Weaver
CONSTRUCTION MANAGEMENT
3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

# SUBMITTAL TRANSMITAL

June 26, 2012
Submittal No: 07501-004

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Heath Steel**
141 Racquette Dr
Fort Collins, CO 80522
970-490-8031 Randy Gates
rgates@heathsteel.com

SUBJECT: Operation Building Structural Standing Seam Roof - Metal Sales Seam Lock and Wall Panels - Custom Panels

SPEC SECTION: 07501: Metal Roof and Wall Panels

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver Construction Management and, unless indicated otherwise, has been found to be in conformance with the intent of the contract documents.

| Contractor's Stamp: | Engineer's Stamp: |
|---|---|
| Date: 6/26/12<br>Reviewed by: John Jacob<br><br>(X) Reviewed Without Comments<br>( ) Reviewed With Comments<br><br>ENGINEER'S COMMENTS:_____ | |

Heath Steel

# PRODUCT SUBMITTAL

**SUBMITTAL # 07501-001**

**DATE:** 25-Jun-12

**ENGINEER/ ARCHITECT:** GMS, Inc. Consulting Engineers
611 N. Weber, Suite 300
Colorado Springs
David Frisch
(719) 475-2935
drfrisch@gmsengr.com

**SUBCONTRACTOR/ SUPPLIER:** Custom Panel Systems
3991 Green Park Road
Saint Louis, MO 63125
Contact - George Bagot
Phone - (314) 894-3903
panels4you@aol.com

Project # 12MB161S

Project: HDT WRF - Operations Building Addition

Product: Wall Panel System

Spec Section: 07501

**Schedule:**
Required On Site
Delivery Time
Fabrication Time
Order Time
Review Time
Latest Submittal Date

*CONTRACTOR STAMP*

*ARCHITECT/ENGINEER STAMP*

[X] Reviewed*

[ ] Forwarded to Architect with notes

[ ] Rejected/Returned to Subcontractor for resubmittal

* This submittal has been reviewed for general conformance with the design intent. Subcontractor is responsible for dimensions, performance, information that pertains to the fabrication or techniues of construction safety, and compliance with applicable governing agencies.

Comments:

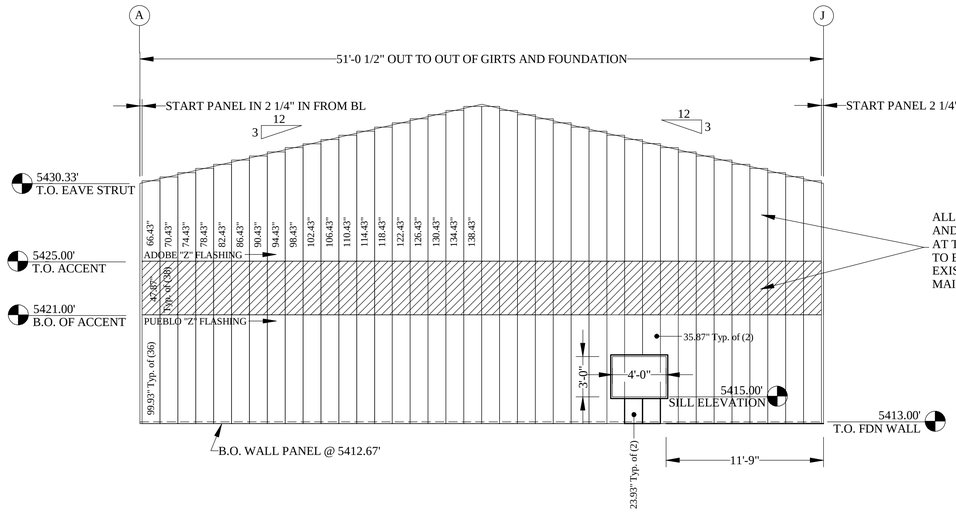
I am assuming we don't need to submit the marked up spec section for this submittal as it was provided with the E&M Submittal. We acknowledge and agree to all correspondence that was part of that submittal.

Comments:

Randy Hatch

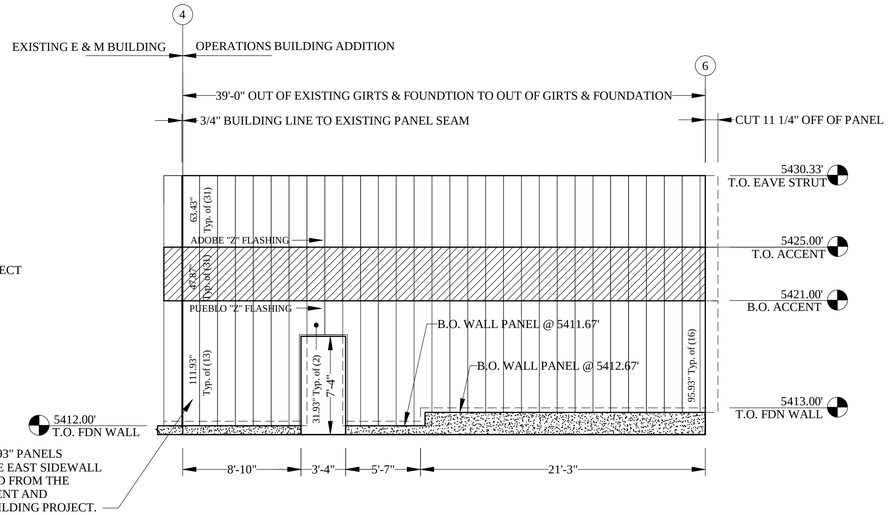
HEATH STEEL

ARCHITECT/ENGINEER



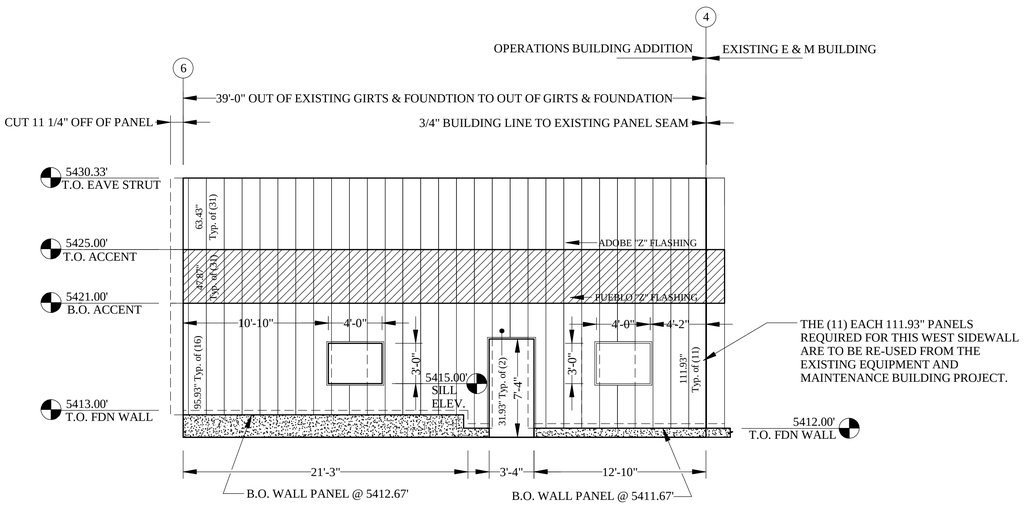

## NORTH ENDWALL PANEL ELEVATION

GRID LINE 4 NOT TO SCALE




## EAST SIDEWALL PANEL ELEVATION

GRID LINE A NOT TO SCALE




## WEST SIDEWALL PANEL ELEVATION

NOT TO SCALE GRID LINE J

INSTALLATION NOTES:

1) Installer of the wall panel system is to completely familiarize themselves with the 27-page install manual from the manufacturer.
2) Roof system and roof trims are by others and not detailed in these drawings.
3) Field cut the wall panels to rake of the roof at the endwalls.
4) Gutter and downspouts are by others and not shown in these drawings.
5) Use M-1 Structural sealant in the vertical joints of the wall panel seams.
6) Use sealant in the horizontal stacked wall panel joints of the proper color.
7) Start sidewall panel on Building Line (BL) at the corners.
8) Start endwall panel 2 1/4" in from Building Line (BL) at the corners.
9) Reference the metal building manufacturer's erection drawings and general detail manual for specific information pertaining to the erection of the building's structure.
10) Touch-up the heads of all rivets with the panel manufacturer's supplied matching touch-up paint.
11) The vertical leg at the end of the wall panel is to be on the top side and should not need to be cut. Layout installation of these panels to accommodate this requirement.
12) The upper panels and the accent panels at the at the North Endwall of this Operations Building Addition are to be re-used from the existing Equipment & Maintenance Storage Building.

WALL PANEL COLOR SELECTIONS
SELECTED FROM CUSTOM PANEL SYSTEMS
STANDARD COLORS:

WALL PANEL COLOR: Pueblo

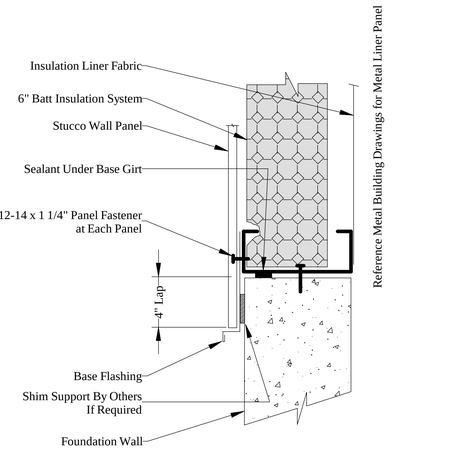
ACCENT WALL PANEL COLOR: Adobe

HEATH STEEL
P.O. BOX 473
141 RACQUETTE DR.
FORT COLLINS, CO 80522

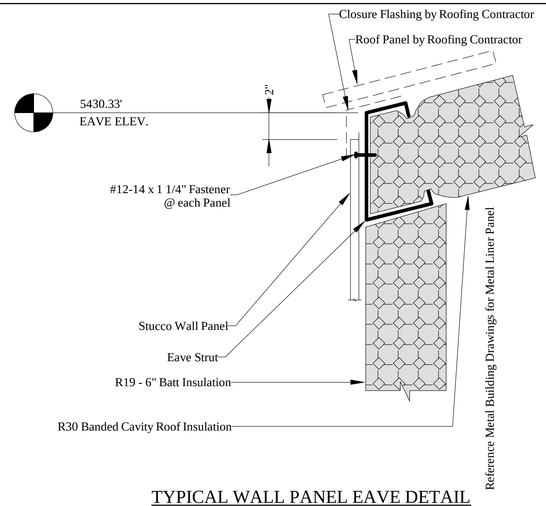
(970) 490-8031

**HAROLD D. THOMPSON**
**REGIONAL WATER RECLAMATION FACILITY**
**OPERATIONS BUILDING ADDITION**
**14651 LOWER FOUNTAIN HEIGHTS, FOUNTAIN, CO**

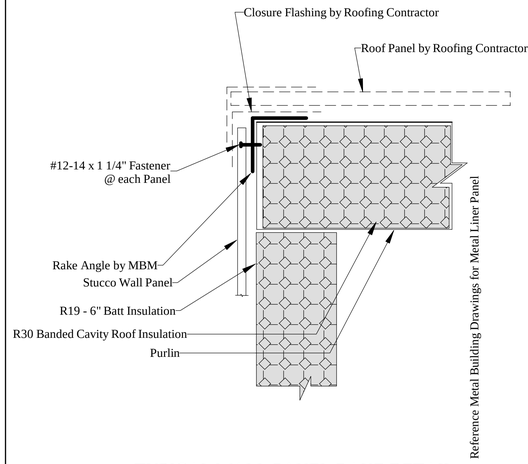
**ISSUED FOR:** APPROVAL
**DATE:** JUNE 25, 2012



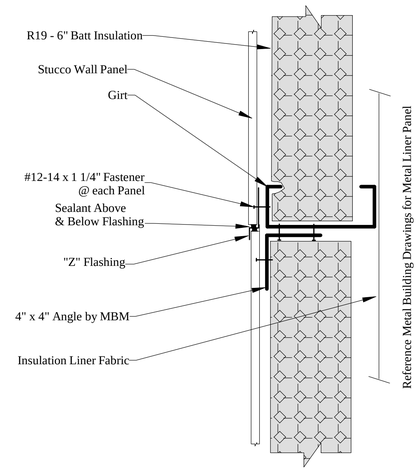

TYPICAL WALL PANEL BASE DETAIL



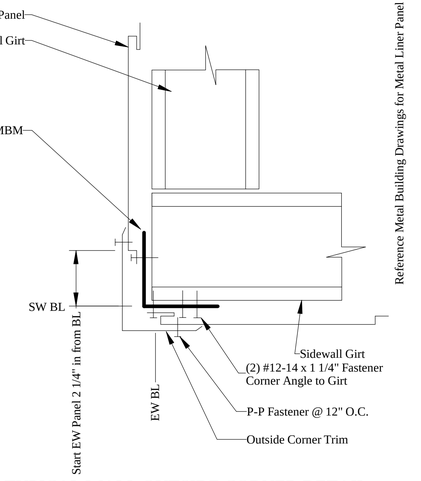

TYPICAL WALL PANEL EAVE DETAIL



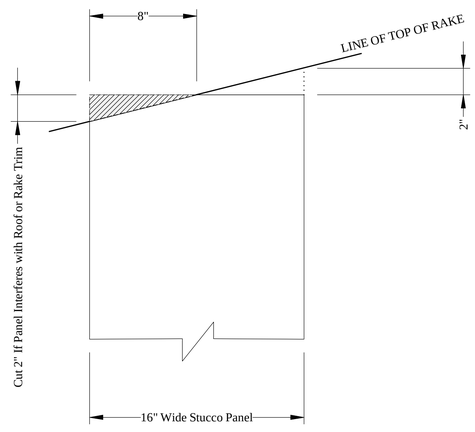

TYPICAL WALL PANEL RAKE DETAIL




TYPICAL STACKED WALL PANEL JOINT DETAIL




TYPICAL WALL OUTSIDE CORNER DETAIL




TYPICAL WALL PANEL AT RAKE DETAIL

INSTALLATION NOTES:

1) Installer of the wall panel system is to completely familiarize themselves with the 27-page install manual from the manufacturer.
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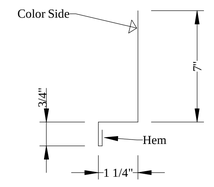
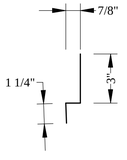
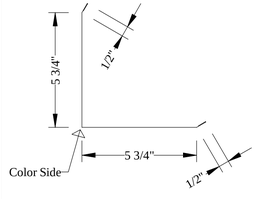



OUTER BASE FLASHING
Not to Scale




"Z" FLASHING
Not to Scale




OUTSIDE CORNER TRIM
Not to Scale

HEATH STEEL
P.O. BOX 473
141 RACQUETTE DR.
FORT COLLINS, CO 80522

(970) 490-8031

**HAROLD D. THOMPSON**
**REGIONAL WATER RECLAMATION FACILITY**
**OPERATIONS BUILDING ADDITION**
**14651 LOWER FOUNTAIN HEIGHTS, FOUNTAIN, CO**

**ISSUED FOR:** **DATE:**
APPROVAL JUNE 25, 2012

**2 of 2**
GENERAL DETAILS

Heath Steel

# PRODUCT SUBMITTAL

**SUBMITTAL # 07501-002**

**DATE:** 26-Jun-12

**ENGINEER/ ARCHITECT:** GMS, Inc. Consulting Engineers
611 N. Weber, Suite 300
Colorado Springs
David Frisch
(719) 475-2935
drfrisch@gmsengr.com

**SUBCONTRACTOR/ SUPPLIER:** Metal Sales Manufacturing
7990 East I-25, Frontage Rd.
Longmont, CO 80504
Contact - Korey Patterson
Phone - (303) 702-5440
kpatterson@metalsales.us.com

Project # 12MB161S

Project: HDT WRF - Operations Building Addition

Product: Roof Panel System

Spec Section: 07501

**Schedule:**
Required On Site
Delivery Time
Fabrication Time
Order Time
Review Time
Latest Submittal Date

*CONTRACTOR STAMP*

*ARCHITECT/ENGINEER STAMP*

[X] Reviewed*

[ ] Forwarded to Architect with notes

[ ] Rejected/Returned to Subcontractor for resubmittal

* This submittal has been reviewed for general conformance with the design intent. Subcontractor is responsible for dimensions, performance, information that pertains to the fabrication or techniues of construction safety, and compliance with applicable governing agencies.

Comments:

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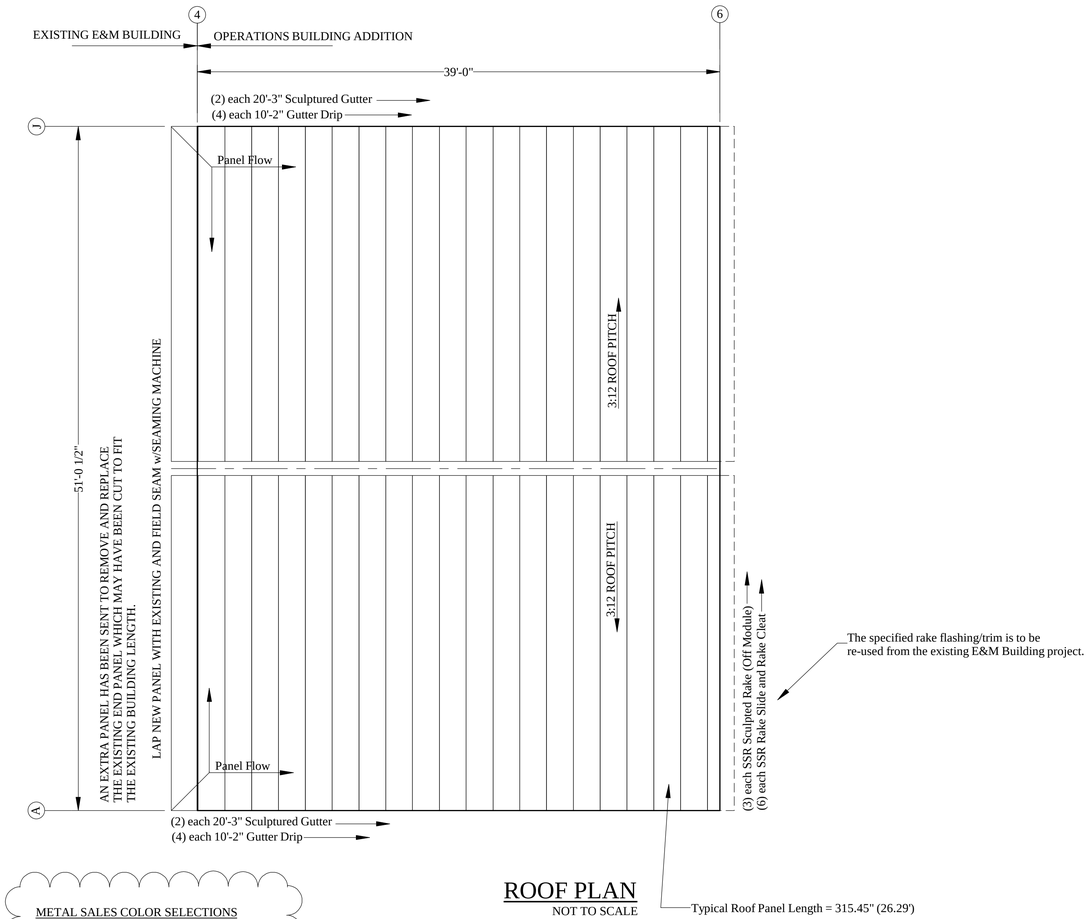
Comments:

Randy Hatch

HEATH STEEL

ARCHITECT/ENGINEER




ROOF PLAN
NOT TO SCALE

METAL SALES COLOR SELECTIONS

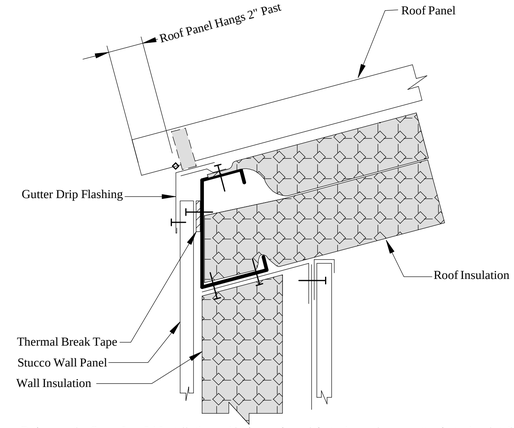
Loc-Seam 24 Roof: Colonial Red

Eave Gutter & Rake Trim: Colonial Red

Downspouts: Colonial Red

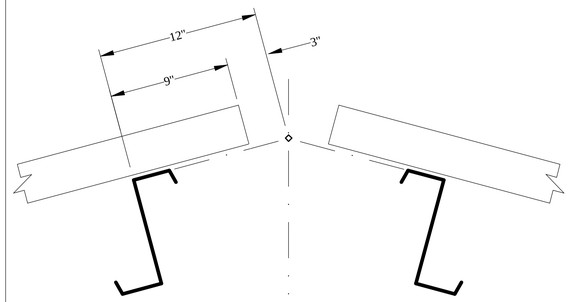
ROOFING GENERAL NOTES:

1) Prior to roof installation, it is the responsibility of the installer to familiarize themselves with the Metal Sales Installation Guide for the Seam-Loc 24 product.
2) Reference the Metal Sales Seam-Loc 24 Installation Guide for all standard details,
3) Reference the metal building's framing on the Chief Buildings erection drawings.
4) Gutter support straps are required on every panel seam at both eaves.
5) Install (1) each downspout drops with elbows at each eave.
6) Delicately remove the last roof panel on the existing building if it has been cut to width. Do not damage the existing roof panel's seam so the machine can properly seam this joint.




Reference the Seam-Loc 24 Installation guide for roof panel fastening and eave gutter fastening details.

ROOF PANEL PLACEMENT AT EAVE DETAIL




Reference the Seam-Loc 24 Installation guide for roof panel fastening and ridge cap fastening details.

Insulation not shown for clarity, but must be installed prior to roof panel installation.

ROOF PANEL PLACEMENT AT PEAK DETAIL

HEATH STEEL
P.O. BOX 473
141 RACQUETTE DR.
FORT COLLINS, CO 80522

(970) 490-8031

**HAROLD D. THOMPSON**
**REGIONAL WATER RECLAMATION FACILITY**
**OPERATIONS BUILDING ADDITION**
**14651 LOWER FOUNTAIN HEIGHTS, FOUNTAIN, CO**

**ISSUED FOR:** APPROVAL
**DATE:** JUNE 26, 2012

# RS1 of 1
ROOF SHEETING

# CUSTOM PANEL SYSTEMS

3991 Green Park Rd. • St. Louis, MO 63125 • 314.631.9244 FAX 314.631.3003

## *Pre-Finished Stucco Wall Panels*

Standard Colors



SUMMER

PUEBLO

SUNSET

MESA

ADOBE

DUSK

EVEREST

ASH

GRAY

SLATE

HACIENDA

DUNE

HORIZON

SKY

OLIVE

*NOTE: These color chips are to give a basic representation of standard colors. Slight color variations may occur between sample materials and finished product. Samples are not intended to show texture of actual panels.

# CUSTOM PANEL SYSTEMS

3991 Green Park Rd. • St. Louis, MO 63125 • 314.894.3903 Fax 314.631.3003
www.CustomPanelSystems.com

# Fax

Phone 314-894-3903
Fax 314-631-3003

To: RANDY GATES From: GEORGE BAGOT

Company: HEATH STEEL Pages: 7

Fax: 970-490-8081 Date: 12/6/11

Re: CC:

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

RANDY -

HERE IS THE INFORMATION YOU REQUESTED.

THANKS.

# CUSTOM PANEL SYSTEMS
# PRE-FINISHED STUCCO WALL PANEL
# 20 GA STEEL, 16" WIDE
(WITH M-1 STRUCTURAL SEALANT IN SIDE JOINTS)

## NEGATIVE DESIGN LOADS

| SPAN (FT) | ULTIMATE TEST LOAD (PSF) | DESIGN LOAD (PSF) |
|---|---|---|
| 2 | 161.0 | 107.0 |
| 2.5 | - | 100.2 |
| 3 | - | 93.5 |
| 3.5 | - | 86.8 |
| 4 | - | 80.0 |
| 4.5 | - | 73.3 |
| 5 | 100.2 | 66.6 |

NOTES:

1) The above loads were derived from uplift tests done in accordance with ASTM E1592-95 (see Farabaugh Engineering and Testing , Inc. Test Report No. T201-01 for specific test data)

2) Design values are interpolated from tests performed at spans of 2'-0" and 5'-0" only.

3) Design Load contains a 2.0 factor of safety and a 33% increase due to wind per AISI 1996.

4) This material is subject to change without notice. Please contact Custom Panel for most current data.

5) Yield of steel min. 50 ksi.

Project No. T201-01

| TEST DATA FOR 16" CUSTOM WALL PANEL 20 GA W/SEALANT, 3 SPANS @ 5 '-0" oc | | | | | | | |
|---|---|---|---|---|---|---|---|
| | DEFLECTION DIAL READINGS (INCHES) | | | | | | |
| LOAD (PSF) | DIAL 1 | DIAL 2 | DIAL 3 | DIAL 4 | DIAL 5 | DIAL 6 | REMARKS |
| | | | | | | | |
| 1.9 | 0 | 0 | 0 | 0 | 0 | 0 | PANEL WT. |
| 12.3 | 0.166 | 0.079 | 0.1 | 0.122 | 0.081 | 0.134 | |
| 1.9 | 0.027 | -0.027 | 0.001 | -0.012 | 0.015 | 0.01 | PANEL WT. |
| 17.5 | 0.232 | 0.161 | 0.125 | 0.185 | 0.085 | 0.197 | |
| 1.9 | 0.055 | -0.033 | 0.01 | -0.007 | 0.037 | 0.018 | PANEL WT. |
| 22.7 | 0.307 | 0.272 | 0.239 | 0.274 | 0.093 | 0.263 | |
| 1.9 | 0.082 | -0.005 | 0.033 | 0.024 | 0.052 | 0.045 | PANEL WT. |
| 27.9 | 0.398 | 0.382 | 0.304 | 0.364 | 0.115 | 0.352 | |
| 1.9 | 0.125 | 0.034 | 0.062 | 0.048 | 0.077 | 0.088 | PANEL WT. |
| 33.1 | 0.51 | 0.472 | 0.417 | 0.467 | 0.177 | 0.456 | |
| 1.9 | 0.153 | 0.044 | 0.094 | 0.086 | 0.104 | 0.141 | PANEL WT. |
| 43.5 | 0.681 | 0.649 | 0.579 | 0.661 | 0.222 | 0.58 | |
| 1.9 | 0.263 | 0.166 | 0.173 | 0.197 | 0.154 | 0.219 | PANEL WT. |
| 53.9 | 0.809 | 0.839 | 0.738 | 0.8 | 0.266 | 0.749 | |
| 1.9 | 0.288 | 0.286 | 0.277 | 0.317 | 0.236 | 0.349 | PANEL WT. |

ULTIMATE TEST LOAD = 100.2 PSF (FASTENER PULLOVER)

NOTE: SEE SKETCH 1 FOR LOCATION OF FASTENER PULLOVER.

WITHOUT SEALANT

Project No. T142-01

| | TEST DATA FOR 16" CUSTOM WAL PANEL 20 GA 3 SPANS @ 5'-0" oc | | | | | | |
|---|---|---|---|---|---|---|---|
| | DEFLECTION DIAL READINGS (INCHES) | | | | | | |
| LOAD (PSF) | DIAL 1 | DIAL 2 | DIAL 3 | DIAL 4 | DIAL 5 | DIAL 6 | REMARKS |
| 1.9 | 0 | 0 | 0 | 0 | 0 | 0 | PANEL WT. |
| 7.1 | 0.097 | 0.109 | 0.08 | 0.157 | 0.009 | 0.093 | |
| 1.9 | 0.01 | 0.008 | 0.018 | 0.008 | -0.002 | 0 | PANEL WT. |
| 12.3 | 0.184 | 0.359 | 0.186 | 0.404 | 0.05 | 0.331 | |
| 1.9 | 0.026 | 0.043 | 0.021 | 0.05 | 0.008 | 0.029 | PANEL WT. |
| 17.5 | 0.263 | 0.57 | 0.263 | 0.657 | 0.093 | 0.529 | |
| 1.9 | 0.056 | 0.064 | 0.038 | 0.071 | 0.012 | 0.033 | PANEL WT. |
| 22.7 | 0.321 | 0.827 | 0.337 | 0.911 | 0.133 | 0.73 | |
| 1.9 | 0.085 | 0.08 | 0.056 | 0.094 | 0.029 | 0.053 | PANEL WT. |
| 27.9 | 0.393 | 1.047 | 0.394 | 1.148 | 0.162 | 0.94 | |
| 1.9 | 0.105 | 0.112 | 0.092 | 0.149 | 0.042 | 0.068 | PANEL WT. |
| 31.0 | | | | | | | SIDE JOINT |
| | | | | | | | DISENGAGEMENT |

NOTE: SEE SKETCH 1 FOR LOCATION OF SEAM DISENGAGEMENT.

THIS SHEET IS FOR THEIR SYSTEM WITHOUT SEALANT. WE ARE USING THE SPECIFIED M-1 STRUCTURAL SEALANT

# CUSTOM PANEL SYSTEMS
# PRE-FINISHED STUCCO WALL PANEL
# 20 GA STEEL, 16" WIDE W/O SEALANT

## NEGATIVE DESIGN LOADS

| SPAN (FT) | ULTIMATE TEST LOAD (PSF) | DESIGN LOAD (PSF) |
|---|---|---|
| 2 | 39.4 | 26.2 |
| 2.5 | - | 25.2 |
| 3 | - | 24.3 |
| 3.5 | - | 23.4 |
| 4 | - | 22.4 |
| 4.5 | - | 21.5 |
| 5 | 31.0 | 20.6 |

NOTES:

1) The above loads were derived from uplift tests done in accordance with ASTM E1592-95 (see Farabaugh Engineering and Testing , Inc. Test Report No. T142-01 for specific test data)

2) Design values are interpolated from tests performed at spans of 2'-0" and 5'-0" only.

3) Design Load contains a 2.0 factor of safety and a 33% increase due to wind per AISI 1996.

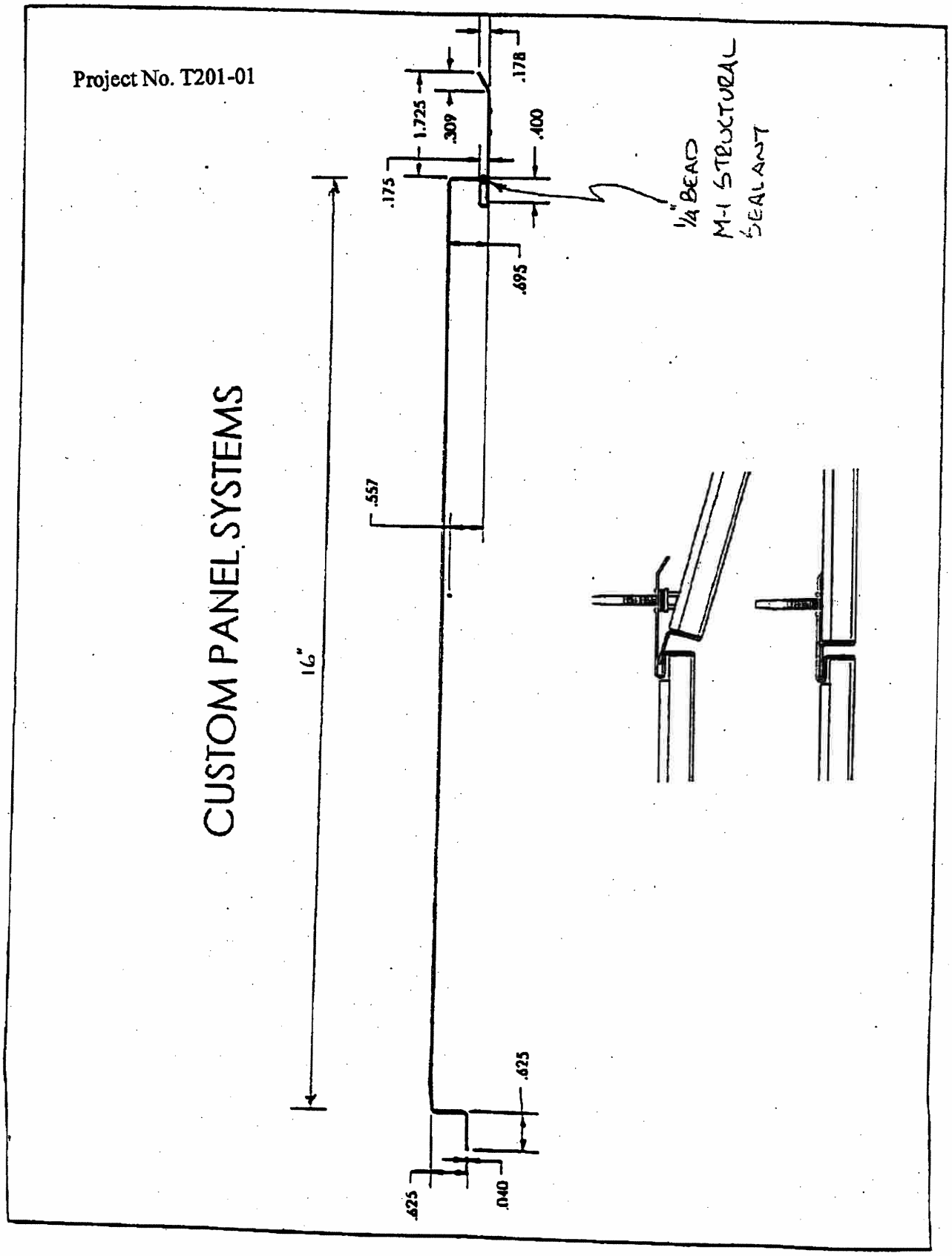
4) This material is subject to change without notice. Please contact Custom Panel for most current data.

5) Yield of steel min. 50 ksi.

THIS SHEET IS FOR THEIR SYSTEM WITHOUT SEALANT. WE ARE USING THE SPECIFIED M-1 STRUCTURAL SEALANT

Project No. T201-01

CUSTOM PANEL SYSTEMS



# *West Penn Testing Laboratories, Inc.*

1010 Industrial Blvd, New Kensington, PA 15068
Voice: (724)334-1900 Fax:(724)334-9785 E-mail: info@wptlabs.com


Date: 21-Aug-01
Page No.: 1 of 1

Project No. T201-01

## Summary Page: Tensile Testing of Sheet Steel

Client: Farabaugh Eng. & Testing, Inc.

| PIN # | Dimensions (in.) Width x Thickness | Area (sq.- in.) | Yield Point (lbs.) | Tensile Strength (lbs.) | Yield Strength (psi. ) | Tensile Strength (psi.) | Elongation (% in 2 in.) | n-Value |
|---|---|---|---|---|---|---|---|---|
| Custom panels 20ga | 0.5060 x 0.0356 | 0.0180 | 807 | 950 | 44850 | 52780 | 32.5 | 0.180 |

Test Method: ASTM E-8-00 (Yield point determined by 0.2% offset)
Equipment Used: Satec Vertex/60 HLV #1602, Extensometer # SE2-12.5/1231
Test Performed by: w. sackett

Respectfully Submitted,

WEST PENN TESTING LABORATORIES, INC.

# Custom Panel Systems

# STUCCO BUILDING PANELS

## *General Information*

### Application

**This concealed fastener, interlocking, exterior wall system provides a flat-surfaced, steel Stucco Building Panel with a textured coating to simulate the look and feel of Stucco.**

**This non-structural, Stucco Wall system may be used as the primary exterior building surface for newly constructed pre-engineered metal buildings.**

**It may also be used in combination with other surfacing materials on new or existing structures. For resurfacing applications, the Stucco Panels may be applied over masonry, concrete, brick, wood, composition siding or existing metal siding.**

### Material Specification

**Stucco Wall Panels are manufactured from 20-gauge, G-90 galvanized coil steel that is primer coated on both sides with a baked-on coil coat finish.**

**Standard Trim profiles for use at Stucco Panel base, building corners, window and door openings are shipped with each order as required. Special Trim sections are also available. All visible Trim is Stucco coated.**

### Manufacturing Process

**Stucco Building Panels are roll formed and edge formed to Architect / Engineer / Builder specified lengths from continuous coil steel. Stucco coating is applied after which the Wall Panels are baked and packaged, ready for shipment.**

**The computerized manufacturing process is continuous, without handling, from decoiling to packaging.**

## Stucco Finish

**The specially formulated texture coating is a fiber reinforced polymer and crushed aggregate composition that is oven baked to provide excellent adhesion to the prime coated, galvanized steel Panel.**

**Fifteen standard colors are offered or custom color matching is available at no additional cost.**

## Design Assistance

**Headquarters Sales/Service personnel are available to assist builders, contractors, architects and metal building manufacturers with determination of Stucco Wall Panel and Trim requirements.**

**Printed and scaled architectural plans, construction drawings, building elevations and wall sections are helpful but not required for initial quotation.**

## Distribution

**Our Stucco Wall Panels are shipped from St. Louis, Missouri throughout the United States including Alaska and Hawaii.**

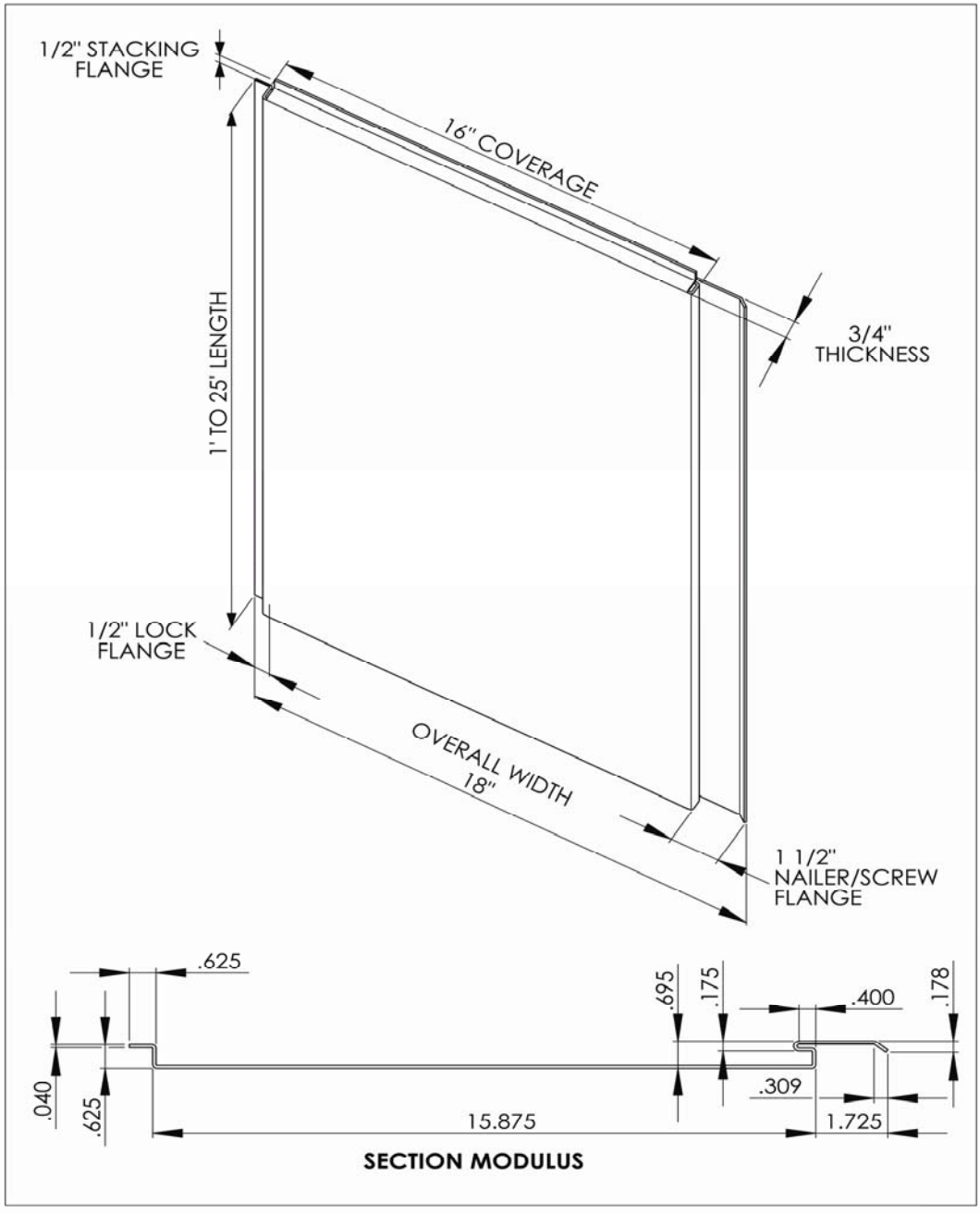
## Technical Service

**Service and installation questions are handled from our St. Louis headquarters. Most common questions are addressed in our Installation Manual but sales and engineering help are always as close as the telephone, fax or e-mail.**

## Warranty

**Panels and Trim carry a Twenty-Year Warranty against material and coating defect.**

**Our panels are custom manufactured for your application and supplied in any lengths ranging from 1’ to 25’ long. Each Panel has a 16” face (coverage) with a 1 ½” nailer flange on one edge and a ½” lock flange on the other edge for an overall width of 18”. The top flange is finished with a double 90° flange. These formed ends allow the panels to nest (end to end) for stacking up a vertical wall and gives the building the ability to utilize the panel for taller elevations.**



**Stucco Panels are installed left to right with each panel fastened to bottom, top and intermediate structural members. (Figure #1)**

**Each succeeding panel has the ½" left side lock flange inserted into the right side ½" pocket flange of the previously installed panel. (Figure #2)**

## TOP VIEW
## INTERLOCKING EDGE FLANGE

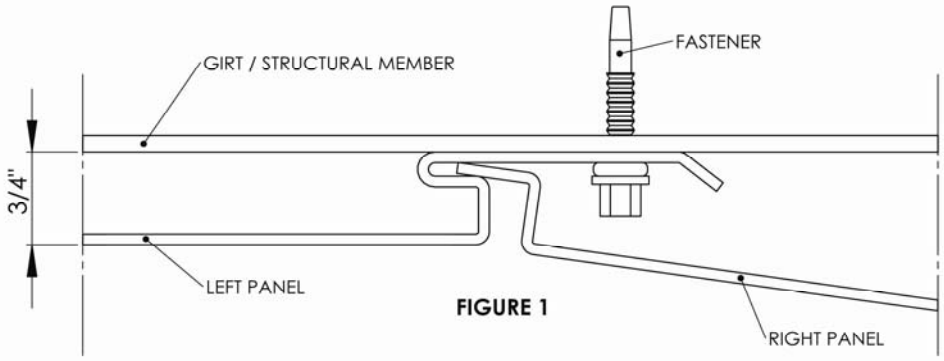



FIGURE 1

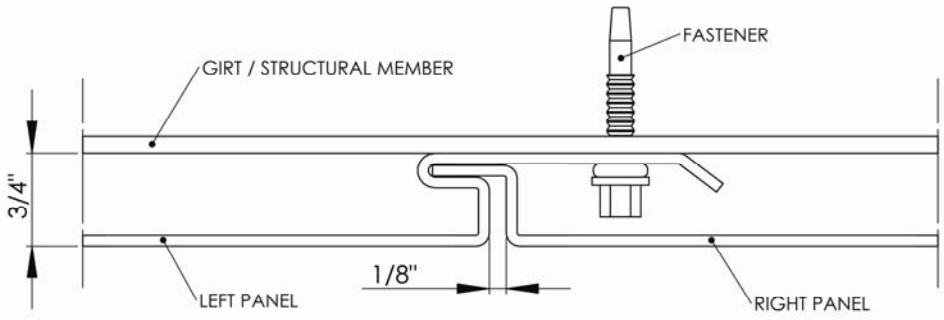


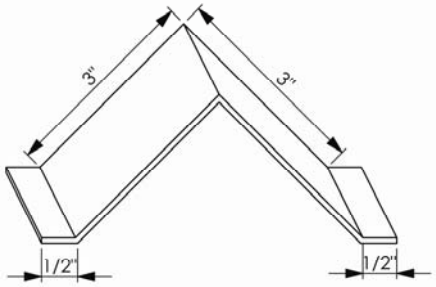

FIGURE 2

First the left panel is screwed into supporting girt / structural member.

