 24 Sculptured Eave back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Seam-Loc 24 Sculptured Eave in place fasten to substrate with #10-16 x 1" Pancake Head Driller, 4'-0" o.c.
2. Fasten Seam-Loc 24 Sculptured Eave to wall with appropriate fastener, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Seam-Loc 24 Sculptured Eave so that sealant is centered over top leg of Eave Plate.
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 Metal Inside Closures and panels have been installed and properly sealed, (See page 26), fasten through panel, Double Bead Tape Sealant and Seam-Loc 24 Sculptured Eave into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.

**1/4:12 Slope
Minimum**



Seam-Loc 24 Panel
Tube Sealant
#12-14 x 1 1/4" Self Driller XL (2 per gutter support)
Metal Inside Closure (See below)
1/4"-14 x 7/8" Stitch Screw XL (2 per panel)
1/8" x 13/16" Pop Rivet (1 per gutter support)

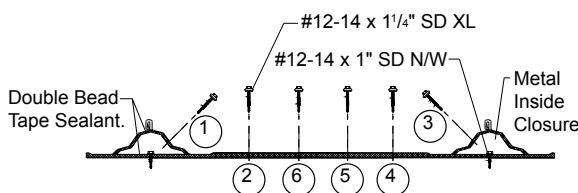
SSR Gutter Support (Located at every other rib)
Sculptured Gutter
Double Bead Tape Sealant
#12-14 x 1" Self Driller N/W (See below)
Gutter Drip
Eave Plate
#14-13 x (X") Deck Screws (1'-0" o.c.)

CAUTION

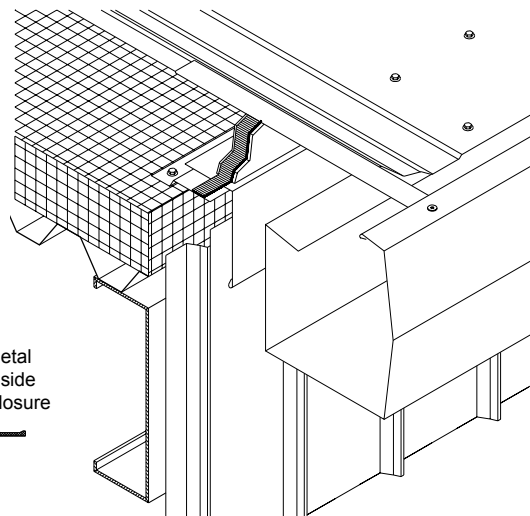
In locations where heavy rainfall or severe ice and snow may occur, Metal Sales' standard gutters may not be suitable for use.

Note: Length of Deck Screws is dependent on the assembly thickness (See page 11 for lengths).

Note: Blocking beneath the Eave Plate may be necessary for high snow loads, panel lengths or roof slope.



Seam-Loc 24 Fastening Pattern

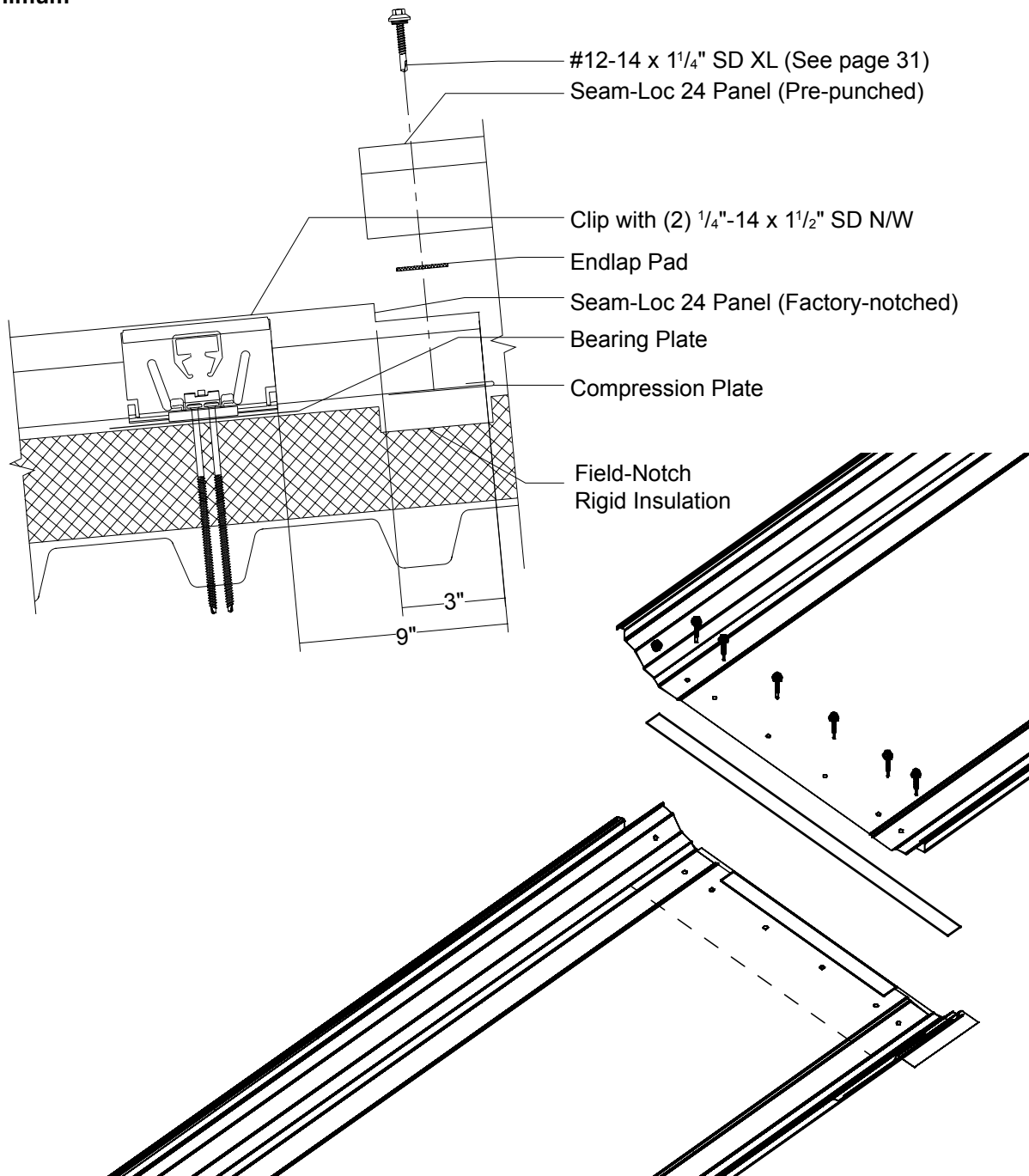


INSTALLATION NOTES

Gutter Drip must be installed prior to panel installation.