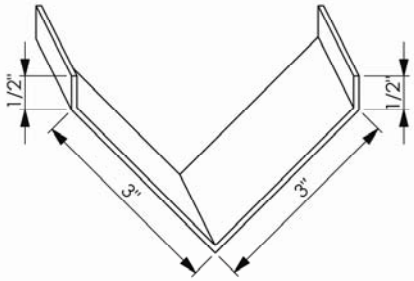
Second the right panel is inserted and interlocked to left panel then screwed in at next seam.

CUSTOM
PANEL
SYSTEMS

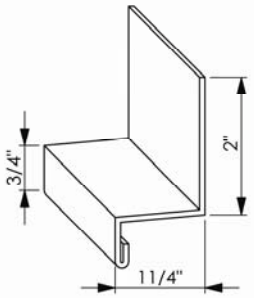
# Standard Trim Sections
# 10' Lengths



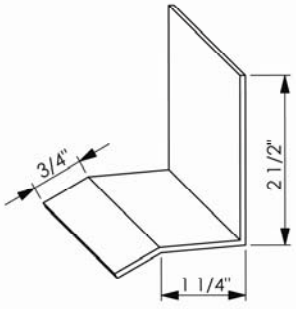

**Inside Corner Trim**
**Part A**




**Outside Corner Trim**
**Part B**



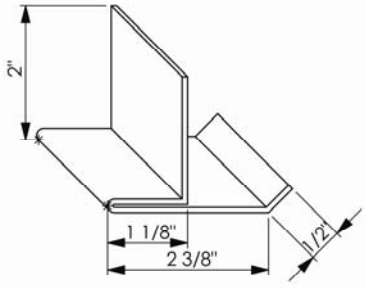

**Base Trim or Drip Cap**
**Part C**



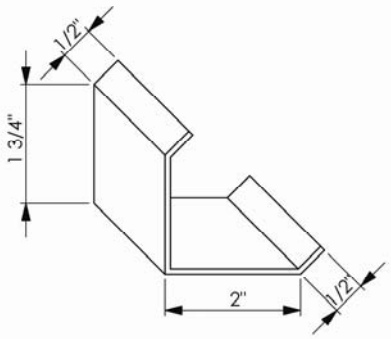

**Base Trim or Drip Cap**
**Part D**

CUSTOM
PANEL
SYSTEMS

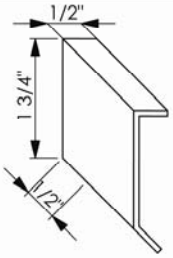
# Standard Trim Sections
# 10' lengths



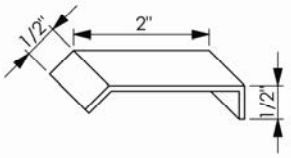

**Window & Door header Flashing - Part E**



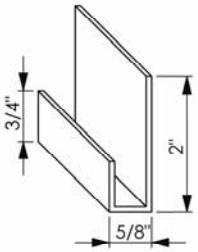

**Frame Opening Sill & Jamb Trim - Part F**



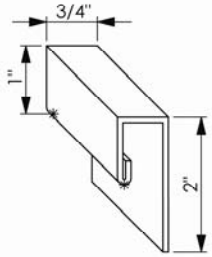

**Top Window & Door Trim Part - G**




**Top Wall, Rake & Utility Trim - Part H**



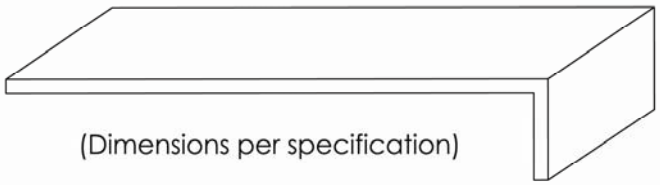

**(Unpainted) SubJamb Flashing Part I**



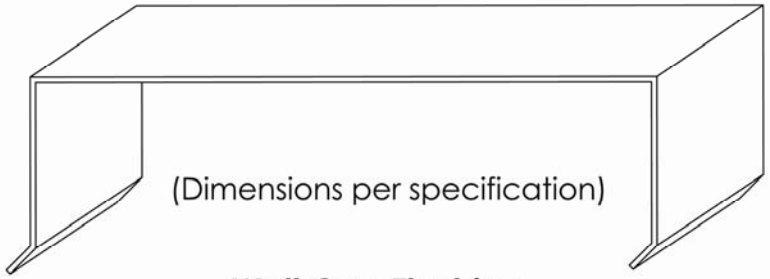

**(Painted) Top/Side Panel Cap Part J**

CUSTOM
PANEL
SYSTEMS

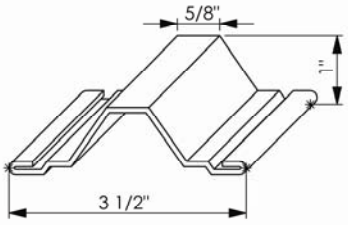
# Special Trim Sections
# 10' Lenths




**Overhead Door Jamb Cover**




**Wall Cap Flashing**




**Hat Channel**

# Insulation

## General Information

**Our STUCCO WALL PANEL is compatible with the use of most types of insulation, including loose blown materials, kraft or poly backed fiberglass batts, etc.**

## Expanded Polystyrene (EPS) Option

**We offer optional factory installed expanded polystyrene foam (EPS) insulation in a variety of thickness and densities to accommodate desired R-Values. EPS can be used alone or in combination with various types of field-installed insulation. Factory installed EPS is form fitted and glued into the back of the Panel with a tongue and groove design to eliminate thermal transfer.**

## Installing EPS Insulated Panels

**Installation of EPS insulated Panels is basically the same as installing our non-insulated Panel (see *Wall Panel Installation*) with a few exceptions:**
**DO NOT over tighten the fastening screws when using EPS insulated Panels as crushing the insulation against the Panel may distort the flat surface plane. Insulated Panels may require alteration of Trim profiles and quantities of Trim needed.**

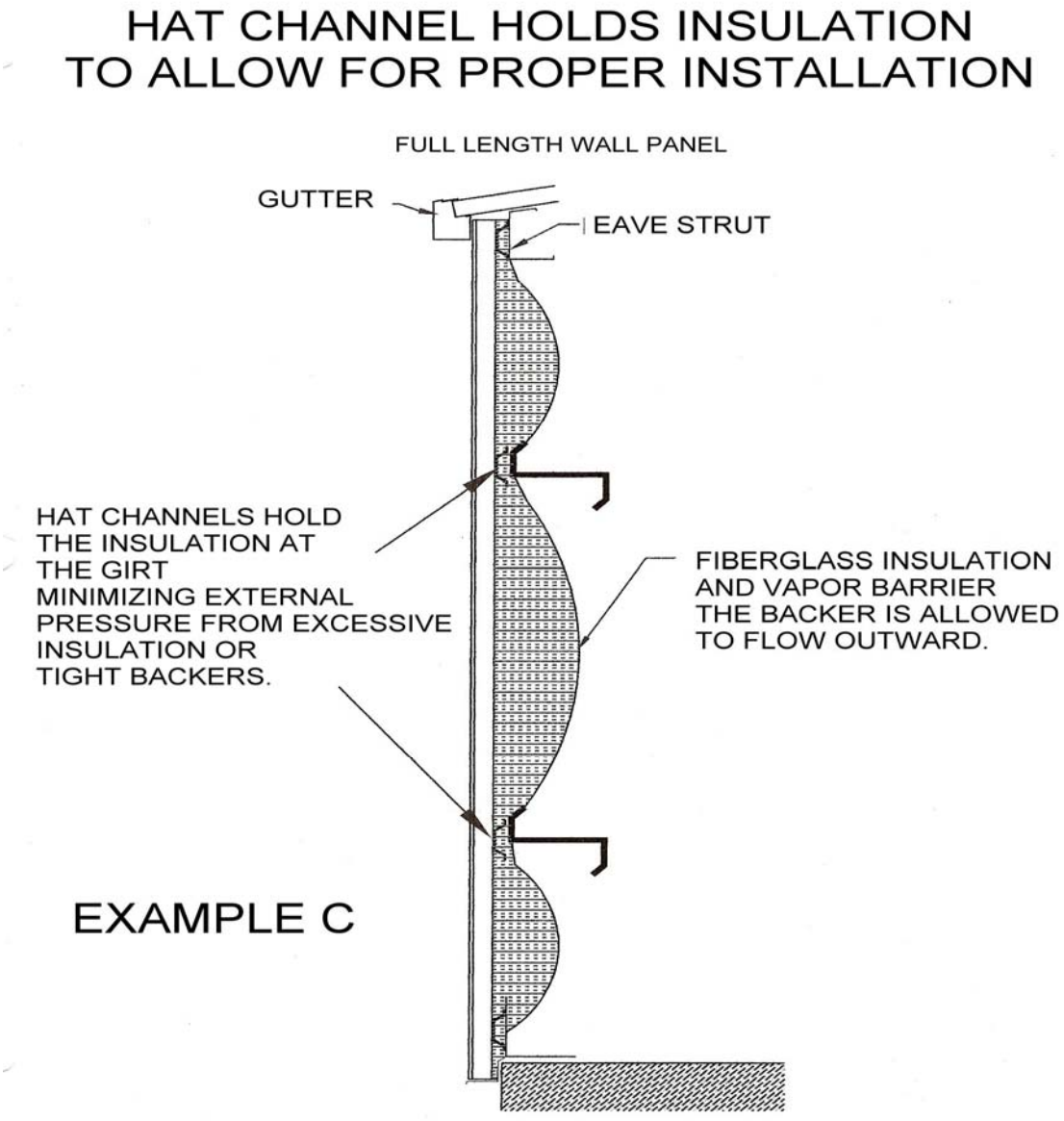
## Installing Panels Over Batten Insulation

**Make certain that insulation and vapor backers are installed loosely enough to allow the insulation cushion to flow outward, away from the Panel. (See diagram *Example A*) This allows for maximum insulating benefit and avoids distortion of the Panel plane. Tight vapor backing materials can compress the insulation taut against the back of the Panel and cause surface distortion. (See diagram *Example B*) Check for flat Panel plane with a straight edge.**

**When using thicker batts of insulation it may be necessary to score and remove some of the insulation where the insulation crosses over the girts. This allows for the benefit of thick insulation without distortion of the Panel plane. Check for flat Panel plane with a straight edge.**

# Installing Panels Over Hat Channel

**In some cases it may be necessary or desirable to attach the Panels to Hat Channel sections that are used to compress insulation at the girts and to relieve pressure on the back of the Panels. (See diagram *Example C*) Check for flat Panel plane with a straight edge. Custom Panel Systems can supply Hat Channel sections. (See *Special Trim Sections*) Trim configurations and quantity changes may be required as a result of the use of Hat Channel. Consult our Sales / Service department.**



# Getting Started

## Storage and Handling of Stucco Panels

**Stucco Panels are specially packaged in crates and separated with spacers to avoid contact with other Stucco Panels. Dragging Panels across each other can cause abrasion and marring of the finished surface.**

**Care should be exercised in handling and storage of the Panels. DO NOT allow Stucco Panels to be stored outdoors on dirt, mud or grass surfaces.**

**If Stucco Panels must be stored outdoors at the job site, they should be tarp covered after being placed on a well-drained concrete or elevated surface.**

**Care should be taken when handling and erecting Stucco Panels. Wearing clean gloves and handling Panels primarily by the edges will help protect the painted surface from dirt and staining.**

## Tools Required For Installation

**The following tools and accessories should be at hand before beginning Stucco Building Panel and Trim installation:**

**Safety Glasses**
**Clean Work Gloves**
**Circular Saw with Metal Cutting Blades**
**Hand Shears (Heavy Duty 12")**
**Hand Flanger (4")**
**2' Carpenter Square**
**Rivet Gun & Rivets (rivets supplied with Trim)**
**Drill (Cordless) with Metal Bits**
**Screw Drive**
**Screws (self-tapping, hex head, gasketed)**
**Level (4'-6')**
**Straight Edge (4'0" min.) For circular saw to ride on when cutting or ripping panels)**
**Chalk Line**
**Tape Measure**
**Caulk Gun & Caulk**
**Clamps (For attaching straight edge to Panel face before cutting or ripping)**

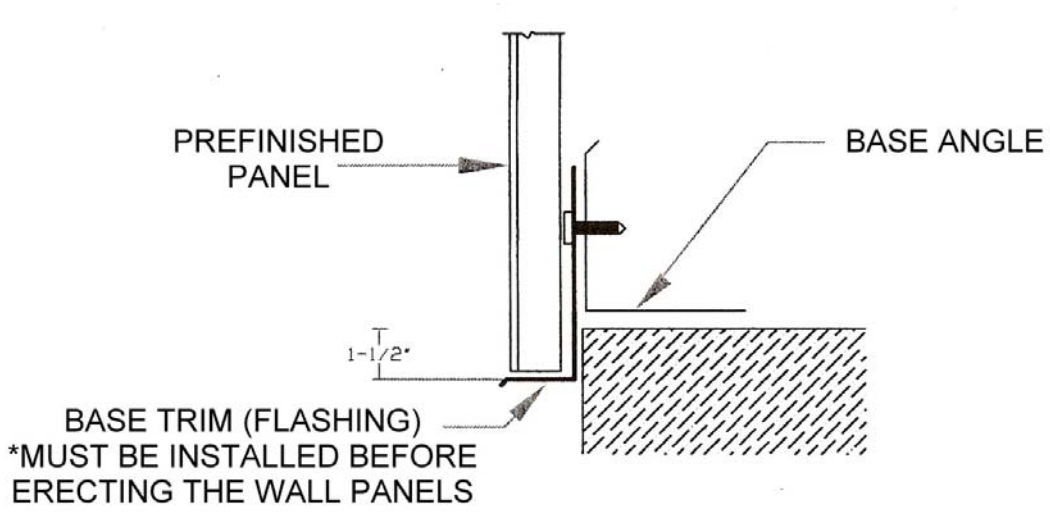
# Base Trim / Drip Cap Flashing

*** Must be installed prior to assembling panels.**

**Base Trim / Drip Cap (Parts "C" or "D") must be attached to base angle or other surface before installing panels.**

**Verify Base Trim / Drip Cap Location, i.e. at finished floor level or distance below finished floor level, before attaching to base angle or structure.**

**A bead of caulk between Base Trim / Drip Cap and base angle will weatherproof the assembly.**



# Determining Stucco Panel Layout

## Starting with a Full or Partial Panel

**Read entire section before beginning installation!**

**It is common that by design or by variance from design during structural framing, a building elevation's lineal width my not be divisible by sixteen inch increments. As a result, vertical cutting (ripping) of a panel(s) may be necessary.**

**This width adjustment may be made to a single (left or right end) panel or the total amount of excess material may be divided between the first panel on the left side and the last panel on the right side of the wall.**

**The following procedure describes a method for resolving these situations.**

1. **For each elevation, field measure the horizontal width the panels are to cover. For example, measurement of a wall shows the width to be 50'-4".**

2. **Take the result (i.e. 50' 4") and convert the number of feet to inches (i.e. 50' X 12" = 600") and add the remaining inches (i.e. 4" + 600" = 604").**

3. **Divide the sum of inches by 16" (i.e. 604" divided by 16" = 37.75) to get the number of panels required to cover the elevation from left to right.**

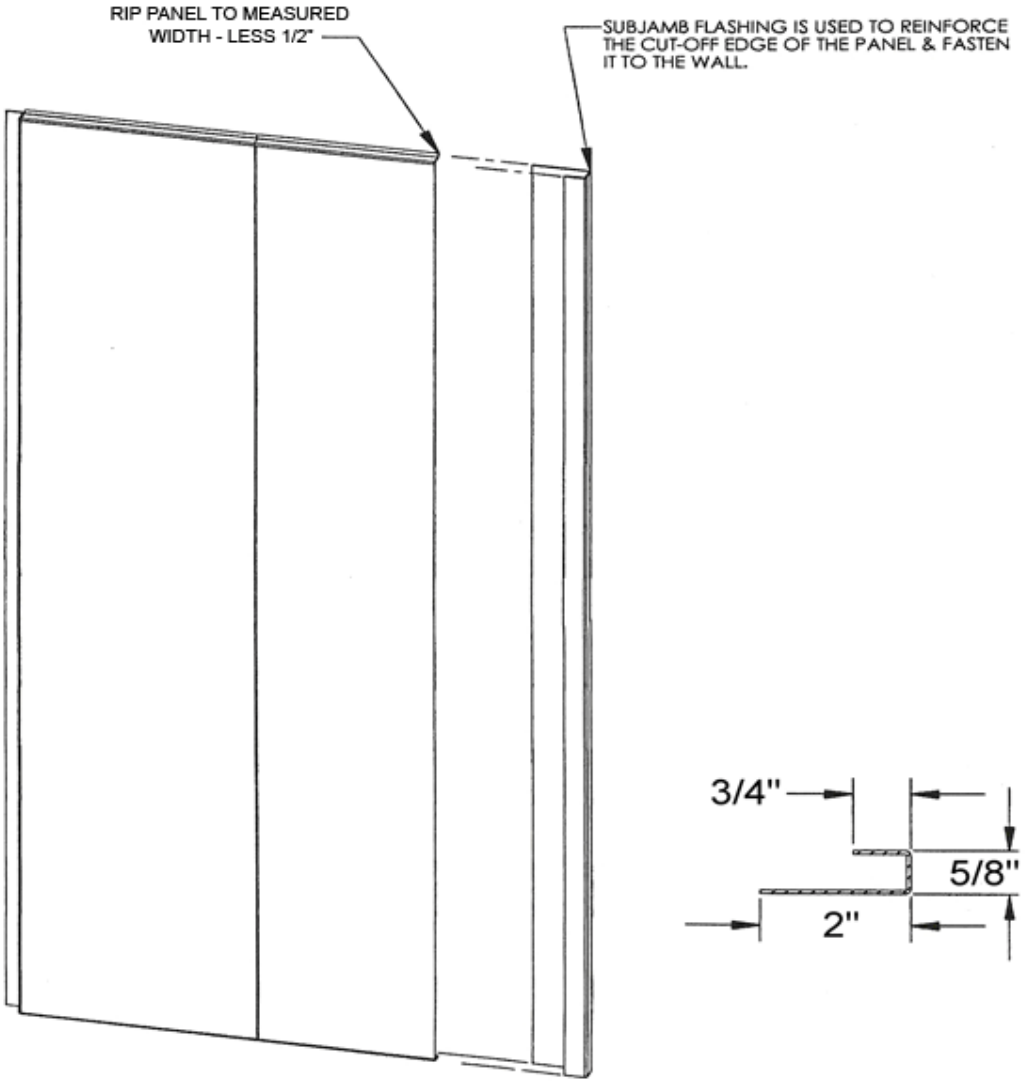
4. **Convert any decimal remainder of panel to inches (i.e. 0.75 panels = 12") by multiplying 16" X 0.75 = 12".**

5. **The result shows that 37 full panels of 16" width will be needed PLUS 12" of an additional panel.**

6. **Installation may be made in this manner by removing 4" from the raised right face of the last panel or the total remaining width may be divided into equal distances (i.e. 6") on both the left and right ends of the wall.**

7. **To equally divide the distance (12" divided by 2 sides = 6"), the left 6" of the raised surface of the first panel must be removed and the last 6" from the right raised surface of the last panel must be removed.**

**NOTE: Vertically ripped panels must have Sub-Jamb Flashing (Part I unpainted) installed behind the full length of the ripped edge. See Sub-Jamb Flashing.**

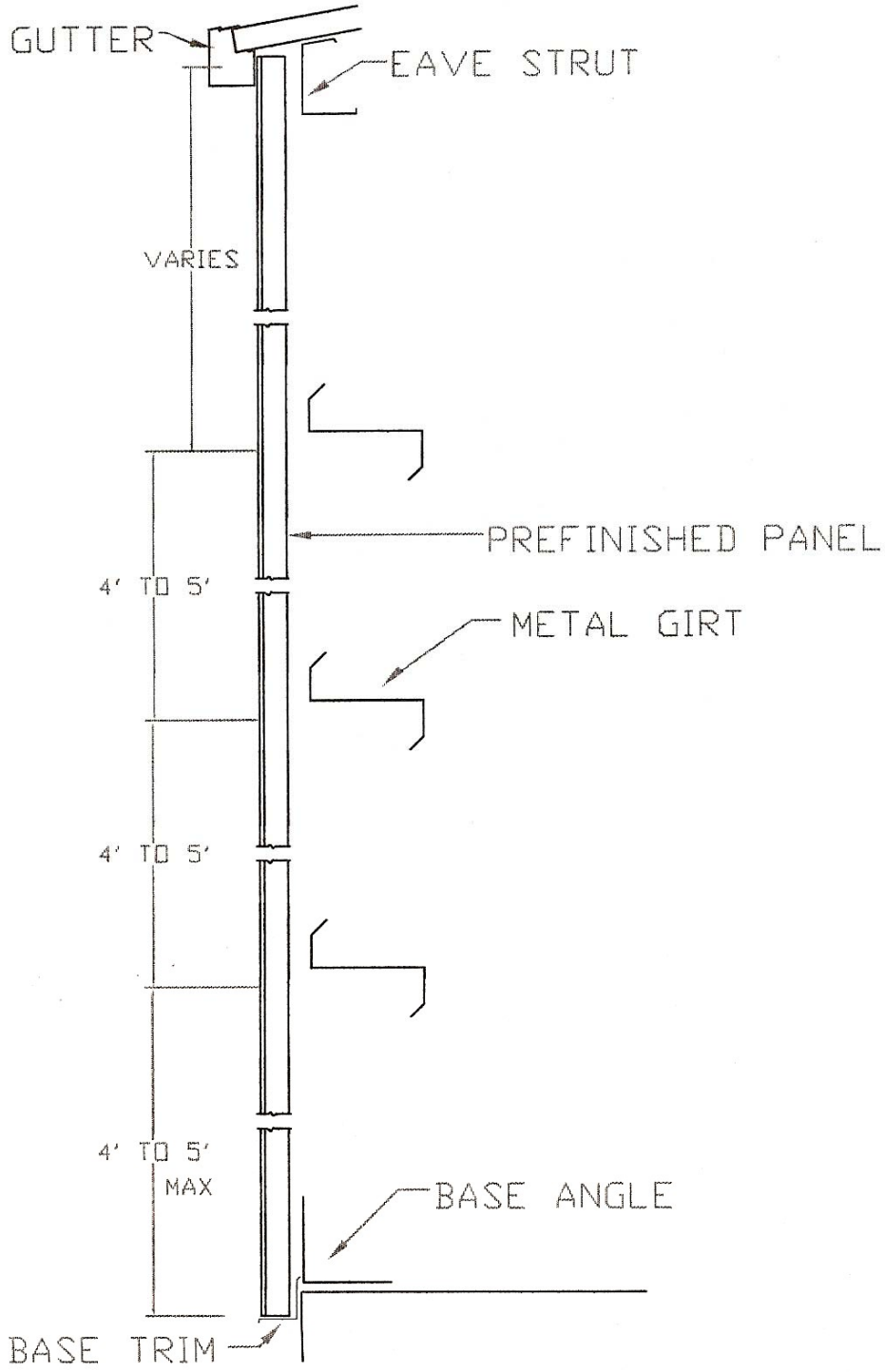



FILLER PANEL
(WINDOW / DOOR / WALL END)

# SUB-JAMB FLASHING
# (UNPAINTED)
# PART I

# TYP GIRT SPACING

FULL LENGTH WALL PANEL



# Window & Door Trim Fabrication and Installation

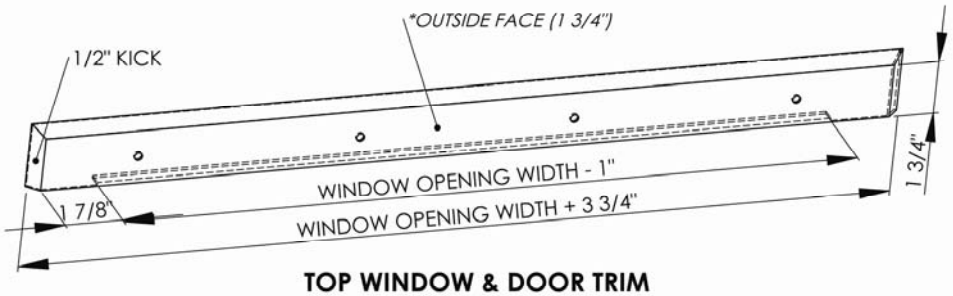
1. **Measure window *opening height* and *opening width* to determine overall part lengths needed to fabricate the right & left hand jamb flashing, sill flashing, header flashing, and top trim flashing.**

2. **The lower sill is fabricated from (Part F) and installed first. Cut part to length, *Overall length = opening width + 3 1/2”*. Fold up 2” long ears on both ends of window sill face,** *(Do not fold ears on the outside 1 ¾” face of flashing).* **Bend ½” kick back on both ends of outside face. Bend slight slope on sill face for water run off. Position lower sill flashing in place and fasten with blind rivets.** (See Figures 3, 5, 6 & 7)

3. **Cut the header flashing (Part E) to length, *Overall length = opening width*. Tuck the header trim flange between panels and header frame then insert vertically. Position header flashing in place and fasten with blind rivets.** (See Figures 2, 5, 6, & 7)

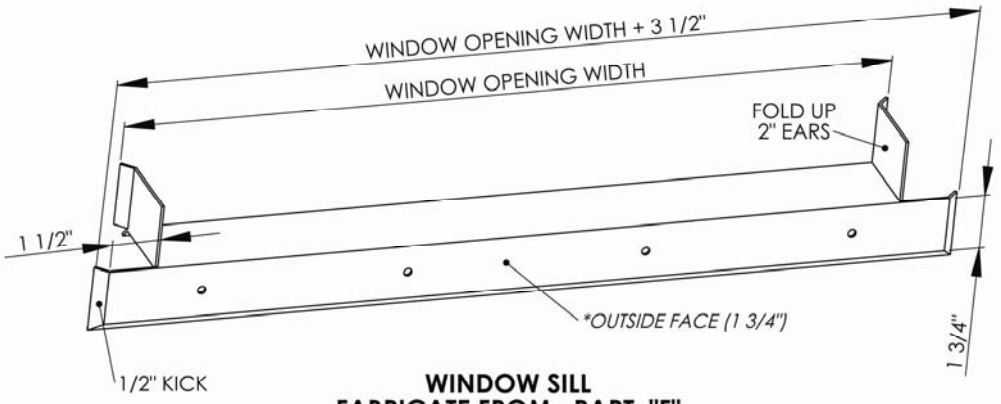
4. **The left and right side jambs are fabricated form (Part F) and installed after the lower sill and header flashing. Cut parts to length, *Overall length = opening height + 3 1/2”*. Fold down 2” long ear on header end of inside face. Cut 2 1/4” long notch on sill end of inside face. The lower notch is not cut on door assemblies.** *(Do not fold ear or cut notch on the outside 1 ¾” face of flashing).* **Bend ½” kick back on both ends of outside face. Position left and right side jambs in place and fasten with blind rivets. (Both left and right hand jambs are symmetrical).** (See Figures 4, 5, 6 & 7)

5. **The top trim is fabricated from (Part G) and installed last. Cut part to length, *Overall length = opening width + 3 ¾”*. Trim off rear flange 2 3/8” from both ends.** *(Do not trim off the outside 1 ¾” face of flashing).* **Bend ½” kick back on both ends of outside face. Position top trim flashing in place and fasten with blind rivets.** (See Figures 1, 3, 5, 6 & 7)

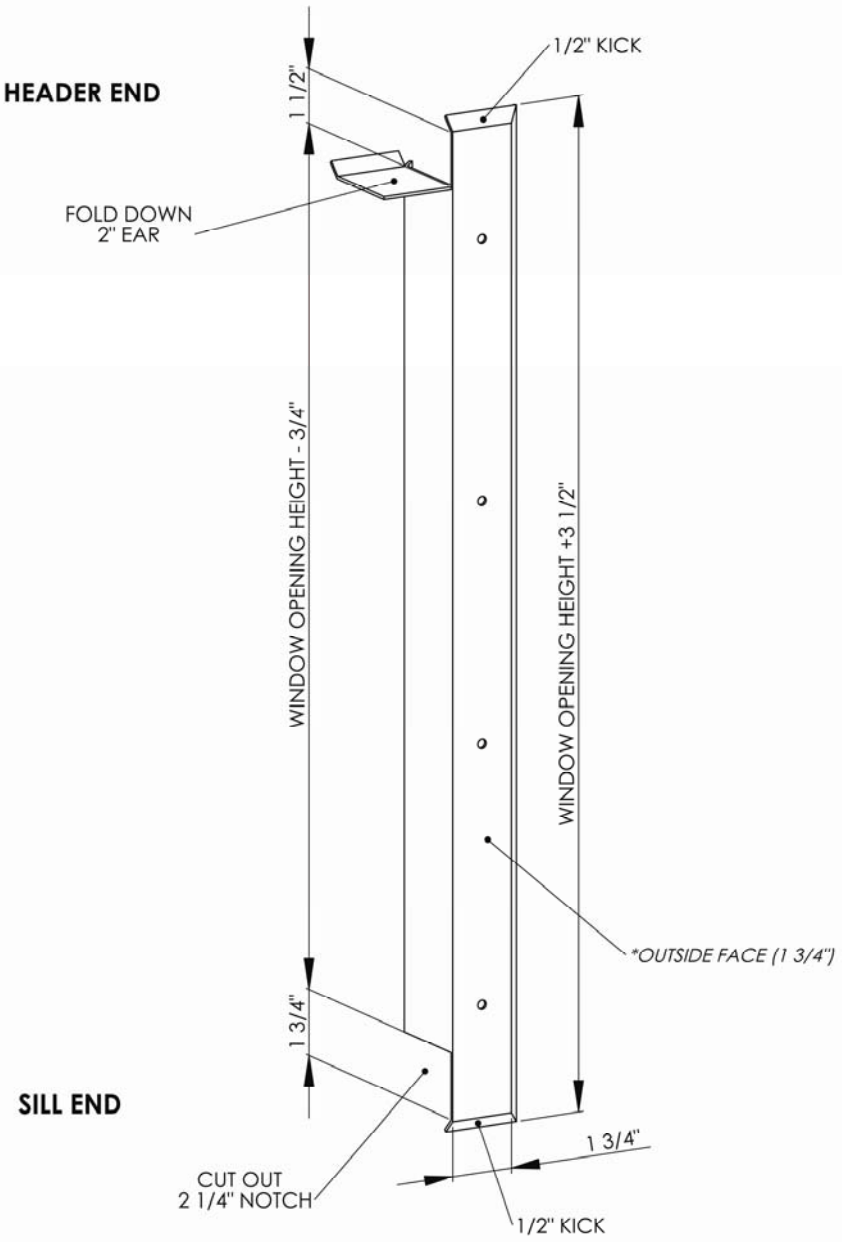



**TOP WINDOW & DOOR TRIM**
**FABRICATE FROM PART "G"**
(FIGURE 1)

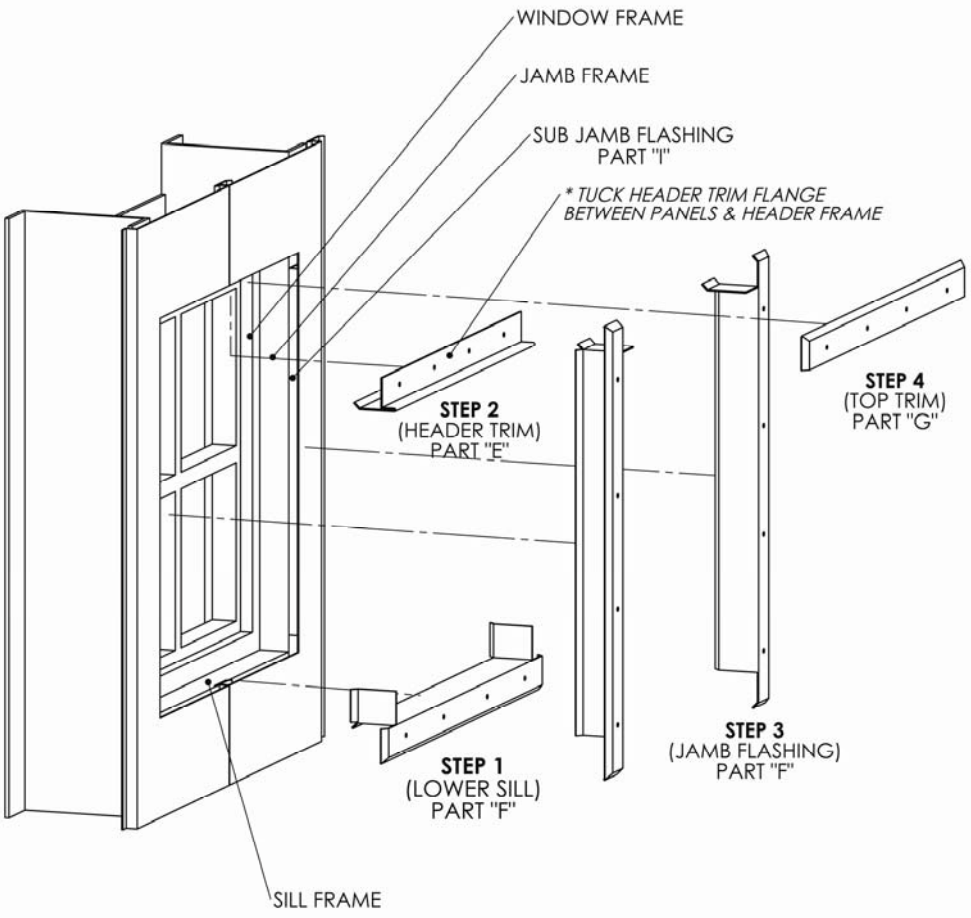

**WINDOW & DOOR HEADER**
**PART "E"**
(FIGURE 2)



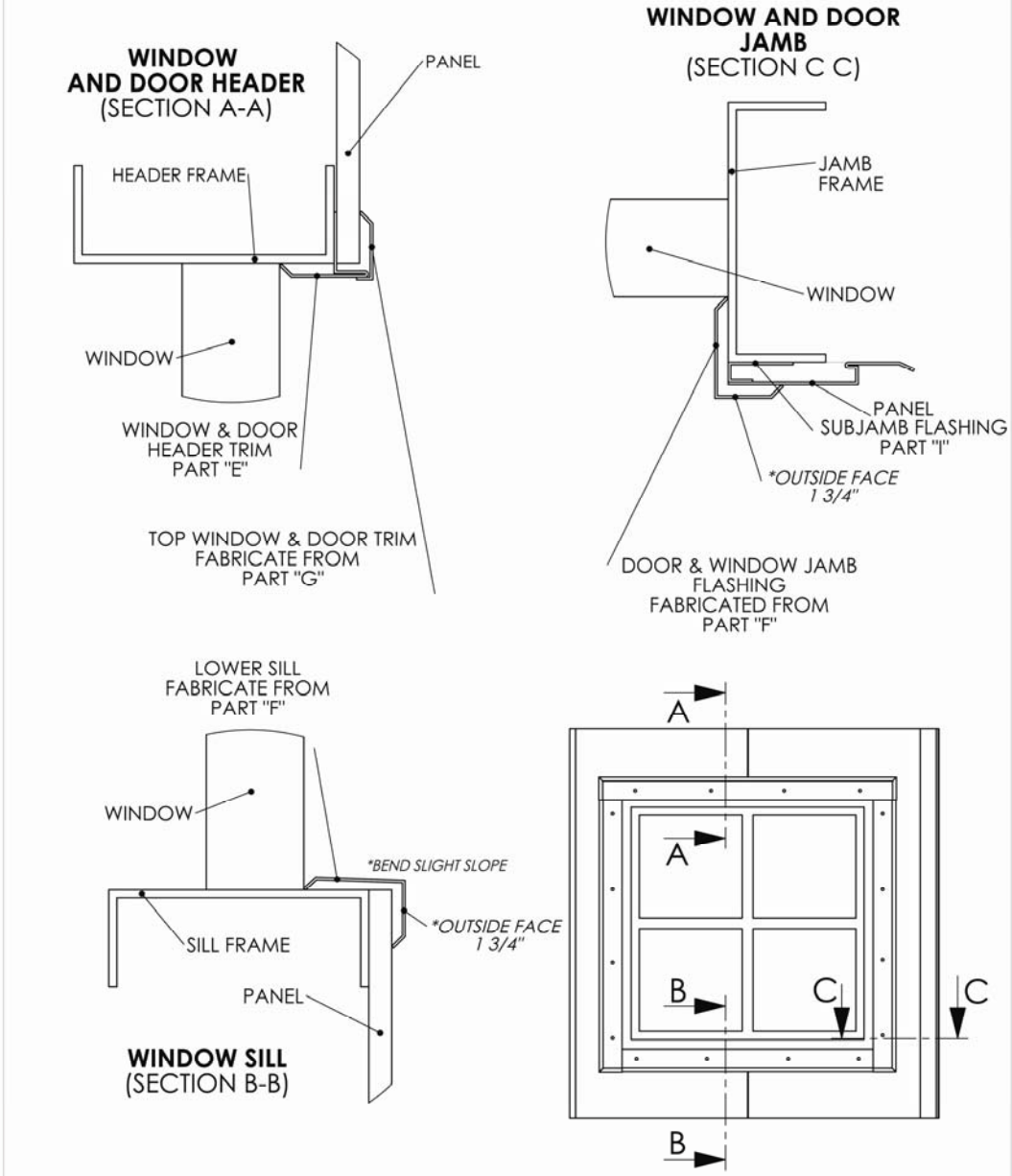

**WINDOW SILL**
**FABRICATE FROM PART "F"**
(FIGURE 3)



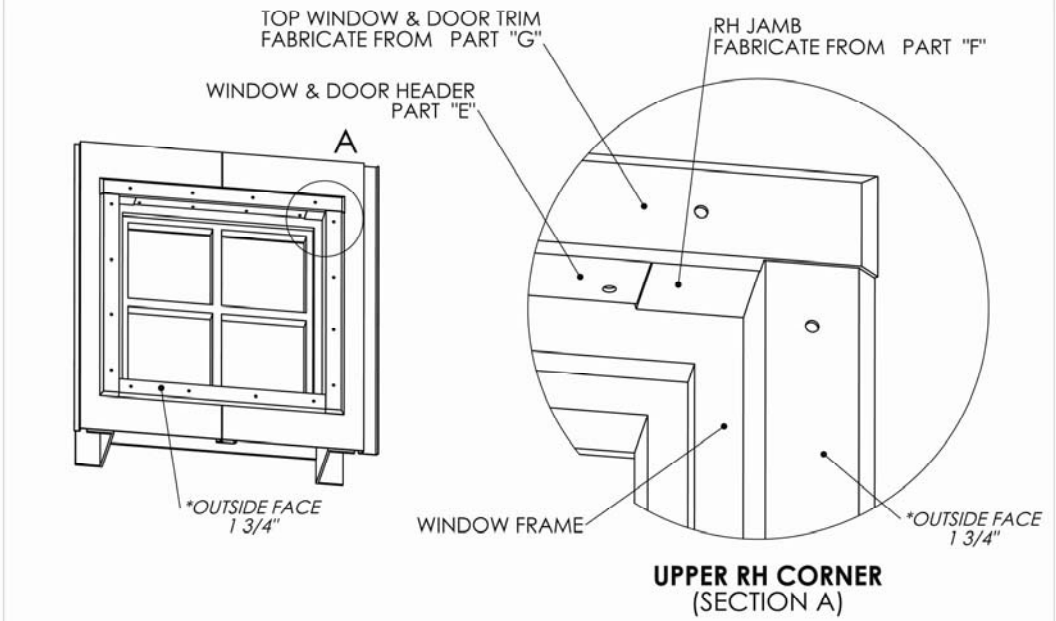

**RIGHT HAND JAMB FABRICATE FROM PART "F"**
(FIGURE 4)



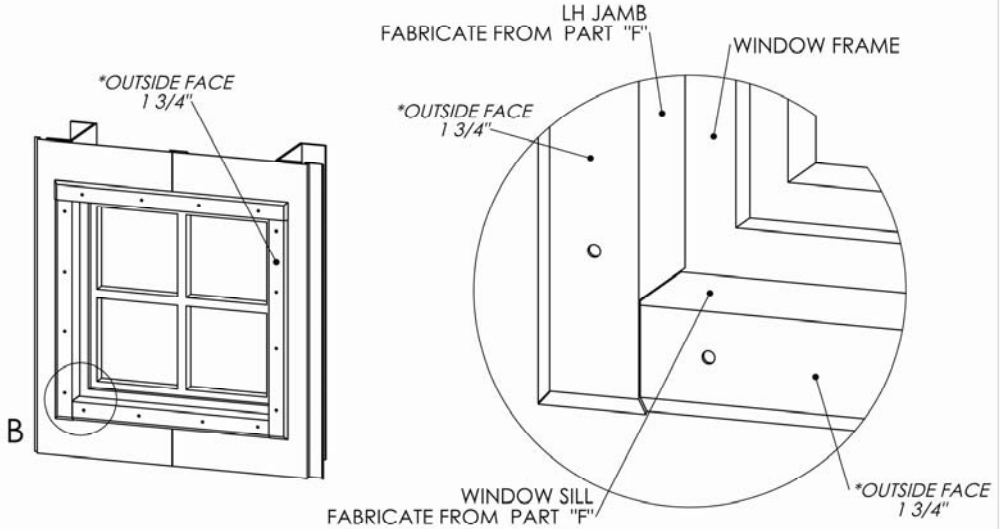

**WINDOW FRAME ASSEMBLY**
(FIGURE 5)




**WINDOW AND DOOR FLASHING CROSS SECTIONS**
(FIGURE 6)




**UPPER RH CORNER**
(SECTION A)




**LOWER LH CORNER**
(SECTION B)

(FIGURE 7)

# STUCCO BUILDING PANEL
## Panel Stacking Option

**A unique feature of our Stucco Building Panels is the ability to stack one Panel over the other without external flashings or trim. The Panels are flanged on both the top and bottom and interlock at the corners.**

**The Stucco Panel stacking option should be viewed as a design opportunity for potential color change. Stacking allows for creation of a variety of patterns and colors and makes possible almost unlimited wall heights.**

**Changing colors is particularly effective and attractive on gable ends or where long, high sidewalls are without other visual interest or architectural enhancement.**

**The top flange of the Stucco Panel is designed to deflect water back onto the face of the Panel when the stacking option is used.**

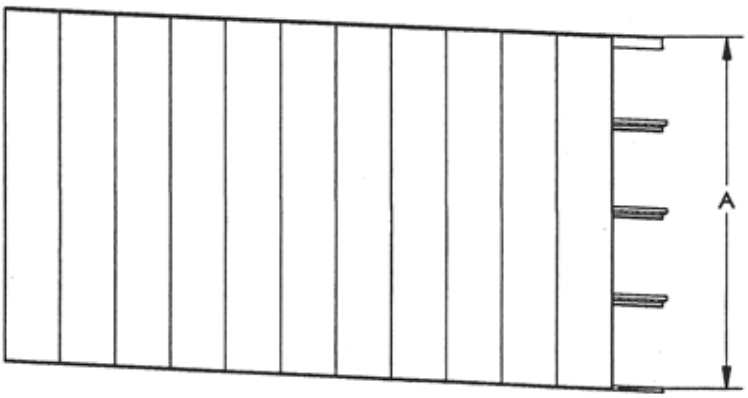
## How To Stack

**When stacking Stucco Building Panels it is required that there be a grit or other structural member at the upper and lower Stucco Panel junction for the attachment of both Panels.**

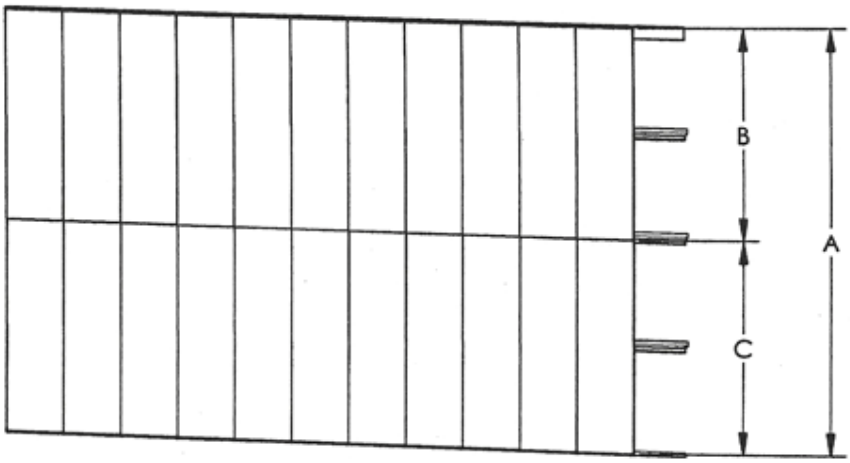
**To stack Panels, install the bottom row as in any standard application. Apply a bead of caulk along the top flange of the lower Panel to prevent water and air infiltration. The caulk should be applied along the 90° vertical stacking flange. BE CAREFUL not to use excessive amounts of caulk that may squeeze out onto the face of the Panels.**

**Intermediate and / or top row of Stucco Building Panels should be installed directly above, taking care to maintain the same vertical seam width throughout.**

# TYPICAL SIDE WALL

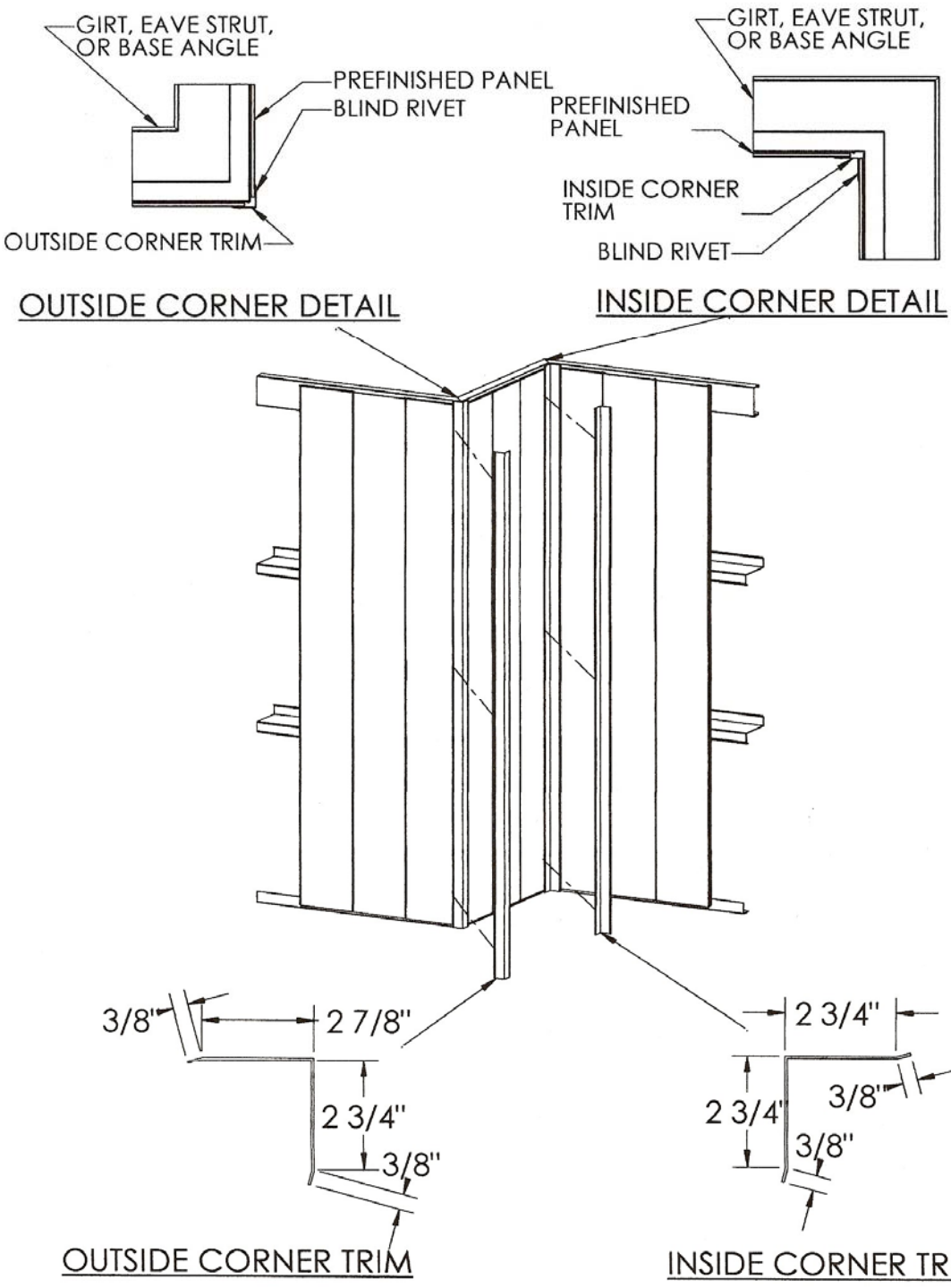


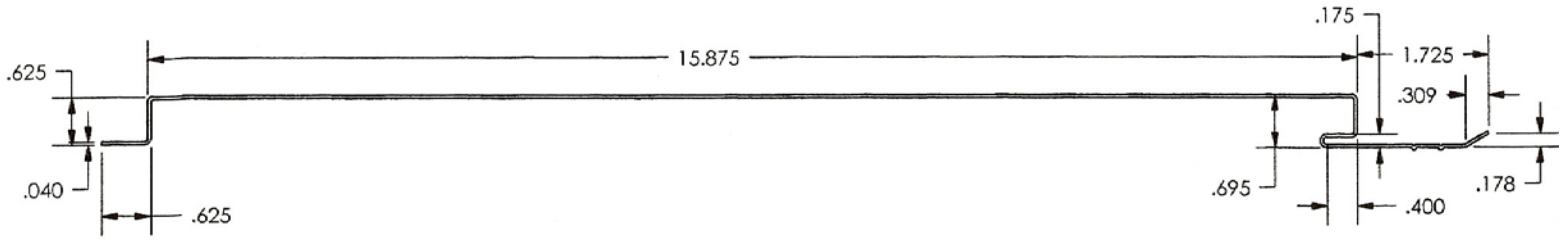

**Panels can be run the full length of the wall up to 25'. Standard panel length on a pre-engineered building should be from top of eave strut to floor +1".**




STACKING APPLICATION

A stacked panel design can be used for a 2 color accent, cosmetic pattern variation, or to accommodate wall heights over 25'. Allor for 1/8" gap for horizontal seam width when stacking. Overall wall height, A = Top of eave strut to floor +7/8".


GIRT, EAVE STRUT, OR BASE ANGLE
PREFINISHED PANEL
BLIND RIVET
OUTSIDE CORNER TRIM
GIRT, EAVE STRUT, OR BASE ANGLE
PREFINISHED PANEL
INSIDE CORNER TRIM
BLIND RIVET
OUTSIDE CORNER DETAIL
INSIDE CORNER DETAIL
3/8"
2 7/8"
2 3/4"
3/8"
2 3/4"
2 3/4"
3/8"
3/8"
OUTSIDE CORNER TRIM
INSIDE CORNER TRIM


.625
.040
.625
15.875
.175
1.725
.309
.695
.400
.178

# STUCCO
# METAL WALL PANELS

## F.A.Q.'s
(Frequently Asked Questions)

- Do your STUCCO COATED PANELS come in different lengths?
  **YES! We form our Stucco Building Panels in lengths from One-Foot to Twenty-five feet and in any increment of an inch in between.**

- ***How wide are your STUCCO WALL PANELS?***
  **Our Stucco Panels cover Sixteen Inches in width (18" overall) from seam to seam. They are available <u>ONLY</u> in this width.**

- Can you match the existing color of my building with your STUCCO STEEL PANELS?
  **YES! Provide us a wet sample of paint, a painted sample or simply give us the original paint manufacturer's name and color number for an exact match at no extra charge.**

- What gauge steel are your STUCCO BUILDING PANELS?
  **Our Metal Stucco Panels are formed from very sturdy, 20-gauge, G-90, galvanized steel to assure a uniform flat surface that resists wrinkling and "oil canning". Standard corrugated metal panels are normally much thinner, 26-28 gauge.**

- Are your STUCCO COATED PANELS insulated?
  **Not usually, but our Stucco Panels can be insulated at the factory (additional charges apply) with standard EPS (Expanded PolyStyrene) foam board. Various thickness and densities can be used to achieve desired R-Values. More often though, batts of rolled fiberglass insulation are installed over the girts before our Stucco Wall Panels are attached. Contact us for installation procedures.**

- Will your STUCCO BUILDING PANELS be damaged if they are installed during bad weather?

  *NO! Unlike concrete, masonry or EIFS, our Stucco Wall Panels can be installed during periods of rain, snow or sub-freezing weather. No damage will result.*

- What are some of the typical applications for your METAL STUCCO PANELS?

  **Commercial Buildings, Offices, Retail Centers, Churches, Schools, and Government Buildings are some of the more popular uses for our Stucco Building Panels. Virtually any building project can be enhanced with our STUCCO PANELS. *WE DO NOT OFFER OUR METAL STUCCO PANELS FOR RESIDENTIAL USE!!* Visit our picture Gallery for a sampling of uses.**

- Can your STUCCO WALL PANELS be used to resurface an existing building?

  **YES, almost always. By installing "Hat Channel" or similar structural sections over existing building surfaces and attaching our Stucco Wall Panels to the hat channel, most existing surfaces like brick, masonry, corrugated metal, etc. can be easily retrofitted.**

- Do you have a local METAL STUCCO PANEL representative or distributor in our area?

  **Our single tier Marketing structure helps save our clients save money. Sales and Marketing, Technical Support, Production and Installation queries are all handled from our St. Louis headquarters. Assistance is as close as the telephone, fax or e-mail.**

- You say that your STUCCO WALL PANELS can be "stacked"; how does that work?

  *Our Stucco Panels can be stacked without trim section in between. This allows the architect or designer to add accent stripes of a different color to a long or tall elevation that might otherwise have a somewhat boring appearance. See our Stucco Building Panel Specifications page for more detail.*

- How does your STUCCO COATED PANEL compared to EIFS?

  *We think we are FAR SUPERIOR.*

  1. *Our Stucco Panels are MUCH LESS EXPENSIVE than EIFS.*
  2. *Our Stucco Panels are MUCH MORE DURABLE than EIFS.*
  3. *Our Stucco Panels INSTALL MUCH MORE RAPIDLY than EIFS.*
  4. *Our Stucco Panels are FAR LESS PRONE TO LEAKAGE and resulting water damage. There are real EIFS horror stories (visit www.stuccolaw.com and click on related links) involving building damage, lawsuits, government action, mold, insurance concerns, etc. Bottom line…OUR STUCCO BUILDING PANELS DON'T LEAK OR ROT!*
  5. *Our Stucco Panels and Finish carry a 20-YEAR-WARRANTY!!*

- Can your STUCCO WALL PANELS be cut at the job site?

  *Yes. Use a circular saw with a good quality metal cutting blade to rip the Stucco Panels vertically or angle cut them to roof exact roof pitch or framed opening size.*

- Do you make STUCCO TRIM to give your STUCCO PANELS a finished appearance?

  *Yes. We have STANDARD TRIM SECTIONS, i.e. Inside Corners, Outside Corners, Base Trim, Window & Door Trims. We can also make "SPECIAL" trim to most dimension requests. All Trim is painted with baked on STUCCO coating.*

- How do we get started with your STUCCO WALL PANELS?

  *Just give us a call to discuss the project you're thinking about. Send us your drawings or fax them to us and we'll get you a fast, accurate quotation.*

# Impax™ — Performance Self-Drill

## 12-14 Impax and 1/4-14 Impax lap self-drill
*For metal to metal*

- **Precision cold forged assuring superior point strength and the fastest drilling time performance through high strength steel and nested purlins.**
- **Ultimate performance in light, medium and heavy gage applications.**
- **Designed and engineered to have low driving and thread engagement torque and provide maximum clamp load.**
- **Corrosion resistant coating system.**

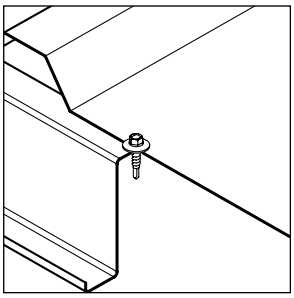
## Application

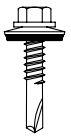
### 12-14 Impax
**Metal to metal**

Drilling capacity: .035 – .210

Thickness is based on normal, single thickness purlin/girt or multiple material thickness combined for total.

Min projection: 3/16" of threads below substrate





5/16" AF Hex Washer Head
Thread Major Dia: .215 – .209
Thread Minor Dia: .164 – .157

***Strength (lbs ult.):***
Tensile: 2900
Torsional: 92 in-lbs
Shear: 2050

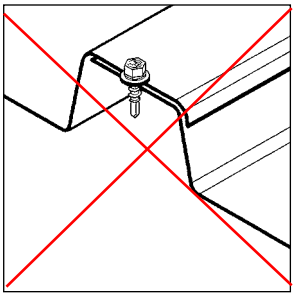
| ***Pull-out (lbs ult.):*** | **SD2** | **SD3** |
|---|---|---|
| 12 ga (.109): | 1539 | 1480 |
| 14 ga (.075): | 1010 | 828 |
| 16 ga (.060): | 724 | 624 |

***Pull-over with Bond Seal (lbs ult.):***
22 ga (.030): 1249
24 ga (.024): 1056
26 ga (.018): 654

### 1/4-14 Impax Lap
**Panel to panel side lap**

Drilling capacity: .030 – .095

Some applications may require attaching light gage (24 – 26 ga) to sub-structural member. Composite thickness should not exceed .095.



5/16" AF Hex Washer Head
Thread Major Dia: .246 – .240
Thread Minor Dia: .192 – .185

***Strength (lbs ult.):***
Tensile: 3800
Torsional: 150 in-lbs
Shear: 2850

***Pull-out (lbs ult.):***
22 ga (.030): 379
24 ga (.024): 304
26 ga (.018): 204

### Notes

Dimensions are nominal inches unless noted. Self-drill pull-out values (pounds ultimate) are based on 57,000 psi hot rolled steel material. Lap self-drill pull-out values are based on 40,000 psi AZ55 Galvalume steel sheet material. Ultimate values listed are the result of laboratory testing. The specific job conditions should be considered and appropriate safety factors applied when specifying the proper fasteners. #12 fasteners 1" and longer have special long pilot lengths to accommodate nested purlins.

## Selection

| Length | Part No. #12 Bond Seal (15 mm) | Part No. #12 No Washer | Part No. 1/4-14 Impax Lap w/ Bond Seal | Part No. 1/4-14 Lap No Washer |
|---|---|---|---|---|
| 12-14 x 3/4" SD3 | V2361-EDF | A2361F | — | — |
| 12-14 x 3/4" SD2 | S4495-EDF | S4495F | — | — |
| 12-14 x 1" SD2 | V4577-EDF | S4577F | — | — |
| 12-14 x 1-1/4" SD2 | V4632-EDF | S4632F | — | — |
| 12-14 x 1-1/2" SD2 | V4677-EDF | S4677F | — | — |
| 12-14 x 2" SD2 | V4777-EDF | S4777F | — | — |
| 12-14 2-1/2" SD2 | S4902-EDF | S4902F | — | — |
| 12-14 x 3" SD2 | S4952-EDF | S4952F | — | — |
| 12-14 x 4" SD2 | S4981-EDF | S4981F | — | — |
| 1/4-14 x 7/8" | — | — | V5051-GUF | S5051F |

## Installation

Tools: 0 – 2000 rpm screwdriver equipped with depth sensing nosepiece.

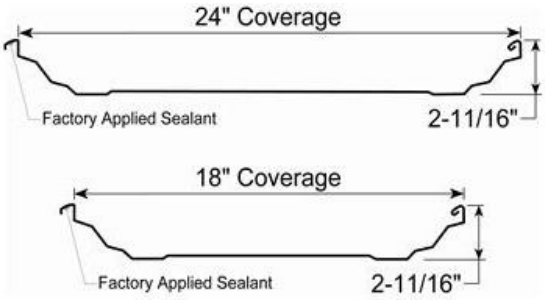
## Options

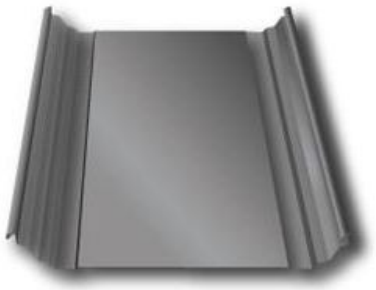
VistaCoat™ | Painted | irius | ZAC® | MAC™

return to search results

# Seam-Loc 24





- Structural trapezoidal standing seam roof panel
- 24" or 18" panel coverage, 2-11/16" rib height
- Gauges: 24 ga standard, 22 ga optional
- Minimum roof slope: 1/4:12
- Factory-applied side lap sealant
- Pittsburgh double flat locking mechanically seamed side lap
- Concealed clip designed for thermal movement
- Accommodates 1/2" to 6" blanket insulation
- Applies over open framing or solid substrate
- Finishes: PVDF (Kynar 500®), and Acrylic Coated Galvalume® (ACG)
- Contact Metal Sales for load-carrying capabilities

ARCAT SpecWizard

Colors | Testing & Approvals | Warranty | Downloads

*Color selections are close representations but are limited by viewing conditions.*

ENERGY STAR PARTNER *All colors are ENERGY STAR Listed*

In order to view colors available in your area, please enter your zip code: 80538 Submit

Note to architects and design professionals:
Please enter project zip code to view project specific color availability.

## 24 gauge - ACG

Acrylic Coated Galvalume

## 24 gauge - PVDF

Aged Copper | Antique Patina (Metallic) | Ash Grey | Brandywine
Champagne Metallic | Classic Green | Colonial Red | Copper Penny (Metallic)
Dark Bronze | Felt Green | Hemlock Green | Khaki
Linen White | Metallic Silver | Mistique Plus (Metallic) | Ocean Blue


Old Town Grey
Patriot Red

Old Zinc Grey
River Teal

Parchment
Sandstone

Patina Green
Snowdrift White

Tahoe Blue

Taupe

Terra Cotta

Weathered Copper

Mansard Brown

Slate Grey

Matte Black

Regal Blue

Medium Bronze

545 South 3rd Street, Suite 200 Louisville, KY 40202 800.406.7387 

CHEM LINK®
Advanced Architectural Products
Contractor Driven

*The Next Generation Adhesive/Sealant*

# M-1®

***Structural Adhesive/Sealant***

**Technical Data Guide** | **Polyether Technology** | **CSI Section No. 07 92 13**

**Last Revision:** 09/14/11


**CHEM LINK Products LLC**
Telephone: 800-826-1681
Fax: 269-679-4448
353 East Lyons
Schoolcraft, MI 49087
www.chemlink.com


## Product Description

**M-1**® is a moisture curing, polyether adhesive sealant designed for application in damp, dry, or cold climates. **M-1** is solvent free and contains no isocyanates. **M-1** will not shrink upon curing, will not discolor when exposed to UV light, and can not "out-gas", or bubble, on damp surfaces as urethane sealants often do. **M-1** has resilient "elastomeric" properties and excellent adhesion to most construction materials. **M-1** is capable of joint movement in excess of 25% in both compression and extension. **M-1** can be used effectively in many difficult construction site conditions, cures in wet or dry climate conditions and at low temperatures (30°F / -2°C).

## Applicable Performance Standards

- ASTM C-920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A, and O
- Federal Specification TT-S-00230-C Type II, Class A
- Corps of Engineers CRD-C-541, Type II, Class A
- Canadian Standards Board CAN 19, 13-M82

## Regulatory Compliance

- Conforms to OTC Rule for Sealants and Caulks
- Meets requirements of California Regs: CARB BAAQMD, and SCAQMD
- Conforms to California Proposition 65
- Conforms to USDA requirements for Non-food Contact

## Green Standards:

- LEED 2.2 for New Construction and Major Renovations: Low Emitting Materials (Section 4.1) eligible for 1 Point
- NAHB Model Green Home Building Guidelines: 5 Global Impact Points
- VOC Content: less than 20 grams / liter ASTM D2369 EPA Method 24 (includes water, tested at 240°F)


## Advantages

- Solvent free, 100% solids will not shrink
- Non-slump, applies vertically and overhead
- 20 minute skin over, will not pick up dirt
- No outgassing on damp surfaces
- Very good color stability, will not suntan
- Paintable within 24 hours
- Gun grade, no special tools or mixing required

| Colors | | |
|---|---|---|
| White | Gray | Limestone |
| Black | Tan | |

## Packaging

- **10.1 oz (300 ml)** 24 cartridges/carton, 45 cartons / pallet
- **20 oz (825 ml)** 12 sausages/carton, 45 cartons / pallet
- **28 oz -** 12 cartridges/carton 40 cartons/pallet White only / Other colors by special order
- **5 gallon pails and 50 gallon drums** Available by special order

NATIONAL ROOFING CONTRACTORS ASSOCIATION MEMBER

SWR INSTITUTE®

## Joint Preparation

Joint surfaces should be clean, dry and free from all contamination including: dirt, oils, grease, tar, wax, rust and any other substance that may inhibit the sealant's performance.

## Joint Design

Install all joint applications per ASTM and SWRI recommendations and guidelines. Joints shall be designed with a depth to width ratio of 1:2 (joint depth one-half the width). Control the depth of the sealant by using a polyethylene backer rod that is 25% larger than the joint opening at standard temperature.To prevent three-point adhesion use a backer rod or bond breaker tape to ensure proper joint movement and a long lasting weatherproof seal. Where the joint configuration will not permit a backer rod, CHEM LINK recommends that an alternative bond breaker be used.

| **Joint Depth** Inches (mm) | **Joint Depth** Inches (mm) |
|---|---|
| 1/4 - 1/2 (6-13) | 1/4 (6) |
| 1/2 - 3/4 (13-19) | 1/4 - 3/8 (6-10) |
| 3/4 - 1 (19-25) | 3/8 - 1/2 (10-13) |
| 1 - 2 (25-50) | 1/2 (13) |

| **Basic Uses** |
|---|
| Expansion joints |
| Pre-cast concrete |
| Block and Masonry |
| Curtain Walls |
| Window and Door Frames |
| Siding |
| Parapets |
| Cove Joints |
| Transportation |
| Weather Sealing |

| **Typical Uncured Properties** | |
|---|---|
| Gun Grade | Zero Slump ASTM C697 |
| Viscosity | 800,000+ cps Brookfield RVF, TF spindle, 4 RPM, 73°F (22°C) |
| Tack Free Time | 20 minutes ASTM C-679 |
| Odor | Mild Mint Smell |

| **Typical Cured Properties** | | |
|---|---|---|
| Elongation at Break | 400-450% | ASTM D-412 |
| Hardness Shore A | 45 +/- 3 | ASTM C-661 |
| Shear Strength | 400 PSI | ASTM D-1002 |
| Low temperature flex | Pass ¼ inch mandrel at -10°F (-23°C) | ASTM D-816 |
| Shrinkage | No measurable shrinkage after 14 days | |
| Service Temperature | -40°F to 200°F -40 to 104°C continuous service | |
| Shelf Life | Cartridges and sausages: 1 year Pails: 3 months | |

| **Compatible Substrates*** |
|---|
| EPDM and SBS Mod Bit |
| Aluminum Galvanized Metal |
| Engineered Plastics, PVC |
| Glass |
| Fiberglass FRP |
| Wood |
| EIFS |
| Block and Brick |
| EPS Foam |
| Concrete and Stone |

***Test and evaluate to ensure adequate adhesion.***

## Application Guidelines

### Concrete
Prior to application remove any residual contamination by mechanical abrasion, sand blasting or power washing. On green concrete, remove all release agents, friable and loose concrete. Dry all visible and standing water prior to applying **M-1** Install an appropriate backer rod to avoid three-point bonding.

### Metal
Prepare all metal to ensure maximum adhesion. Remove all rust, scale and residue by wire brushing to a bright metal sheen. Remove films, loose or inappropriate coatings and oils with an appropriate solvent such as alcohol.*

**CHEM LINK Products recommends that coated substrates be tested for adhesion prior to starting a project. Please contact Technical Services for specific application guidelines and recommendations.*

### Wood
Wood should be clean, sound and dry prior to sealant application. Allow treated wood to weather for six months prior to application. Remove all coatings and paint (or test for compatibility) to ensure proper bonding. Do not use on fire retardant lumber.

### Priming
In most instances **M-1** will not require a primer. However, certain applications or substrates may require a primer to ensure a long lasting bond and weatherproof seal. It is the applicator's responsibility to determine the need for a primer. CHEM LINK recommends a primer be used for any application where prolonged immersion is anticipated.

### Storage
Store original, unopened containers in a cool, dry area. Protect unopened containers from water, heat and direct sunlight. Elevated temperatures will reduce shelf life. **M-1** will not freeze.

### Shelf Life
One year from date of manufacture when stored in normal environments. High temperature and high relative humidity may significantly reduce shelf life. Pails and special orders have a shelf life of three months.

### Application Instructions
Remove all dirt, oil, loose paint, frost and other contamination from all working surfaces with alcohol. DO NOT USE petroleum solvents such as mineral spirits or xylene. Maintain **M-1** at room temperature before applying to ensure easy gunning and leveling. Test and evaluate to ensure adequate adhesion. Carefully gun the sealant with a smooth, continuous bead. If tooling is needed, do so within fifteen minutes of application.

### Clean-Up
Wet sealant can be removed using a solvent such as alcohol. Cured **M-1** can be removed by abrading or scraping the substrate.

### Caution
Avoid prolonged contact with skin. Uncured adhesive irritates eyes. In case of contact with eyes, immediately flush with water. Call a physician. Please refer to the MSDS for First Aid information. Most current MSDS can be found at **www.chemlink.com**. KEEP OUT OF REACH OF CHILDREN.

### Limitations
- In areas where prolonged chemical exposure is anticipated, contact Technical Services for recommendations.
- Allow treated wood to "cure" for six months prior to application per APA guidelines.
- Do not use in areas subject to continuous immersion.
- Do not store in elevated temperatures.
- Remove all coatings and sealers before application.
- Do not apply at temperatures below 30°F (-2°C).
- Test and evaluate all paints before application. Alkyd and oil based paints may dry slowly.
- Do not use on TPO without CHEM LINK Products TPO primer.


**Notes:**

Read and ensure that the most up-to-date MSDS and technical guidelines are being followed. Proper use and application are the responsibility of the applicator. Direct any questions to Technical Services at 800-826-1681 prior to starting the project.

**IMPORTANT NOTICE**

Except where prohibited by law, CHEM LINK Products makes no warranties, expressed or implied, statutory or otherwise, including but not limited to, any implied condition or warranty of merchantability or fitness for a particular purpose. User is responsible for determining whether this CHEM LINK Products material is fit for a particular purpose and suitable for user's method of application. M-1® is a registered trademark of Chem Link Incorporated.

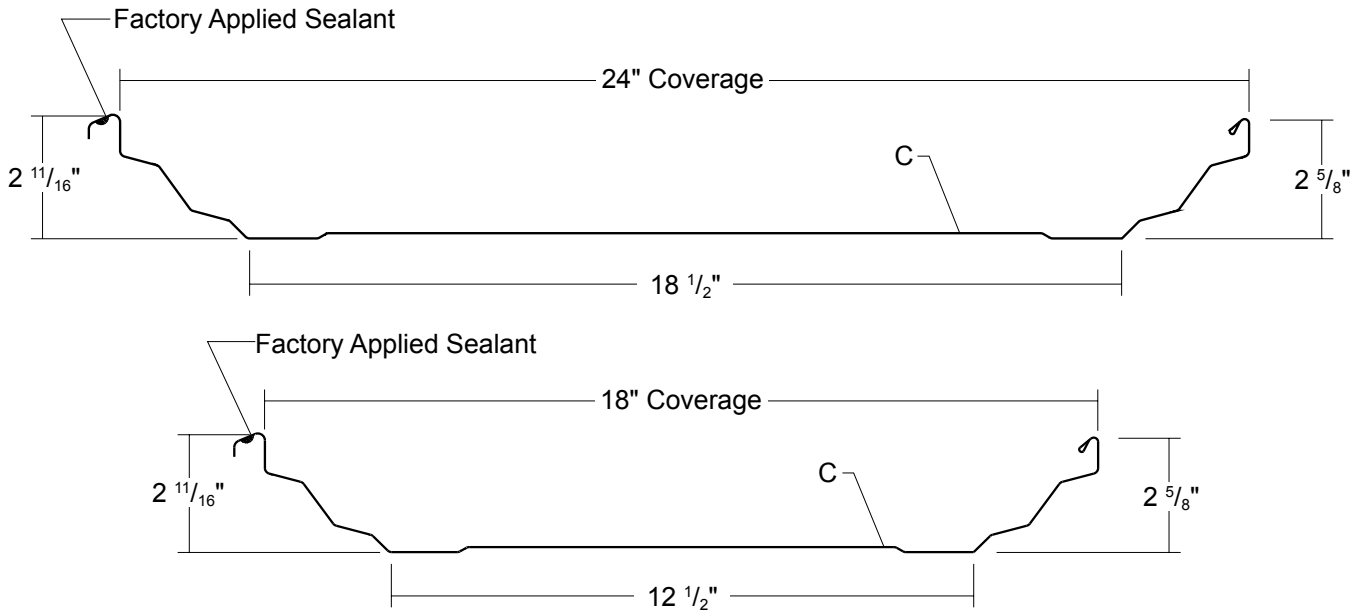
**LIMITATIONS OF REMEDIES AND LIABILITY**

If this CHEM LINK Products material is proved to be defective, the exclusive remedy at CHEM LINK Products' option shall be to refund the purchase price of or to repair or replace the defective CHEM LINK product. CHEM LINK shall not otherwise be liable for loss of damages, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including negligence, warranty or strict liability.

Document CLP 108

# SEAM-LOC 24®

**CONDENSED TECHNICAL REFERENCE**




**COMMERCIAL INDUSTRIAL PANEL**

**CONCEALED FASTENERS**

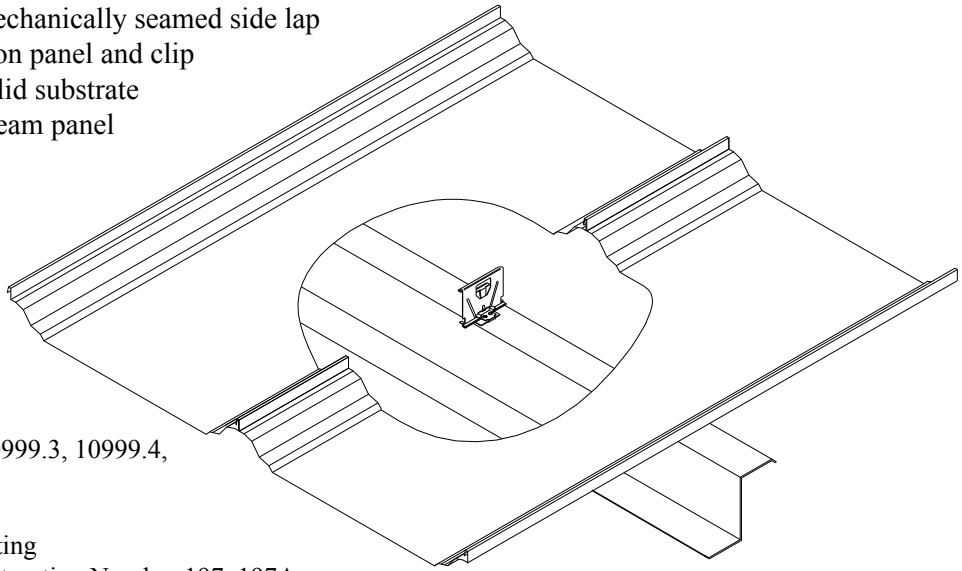
**24" OR 18" COVERAGE**

**MINIMUM 1/4:12 SLOPE**

**OPEN FRAMING OR SOLID SUBSTRATE**

## PANEL OVERVIEW

- Finishes: PVDF (Kynar 500), and Acrylic Coated Galvalume®
- Gauges: 24ga standard, 22ga optional
- 24" or 18" panel coverage, $2^{11}/_{16}$" rib height
- Concealed clip designed to accommodate thermal movement
- Accommodates $^1/_2$" to 6" blanket insulation
- Panels can be factory notched and punched
- Pittsburgh double flat locking mechanically seamed side lap
- Factory applied side lap sealant on panel and clip
- Applies over open framing or solid substrate
- Structural trapezoidal standing seam panel



## TESTING

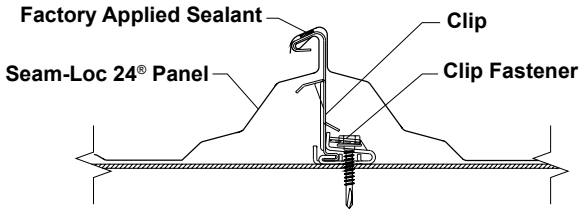
- UL 263 Fire Resistance Rating
- ASTM E 1680 Air Infiltration
- ASTM E 1646 Water Penetration
- Florida Building Code Approved 10999.3, 10999.4, 10999.5, 10999.6
- UL 2218 Class 4 Impact Rating.
- UL 790 Class A Fire Resistance Rating
- UL 580 Class 90 Wind Uplift, Construction Number 197, 197A
- ASTM E 1592 Wind Uplift
- Factory Mutual Approved Class 1-90, 1-165

metal sales manufacturing corporation

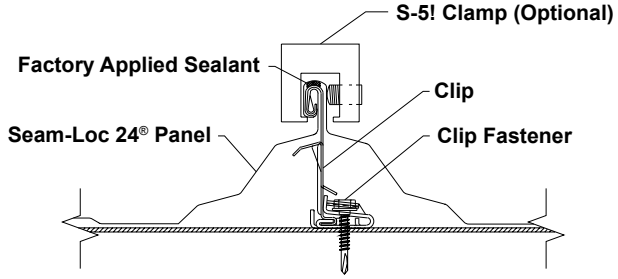
# SEAM-LOC 24®

**CONDENSED TECHNICAL REFERENCE**

## ATTACHMENT DETAILS

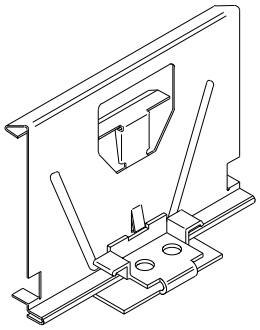


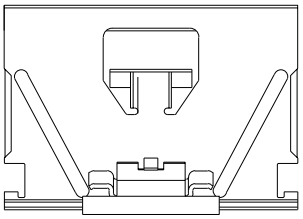

**BEFORE SEAMING**




**AFTER SEAMING**

## PANEL CLIP





## GENERAL INFORMATION

▶ **Slope**
The minimum recommended slope for the Seam-Loc 24® roof panel is 1/4:12.