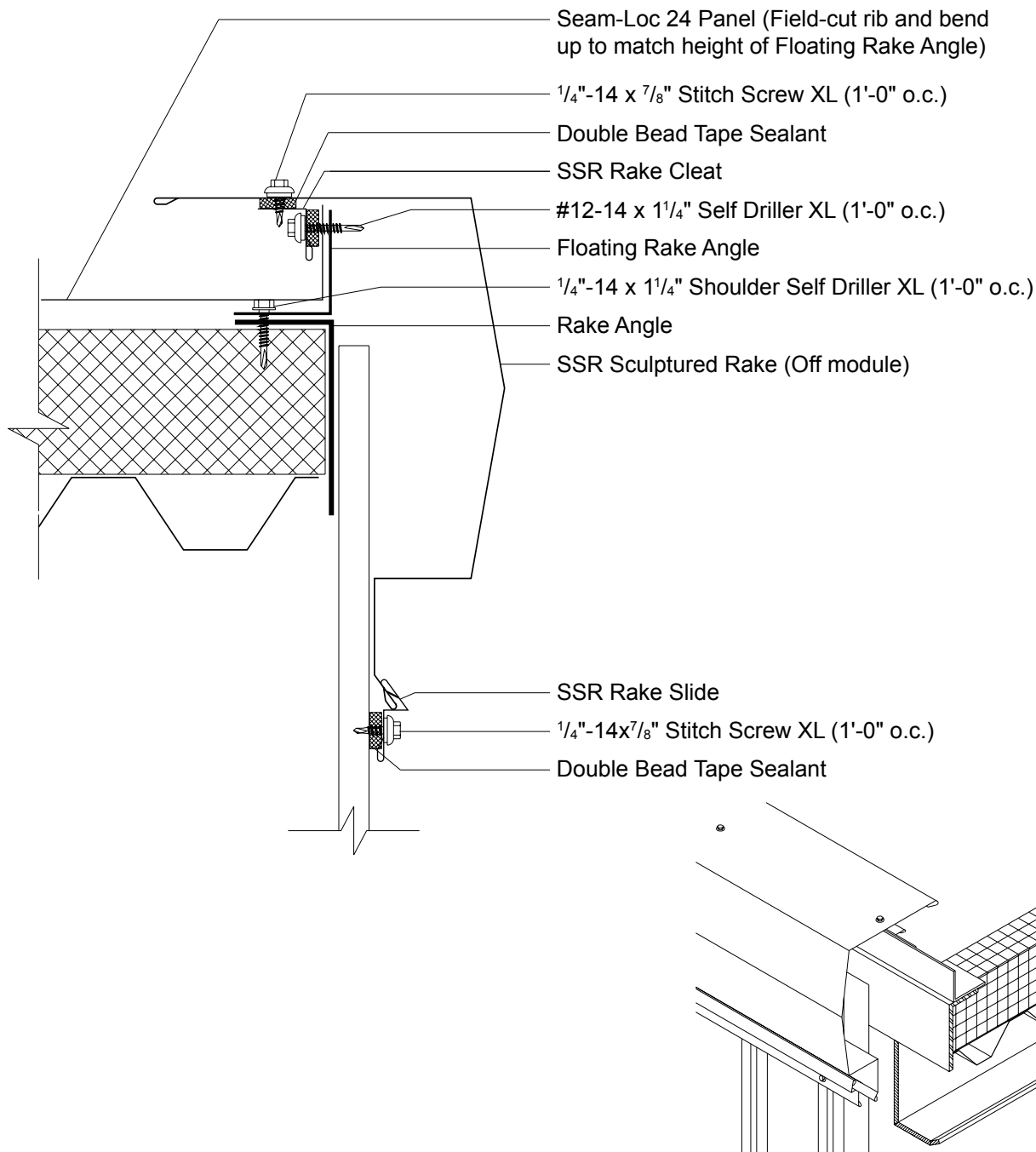
1. Install Gutter Drip back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Gutter Drip in place fasten to substrate with #10-16 x 1" Pancake Head Driller, 4'-0" o.c.
2. Apply a row of Double Bead Tape Sealant across Gutter Drip so that sealant is centered over top leg of Eave Plate.
3. 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.
4. Once Metal Inside Closures and panels have been installed and properly sealed, (see page 26), fasten through panel, Double Bead Tape Sealant and Gutter Drip into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.
5. Attach the SSR Gutter Support to every other panel rib (48" o.c.) with (2) #12-14 x 1 1/4" Self Driller XL screws. Fasteners must be applied down slope of the sealant line. Do not apply screws up slope of the sealant line. The SSR Gutter Support can be adjusted in or out to allow the gutter to be installed in a straight line, even if the edge of the roof is not straight.
6. Prepare the first gutter section with a Sculptured Gutter End. Consider rake to gutter connection for proper placement of Sculptured Gutter End and the Sculptured Gutter. Fasten with (8) 1/4"-14 x 7/8" Stitch XL screws or Pop Rivets.
7. Position the Sculptured Gutter over SSR Gutter Supports with one end against the Rake flashing and rotate into position.
8. Clamp the top of the back lip of the gutter in position with a C-Clamp. Install a 1/4"-14 x 7/8" Stitch XL screw or Pop Rivet where the front lip of the gutter rests on the SSR Gutter Support and fasten the back lip of the Sculptured Gutter to the panel flat with (2) 1/4"-14 x 7/8" Stitch XL screw per panel.
9. Field-miter the Rake trim to fit the Sculptured Gutter at the corner of the building or install a SSR Sculptured Corner Box.
10. 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 1/4"-14 x 7/8" Stitch XL screws or Pop Rivets, 2 1/2" o.c.

**1/4:12 Slope
Minimum**



INSTALLATION NOTES

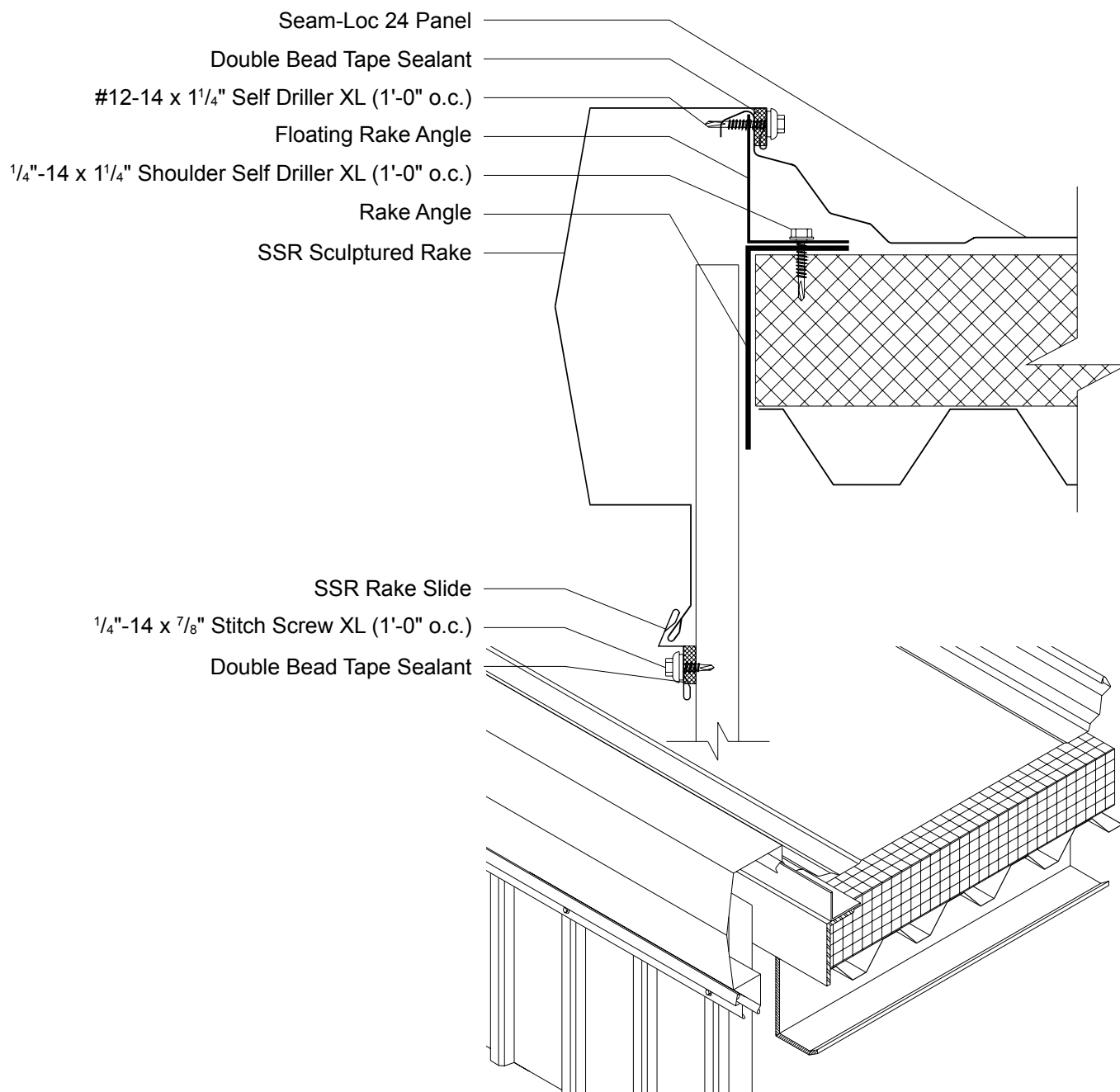
1. Once the eave panel has been installed, (see pages 30-31), slide a Compression Plate under upper edge of panel. The Compression Plate should be flush with edge of Seam-Loc 24 eave panel. Use C-Clamps down slope of the panel lap to hold Compression Plate in place.
2. Apply an Endlap Pad across flat pan, up and over all ribs of eave panels. The Endlap Pad should be flush with edge of the eave panel. Triple Bead Tape Sealant can be used in lieu of the Endlap Pad.
3. Roll Seam-Loc 24 peak panel into place and nest with eave panel so that factory-notch is completely covered. (See page 30 for complete details on installing endlapped panels.)
4. With peak panel in place, fasten panel endlap with (6) #12-14 x 1 1/4" Self Driller XL screws per endlap through factory punched holes and into the Compression Plate. See page 31. A screwdriver can be used to help align the panel holes with the Compression Plate holes
5. Apply a pig tail of Endlap Pad, approximately 2 1/2", over factory-notched section of male legs.