▶ **Substructure**
Seam-Loc 24® is designed to be utilized over open structural framing or a solid substrate.

▶ **Clips**
Clip spacing is based upon the spacing of structural framing members and loading requirements.

▶ **Coverage**
Seam-Loc 24® panels are available in a $2^{11}/_{16}$" seam height with a 24" or 18" width coverage.

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

▶ **Fasteners**
The fastener selection guide should be consulted for choosing the proper fastener for specific applications. Quantity and type of fastener must meet necessary loading and code requirements.
*NOTE: All panels are subject to surface distortion due to improperly applied fasteners. Overdriven fasteners will cause stress and induce oil canning across the face of the panel at or near the point of attachment.*

▶ **Availability**
*Finishes:* Acrylic Coated Galvalume® and PVDF (Kynar 500).
*Gauges:* 24ga and 22ga

## SECTION PROPERTIES

## ALLOWABLE UNIFORM LIVE LOADS PSF (3 or More Equal Spans)

| Ga. | Width (in.) | Yield KSI | Weight PSF | Top in Compression | | Bottom in Compression | | Inward (Gravity / Deflection) Load | | | | | | Outward Uplift (Stress) Load | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ixx $In^4/ft$ | Sxx $In^3/ft$ | Ixx $In^4/ft$ | Sxx $In^3/ft$ | 2' | 3' | 3.5' | 4' | 4.5' | 5' | 2' | 3' | 3.5' | 4' | 4.5' | 5' |
| **24** | 24" | 50 | 1.09 | 0.2055 | 0.0952 | 0.0920 | 0.0653 | 342 | 161 | 120 | 93 | 74 | 60 | 70 | 59 | 54 | 49 | 43 | 38 |
| **24*** | 24" | 50 | 1.09 | 0.2055 | 0.0952 | 0.0920 | 0.0653 | 342 | 161 | 120 | 93 | 74 | 60 | 131 | 105 | 92 | 79 | 66 | 54 |
| **24** | 18" | 50 | 1.15 | 0.2480 | 0.1221 | 0.1220 | 0.0869 | 455 | 214 | 160 | 123 | 98 | 80 | 93 | 78 | 70 | 62 | 54 | 46 |
| **24*** | 18" | 50 | 1.15 | 0.2480 | 0.1221 | 0.1220 | 0.0869 | 455 | 214 | 160 | 123 | 98 | 80 | 169 | 134 | 117 | 100 | 83 | 66 |
| **22** | 24" | 50 | 1.43 | 0.2725 | 0.1263 | 0.1280 | 0.0882 | 458 | 217 | 161 | 125 | 99 | 81 | 74 | 64 | 59 | 54 | 49 | 44 |

1. Theoretical section properties have been calculated per AISI 2007 "Specification for the Design of Cold-formed Steel Structural Members." Ixx and Sxx are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with AISI 2007 specifications considering bending, shear, combined bending and shear, deflection, and ASTM E-1592 testing and fastener pullout from 16 ga. supports. Allowable load considers the worst case of 3 and 4 equal span conditions. Allowable load does not address web crippling. Panel weight is not considered.
3. Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
4. Allowable loads do not include a 1/3 stress increase in uplift.

* Loads determined using the S-5! Clamp at each panel clip.



**metal sales** manufacturing corporation

Kent, WA 800.431.3470
Temple, TX 800.543.4415
Longmont, CO 800.289.7663
Antioch, TN 800.251.8508
Woodland, CA 800.759.6019
Rogers, MN 800.3289316
Spokane, WA 800.572.6565
Jefferson, OH 800.321.5833
Rock Island, IL 800.747.1206
Sellersburg, IN 800.999.7777
Jacksonville, FL 800.394.4419
Orwigsburg, PA 800.544.2577
Independence, MO 800.747.0012
Fontana, CA 800.782.7953
Anchorage, AK 866.640.7663
Bay City, MI 888.777.7640
Detroit Lakes, MN 888.594.1394
Mocksville, NC 800.228.6119
Fort Smith, AR 877.452.3915

**www.metalsales.us.com**

# *Seam-Loc 24®*

## *Installation Guide*

metal sales
manufacturing corporation

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

Metal Sales Manufacturing Corporation is not responsible for the performance of the roof system if it is not installed in accordance with the suggested instructions referenced in this manual. If there is a conflict between this manual and the 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.

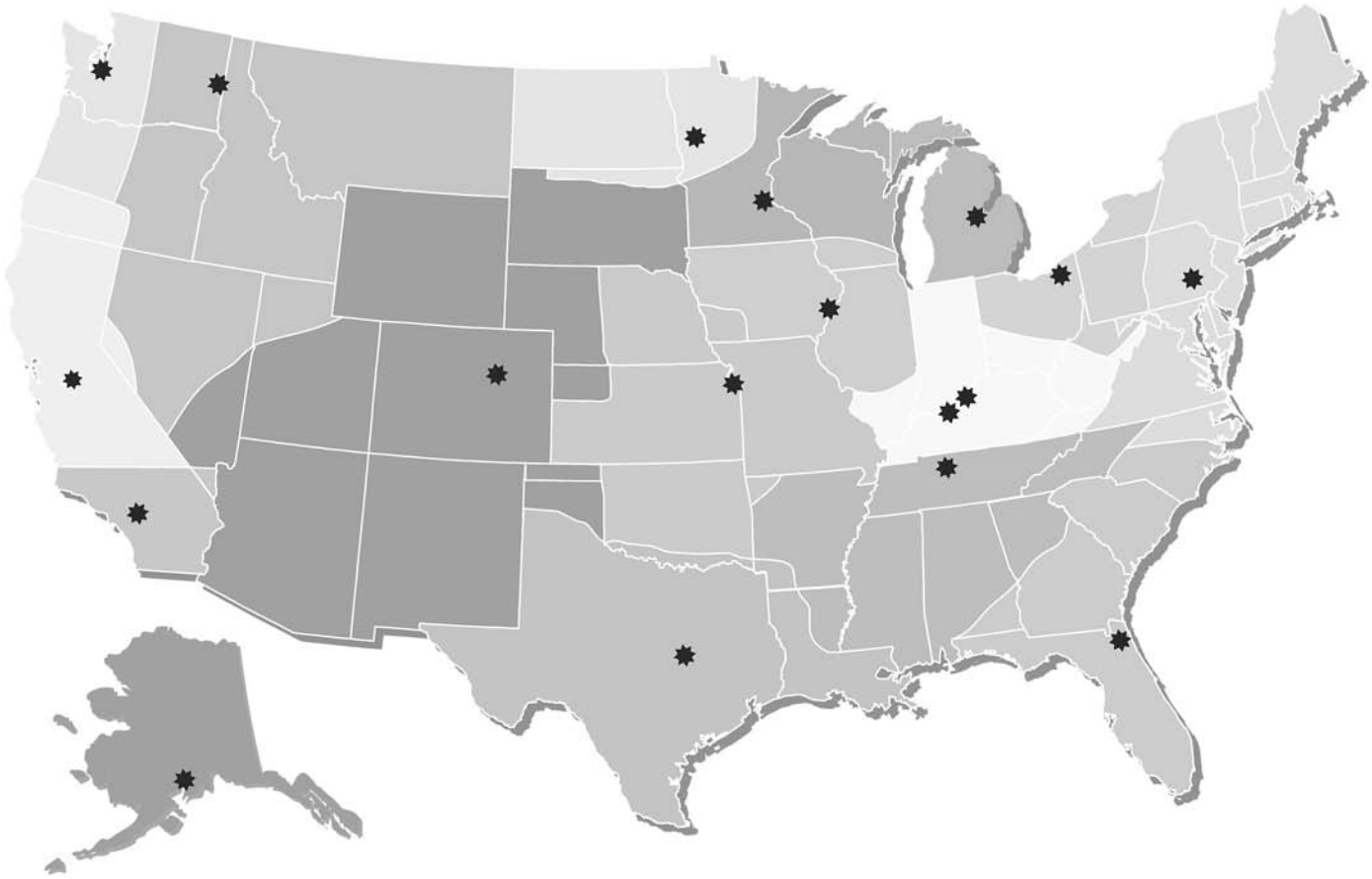
The installation of metal roof systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. USE EXTREME CARE WHILE INSTALLING ROOF PANELS. It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to exist.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



NOTE: Shaded areas represent regions served by each location.


**CORPORATE OFFICE**
**SELLERSBURG, INDIANA**

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

## METAL SALES LOCATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

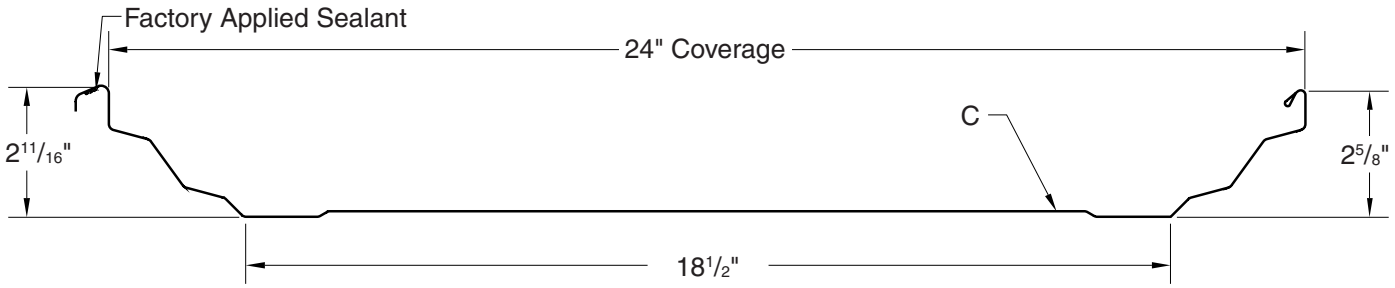
**BAY CITY BRANCH**
5209 Mackinaw Rd.
Bay City, MI 48706
(866) 640-7663
(907) 646-7663
(907) 646-7664 /FAX

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

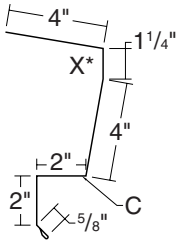
## TECHNICAL SUPPORT

**TECHNICAL SERVICES**
7800 State Road 60
Sellersburg, IN 47172
(812) 246-0819 (800) 406-7387
(812) 246-0829 /FAX (800) 944-6884 /FAX
info@metalsales.us.com

## PANEL PROFILE

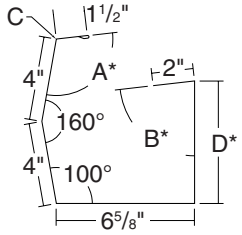



## SEAM-LOC 24 SCULPTURED EAVE



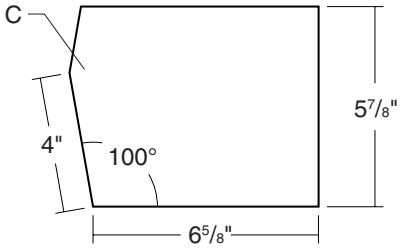

***Length 10'-2", 20'-3" - *Specify Slope Angle***

## SEAM-LOC 24 SCULPTURED GUTTER

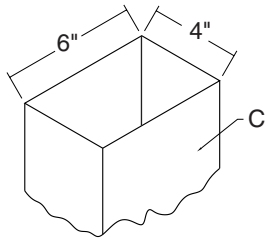



***Length 10'-2", 20'-3"***
***Specify Slope Angle For A and B, and Length for D.***

## SEAM-LOC 24 SCULPTURED GUTTER END

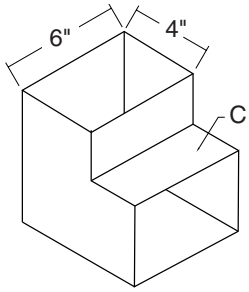



## DOWNSPOUT 6" x 4"



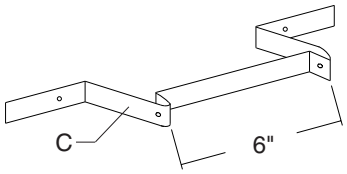

***Length 10'-2", 20'-3"***
***(Also available 4" x 3 1/2")***

## 95° ELBOW 6" x 4"



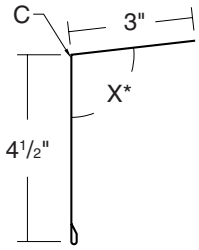

***(Also available 4" x 3 1/2")***

## DOWNSPOUT BRACKET




***(Also available 4")***

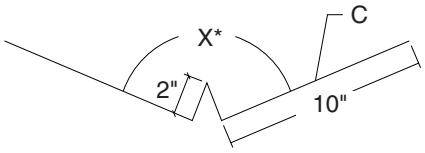
## GUTTER DRIP




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

## VALLEY

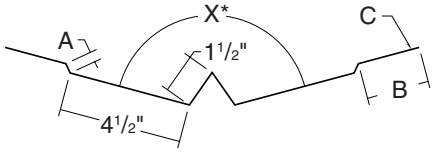
***(For use with Utility System/Clip)***




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

## SSR 4.5" DROP VALLEY

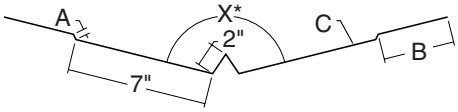
| SYSTEM | A | B |
|---|---|---|
| LOW | 3/8" | 4 1/2" |
| MID | 1" | 3 7/8" |
| HIGH | 1 3/8" | 3 1/2" |




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

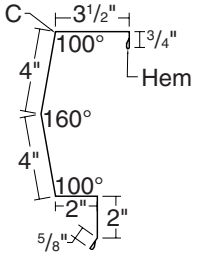
## SSR 7" DROP VALLEY

| SYSTEM | A | B |
|---|---|---|
| LOW | 3/8" | 4 1/2" |
| MID | 1" | 3 7/8" |
| HIGH | 1 3/8" | 3 1/2" |



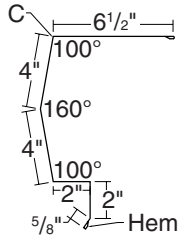

***Length 10'-2", 20'-3" - *Specify Slope Angle***

## SSR SCULPTURED RAKE (ON MODULE)



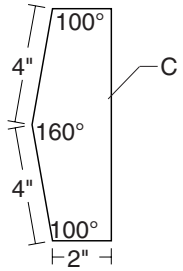

***Length 10'-2", 20'-3"***

## SSR SCULPTURED RAKE (OFF MODULE)

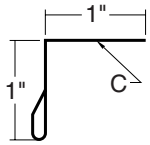



***Length 10'-2", 20'-3"***

## SSR SCULPTURED RAKE END

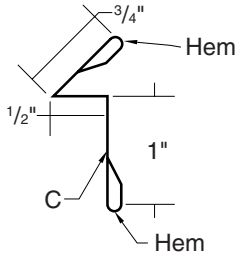



## SSR RAKE CLEAT



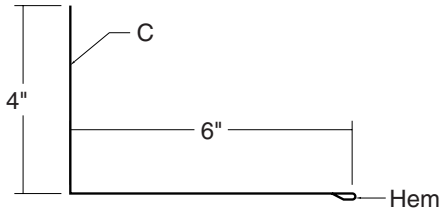

*Length 10'-2"*

## SSR RAKE SLIDE



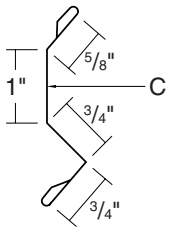

*Length 10'-2"*

## SSR RAKEWALL



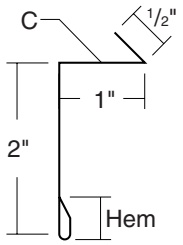

*Length 10'-2"*

## COUNTER FLASHING



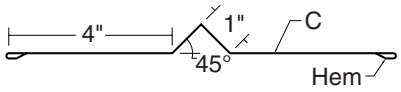

*Length 10'-2"*

## REGLET FLASHING



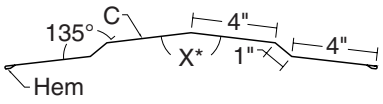

*Length 10'-2"*

## EXPANSION JOINT COVER



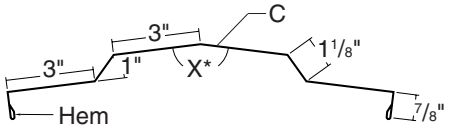

*Length 10'-2"*

## SSR RIDGE



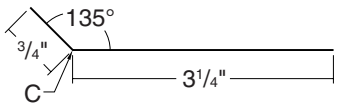

*Length 10'-2", 20'-3" - *Specify Slope Angle*

## VENTED RIDGE COVER



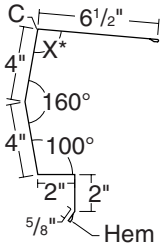

*Length 10'-2", 20'-3" - *Specify Slope Angle*

## VENT DRIP



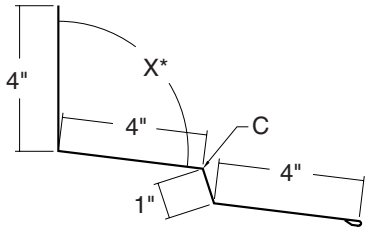

*Length 10'-2"*

## SSR SCULPTURED HIGH SIDE EAVE



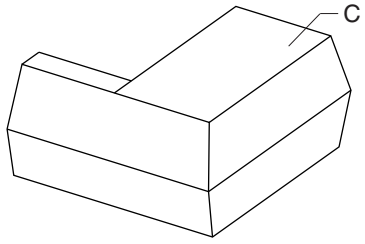

*Length 10'-2", 20'-3" - *Specify Slope Angle*

## SSR HIGH SIDE PITCH BREAK



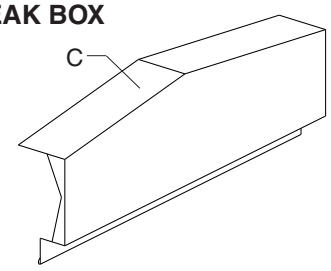

*Length 10'-2", 20'-3" - *Specify Slope Angle*

## SSR SCULPTURED CORNER BOX



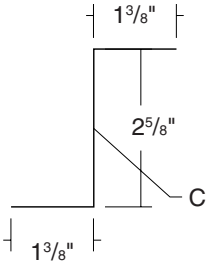

**Specify Slope Angle*

## SSR SCULPTURED PEAK BOX



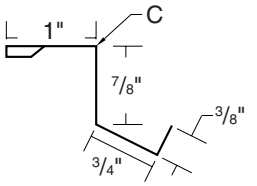

**Specify Slope Angle*

## SEAM-LOC 24 Z-CLOSURE




*Length 10'-2"*

## SSR GUTTER SUPPORT

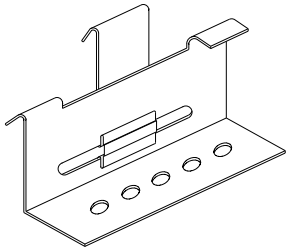



*Length 0'-10"*

**C- Indicates color side of flashing.**

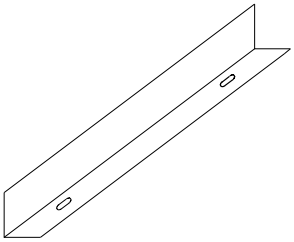


## SEAM-LOC 24 CLIP



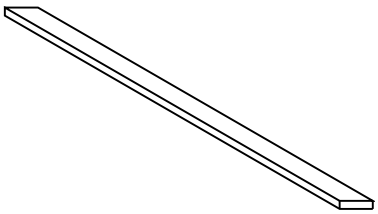
**Height 2⅝", 3⅛", 3⅝", 4⅛"**
**Galvanized**

## FLOATING RAKE ANGLE



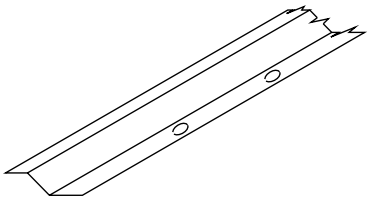
**Length 10'-0"**
**Height 2⅝", 3⅛", 3⅝", 4⅛"**
**Galvanized**

## ENDLAP PAD



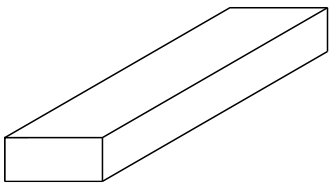
**1½" x 3/32" x 26¼"**
**Butyl - Gray**

## EAVE PLATE



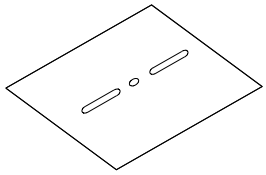
**Length 10'-0"**
**Height ⅜", 1", 1⅜"**
**Galvanized**

## THERMAL BLOCK



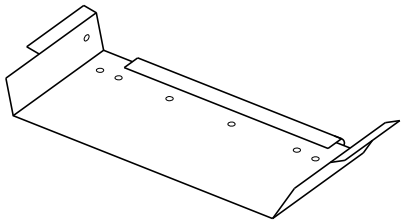
**1" x 3" x 24"**
**Polystyrene Foam**

## BEARING PLATE

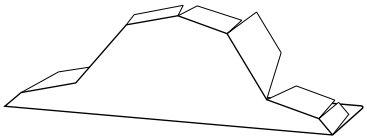


**4" X 5"**
**20 Gauge - Galvanized**

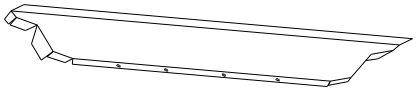
## COMPRESSION PLATE



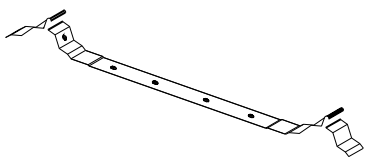
## METAL INSIDE CLOSURE



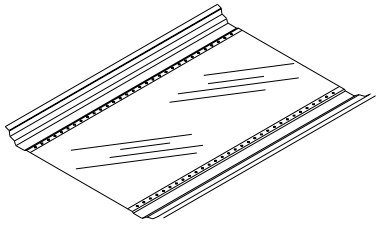
## METAL OUTSIDE CLOSURE



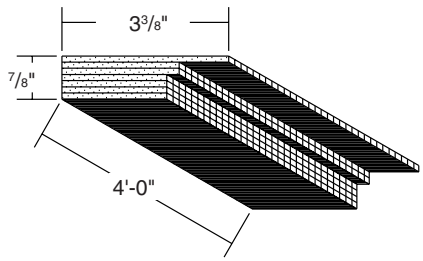
## CINCH STRAP



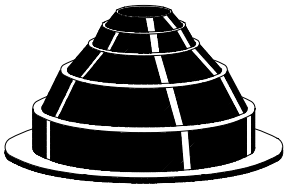
## SEAM-LOC 24 LIGHT TRANSMITTING PANEL



## VENT MATERIAL

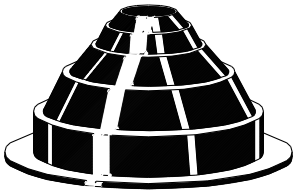


## RUBBER ROOF JACK



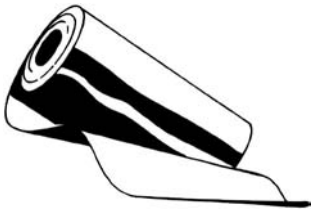
MINI (1/4" to 1 1/8" O.D. Pipe)
#2 (1 3/4" to 3" O.D. Pipe)
#4 (3" to 6" O.D. Pipe)
#6 (6" to 9" O.D. Pipe)
#8 (7" to 13" O.D. Pipe)

## RETRO ROOF JACK



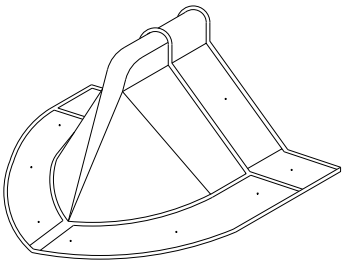
#801RETRO (3/4" to 2 3/4" O.D. Pipe)
#802RETRO (2" to 7 1/4" O.D. Pipe)
#803RETRO (3 1/4" to 10" O.D. Pipe)

## RUBBER ROOF FLASH KIT

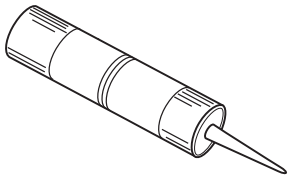


12" x 50'-0" Flash Kit
18" x 50'-0" Flash Kit

## DECK CAP



## TUBE SEALANT

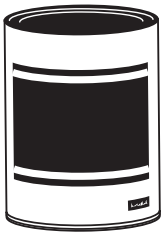


10.3 oz. Cartridge
Urethane

## TAPE SEALANT

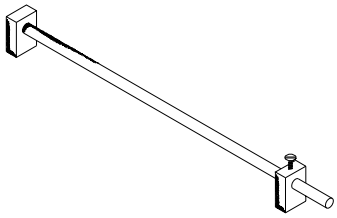
7/8" X 3/16" X 25'
Double Bead
Butyl - Gray

## TOUCH-UP PAINT

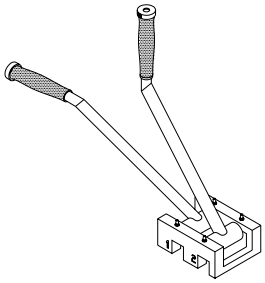


Available in Pints
PVDF / MS CF30

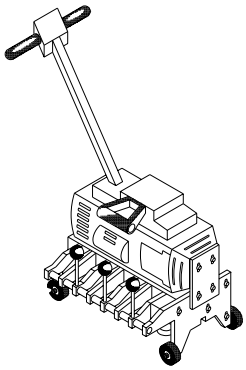
## ADJUSTABLE SPACER BAR



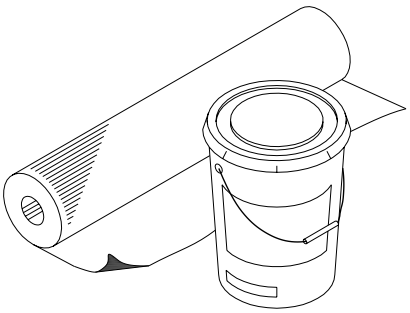
## SEAM-LOC HAND CRIMPER



## MECHANICAL SEAMER

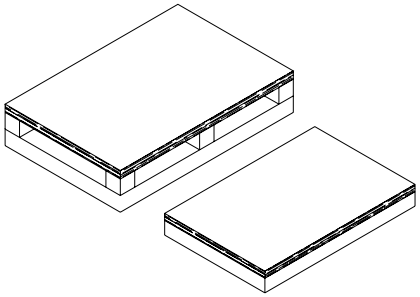


## UNDERLAYMENT & PRIMER



Contact Metal Sales for information

## NAILABLE INSULATION



Contact Metal Sales for information

## RECEIVING MATERIAL

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

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

## GENERAL HANDLING

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

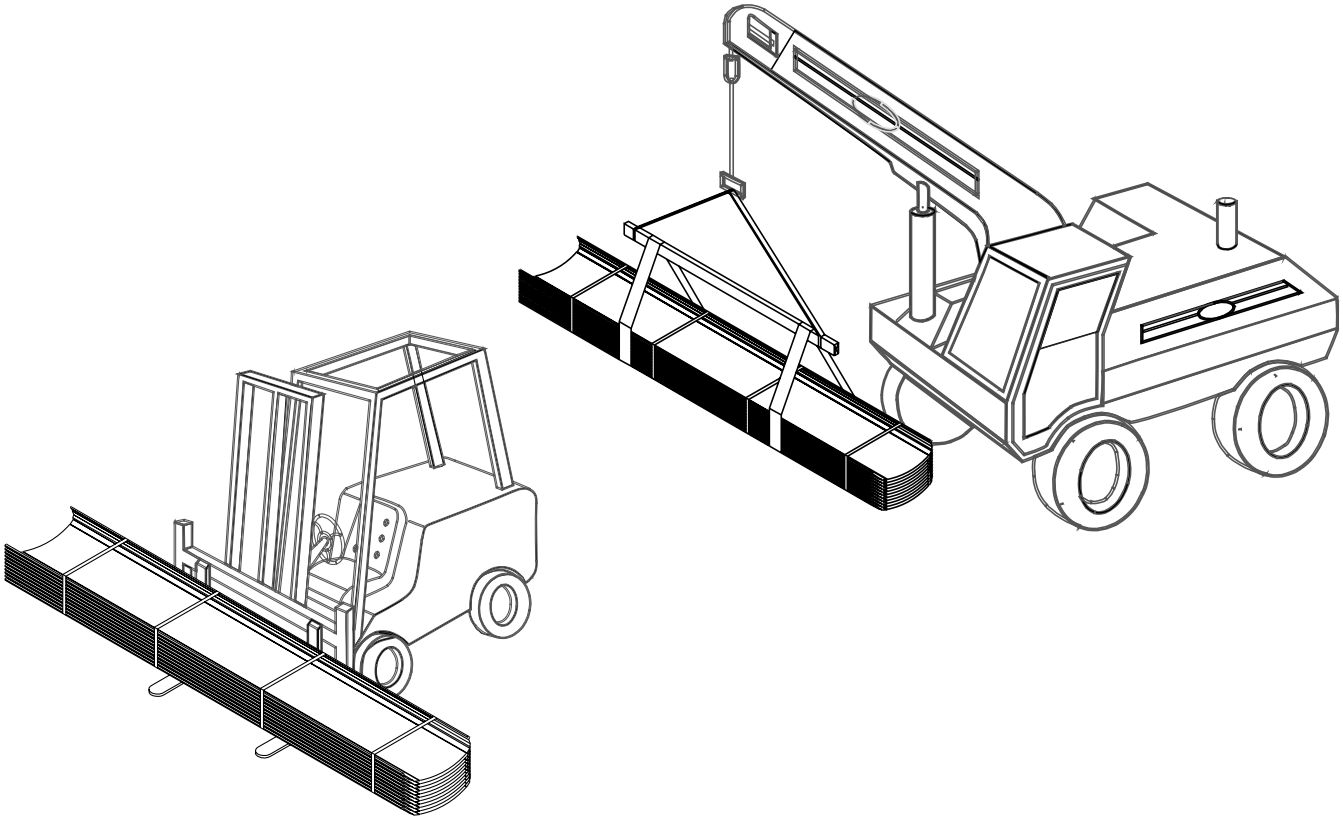
**CAUTION**

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 $^1/_3$ of the length of the panel should be left unsupported. Never use wire rope because this will damage the panels.

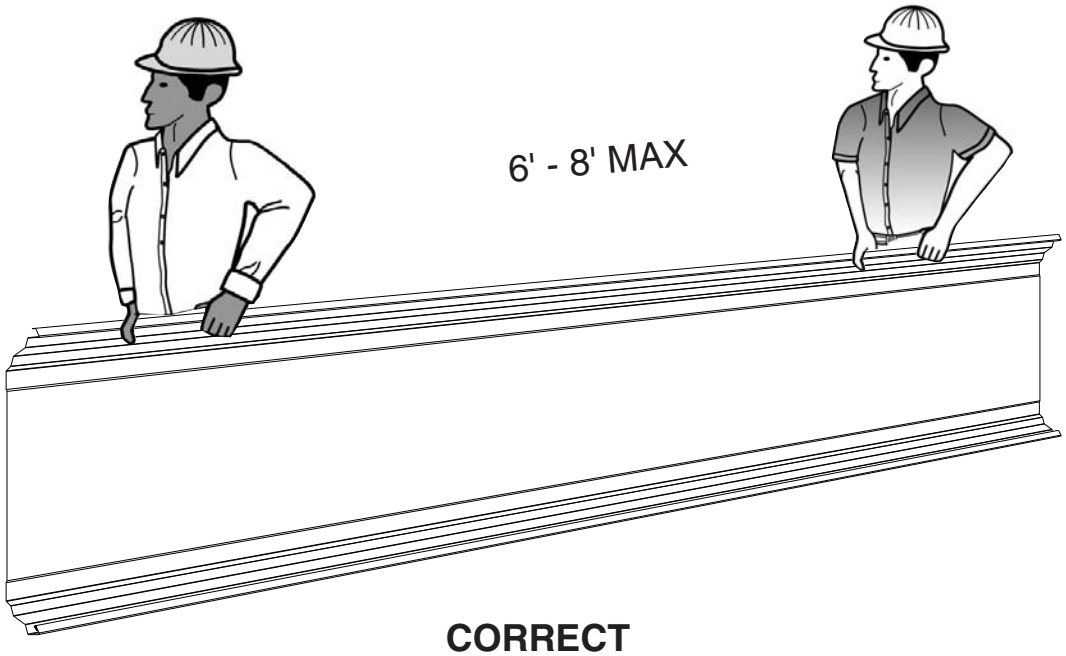


## MANUAL HANDLING

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.

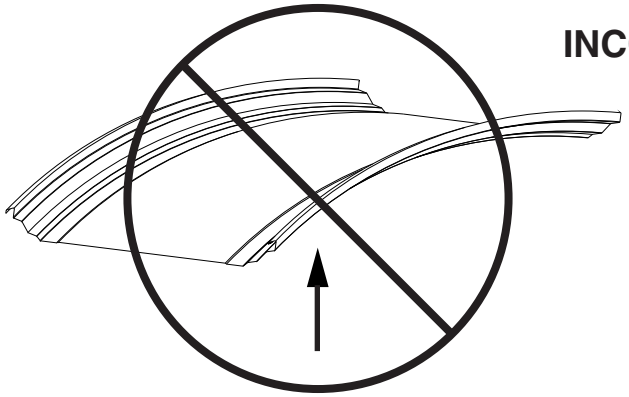
Handling of individual panels should be done carefully and properly to avoid bending or damaging. Seam-Loc 24 panels should be carried by grasping the edge of the panel so that the Seam-Loc 24 panel is vertical to the ground. The Seam-Loc 24 panel should not be carried with the panel horizontal to the ground as this could cause the panel to buckle or bend in the center.

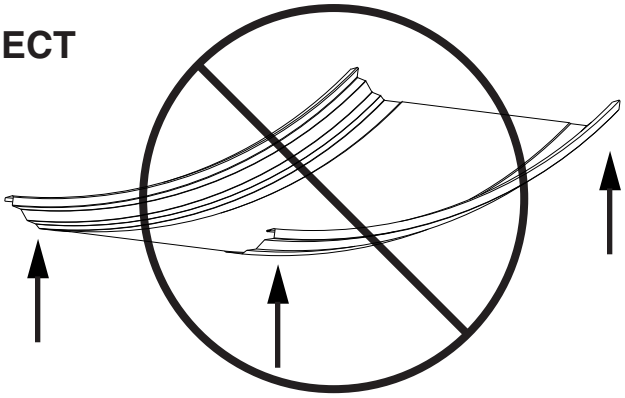
Normally individual panels can be handled by people placed every 6'-0" to 8'-0" along the length of the panel.




**CORRECT**

**INCORRECT**

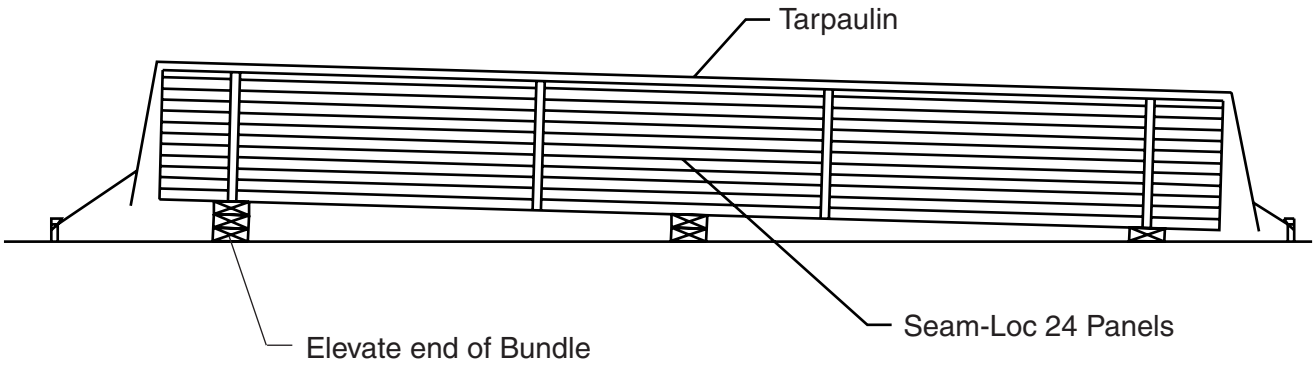


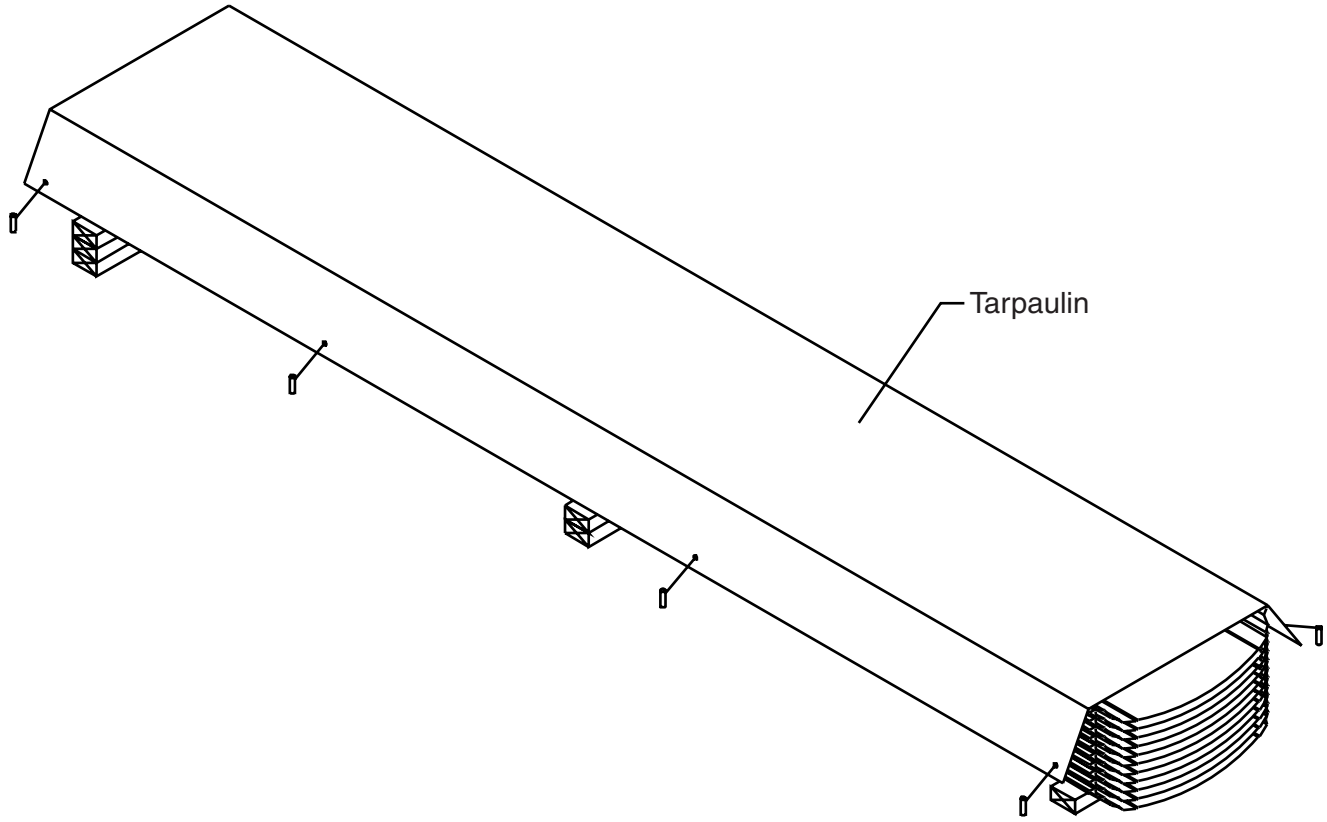


## GENERAL

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

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



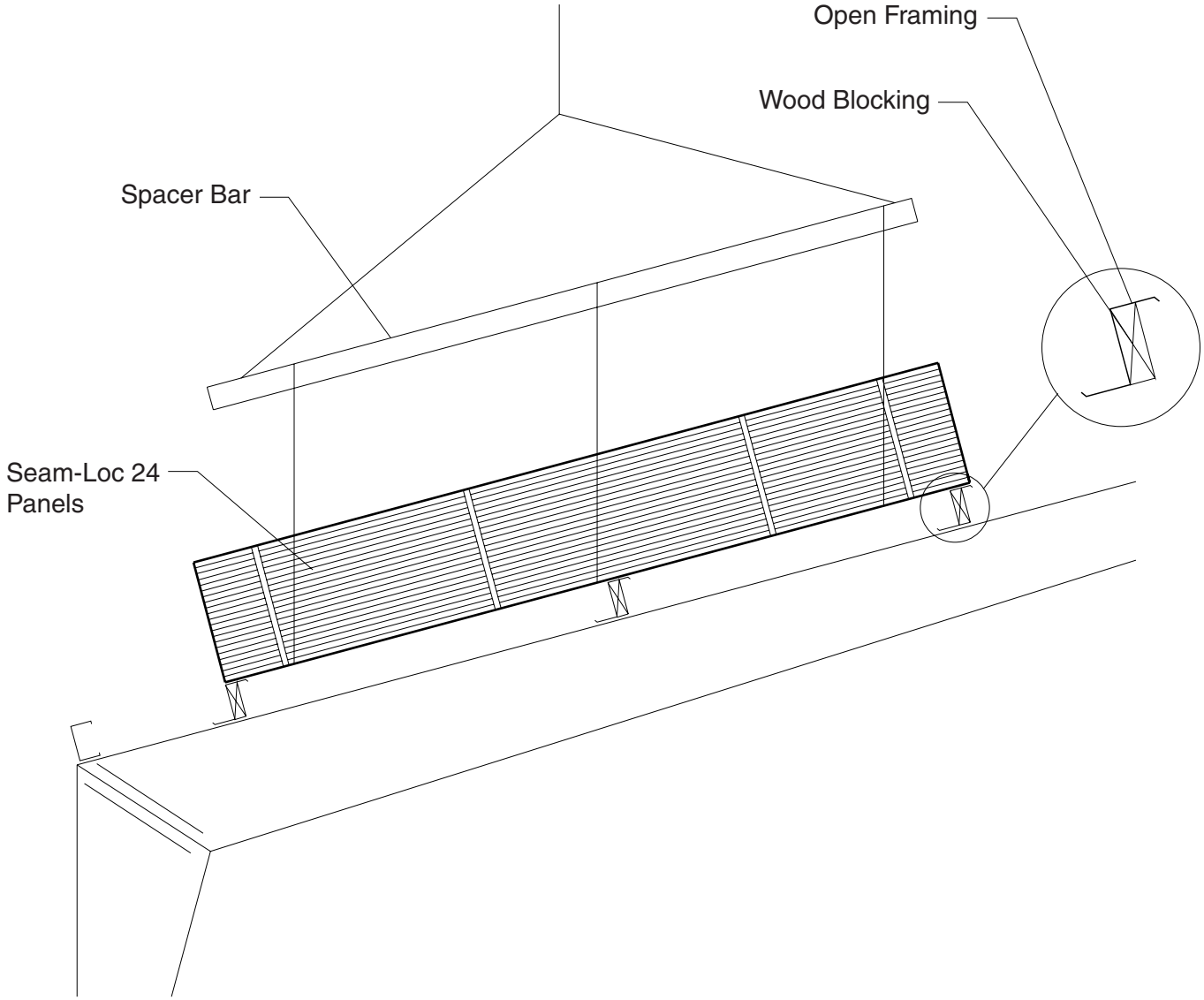



## STORAGE ON ROOF

To facilitate the handling of Seam-Loc 24 panels, panel bundles can be lifted and placed on the roof. Bundles need to be placed on the roof in order for the roof structure to handle the weight. Loading capabilities of the structure must be checked.

When lifting packaged sheets, make certain they are adequately supported. Panels less than 20'-0" in length can normally be lifted with a forklift; however, when lifting panels in excess of 20'-0", it is recommended that a spreader bar and slings be used. As a rule, when lifting, no more than $^1/_3$ 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.



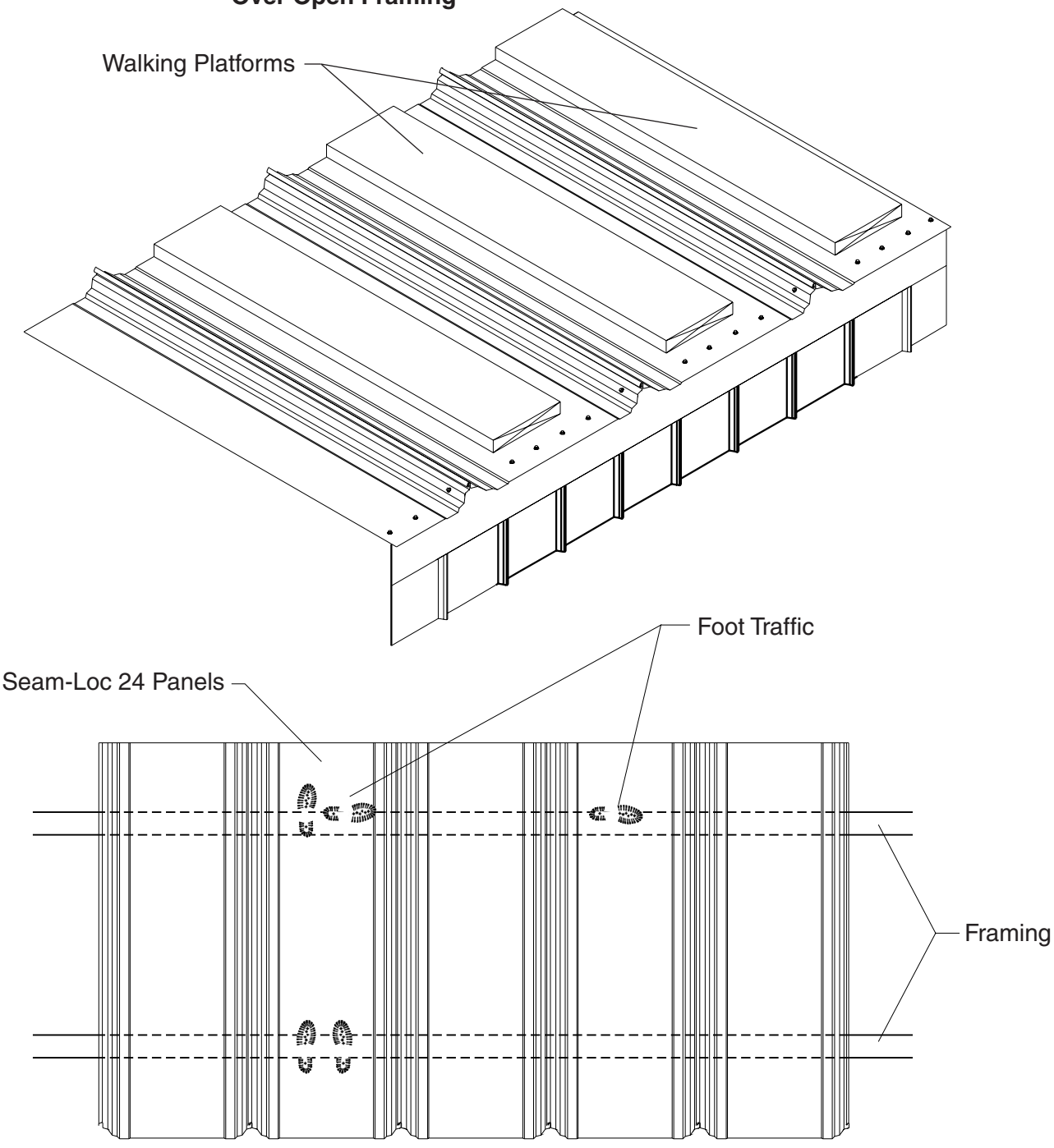
# Foot Traffic

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

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

When walking on the roof panels is unavoidable, walk only in the flats of the panel. Walking on the ribs can cause damage to the panels. If 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.

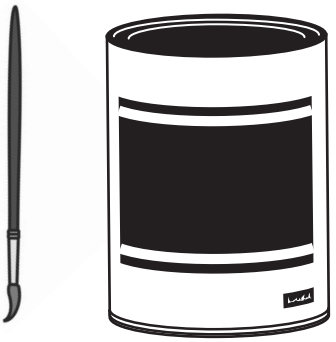
**CAUTION**

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

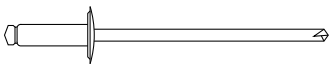
All painted panels and flashings have a factory applied baked on finish. Handling and installing panels may result in some small scratches or nicks to the paint finish. Touch-up paint is available in matching colors from Metal Sales. It is recommended that a small brush be used to apply touch-up paint 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.

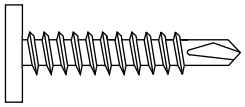
SPRAY PAINT

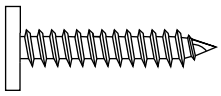


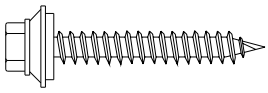
TOUCH-UP PAINT

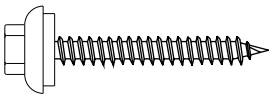
# SEAM-LOC 24® Fastener Selection Guide

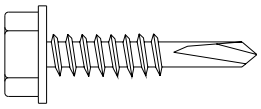
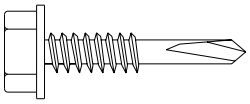
| POP RIVET | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | 1/8" x 3/16" | A | Unpainted | Flashing to Panel or Flashing |
| | 1/8" x 3/16" | A | Painted | Flashing to Panel or Flashing |

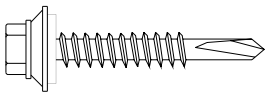
| PANCAKE HEAD DRILLER | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #10-16 x 1" (#2 Point) | Driller | Plated | Panel/clip/flashing to metal framing or decking |

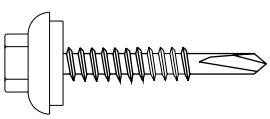
| PANCAKE HEAD WOODSCREW | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #10-12 x 1" | A | Plated | Panel/clip/flashing to wood substructure |

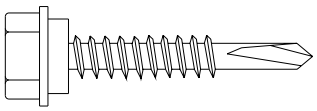
| WOODSCREW | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #9-15 x 1" | A | Painted | Panel or Flashing to wood substructure |
| | #9-15 x 1 1/2" | A | Painted | |
| | #9-15 x 2" | A | Painted | |

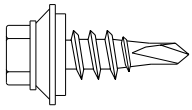
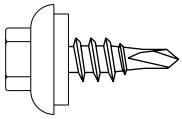
| WOODSCREW XL | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #9-15 x 1" | A | Unpainted | Panel or Flashing to wood substructure |
| | #9-15 x 1 1/2" | A | Unpainted | |
| | #9-15 x 2" | A | Unpainted | |
| | #9-15 x 1" | A | Painted | Panel or Flashing to wood substructure |
| | #9-15 x 1 1/2" | A | Painted | |
| | #9-15 x 2" | A | Painted | |

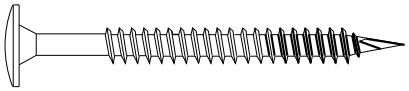
| SELF DRILLER NO WASHER | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #1/4-14 x 1 1/4" | Driller | Plated | Panel clips to metal substructure |
| | #12-14 x 1" | Driller | Plated | Accessories to metal substructure and used with framing on Retrofit |
|  | #12-24 x 1 1/4" | Driller (#4 point) | Plated | Panel clips to bar joists up to 3/8" thick |

| SELF DRILLER | 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 1 1/4" | Driller | Painted | |

| SELF DRILLER XL | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #12-14 x 1 1/4" | Driller | Unpainted | Panel or Flashing to metal substructure |
| | #12-14 x 1 1/2" | Driller | Unpainted | |
| | #12-14 x 1 1/4" | Driller | Unpainted | |
| | #12-14 x 1 1/4" | Driller | Painted | Panel or Flashing to metal substructure |
| | #12-14 x 1 1/2" | Driller | Painted | |
| | #12-14 x 1 1/4" | Driller | Painted | |

| SHOULDER SELF DRILLER | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #12-14 x 1¼" | Driller | Plated | For use with Floating Rake Angle to substructure |

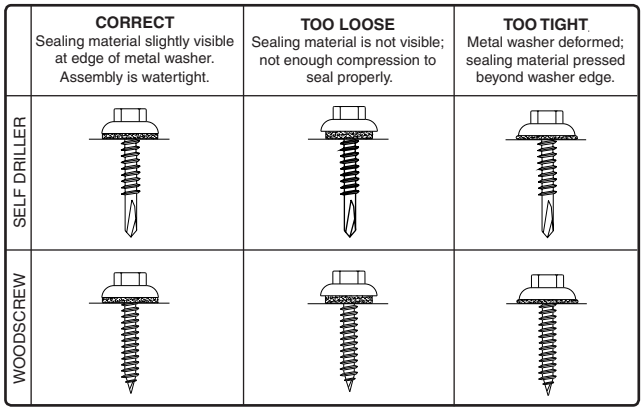
| STITCH SCREW | SIZE | TYPE | FINISH | APPLICATION |
|---|---|---|---|---|
|  | #¼ - 14 x ⅞" | Stitch | Painted | Flashing to Panel or Flashing |
| **STITCH SCREW XL** | | | | |
|  | #¼ - 14 x ⅞" | Stitch | Unpainted | Flashing to Panel or Flashing |
| | #¼ - 14 x ⅞" | Stitch | Painted | Flashing to Panel or Flashing |

| DEKFAST | 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 | |

## TECHNIQUE

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

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




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

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

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

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

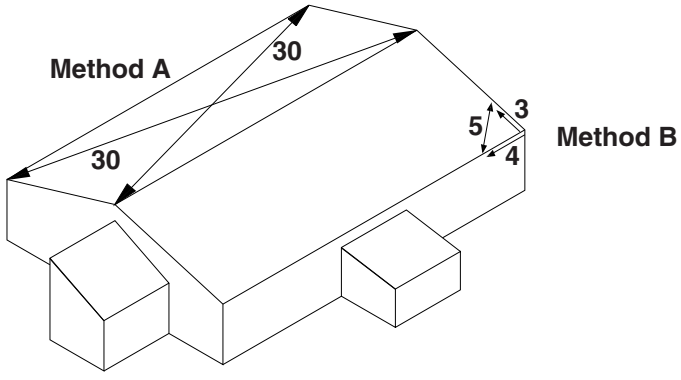
## CONDITION OF SUBSTRUCTURE

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

The installer should check the roof deck for squareness before installing 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.



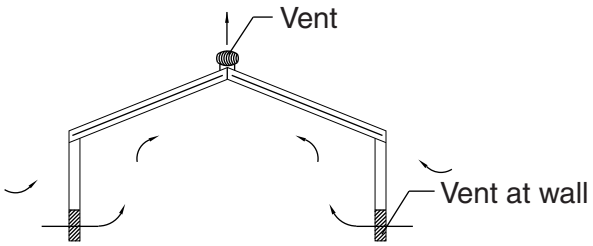
## VENTILATION

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.

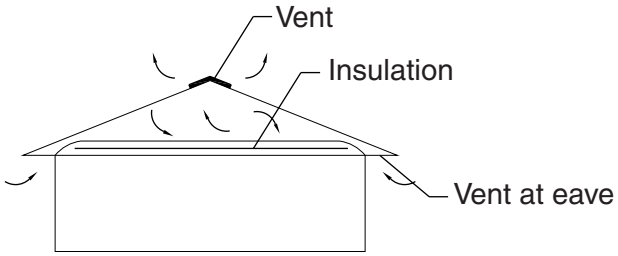
Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal buildings; these problems are common to all types of construction.

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)**



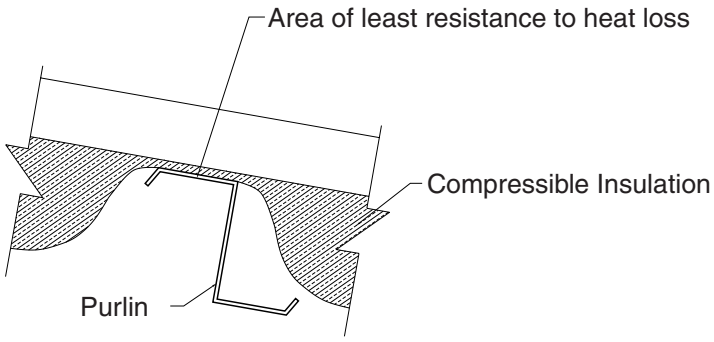

**Building with attic or retrofitted**

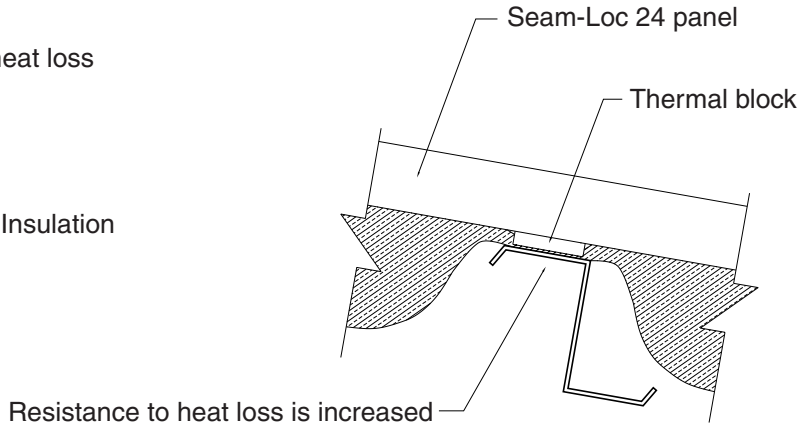
## INSULATION

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 ambient 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.

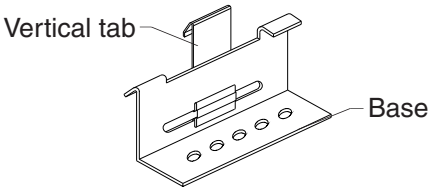
## SELECTION OF SYSTEM COMPONENTS

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 |
| MID | 3 5/8" MID | 1" MID | 3 5/8" MID | 1" | 1/2" TO 4" 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**

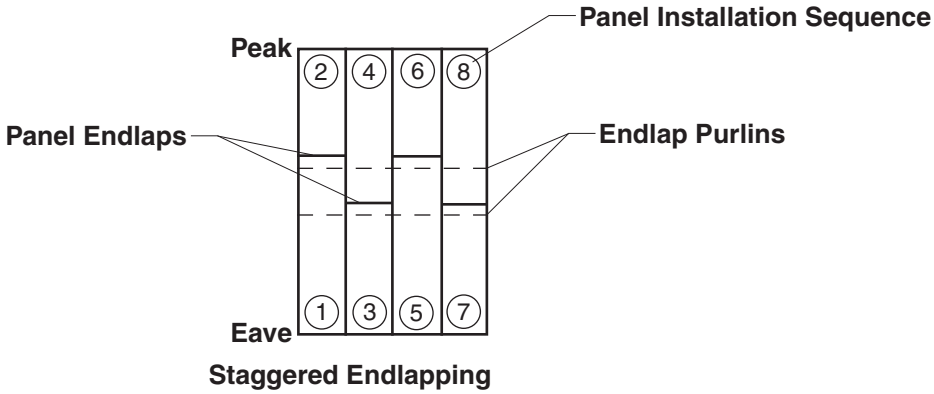
The following chart should be used to determine proper fasteners required for clip installation on the selected applications. (See Product General Information pages 16-17 for other fasteners available.)

| APPLICATION | INSTALLATION REQUIREMENTS | | **CLIP SPACING | TYPE OF FASTENER | # REQ. |
|---|---|---|---|---|---|
| CLIPS OVER PURLINS (16 GA. MIN) | STANDARD | 24 GAUGE | 5'-0" O.C. | 1/4-14 x 1 1/2" SELF DRILLER NW | 2 FASTENERS |
| | STANDARD | 22 GAUGE | 5'-0" O.C. | 1/4-14 x 1 1/2" SELF DRILLER NW | 2 FASTENERS |
| CLIPS OVER 5/8" WOOD DECK | STANDARD | 24 GAUGE | BY DESIGN | #10 X 1" PANCAKE HEAD WOOD | 2 FASTENERS |
| | STANDARD | 22 GAUGE | BY DESIGN | #10 X 1" PANCAKE HEAD WOOD | 2 FASTENERS |
| CLIP OVER RIGID INSULATION / METAL DECK | STANDARD | 24 GAUGE | 4'-0" O.C. | DEKFAST #14* | 2 FASTENERS |
| | STANDARD | 22 GAUGE | 4'-0" O.C. | DEKFAST #14* | 2 FASTENERS |

* Length of Dekfast will vary depending on the total thickness of the rigid insulation and metal (see page 17).
** Based on UL580. Subject to project loading requirements, closer clip spacing may be required. Contact your local Metal Sales branch representative for more information (see pages 2 and 3).

## PANEL ENDLAPPING

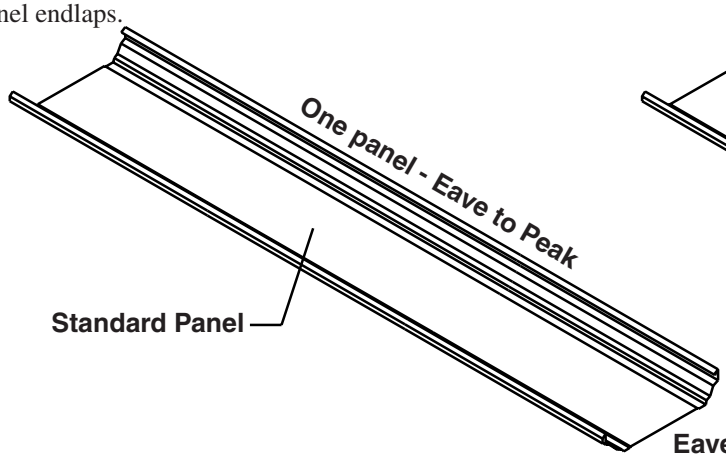
If panel endlapping is required, endlaps must be staggered. This prevents material build-up and aids in overall structural performance.

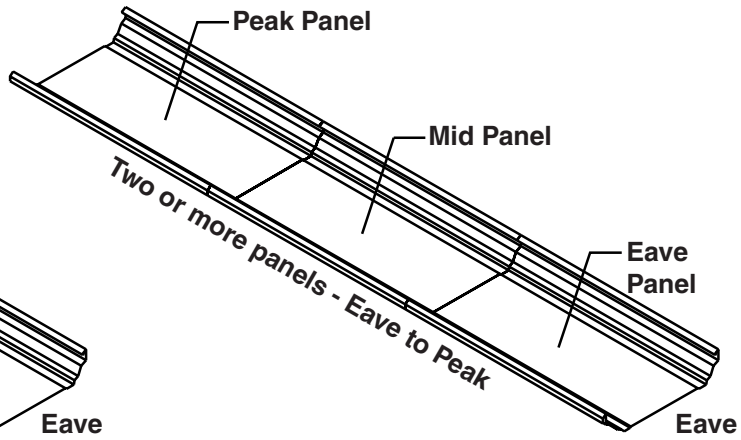



**Staggered Endlapping**

## FACTORY NOTCHED / PUNCHED PANELS

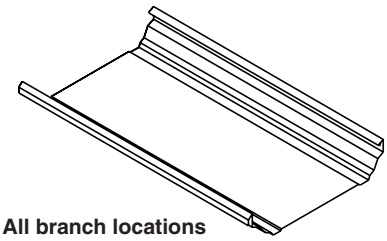
Metal Sales can provide factory notched/punched panel ends to eleminate reliance on field notching for weathertight seams at panel endlaps.



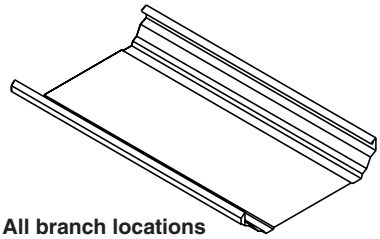




### STANDARD PANEL:

- Used when endlapping of panels is not required
- One panel from eave to peak of roof
- No notching/punching



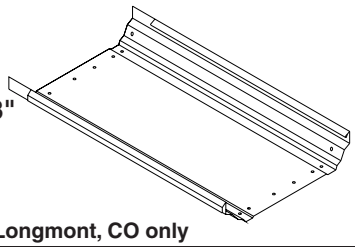
All branch locations



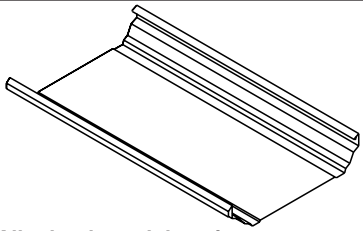
All branch locations

### PEAK PANEL:

- Used when endlapping of panels is required
- Used as upper panel of endlapping run
- Notching and punching*
- No notching or punching**



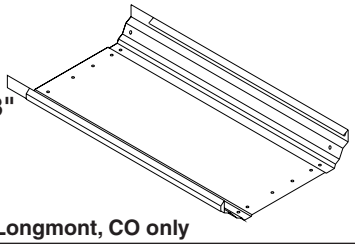

*Longmont, CO only



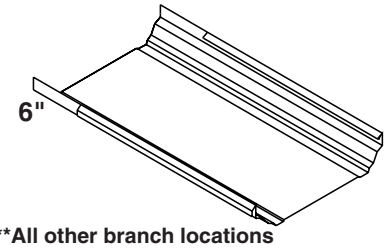
**All other branch locations

### EAVE PANEL OR MID PANEL:

- Used when endlapping of panels is required
- Used as lower or middle panel of endlapping run
- Notching and punching*
- Notched for panel endlapping**



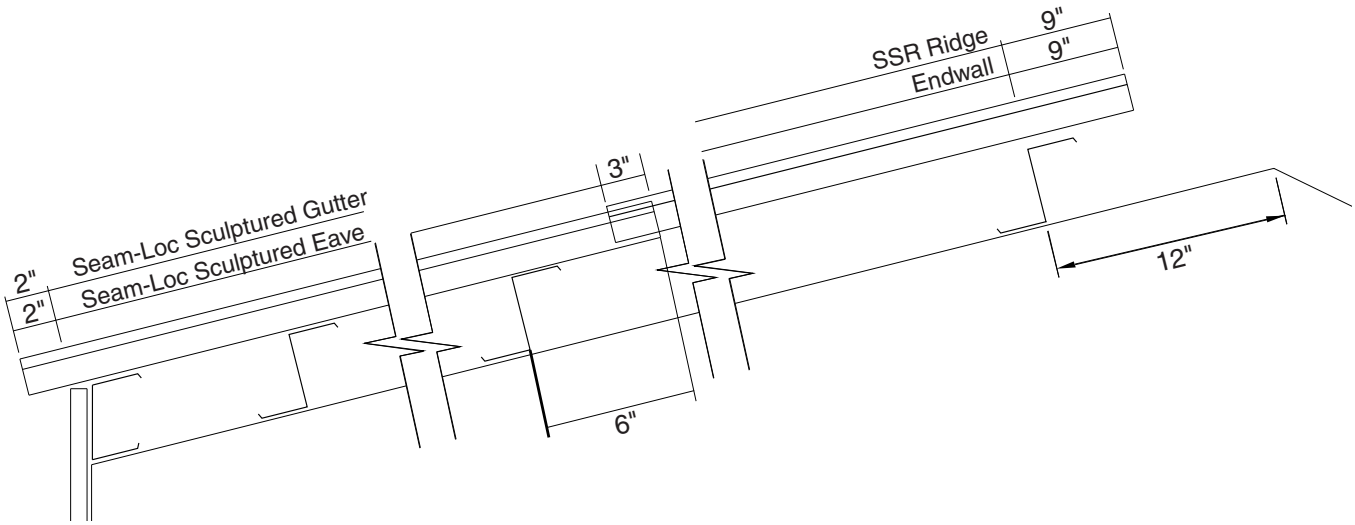

*Longmont, CO only



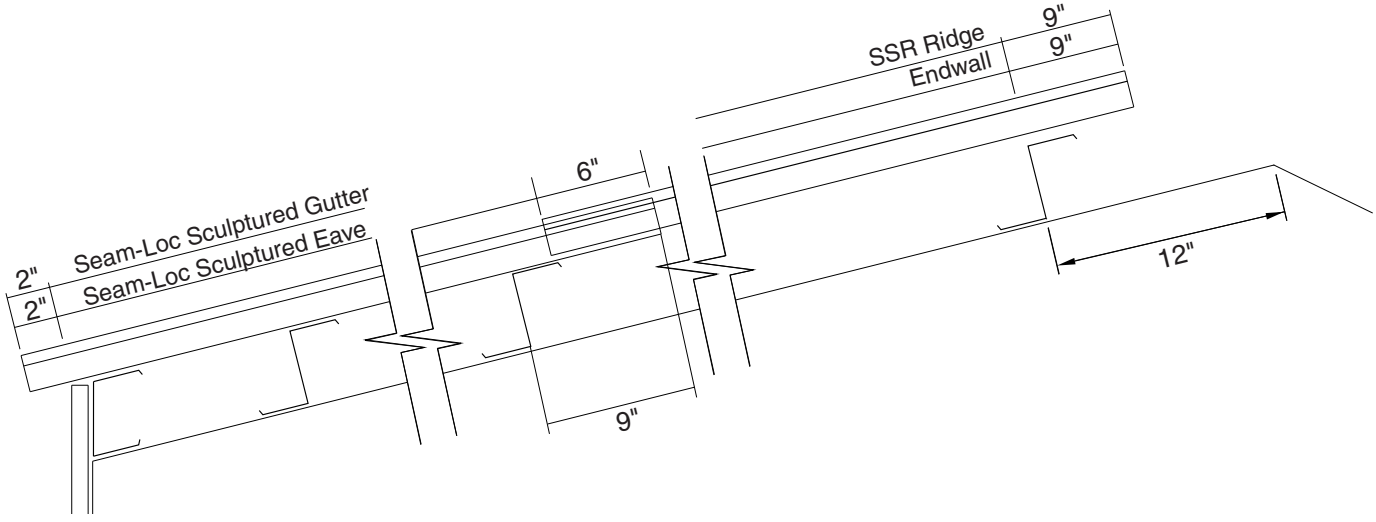

**All other branch locations

***See next page for panel length considerations at endlaps.**

## LENGTH CONSIDERATIONS FOR PANELS PRODUCED AT LONGMONT, CO BRANCH




## LENGTH CONSIDERATIONS FOR PANELS PRODUCED AT ALL OTHER BRANCHES

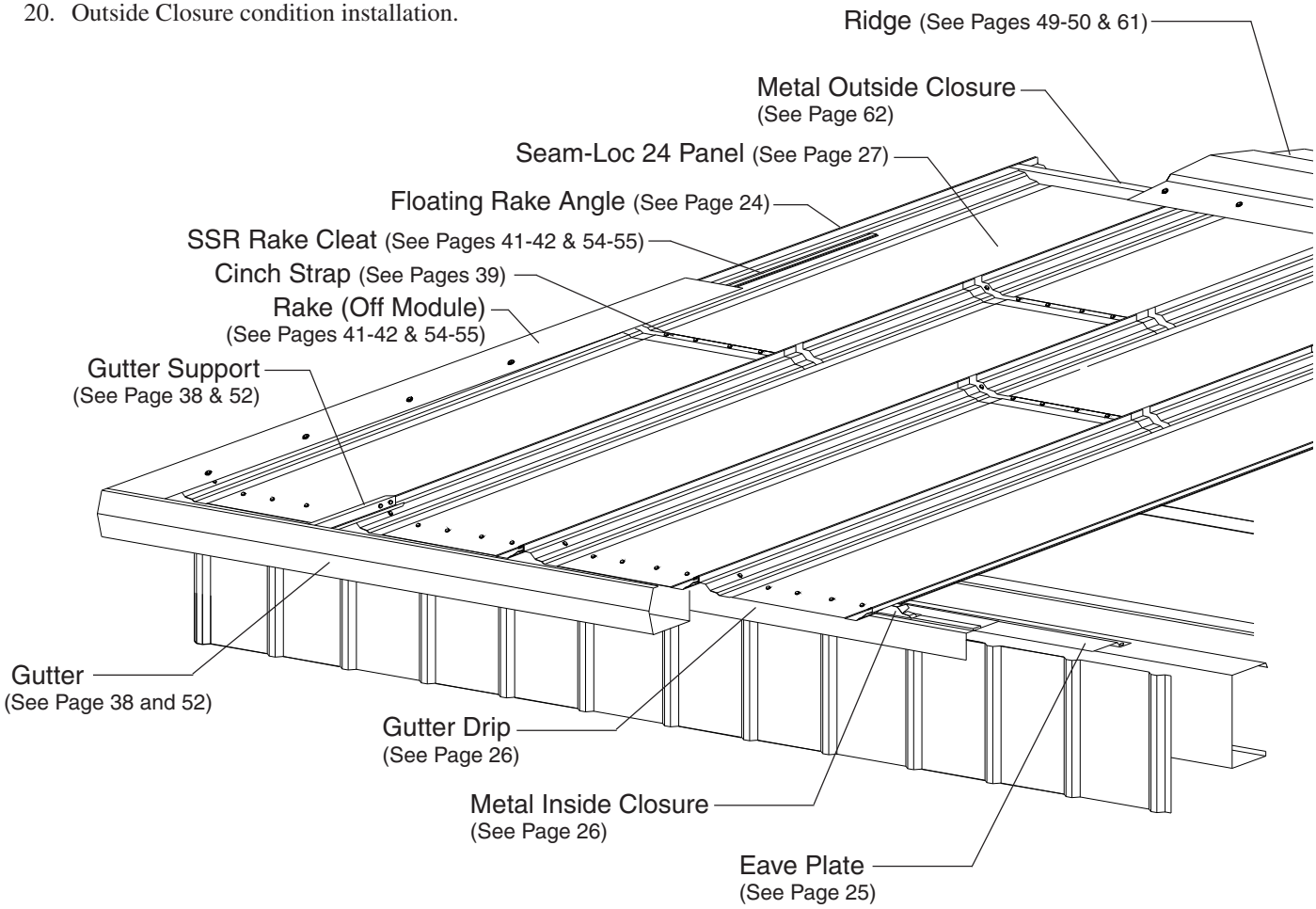


# Installation Procedure Overview

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.



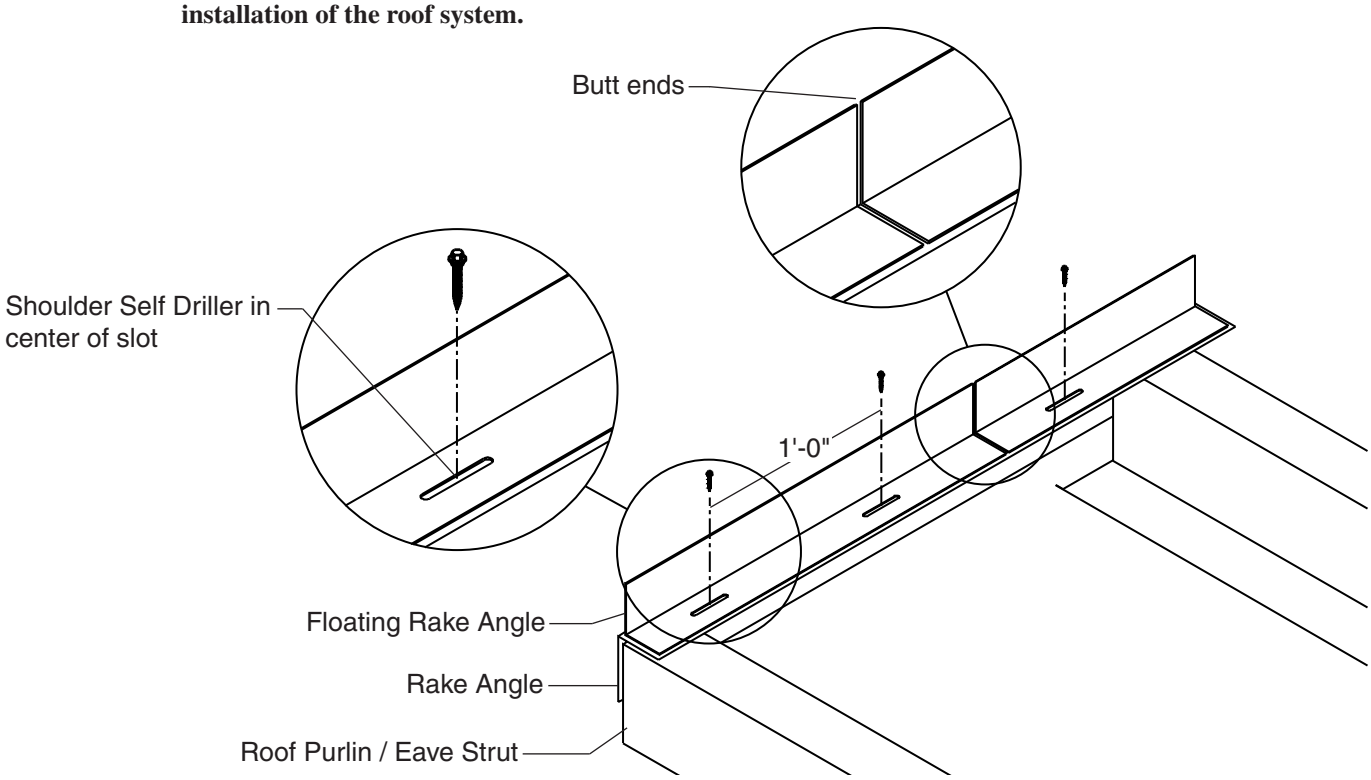
## INSTALLING FLOATING RAKE ANGLE

**STEP 1**

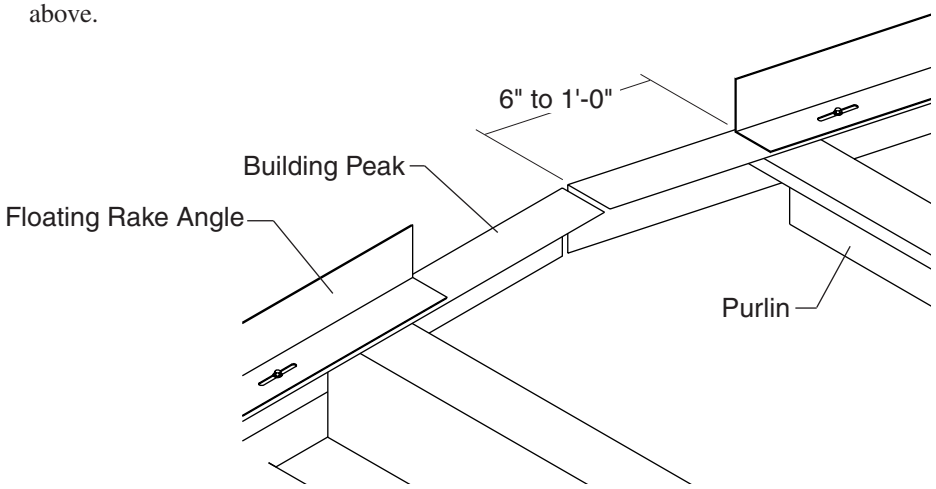
**Note: The Floating Rake Angle must be attached to the framing member along the rake and rakewall. Size of Floating Rake Angle can vary, (see System Components list on page 20).**

**Steps:**

1. 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.**
2. Fasten Floating Rake Angle with #12-14 x 1¼" 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.**




3. If two or more Floating Rake Angles are required, butt ends of Floating Rake Angles **(Do not overlap)** and continue fastening.
4. If necessary, field cut Floating Rake Angle to terminate 6"-12" from peak of building.
5. Install Floating Rake Angle on the opposite end where the panels terminate using the same procedures as above.