INSTALLATION NOTES

Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See Pages 24-36).

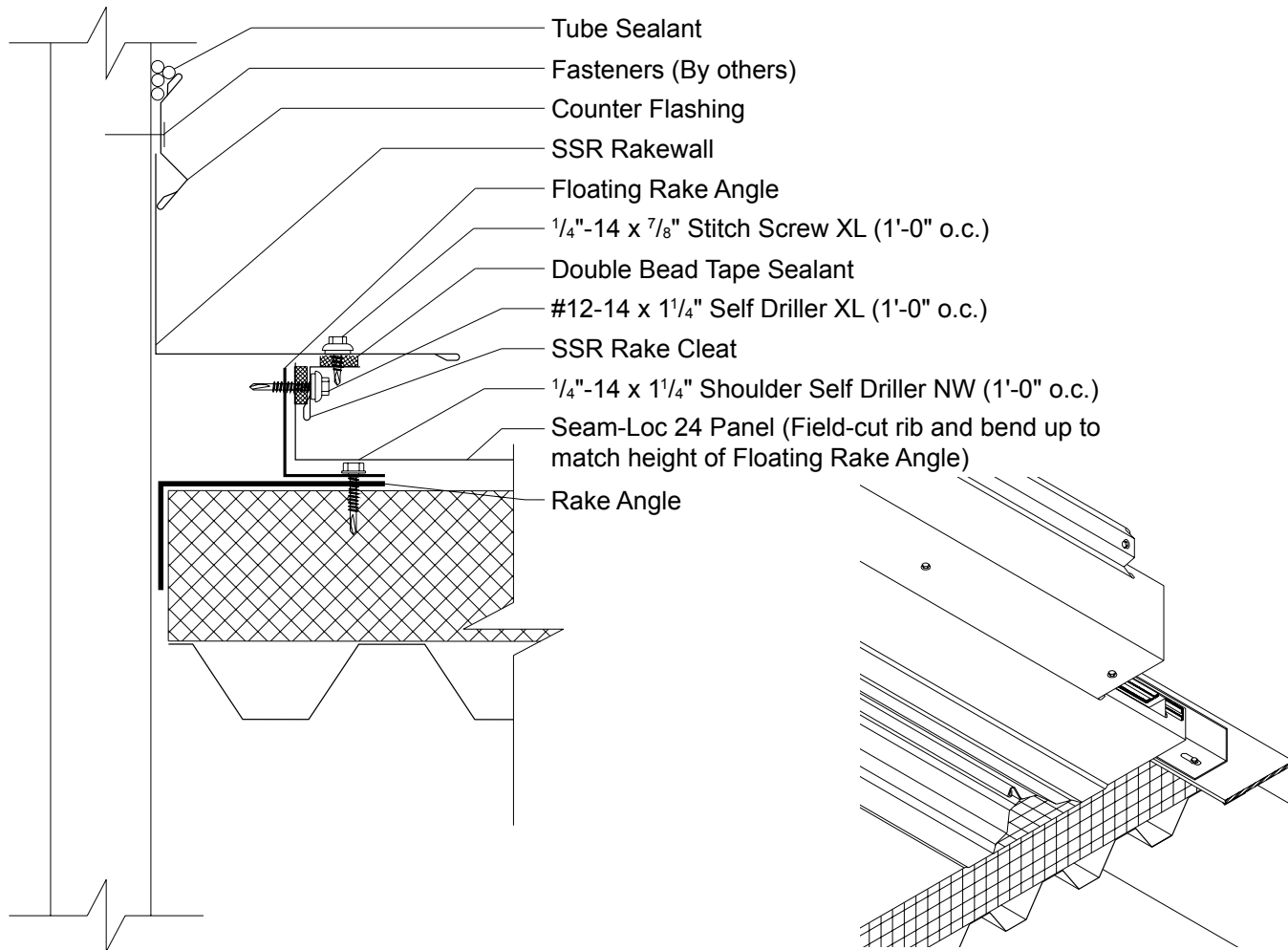
1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape sealant across upper side of field bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Sculptured Rake.
6. Install SSR Rake Slide over lower leg of SSR Sculptured Rake and Double Bead Tape Sealant. Fasten with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
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.



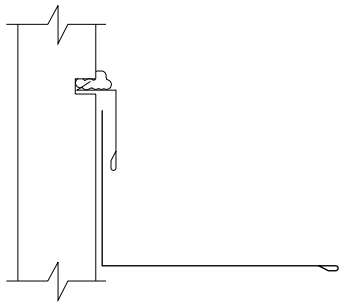
INSTALLATION NOTES

Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See pages 24-36).

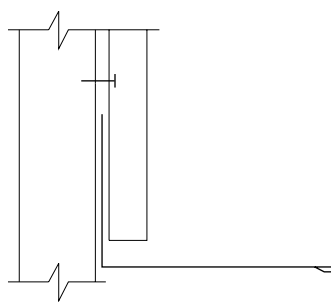
1. With Seam-Loc 24 panel properly nested over top of Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across upper side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Sculptured Rake.
6. Install SSR Rake Slide over lower leg of SSR Sculptured Rake and Double Bead Tape Sealant. Fasten with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
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.