6. 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.
7. Avoid side lap of insulation from occurring directly beneath side lap of panel.

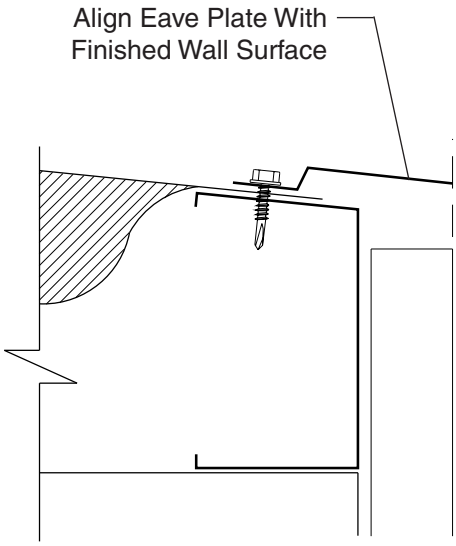
## INSTALLING EAVE PLATE

STEP 2

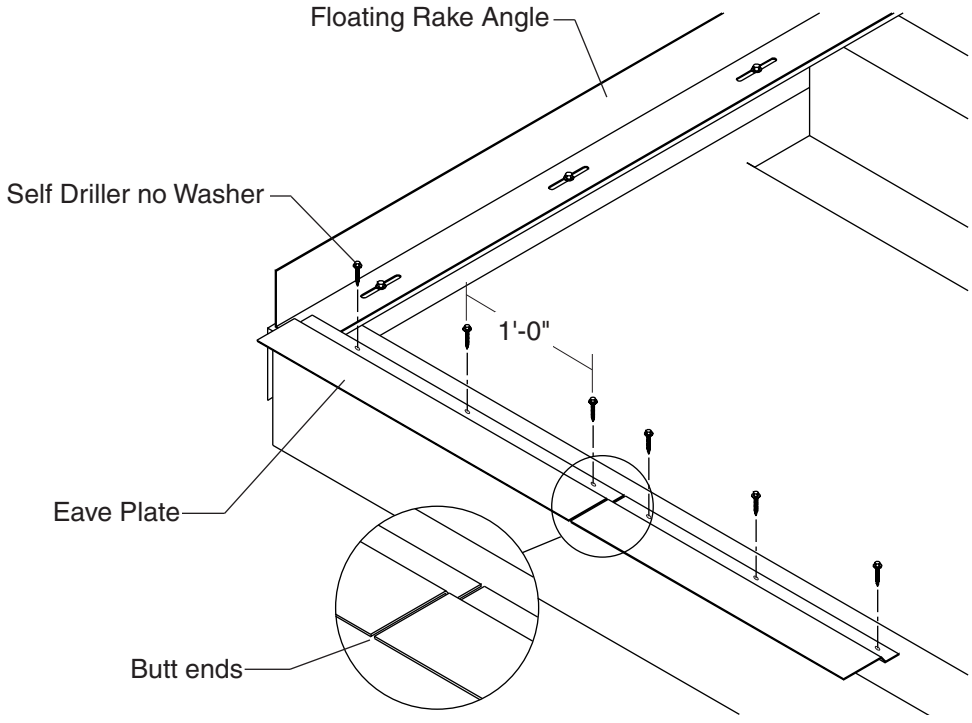
**Note: The Eave Plate serves as an extension of the structure to support and fasten the panel at the eave and valley on applications utilizing the Low, Mid, or High Floating Clip Systems. Size of Eave Plate can vary, (see System Components list on page 20).**

**Steps:**

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

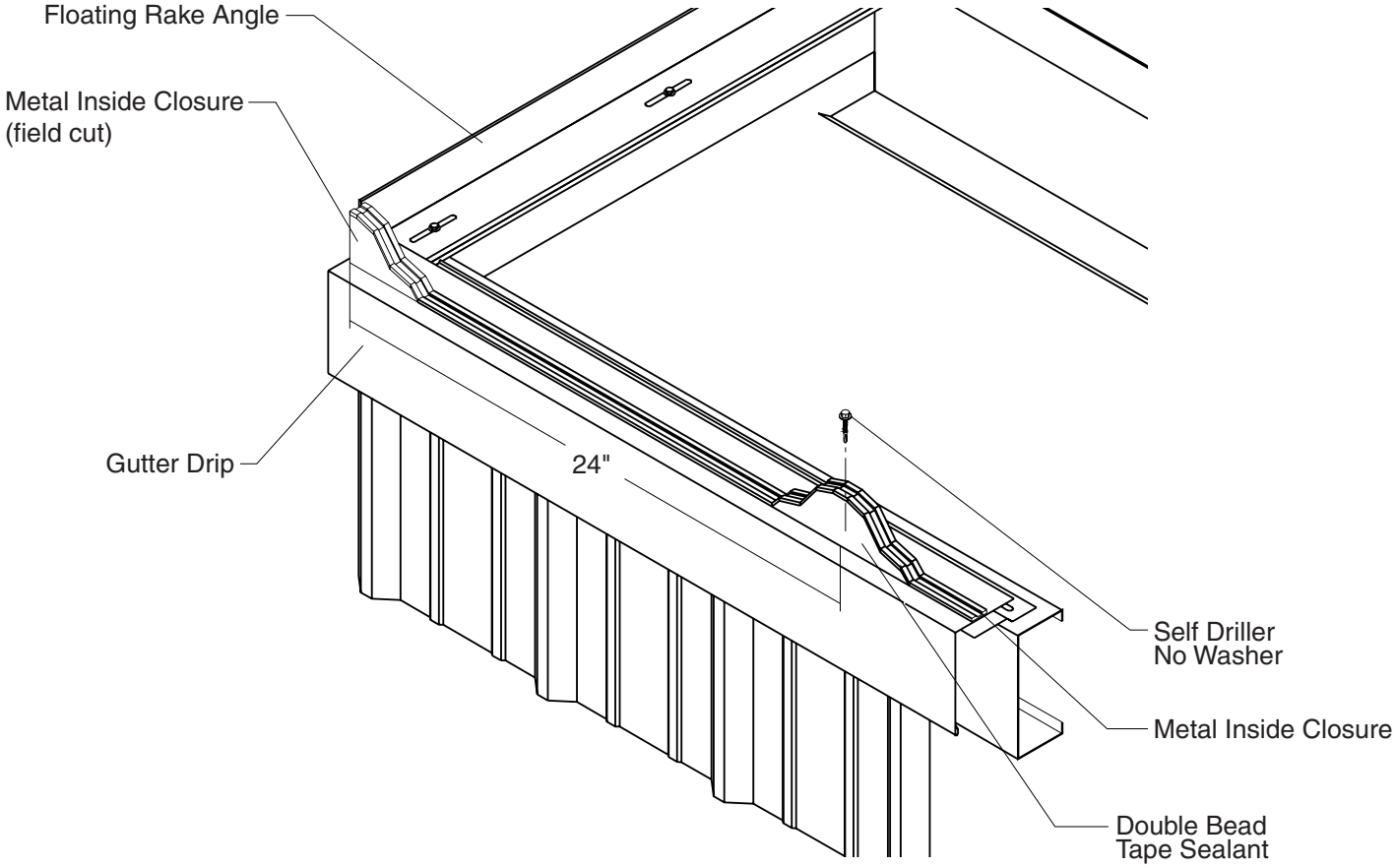
**STEP 3**

**The following steps are for installing the Seam-Loc 24 Panel to accomodate for the Seram-Loc Sculptured Gutter and Gutter Drip Flashing.**
**Note: Eave, Gutter Drip, Gutter, 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 end lapping 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.**

**Steps:**

1. Place a row of Double Bead Tape Sealant across top of Gutter Drip flashing. Be sure to place sealant where panel fasteners will be placed.
2. 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 flashing and mark every 24". Care should be taken in measuring as this helps determine panel modularity.
3. Strip off the paper backing on the Double Bead Tape Sealant a few inches past the first mark.
4. 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 flashing 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" mark.
5. Fasten both Metal Inside Closures to the Gutter Drip flashing and Eave Plate with #12-14 x 1" Self Driller No Washer screws.
6. Apply Double Bead Tape Sealant across the top of the Metal Inside Closures and remove the paper backing.

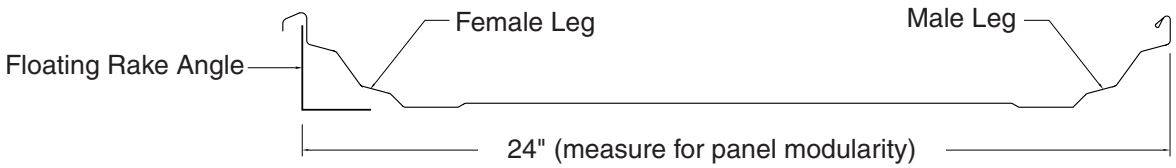


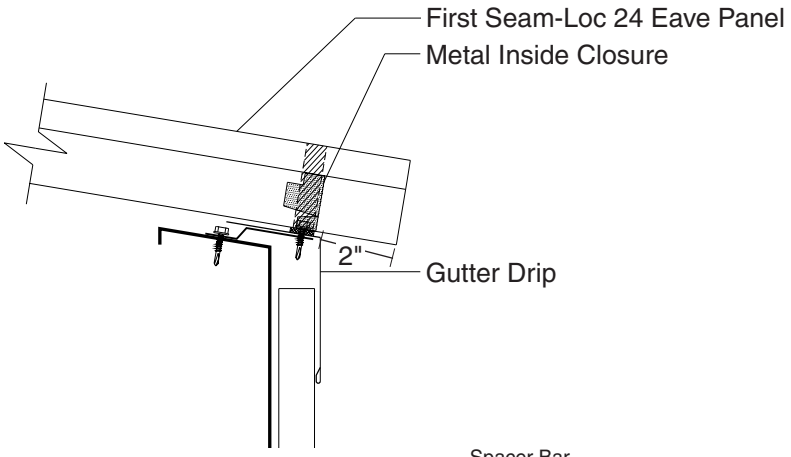
## INSTALLING FIRST PANEL

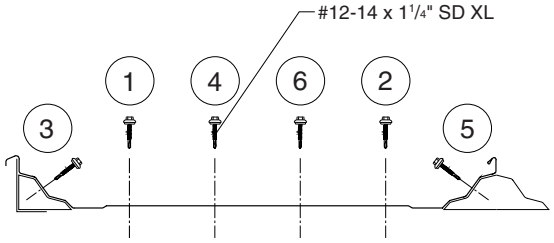
**STEP 4**

**Steps:**

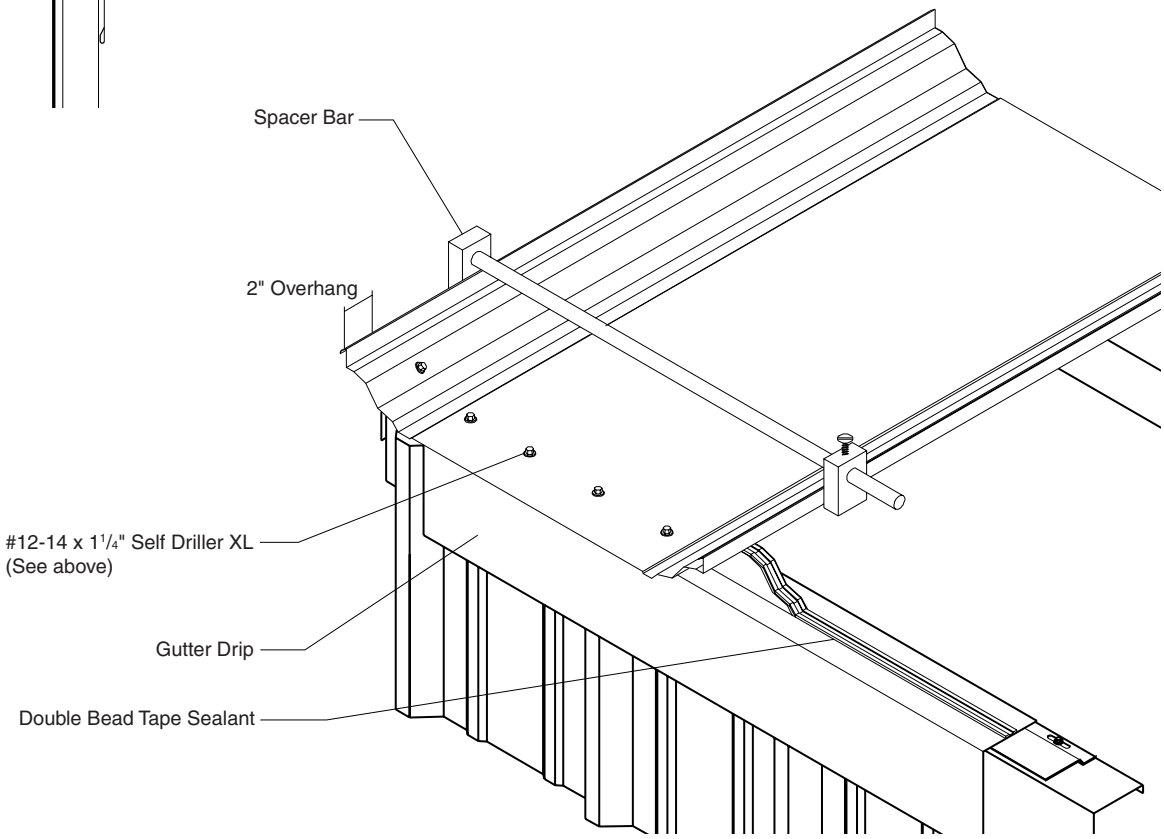
1. Position the first panel so the female leg is against the vertical leg of the Floating Rake Angle.
2. Slide the panel over the Gutter Drip flashing, 2" past finished wall surface.
3. Use a C-clamp to hold the panel against the vertical leg of the Floating Rake Angle.
4. Recheck the panel overhang 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 1¼" Self Driller XL screws. Fasten panel rib through Double Bead Tape Sealant to Metal Inside Closures with (2) #12-14 x 1¼" Self Driller XL screws.




**Seam-Loc 24 Fastening Pattern**
**(Additional fasteners may be required at valley condition)**



## INSTALLING PANEL CLIPS

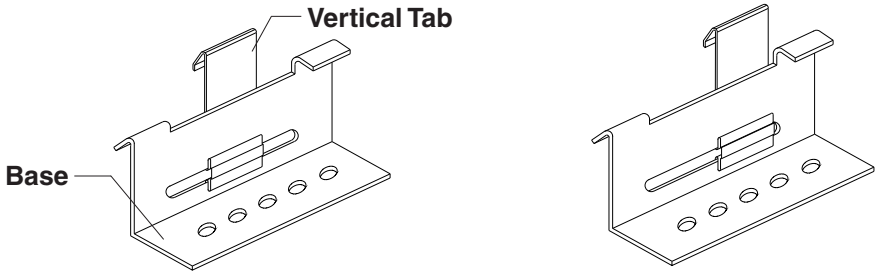
**STEP 5**

**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).**

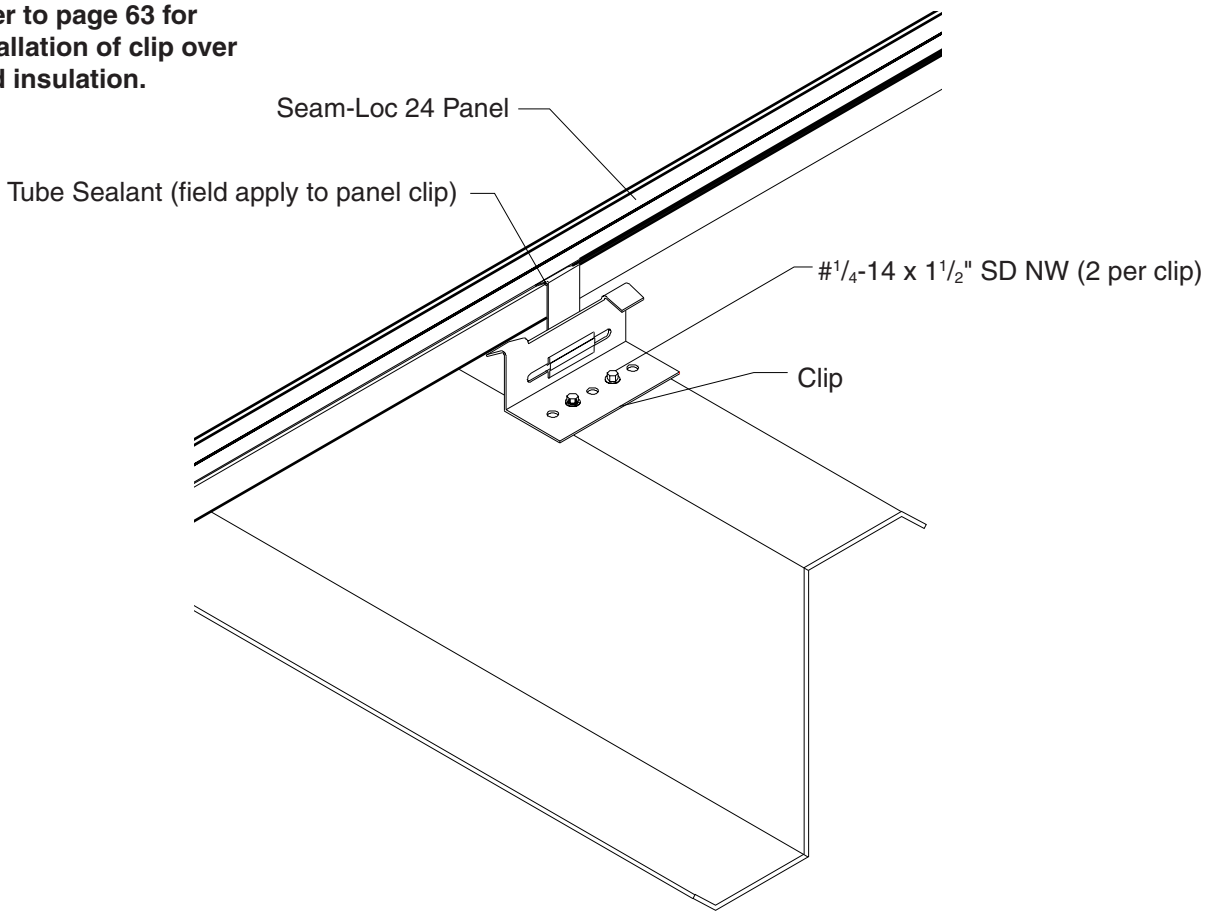
**Steps:**

1. Check vertical tab of clip is centered with the base. The clip must be aligned with the centering tab.
2. 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.
3. Rotate the clip to a vertical position so that the base of the clip rests on the top flange of the purlin.
4. 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.

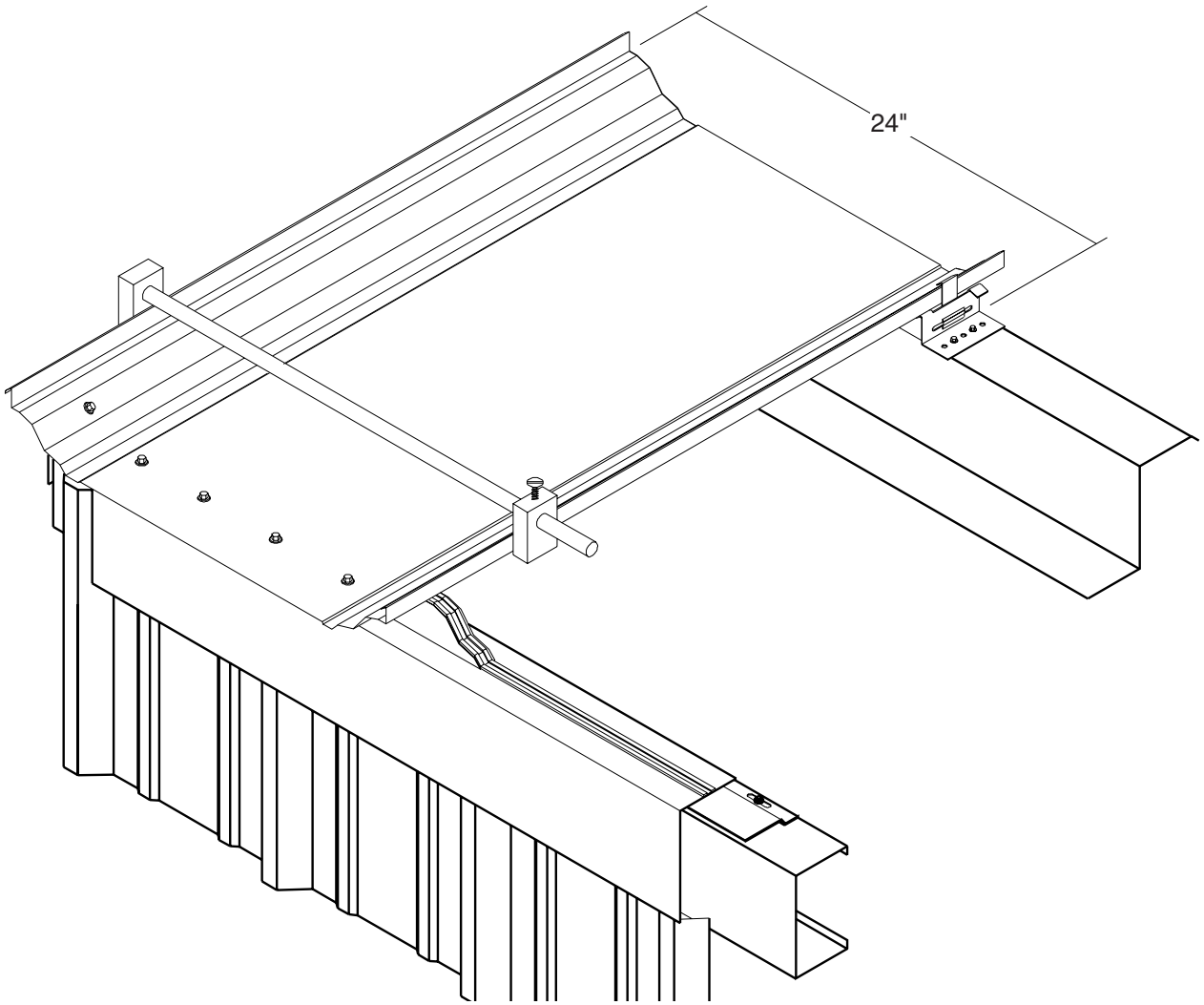
**Refer to the chart for determination of the proper clip size. Correct clip size must be used for panel system to function properly.**




**Refer to page 63 for installation of clip over rigid insulation.**



## INSTALLING PANEL CLIPS (CONT.)




5. If Thermal Blocks are required, slide thermal block under panel prior to fastening clips.
6. Fasten clip to purlin with (2) #1/4-14 x 1½" Self Driller No Washer screws.
7. Clips should be installed at all purlin intersections. **Panel clips are not required at eave framing members.**
8. 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

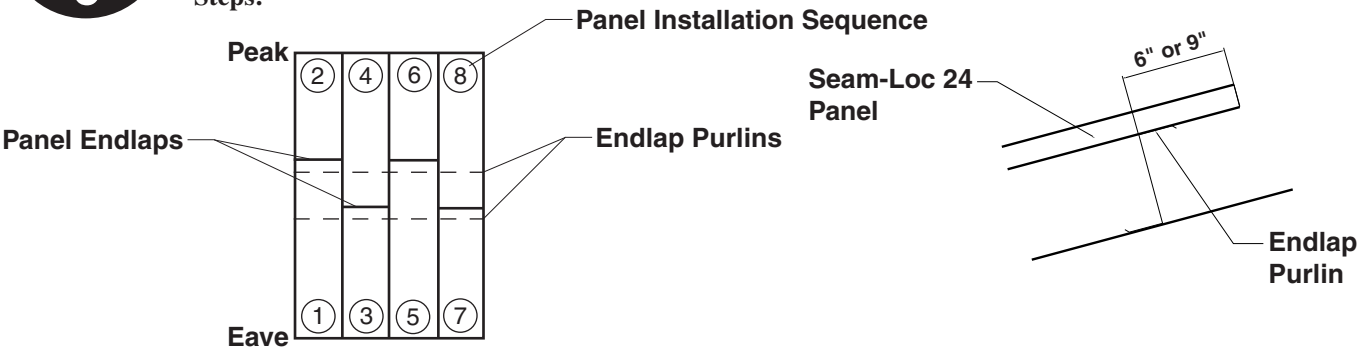
**If a fastener strips out, you must remove the clip and reposition so the fastener can drill a new hole at least 3/8" from the stripped hole or install an oversized fastener in the stripped hole. Failure to do this will result in weakening the roof wind uplift resistance.**

## ENDLAPPING OF PANEL

**STEP 6**

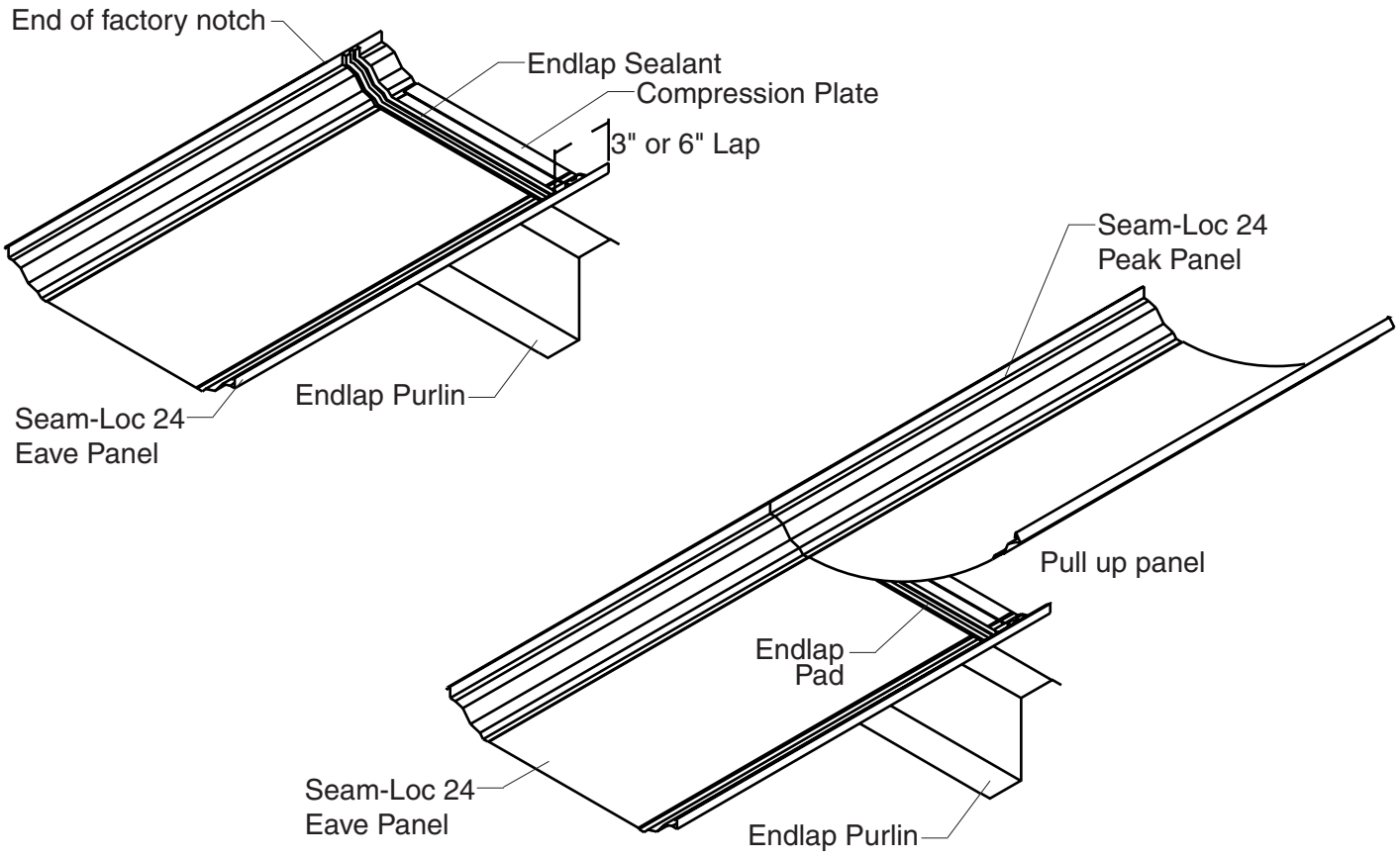
**Note: It is critical that purlins at the ridge and endlap be exactly located as detailed on construction drawings. Panels with endlaps must be fixed at the eave. Endlap splices are to be staggered as shown. The following procedures also apply to panel runs with multiple laps.**

**Steps:**



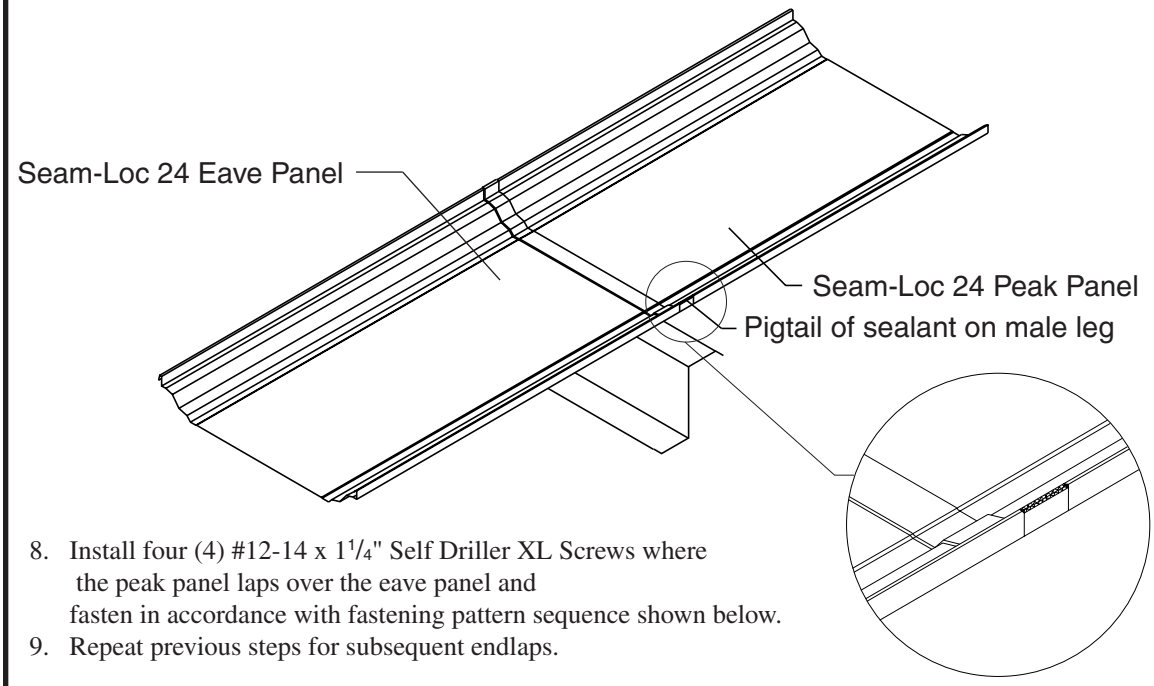

### Staggered Endlapping

1. The installed eave panel should measure 6" or 9" from the web of the endlap purlin to the end of the eave panel. (6" for panels produced in Longmont, CO / 9" for panels produced at all other branches) This dimension must be verified. If the panel exceeds this, verify that the eave overhang dimension is correct.
2. Slide Compression Plate under panel in center of endlap and cee clamp to panel to hold in place for attachment.
3. The male and female legs of the high 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 ½" to ¾" from the end of the panel.
5. Lap the female leg of the peak panel into the female leg of the eave panel lapping the proper 3" or 6".



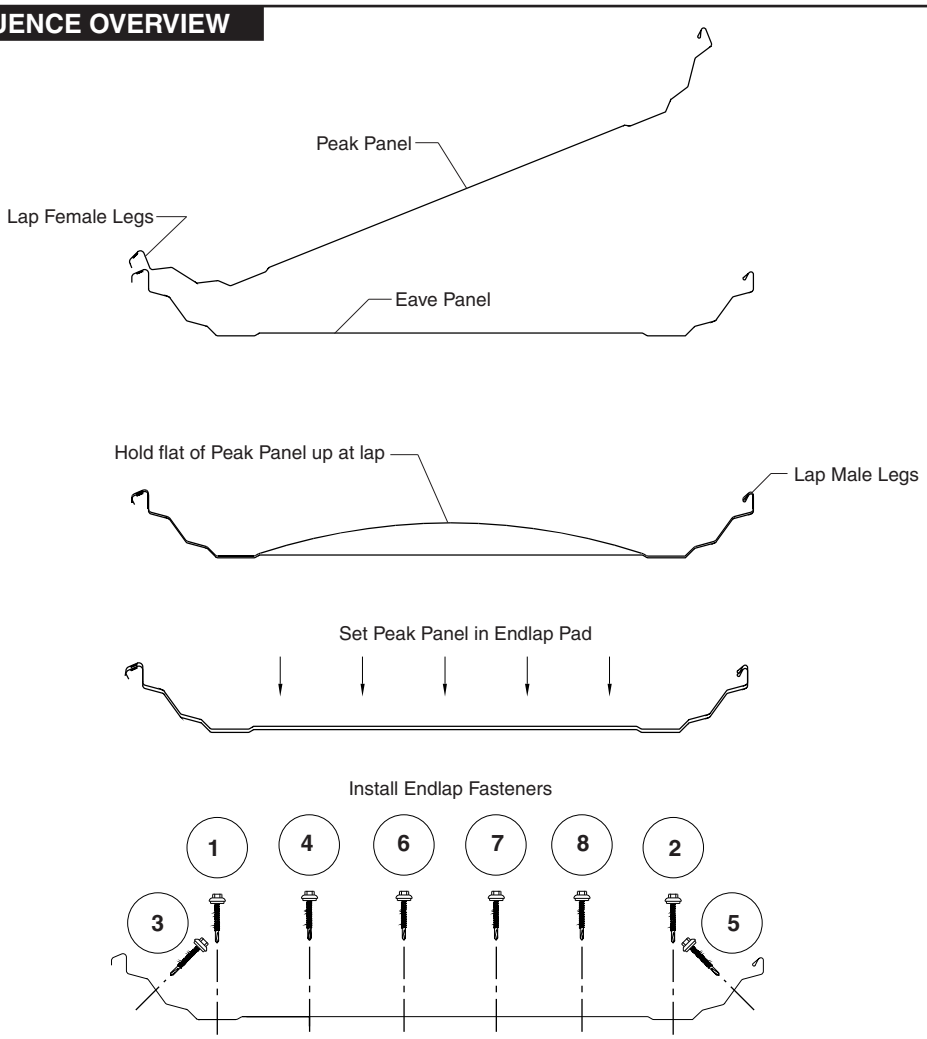
## ENDLAPPING OF PANEL (CONT.)

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 (4) #12-14 x 1¼" Self Driller XL Screws where the peak panel laps over the eave panel and fasten in accordance with fastening pattern sequence shown below.
9. Repeat previous steps for subsequent endlaps.

## ENDLAPPING SEQUENCE OVERVIEW



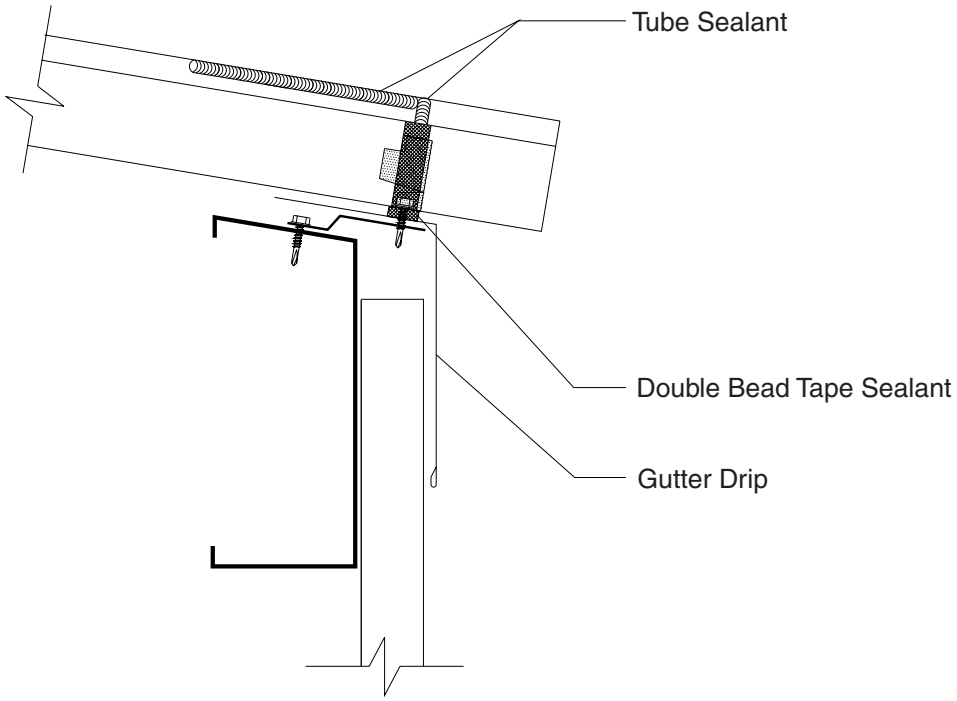
## SIDELAPPING OF PANEL

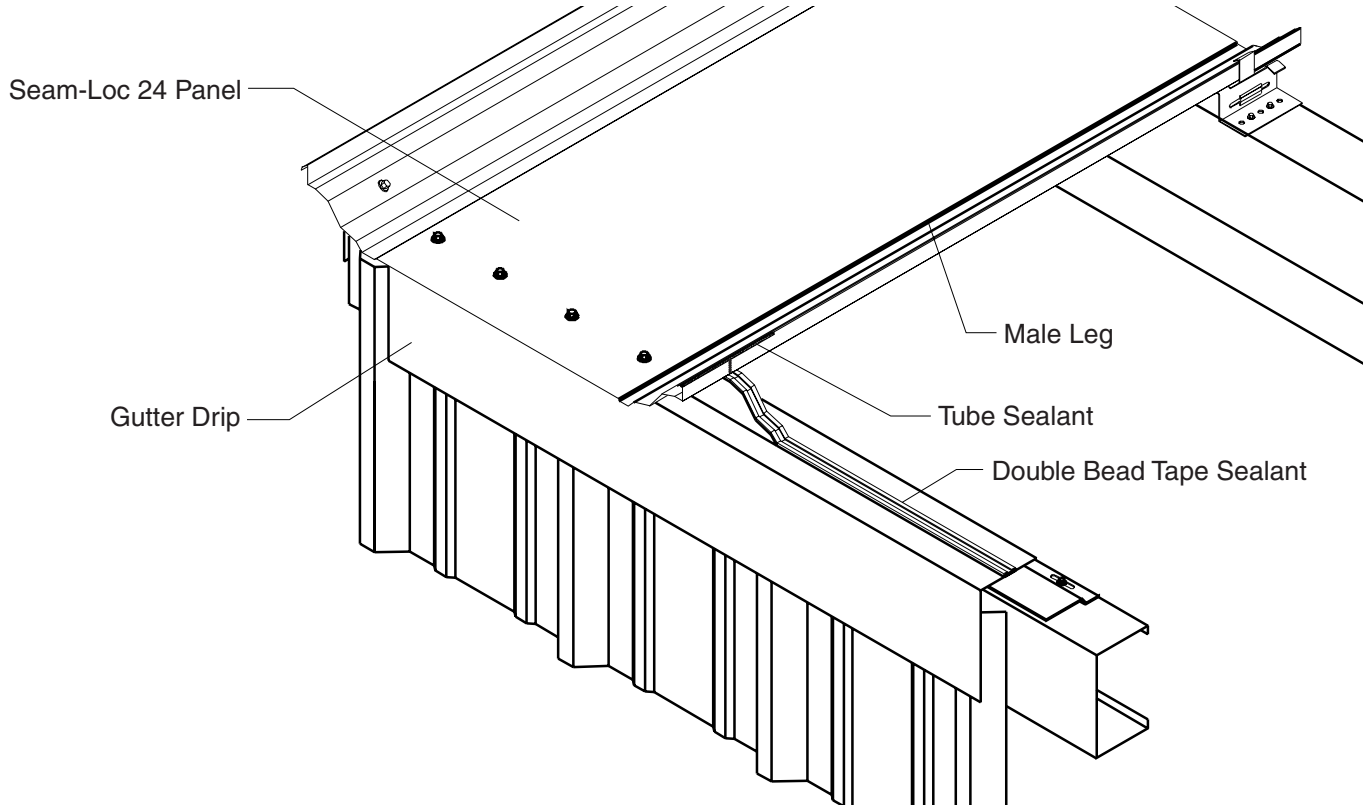
STEP 7

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

**Steps:**

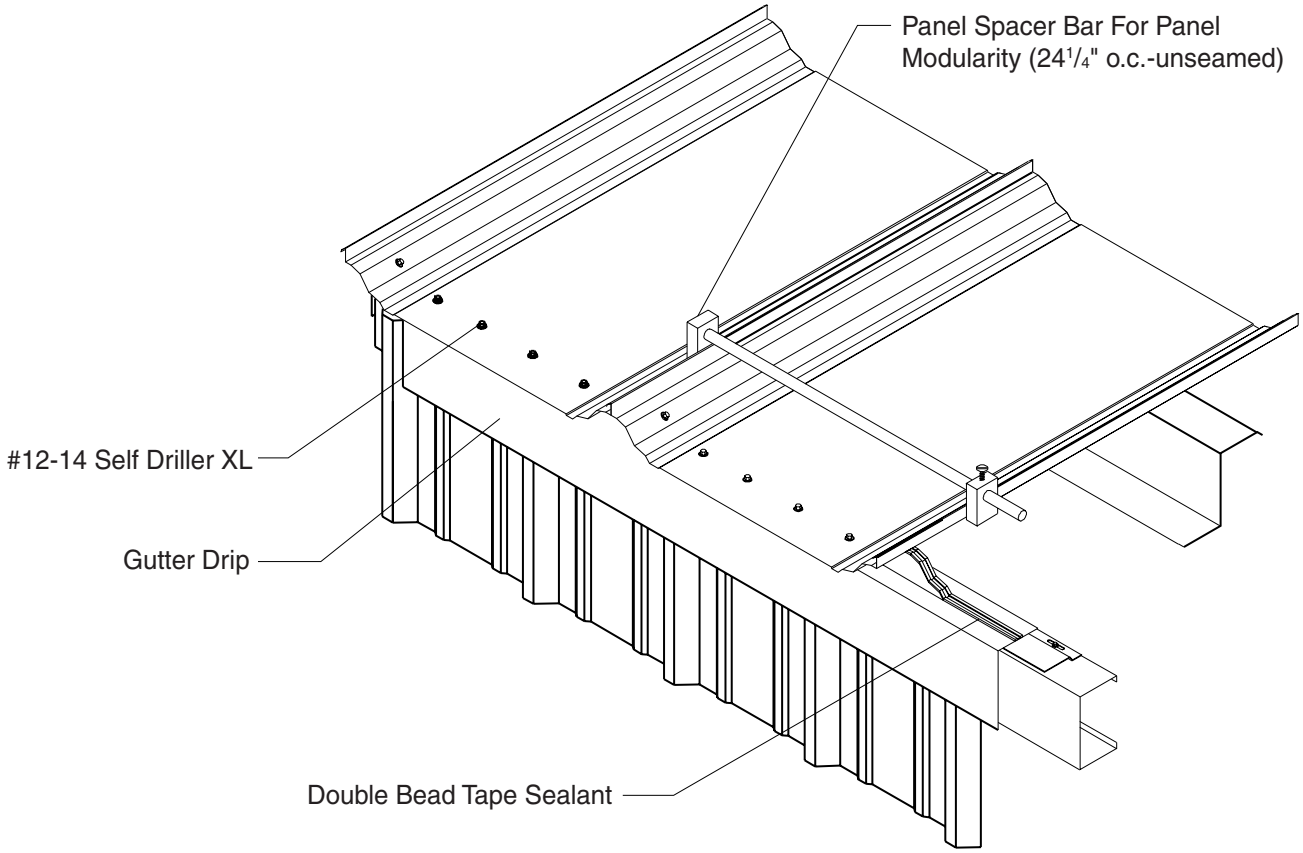
1. Apply a 3/8" bead of Tube Sealant along the vertical male leg of the panel directly over the Double Bead Tape Sealant on the metal inside closure. Be sure the Tube Sealant joins with the Double Bead Tape Sealant.
2. Apply a 3/8" bead of Tube Sealant 6" long across to top of the male leg.
3. Peel back the paper backing covering the Double Bead Tape Sealant at the eave flashing previously installed.

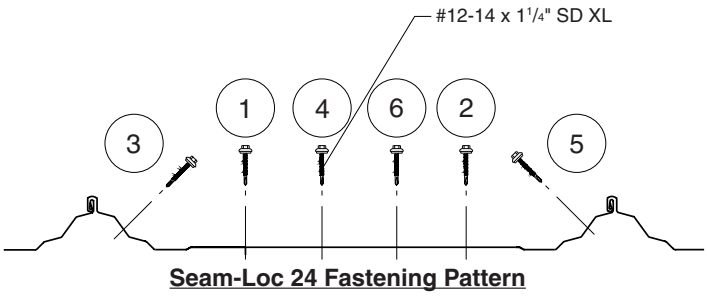


## SIDELAPPING OF PANEL (CONT.)

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 Cee 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 (4) #12-14 x 1¼" Self Driller XL screws. Fasten panel rib through Double Bead Tape Sealant to Metal Inside Closures with (2) #12-14 x 1¼" Self Driller XL screws.
7. Measure the distance from the female leg of the first panel installed. This dimension should be and even multiple of 24"-¼" 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 a ¼" of each other.
8. Make certain that all clips are properly installed and that the panel sidelaps are properly positioned to be seamed.




**Seam-Loc 24 Fastening Pattern**

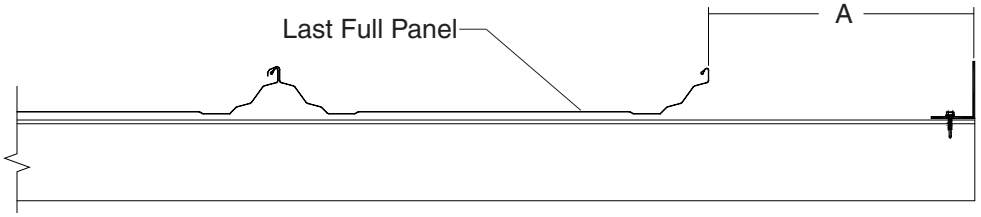
## TERMINATION OF PANEL

**STEP 7**

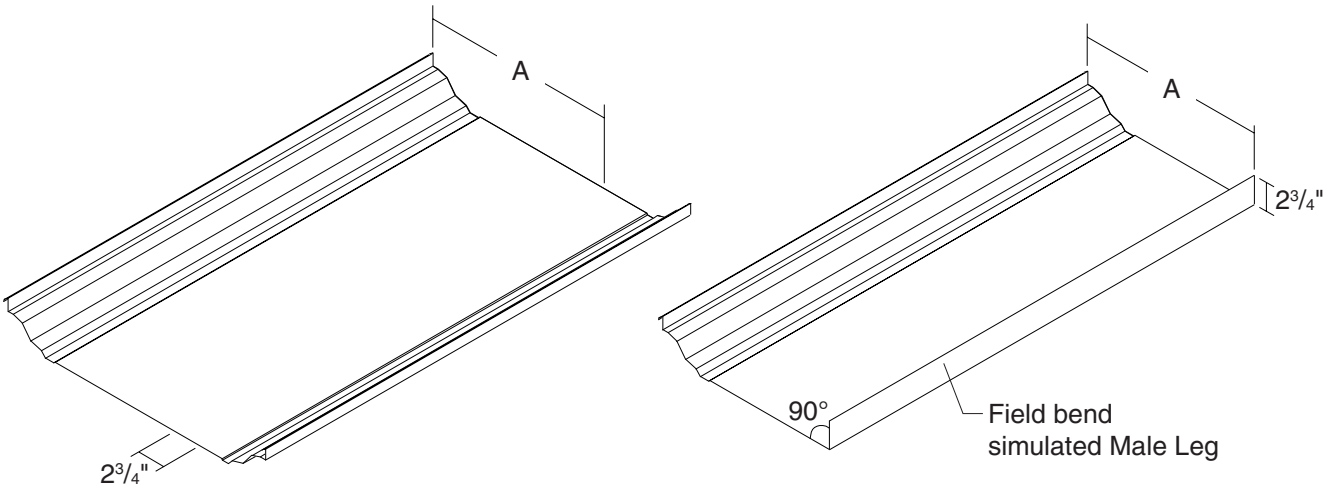
**Note: The following steps are for terminating a panel run when the pan width exceeds the width of the building.**

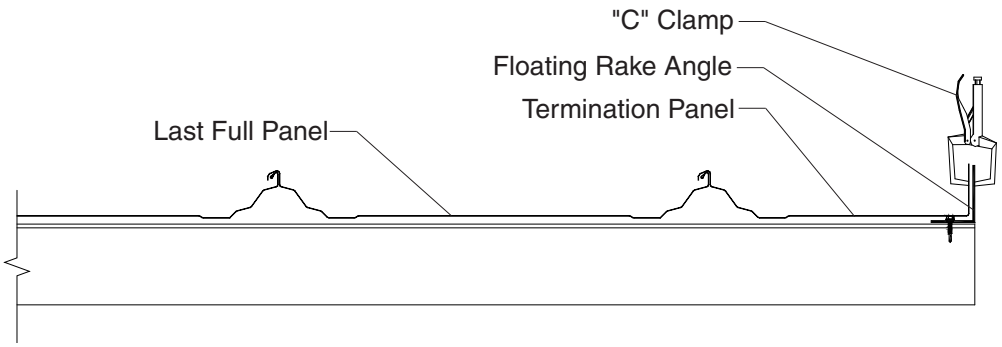
**Steps:**

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 to match rake angle height past the bend line to be the line you will cut off the excess panel.
6. Field bend 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 aquired from Seamer Tools, Inc. 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.

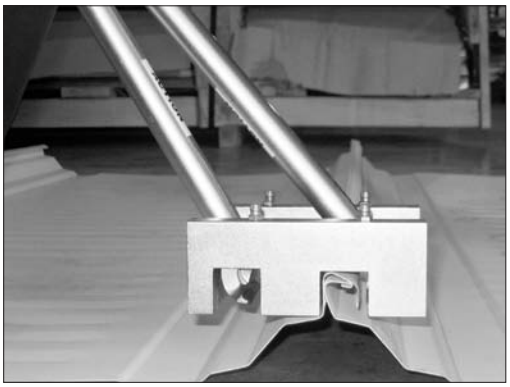
**Preparation Notes:**

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 inches 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:

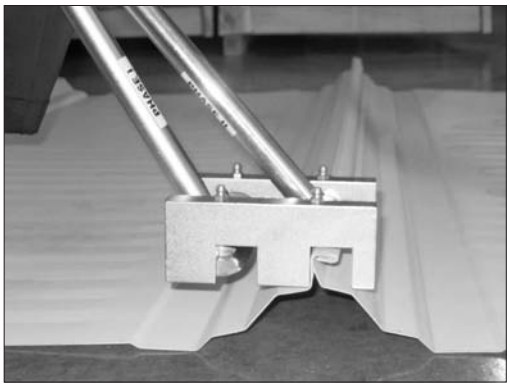
Begin at the seaming start end of the panel. Place the "Phase 1" slot of the hand crimper over the panel rib with the "Phase 1" handle on the open side of the panel rib. Engage the tool to a fully closed position. Hand crimp the first 6-8 inches. In high wind situations, Step 1 can be done at clip locations 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.

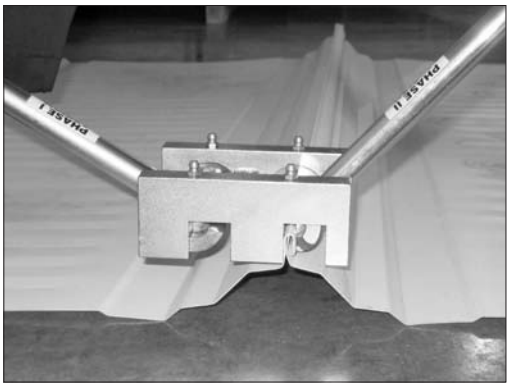
NOTE: Step 1 should be applied at each panel clip location if you are NOT going to run the mechanical seamer after you apply each panel. Metal Sales recommends that panel ribs be mechanically seamed before the end of each working day.



### 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 feet. 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 where 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.**

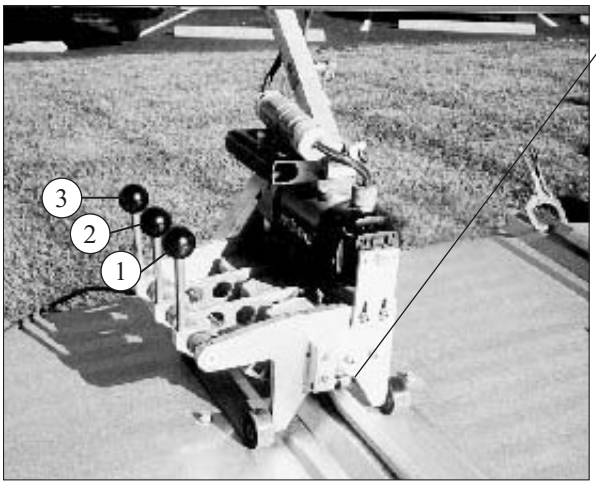



**Photo 3A Electric Seaming**

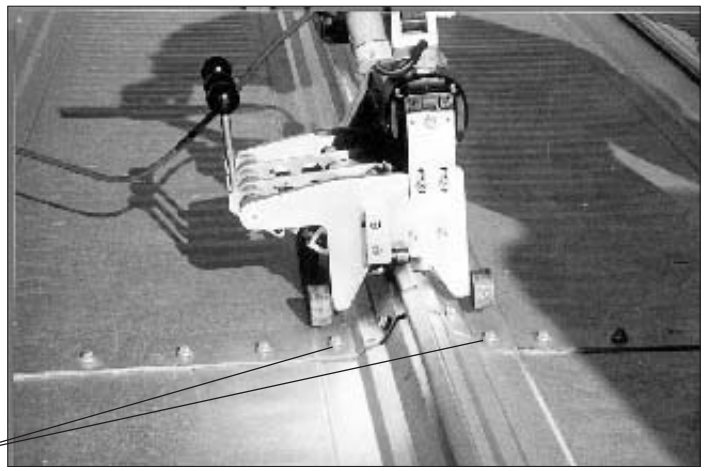



**Photo 3B Electric Seaming at Endlap**

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.

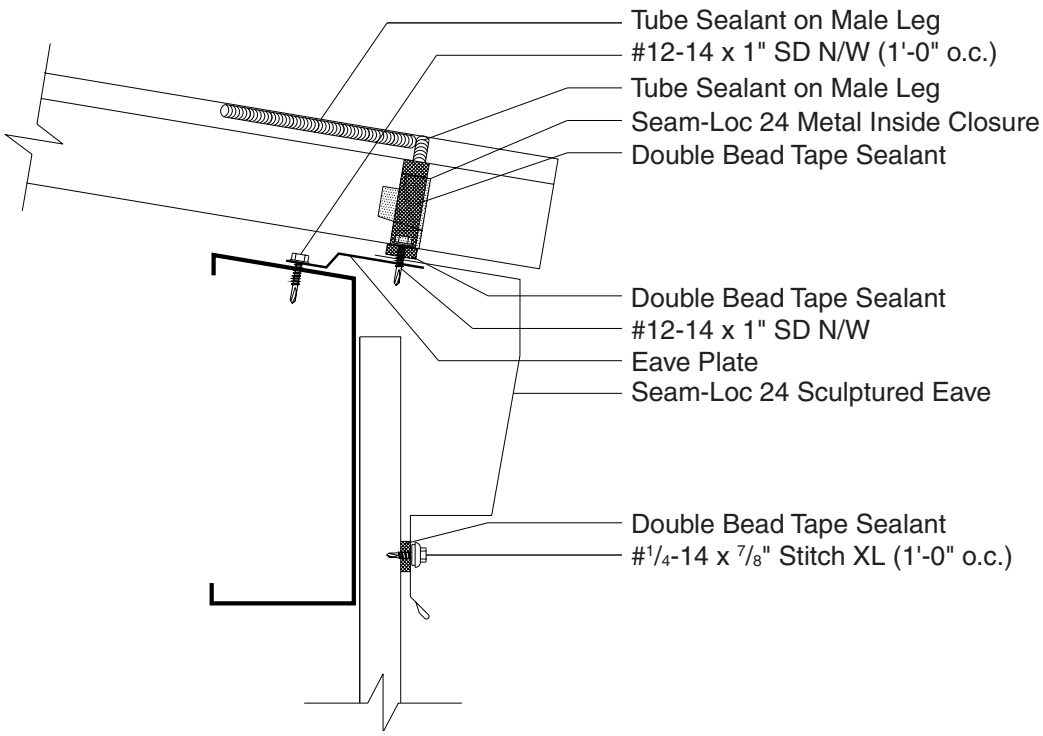
**NOTE: Do NOT hand crimp per Step 2 at any panel clips.**
**NOTE: Keep the forming rolls on the seamer CLEAN**

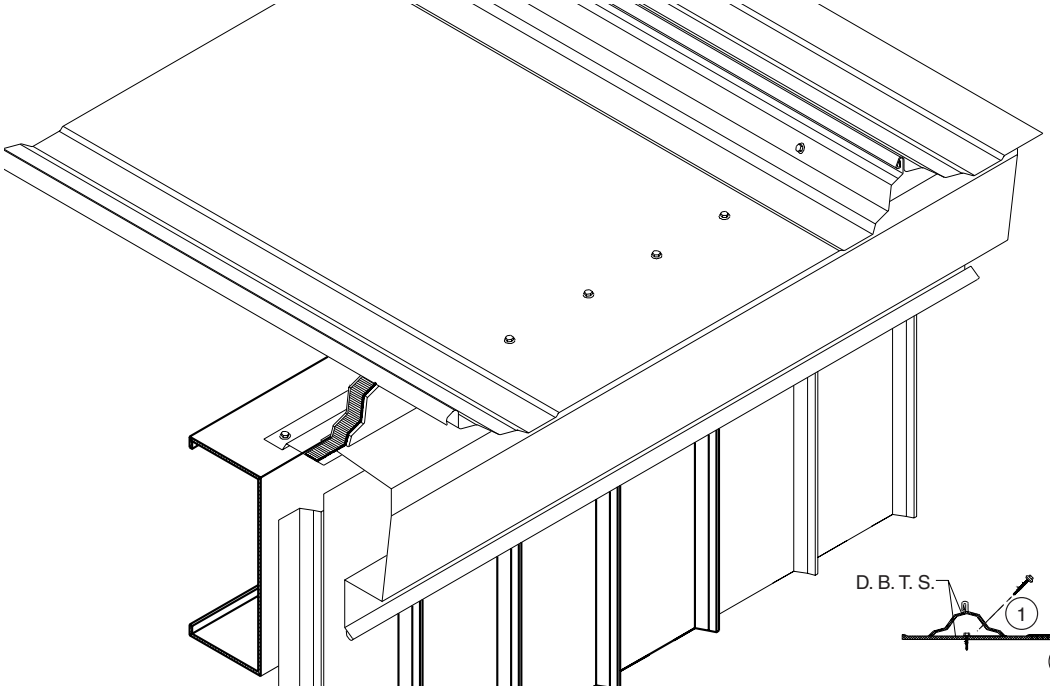
**At completion of seaming, repack tool and return to:**
**Seamer Tools, Inc.**
**8265 Highway 178 Olive Branch, MS 38654.**
**Phone No. (662) 895-1222, Fax No. (662) 890-4775.**

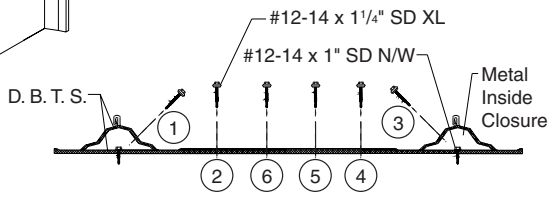
**CAUTION**

**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**






**Seam-Loc 24 Fastening Pattern**

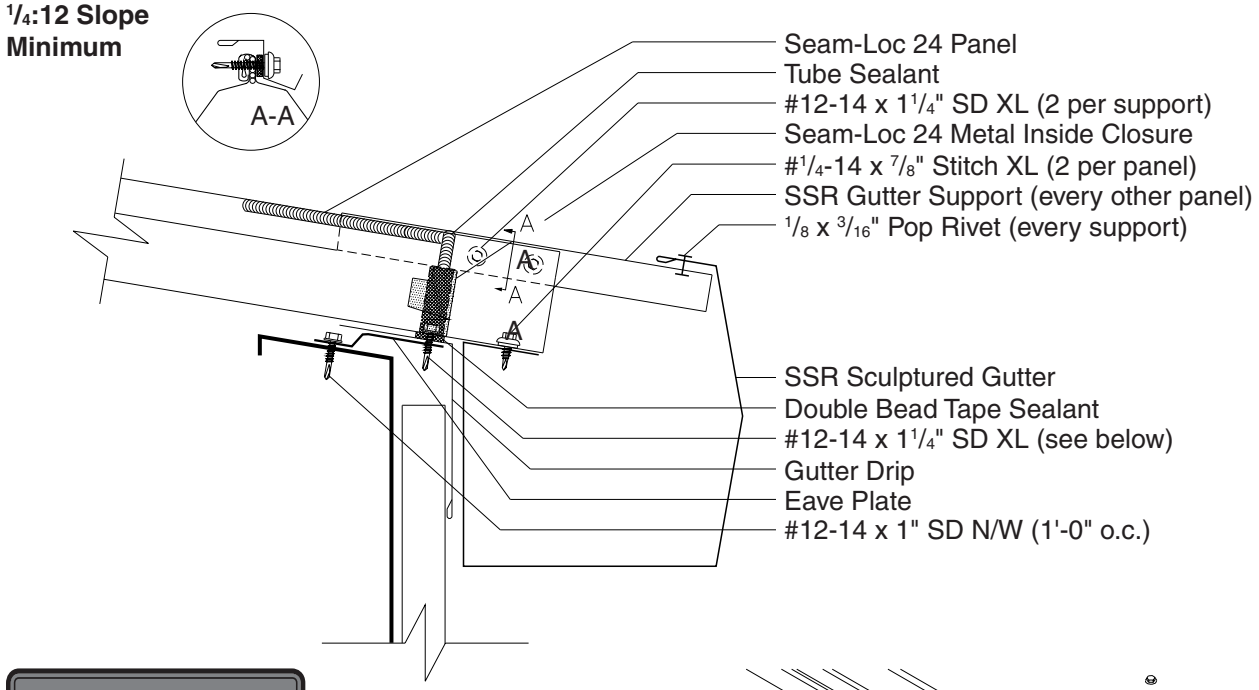
## INSTALLATION NOTES

**All Eave flashings must be installed prior to panel installation.**

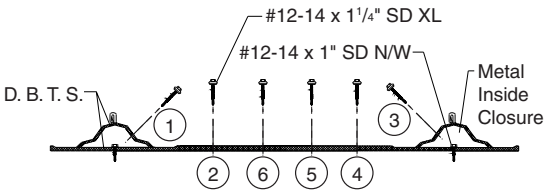
1. Install Sculptured Eave back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Sculptured Eave in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c.
2. Fasten Sculptured Eave to wall with appropriate fastener, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across 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 panels and 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 (6) #12-14 x 1 1/4" Self Driller XL screws per panel.

# SCULPTURED GUTTER OVER OPEN FRAMING

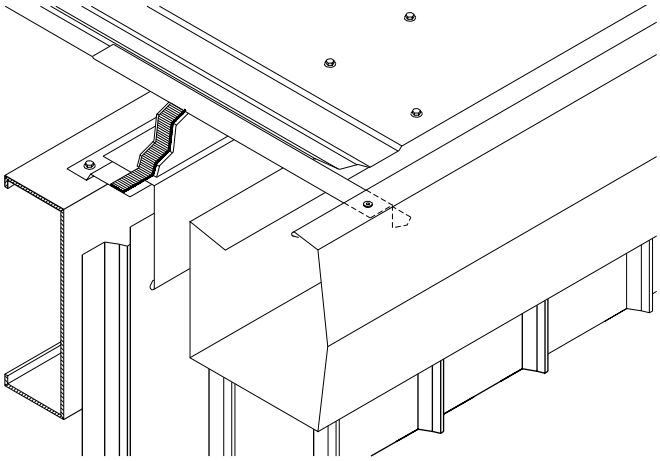
**1/4:12 Slope Minimum**




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




**Seam-Loc 24 Fastening Pattern**



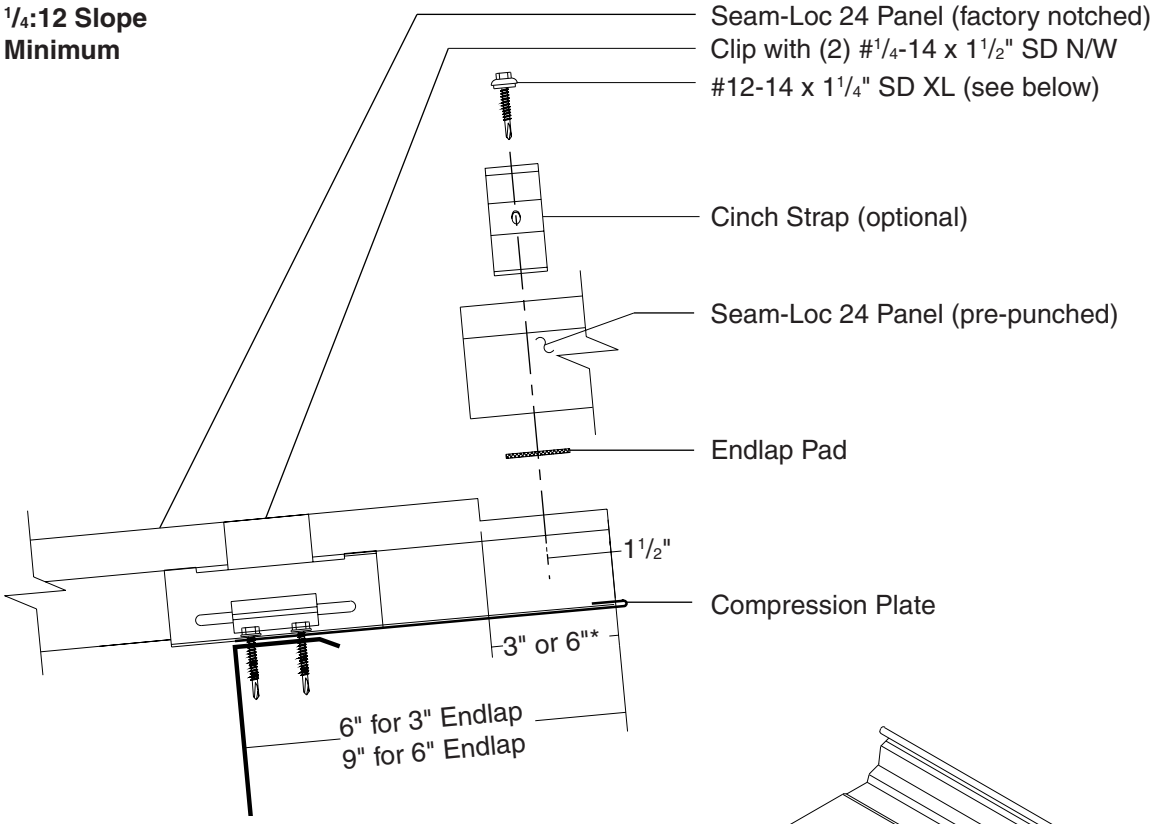
## INSTALLATION NOTES

**Gutter Drip Flashings must be installed prior to panel installation.**

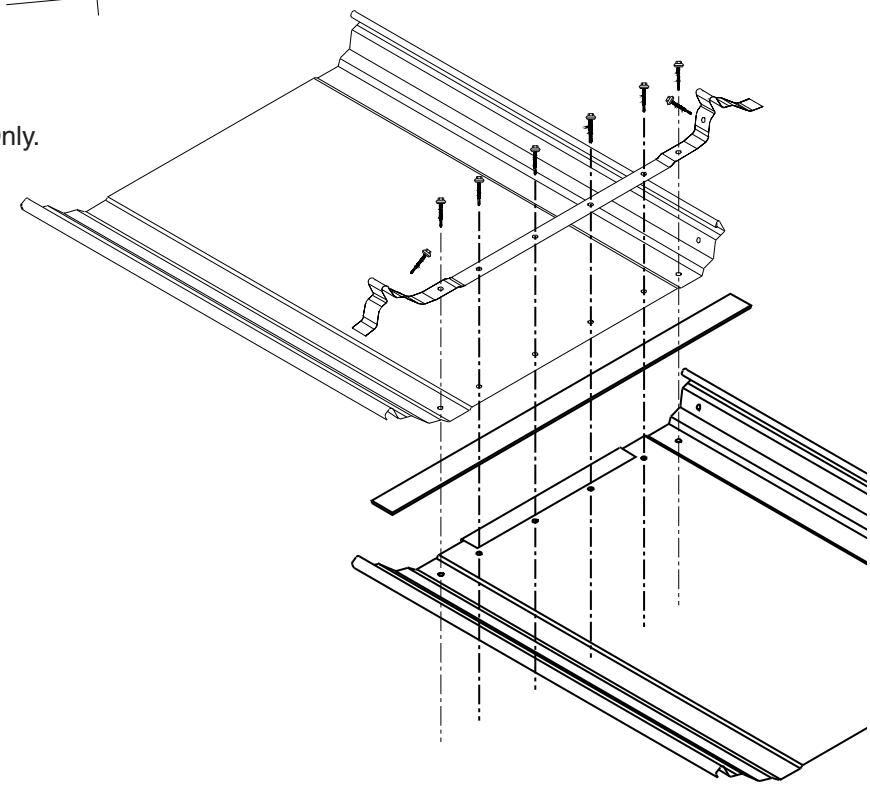
1. Install Gutter Drip back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Gutter Drip in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0"o.c.
2. Apply a row of Double Bead Tape Sealant across Gutter Drip so that sealant is centered 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"
4. Once panels and 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 (6) #12-14 x 1 1/4" Self Driller XL screws per panel.
5. Attach the SSR Gutter Support to the panel rib every other panel (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 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 gutter flashing. Fasten with (8) #1/4-14x7/8" Stitch XL screws or Pop Rivets.
7. Position the gutter over the SSR Gutter Supports with one end against the Rake flashing and rotate gutter 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 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 gutter contour 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.

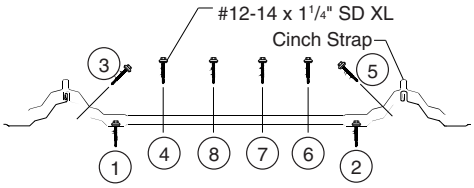
# ENDLAP OVER OPEN FRAMING

**1/4:12 Slope Minimum**




* 3" Endlap produced at Longmont Branch Only.





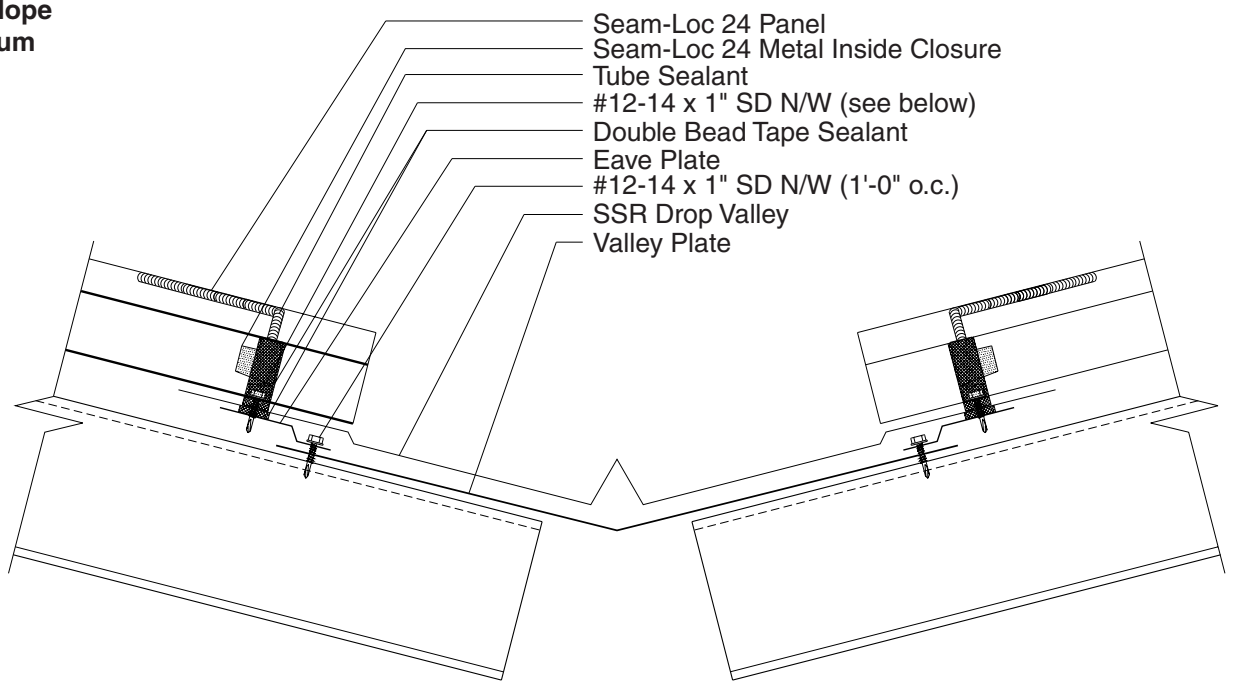

**Seam-Loc 24 Fastening Pattern**

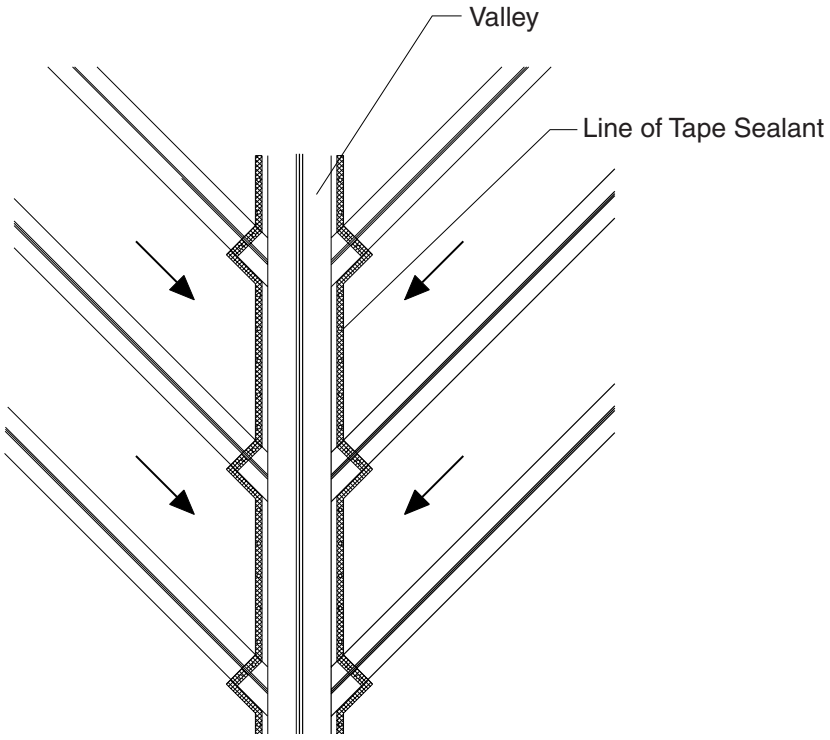
## INSTALLATION NOTES

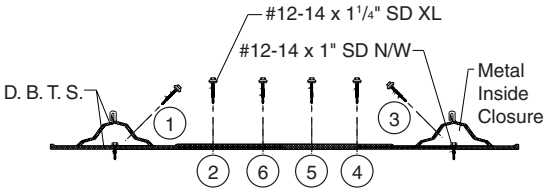
1. Once eave panel has been installed, (see pages 30-31), slide a Compression Plate under upper edge of panels. Compression Plate should be flush with edge of Seam-Loc 24 eave panel. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Endlap Pads across flat pans, up and over all ribs of eave panels. Endlap Pad should be flush with edge of eave panel.
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 lapped panels.)
4. With peak panel in place, fasten panel endlap with (8) #12-14 x 1 1/4" Self Driller XL fasteners per panel through factory punched holes and into the Compression Plate.
5. Apply a pig tail of Endlap Pad, approximately 2 1/2", over factory notched section of male legs.