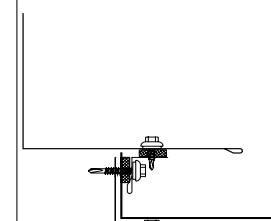
Rakewall with Reglet Option



Rakewall with Wall Panel Option



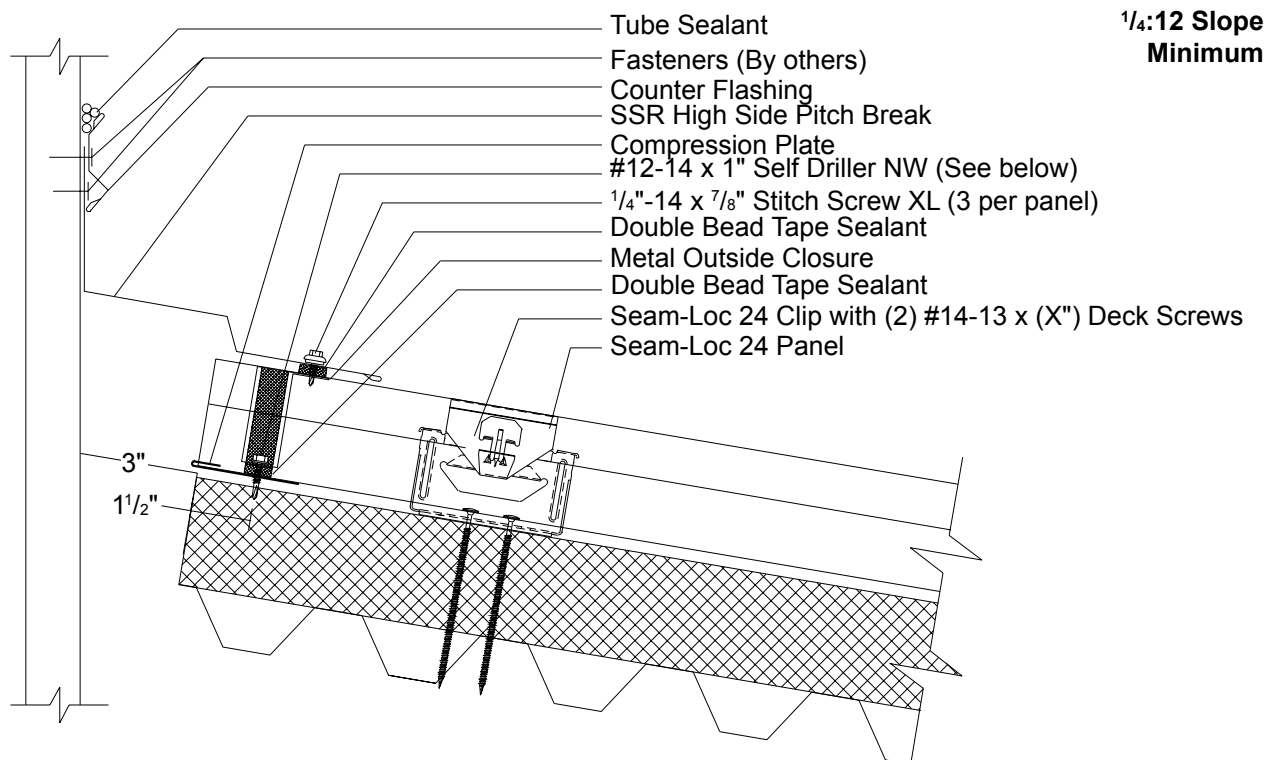
Rakewall Off Module Option



INSTALLATION NOTES

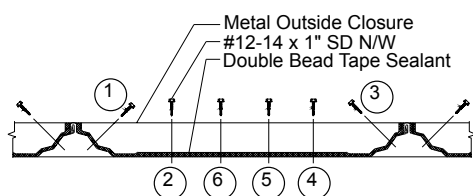
Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to SSR Rakewall installation (See pages 24-36).

1. With Seam-Loc 24 panel properly nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rakewall so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Rakewall, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4"-14 x 7/8" Stitch XL, 1'-0" o.c.
5. 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 SSR Rakewall to parapet wall.
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.

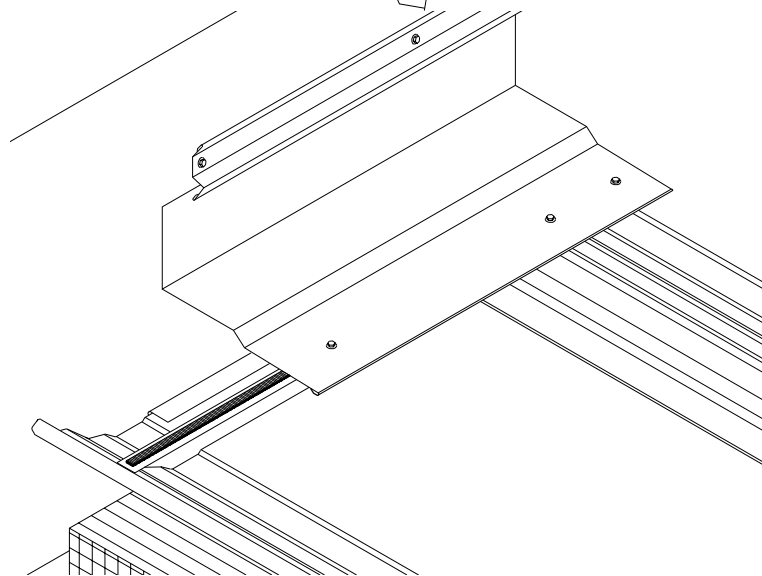


Note:

Lengths of Deck screws is dependent on the assembly thickness (See page 11 for lengths).



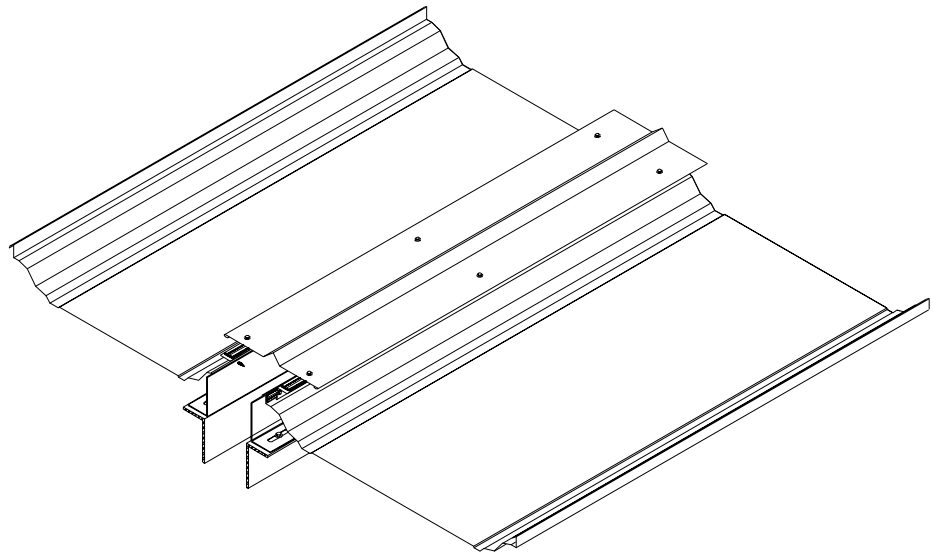
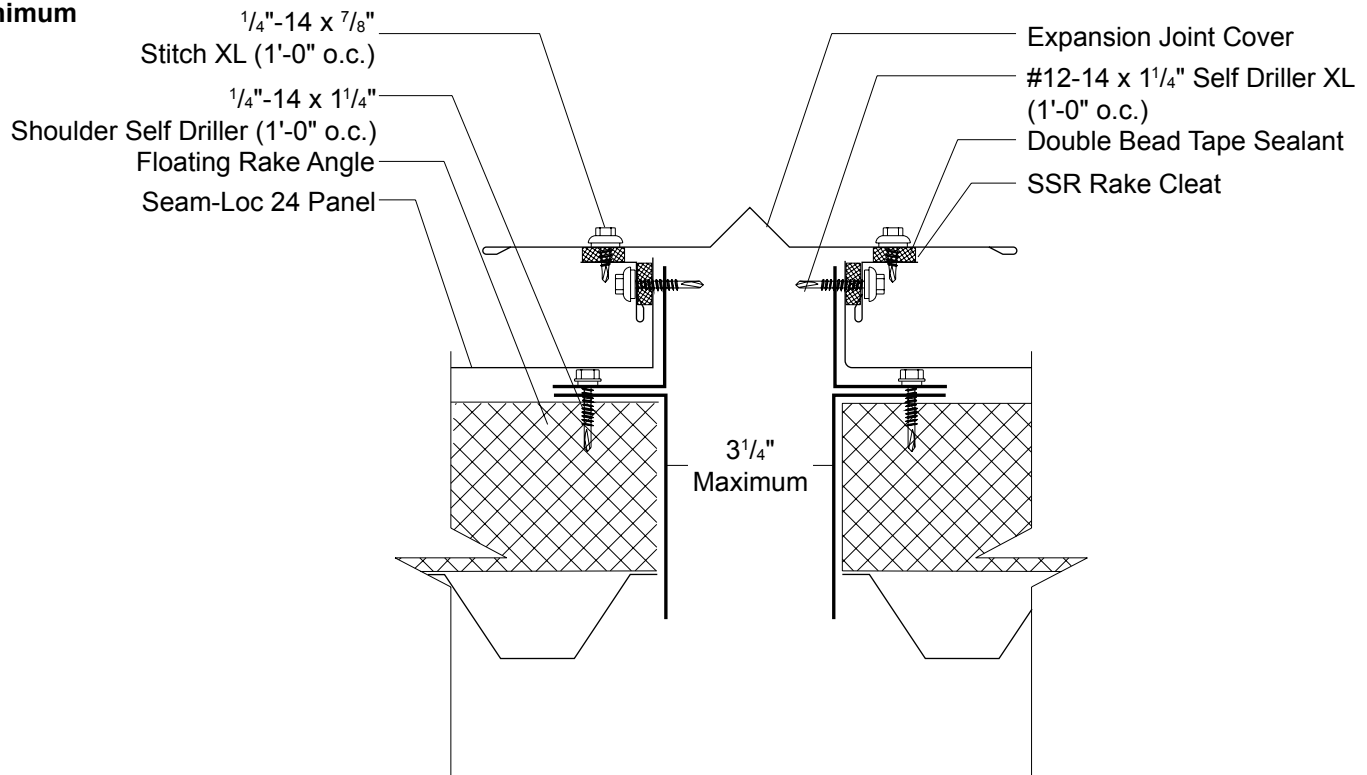
Seam-Loc 24 Fastening Pattern



INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Metal Outside Closures over Double Bead Tape Sealant. Before continuing make sure Metal Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once Metal Outside Closure is set in Double Bead Tape Sealant, fasten through closure, sealant, panel and into Compression Plate with (6) #12-14 x 1" SD N/W per panel. C-Clamps may be removed once Metal Outside Closures have been fastened.
5. Once all Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures. Tube Sealant must be used to fill gaps around Metal Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of Metal Outside Closures with 1/4"-14 x 7/8" Stitch XL at the spacing shown above and to parapet wall with appropriate fastener, 1'-0" o.c.
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.

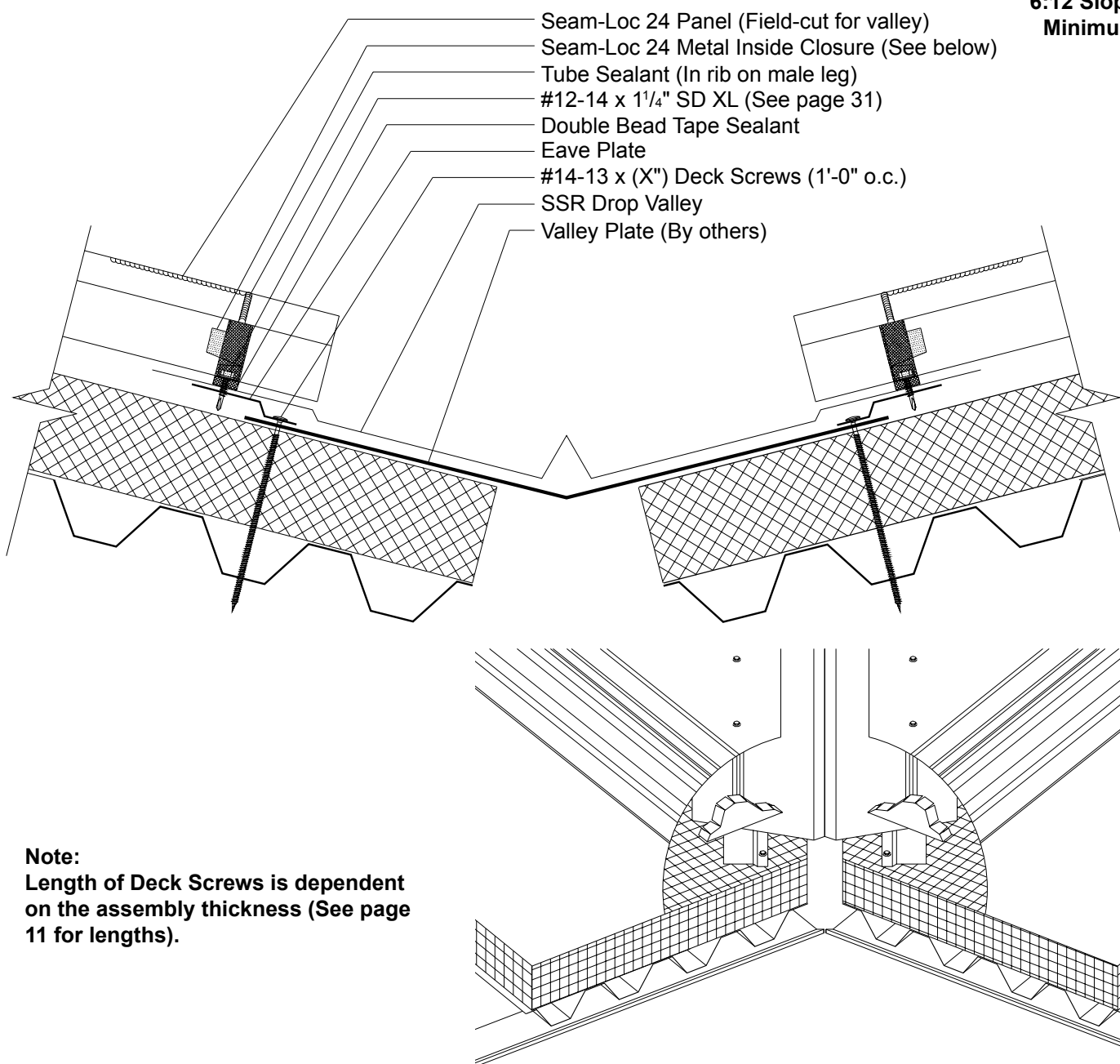
**1/4:12 Slope
Minimum**



INSTALLATION NOTES

Floating Rake Angles and Seam-Loc 24 Panels must be installed prior to expansion joint installation
(See pages 24-36).

1. With Seam-Loc 24 panels nested against Seam-Loc 24 Floating Rake Angles, apply a row of Double Bead Tape Sealant across vertical side of panel ribs on both sides of expansion joint. (See page 34 for proper bending of panel if off module.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant on both sides. Fasten through SSR Rake Cleat, Double Bead Tape Sealant, panel and into Floating Rake Angle with #12-14 x 1 1/4 inch Self Driller XL screws, 1'-0 inch o.c. on both sides.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleats.
4. Install Expansion Joint Cover on top legs of SSR Rake Cleat. Fasten through Expansion Joint Cover, Double Bead Tape Sealant and into SSR Rake Cleat with 1/4 inch-14 x 7/8 inch Stitch XL, 1'-0 inch o.c. on both sides of Expansion Joint Cover.
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2 inch placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2 inch o.c.

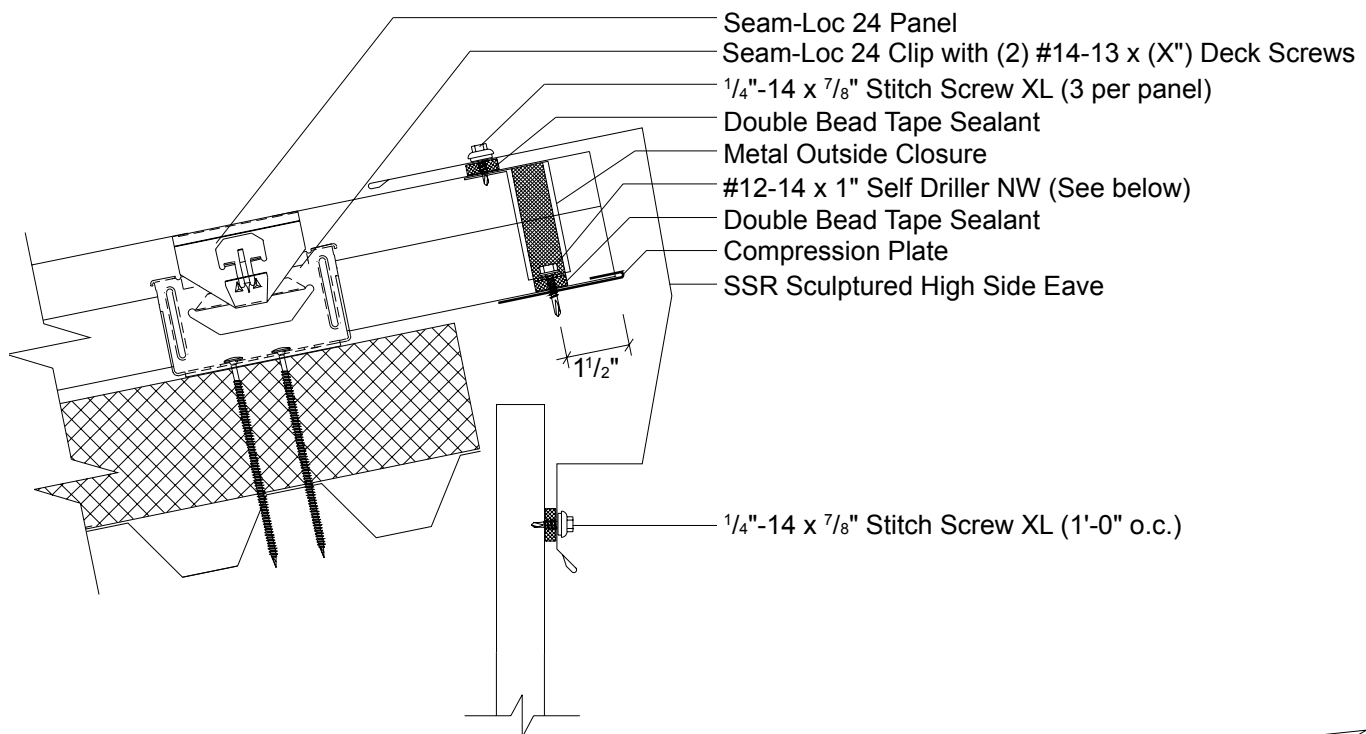
6:12 Slope
Minimum**Note:**

Length of Deck Screws is dependent on the assembly thickness (See page 11 for lengths).

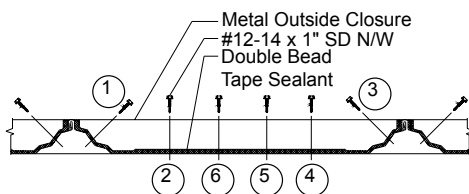
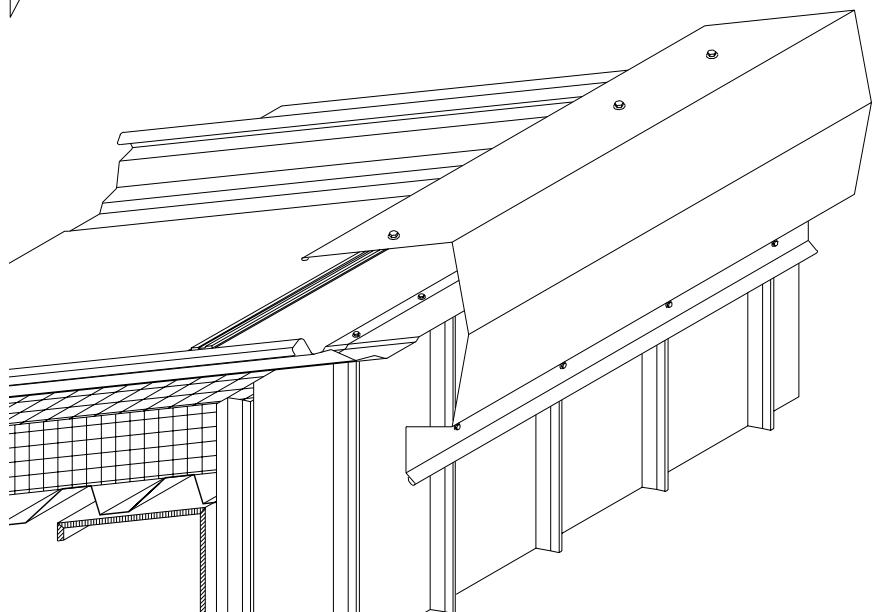
INSTALLATION NOTES

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 ms-HT be installed under Valley flashing for added moisture protection.

1. Install SSR Drop Valley back against previously installed Eave Plates. To hold SSR Drop Valley in place fasten to substrate with #10-16 x 1" Pancake Head Driller, 4'-0" o.c. into top leg of Eave Plate.
2. Apply a row of Double Bead Tape Sealant across both sides of the SSR Drop Valley so that the sealant is centered over the top leg of the Eave Plate.
3. 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.
4. Once Metal Inside Closures and panels have been installed and properly sealed, (See pages 26 and 27) fasten through panel, Double Bead Tape Sealant and SSR Drop Valley into Eave Plate with #12-14 x 1 1/4" Self Driller XL screws.



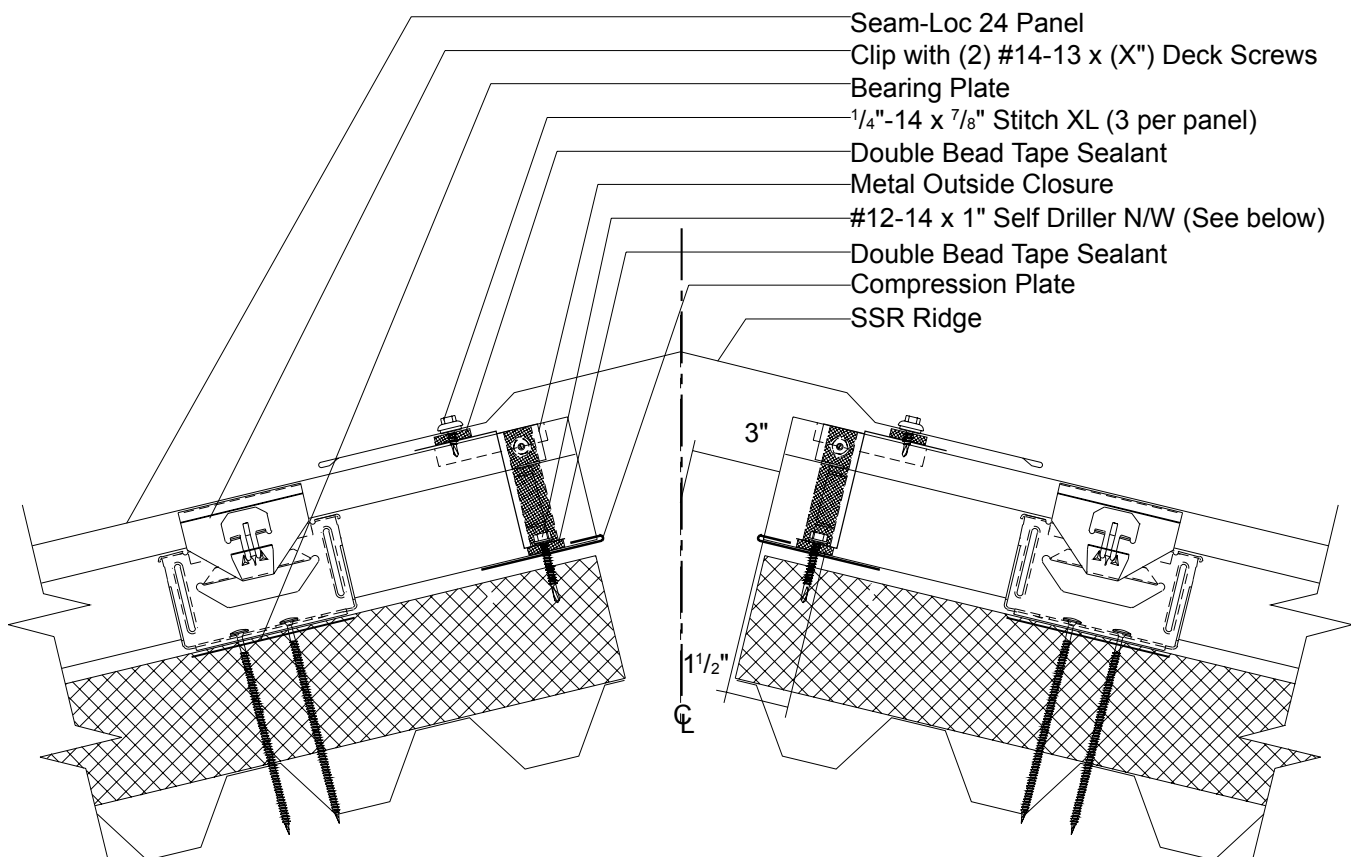
Note:
Length of Deck Screws is dependent on the assembly thickness (See page 11 for lengths).



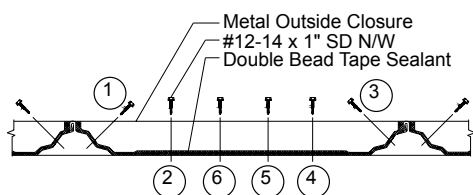
Seam-Loc 24 Fastening Pattern

INSTALLATION NOTES

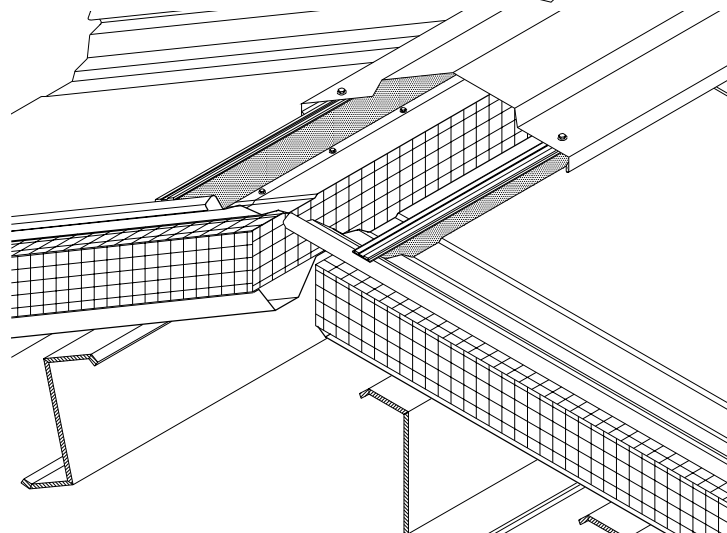
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of high side eave assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Metal Outside Closures over Double Bead Tape Sealant. Before continuing make sure Metal Outside Closure placement will accommodate SSR Sculptured High Side Eave.
4. Once Metal Outside Closure is set in sealant, fasten through closure, sealant, panel and into Compression Plate with (6) #12-14 x 1" SD N/W per panel. C-Clamps may be removed once Metal Outside Closures have been fastened.
5. Once all Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures. Tube Sealant must be used to fill gaps around Metal Outside Closures. Apply appropriate sealant and closures to wall.
6. Install SSR Sculptured High Side Eave and secure to top leg of Metal Outside Closures with 1/4"-14 x 7/8" Stitch XL at the spacing shown above.
7. Fasten SSR Sculptured High Side Eave to finished wall with appropriate fastener, 1'-0" o.c.
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.

**Note:**

Length of Deck Screws is dependent on the assembly thickness (See page 11 for lengths).

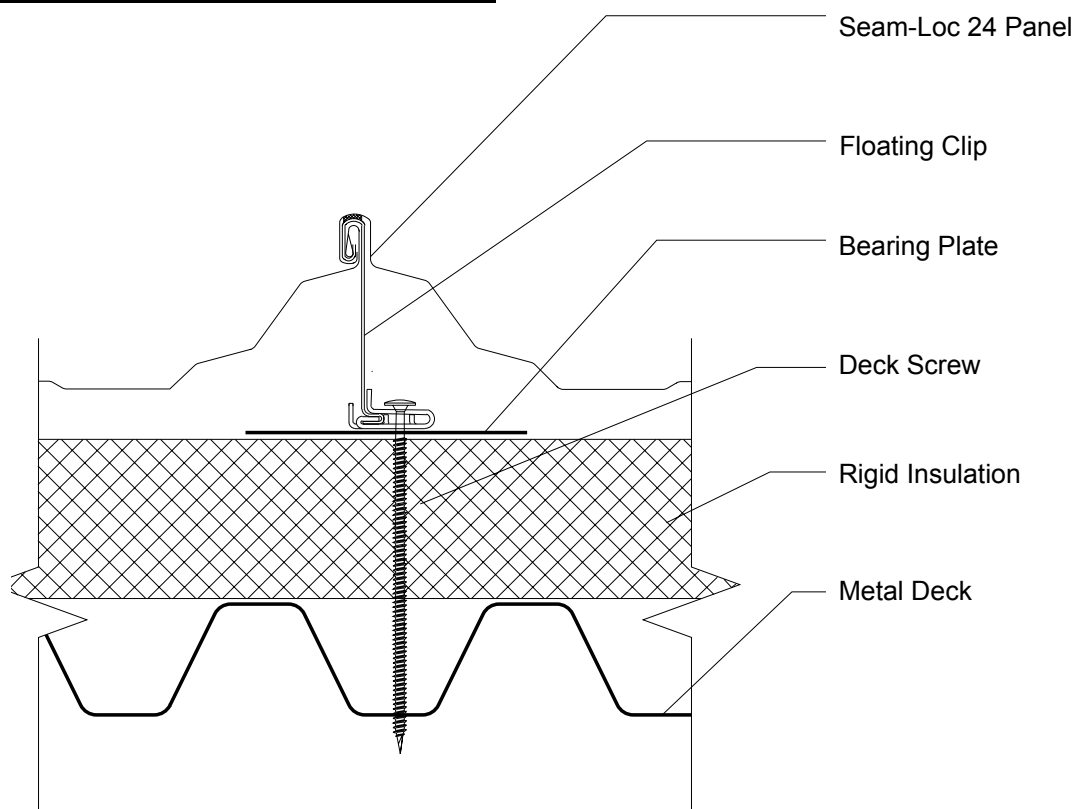


Seam-Loc 24 Fastening Pattern

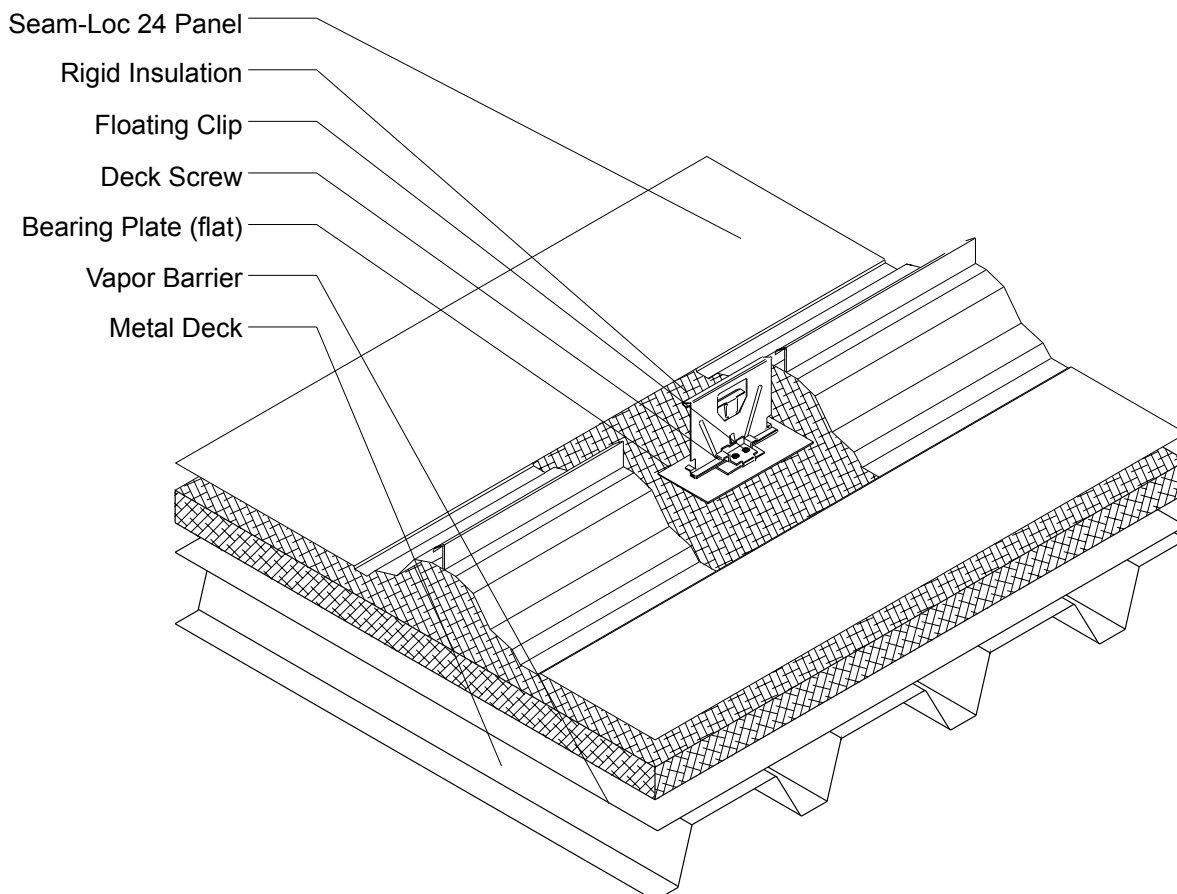
**INSTALLATION NOTES**

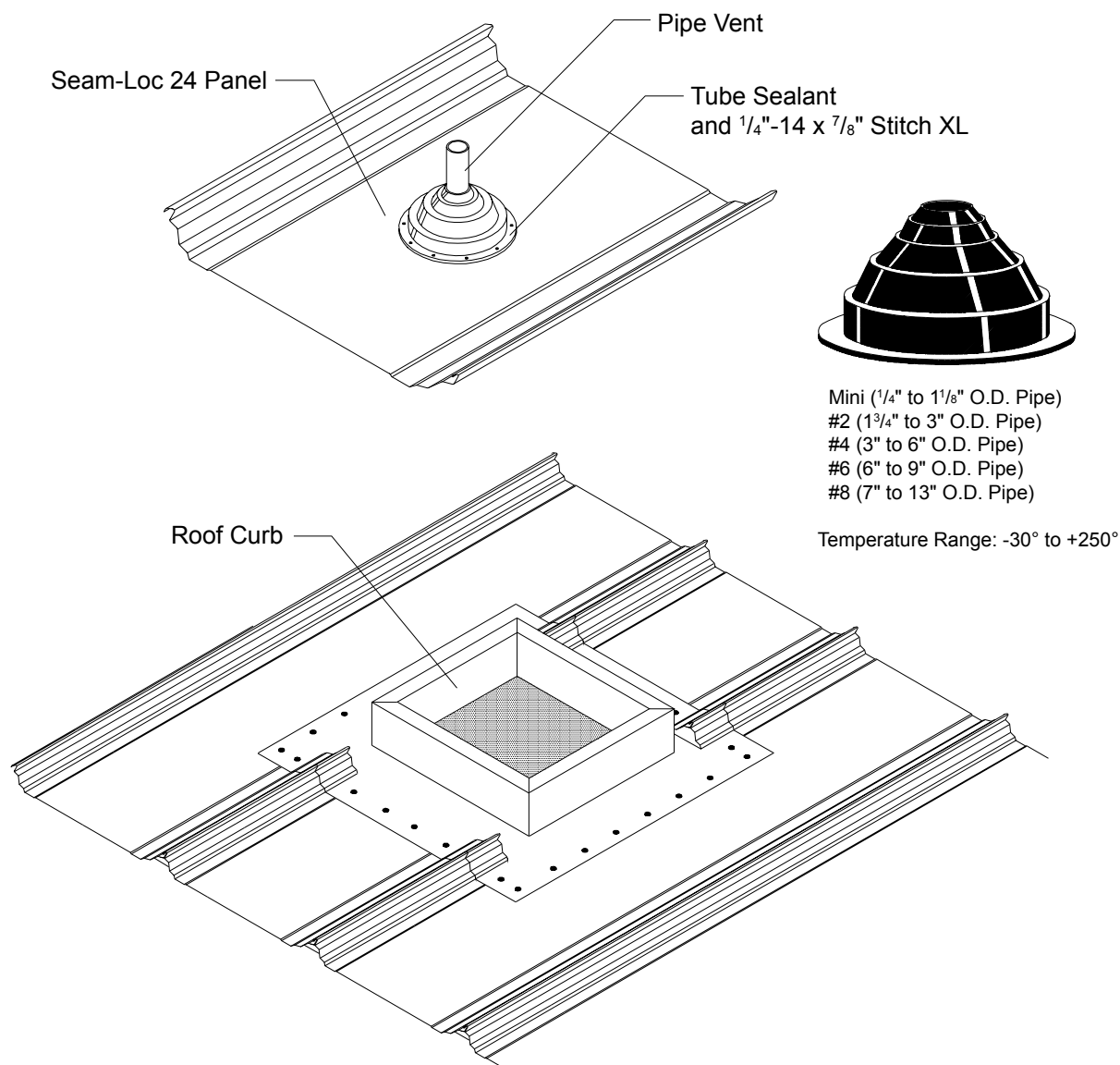
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of ridge assembly. Use C-Clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1½" from panel end on both sides of ridge.
3. Install Metal Outside Closures over Double Bead Tape Sealant. Before continuing make sure Metal Outside Closure placement will accommodate SSR Ridge.
4. Once Metal Outside Closure is set in Double Bead Tape Sealant, fasten through Metal Outside Closure, Double Bead Tape Sealant and into Compression Plate with (6) #12-14 x 1" SD N/W per panel. C-Clamps may be removed once Metal Outside Closures have been fastened.
5. Once all Metal Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Metal Outside Closures on both sides of ridge. Tube Sealant must be used to fill gaps around Metal Outside Closures.
6. Install SSR Ridge and secure to top leg of Metal Outside Closures with ¼"-14 x 7/8" Stitch XL at the spacing shown above.
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, 2½" o.c.

FLOATING SYSTEM WITH BEARING PLATE



FLOATING SYSTEM WITH BEARING PLATE ISOMETRIC





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.

Curbs can be obtained from any of the following manufacturers:

| | | | |
|-------------------------|---------------|-------------|---------------|
| KCC International, Inc. | (800)382-2872 | Custom Curb | (800)251-3001 |
| ThyCurb | (800)666-2872 | LM Curbs | (800)284-1412 |
| Curbs Plus, Inc. | (888)639-2872 | FastCurbs | (877)728-3278 |

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 Seam-Loc 24 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 1/4"-14 x 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 accumulation may cause apparent discoloration of the paint when it has been exposed in some dirt-laden 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 damage the coating surface.

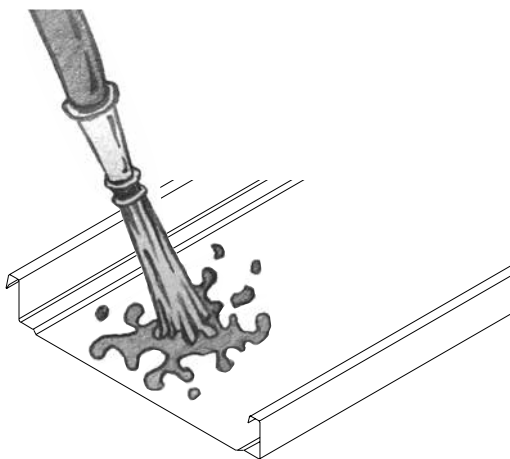
Mildew may occur in areas subject to high humidity but is not normally a problem due to the high inherent mildew resistance of the baked finish that is used. However, mildew can grow on dirt and spore deposits in some cases. To remove mildew along with the dirt, the following solution is recommended.

- $\frac{1}{3}$ 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

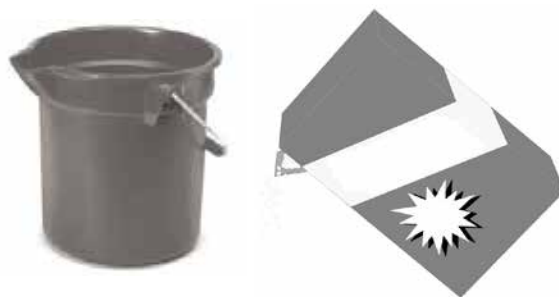
Strong solvents and abrasive type cleaners should be avoided. Most organic solvents are flammable and toxic, and must be handled accordingly. When using a solvent, consult maintenance professionals and label instructions for proper handling and disposal of washings. If required, a mild solvent such as 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**