# SSR Drop Valley Over Open Framing

**6:12 Slope Minimum**




**Seam-Loc 24 Fastening Pattern**

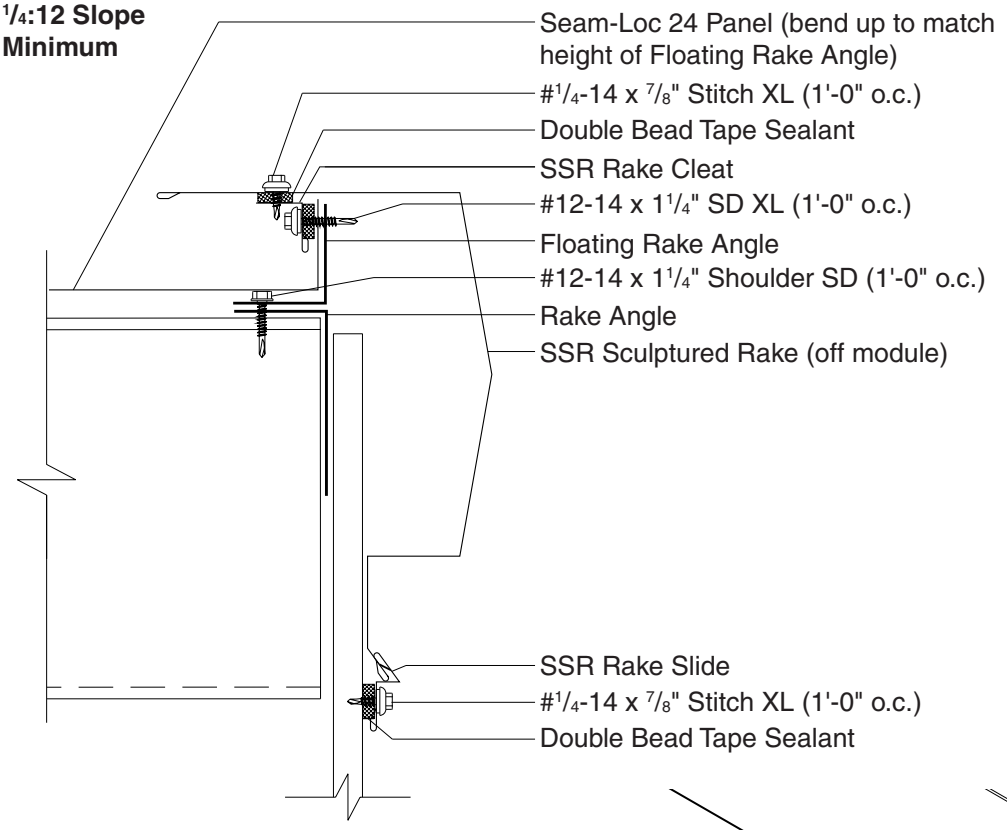
## INSTALLATION NOTES

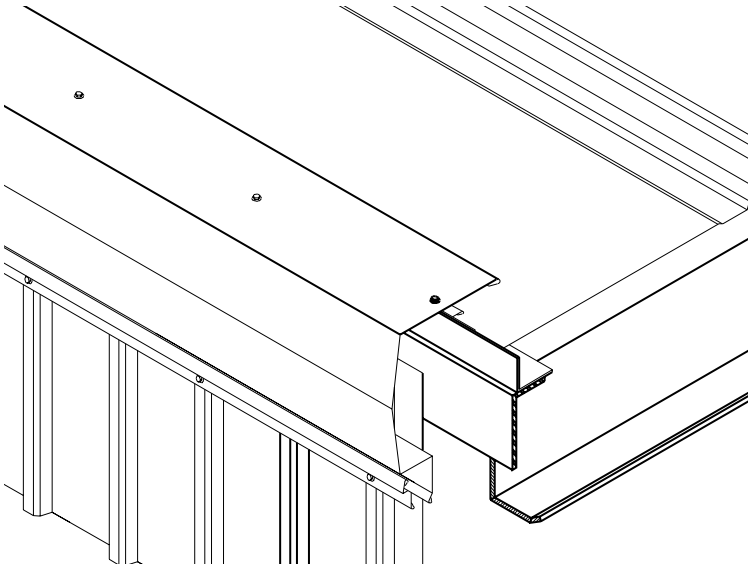
**All Valley flashings must be installed prior to panel installation. If two or more Valley flashings are required, valley must be installed working from eave to peak. It is recommeneded that ice and water shield be installed under Valley flashing for added moisture protection.**

1. Install Drop Valley flashing back against previously installed Eave Plates. To hold Valley in place, fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0"o.c. into top leg of Eave Plate.
2. Apply a row of Double Bead Tape Sealant across both sides of the Drop Valley flashing 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 panels and inside closures have been installed and properly sealed, (See pages Tape Sealant, and Sculptured Eave into Eave Plate with (6) #12-14 x 1¼" Self Driller XL screws per panel.

# SSR Sculptured Rake (Off Module) Detail

**1/4:12 Slope Minimum**



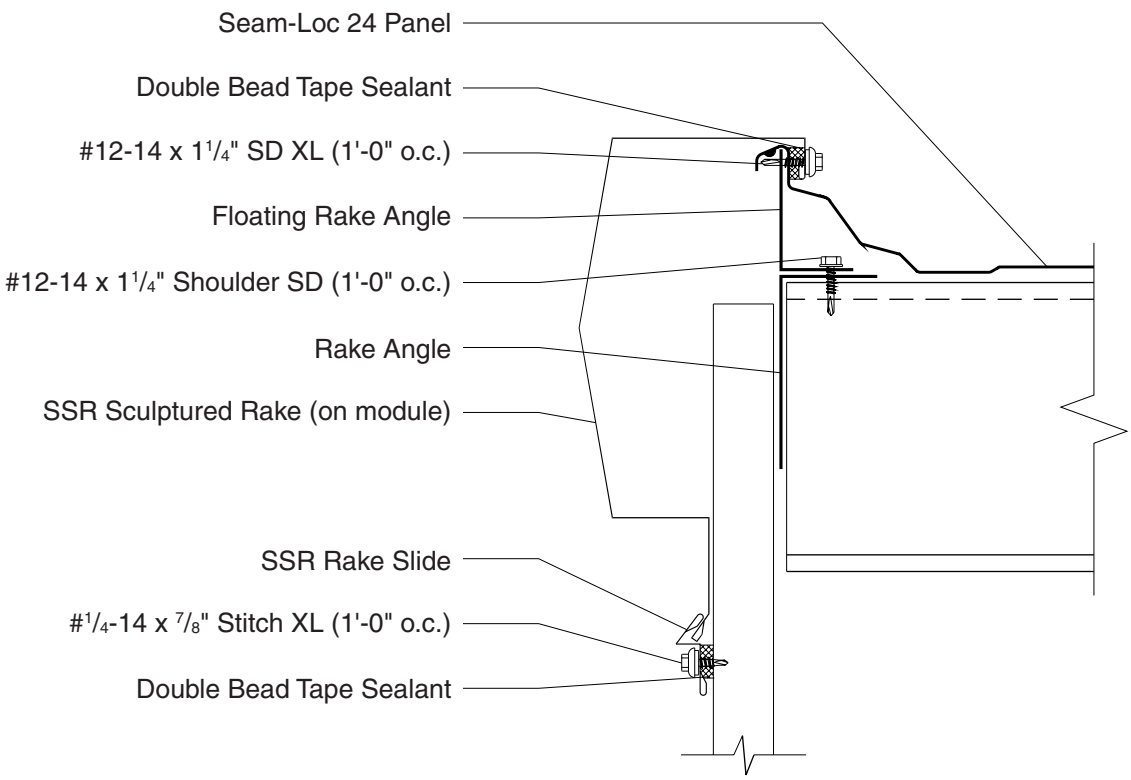
## INSTALLATION NOTES

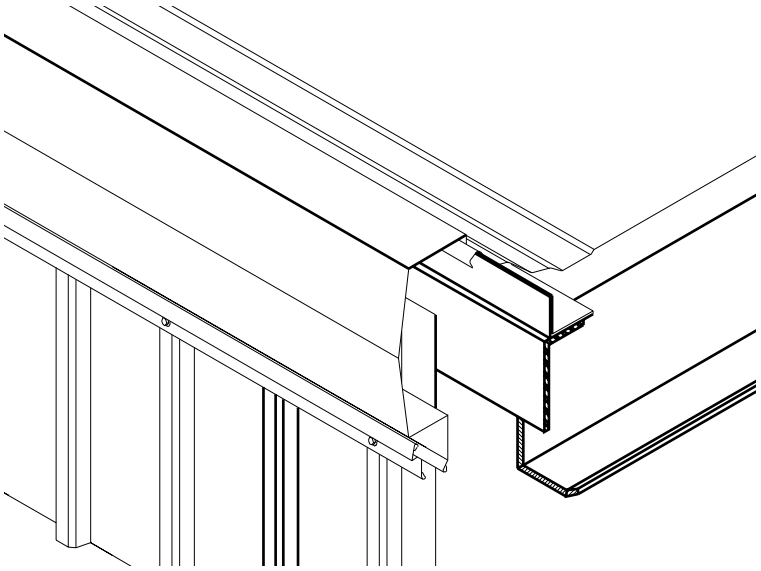
**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See Pages 24-36).**

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, 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 flashing so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into SSR Rake Cleat with #¼-14 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 Rake flashing.
6. Install SSR Rake Slide over lower leg of SSR Rake flashing 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.

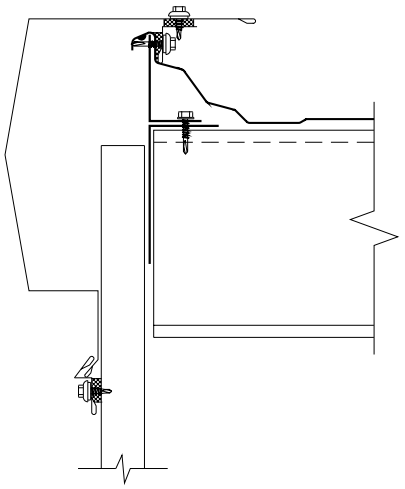
# SSR Sculptured Rake (on module) Over Open Framing

**1/4:12 Slope Minimum**



**SSR Sculptured Rake (On Module Optional) Detail**



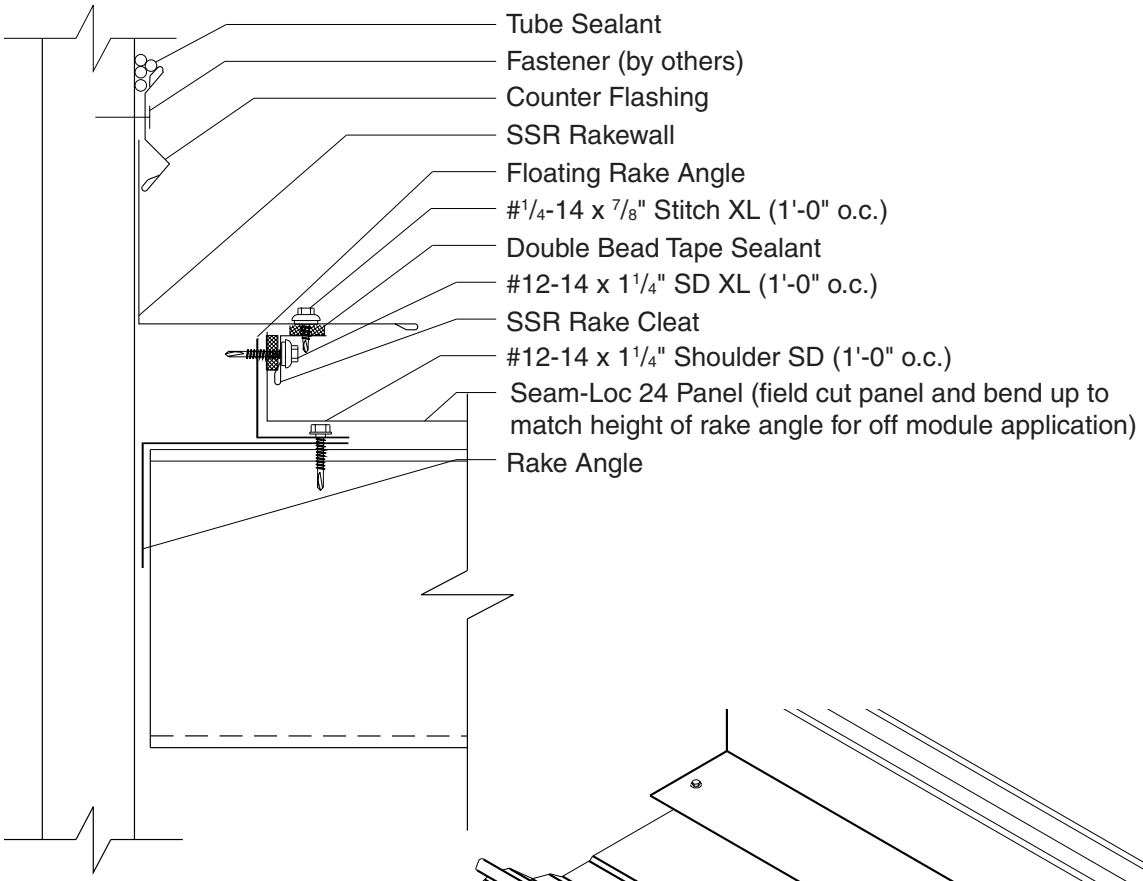
## INSTALLATION NOTES

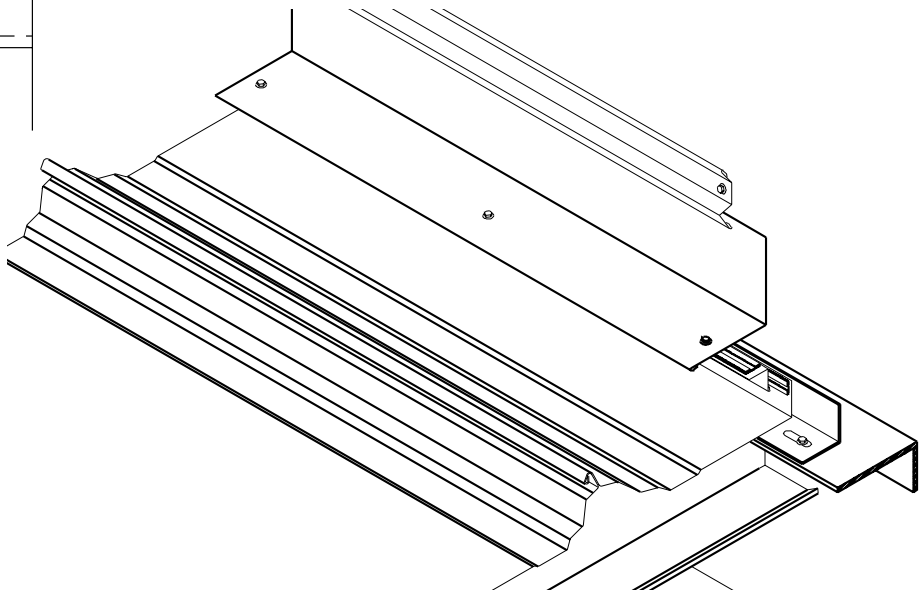
**Seam-Loc 24 floating rake angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See pages 24-36).**

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 vertical side of panel rib.
2. Install SSR Sculptured Rake flashing so that side of flashing is flush with vertical leg of panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into Rake Angle with #12-14 x 1 1/4" SD XL, 1'-0"o.c.
3. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Rake Flashing.
4. Install SSR Rake Slide over lower leg of SSR Rake flashing and Double Bead Tape Sealant. Fasten with #¼-14 x 7/8" Stitch XL, 1'-0"o.c.
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.

# RAKEWALL (OFF MODULE) WITH COUNTER FLASHING OVER OPEN FRAMING

**1/4:12 Slope Minimum**



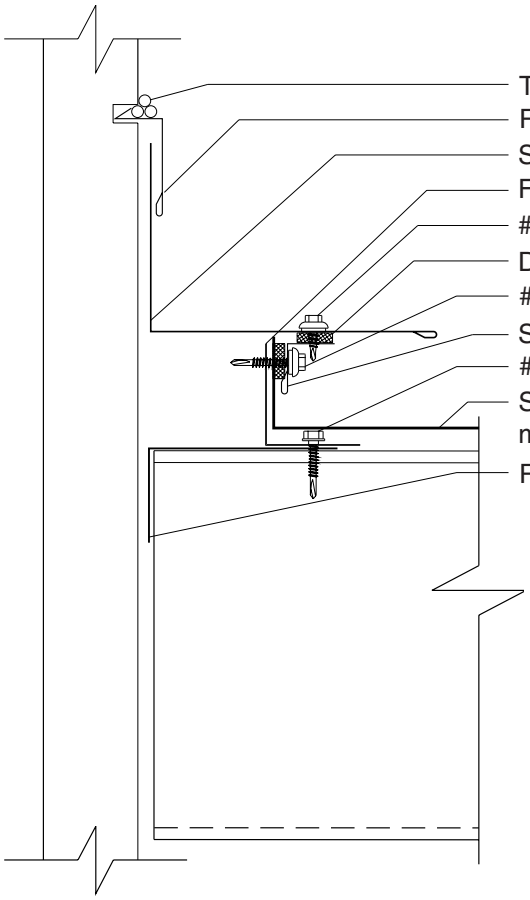
## INSTALLATION NOTES

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

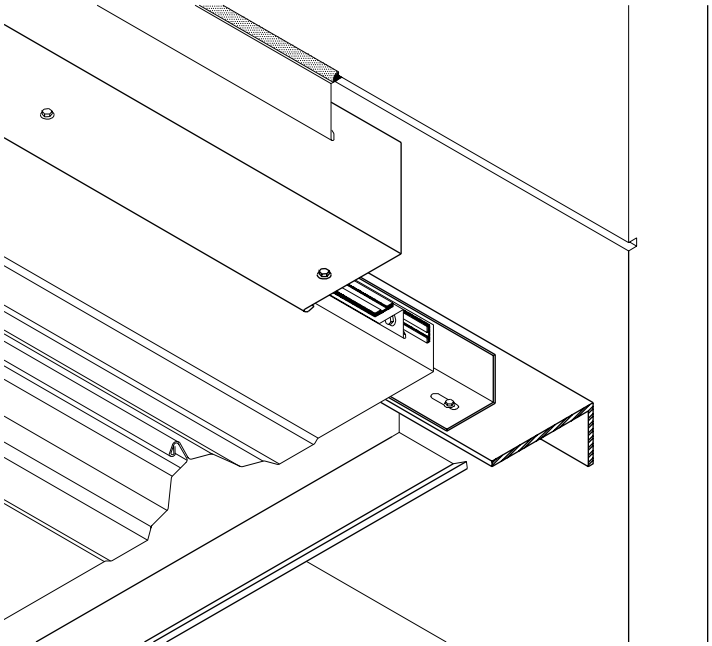
1. With Seam-Loc 24 panel properly nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #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, Tape Sealant, and into SSR Rake Cleat with #¼-14 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.

# RAKEWALL (OFF MODULE) WITH REGLET OVER OPEN FRAMING

**1/4:12 Slope Minimum**



Tube Sealant
Reglet Flashing
SSR Rakewall
Floating Rake Angle
#1/4-14 x 7/8" Stitch XL (1'-0" o.c.)
Double Bead Tape Sealant
#12-14 x 1 1/4" SD XL (1'-0" o.c.)
SSR Rake Cleat
#12-14 x 1 1/4" Shoulder SD (1'-0" o.c.)
Seam-Loc 24 Panel (field cut panel and bend up to match height of rake angle for off module application)
Rake Angle



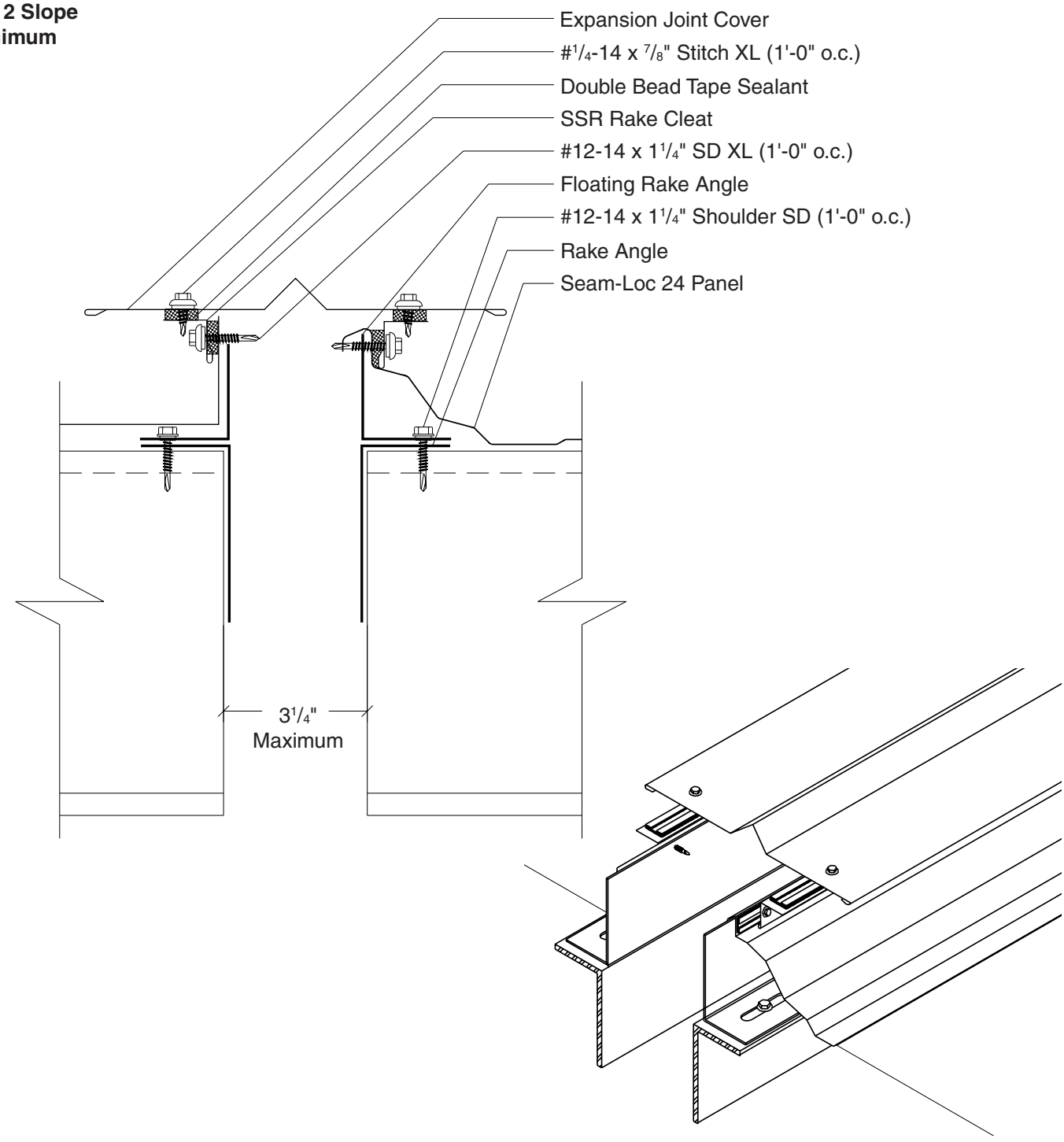
## INSTALLATION NOTES

**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, tape sealant, panel, and into floating rake zee 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, 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.

# Expansion Joint Over Open Framing

**1/4:12 Slope Minimum**



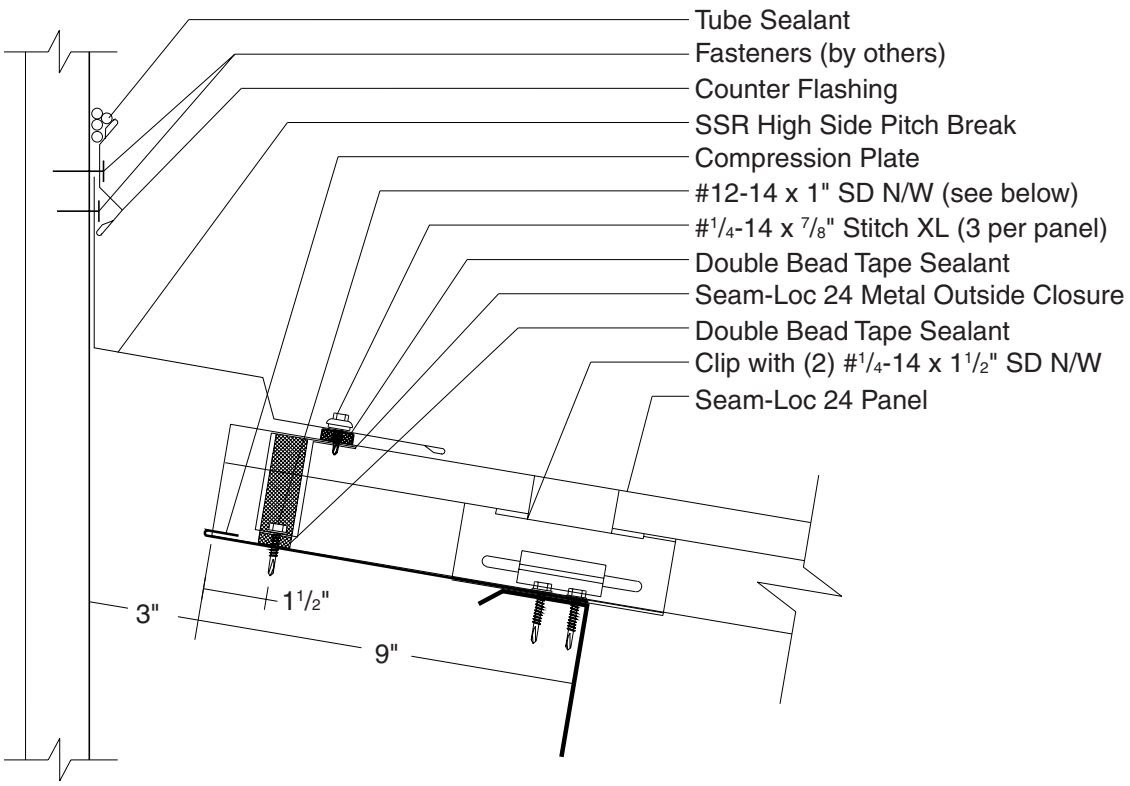

## INSTALLATION NOTES

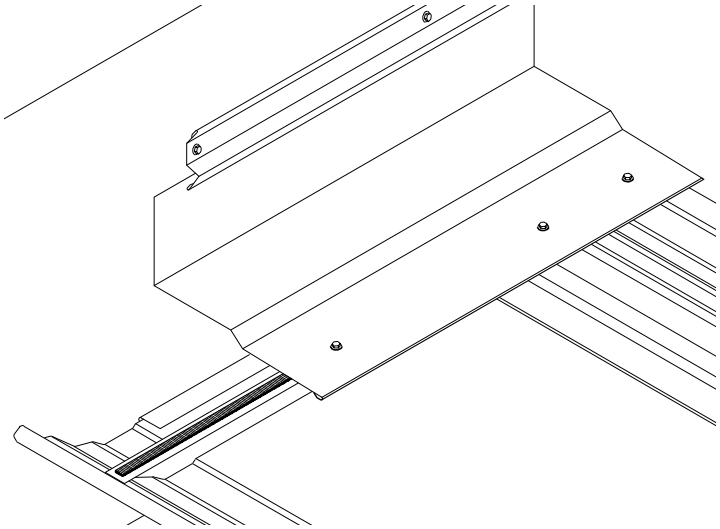
**Seam-Loc 24 Floating Rake Zees and Seam-Loc 24 Panels must be installed prior to Expansion Joint installation (See pages 24-36).**

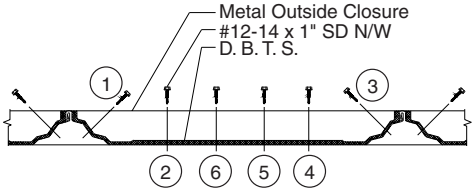
1. With Seam-Loc 24 panels nested against Seam-Loc 24 Floating Rake Zees, apply a row of Double Bead Tape Sealant across vertical side of panel ribs on both sides of Expansion Joint. (See page 34 for proper bending of panel if off module.)
2. Install SSR Rake Cleats over Double Bead Tape Sealant on both sides. 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. on both sides of Expansion Joint.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleats.
4. Install Expansion Joint flashing on top legs of SSR Rake Cleats. Fasten through Expansion Joint flashing, Tape Sealant, and into SSR Rake Cleat with #¼-14 x 7/8" Stitch XL, 1'-0"o.c. on both sides of Expansion Joint.
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.

# Endwall with Counter Flashing Over Open Framing

**1/4:12 Slope Minimum**





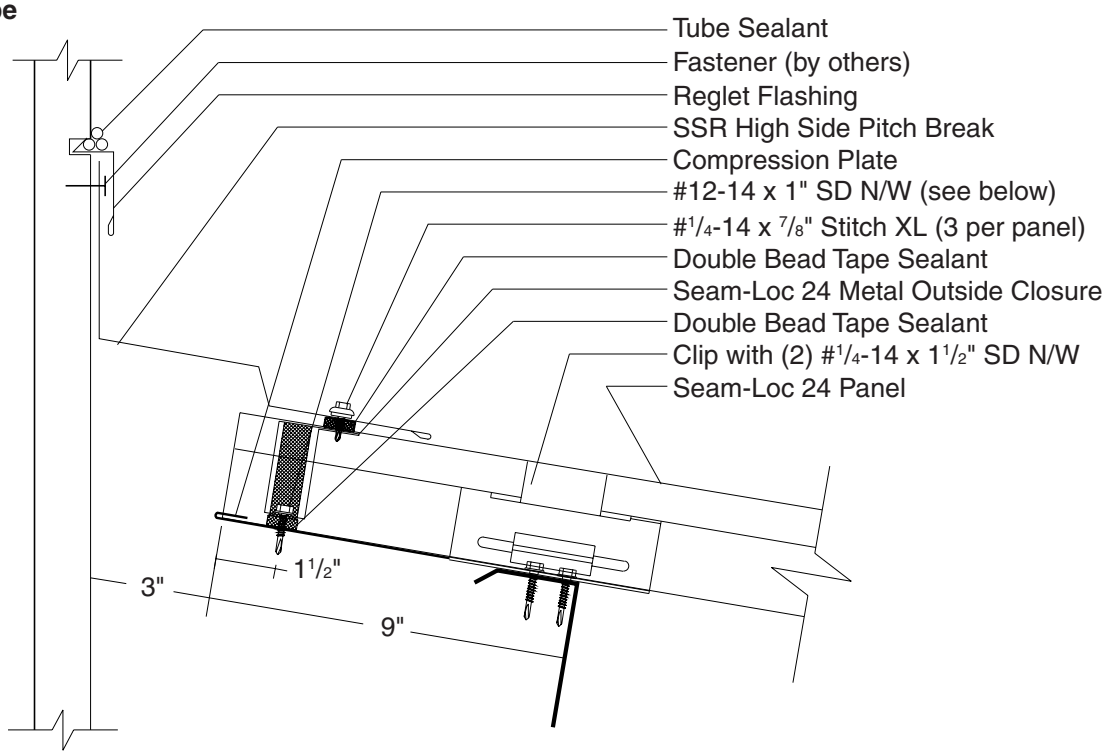

**Seam-Loc 24 Fastening Pattern**

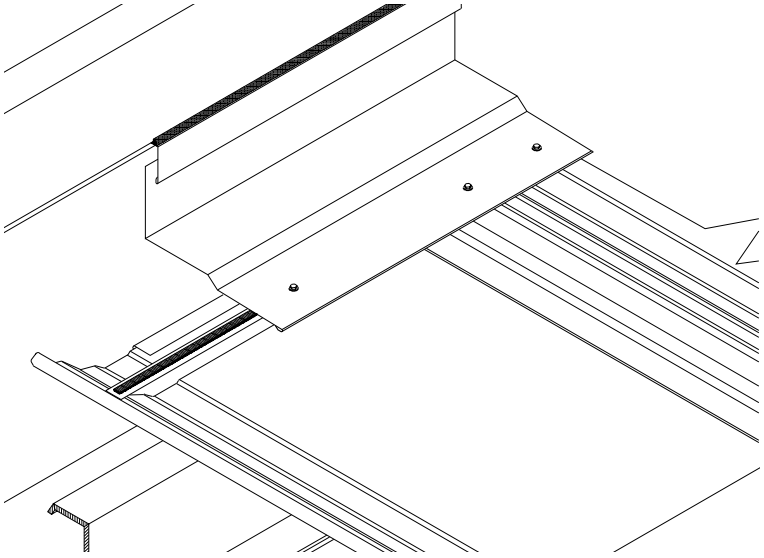
## INSTALLATION NOTES

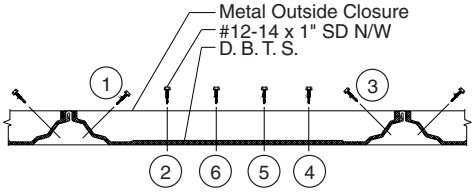
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, 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 closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of 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.

# ENDWALL WITH REGLET FLASHING OVER OPEN FRAMING

**1/4:12 Slope Minimum**






**Seam-Loc 24 Fastening Pattern**

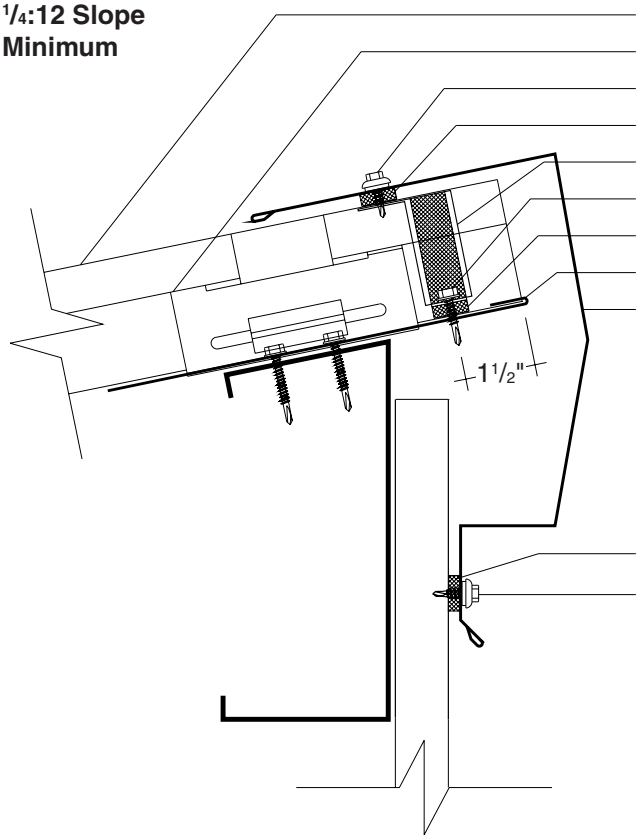
## INSTALLATION NOTES

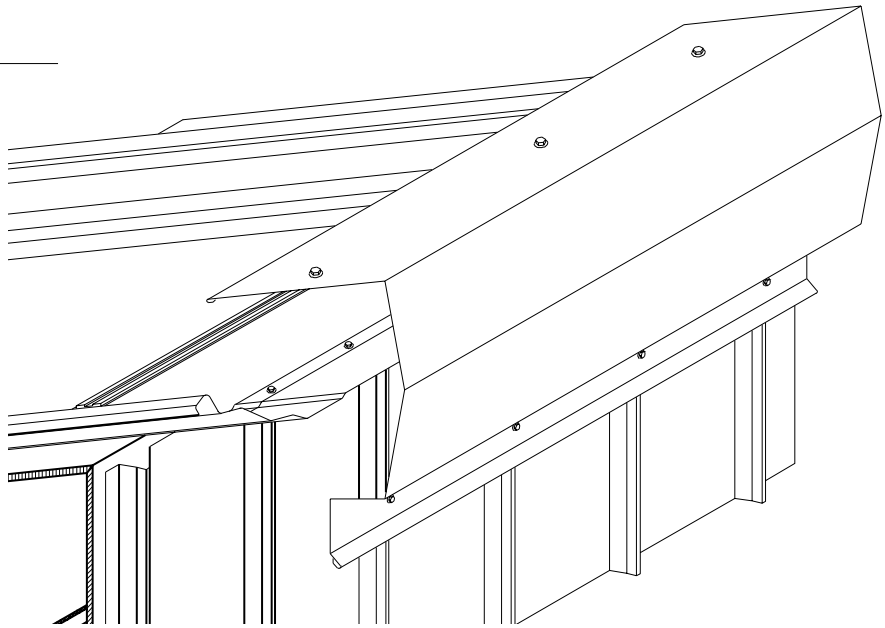
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, 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 closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of 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.

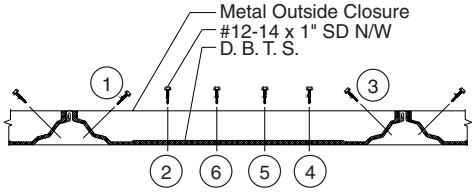
# SEAM-LOC 24®

## Sculptured High Side Eave Over Open Framing

**1/4:12 Slope Minimum**



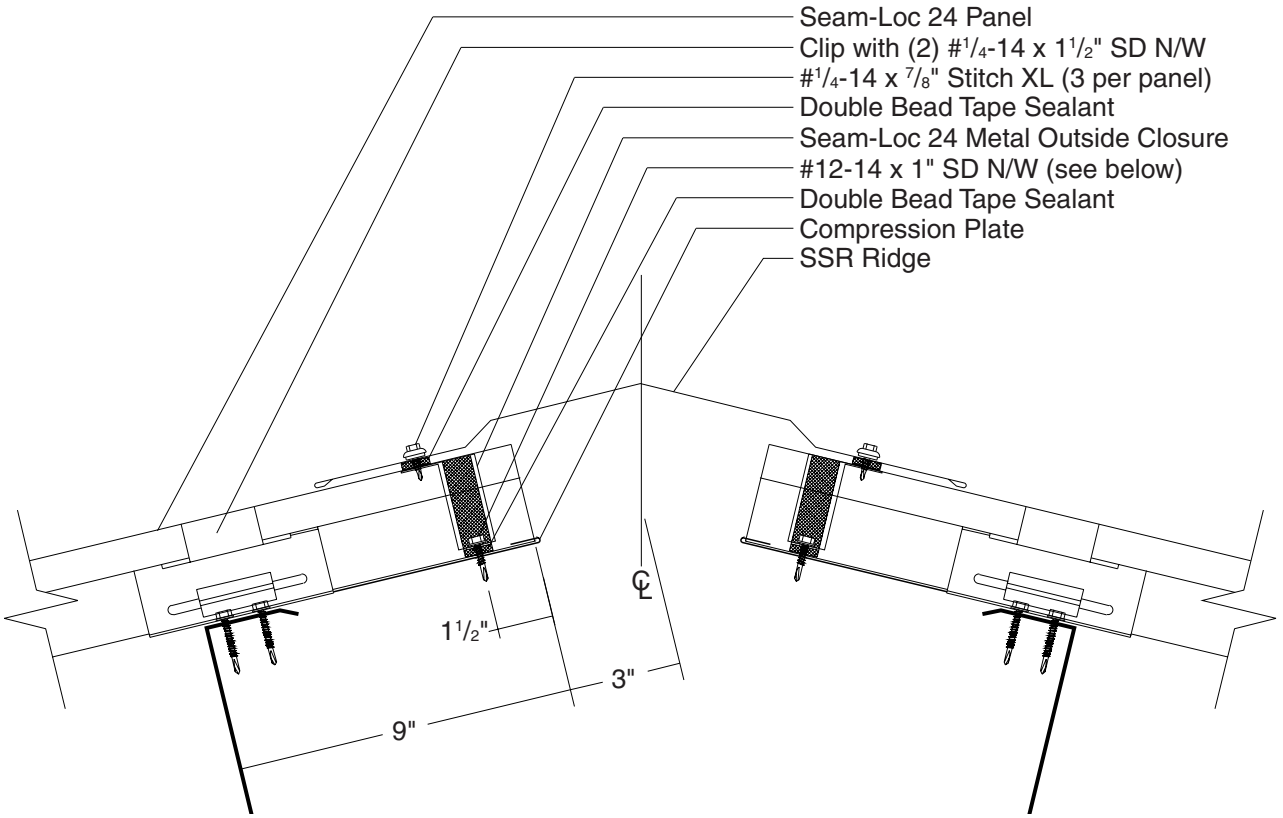


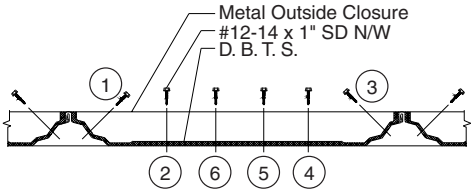

**Seam-Loc 24 Fastening Pattern**

## INSTALLATION NOTES

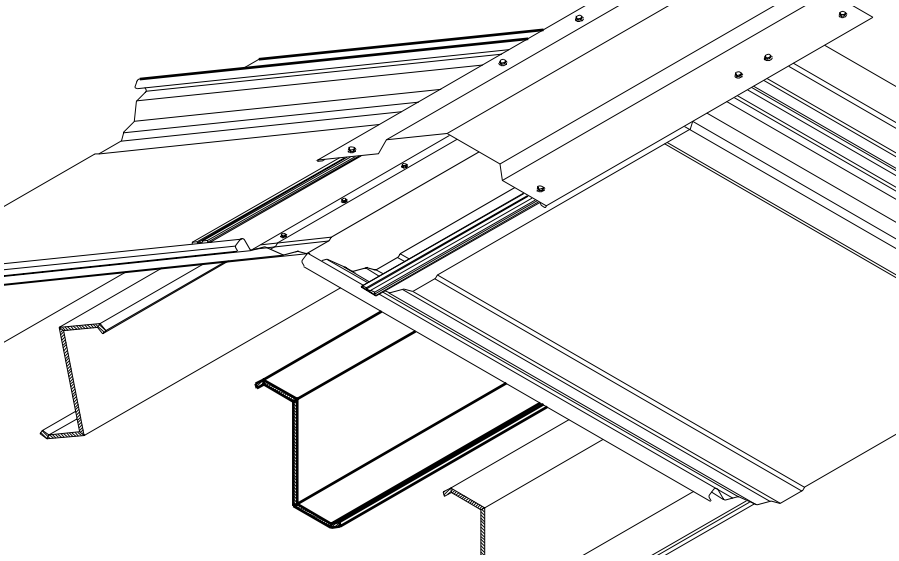
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of High Side Eave assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over tape sealant. Before continuing make sure Outside Closure placement will accommodate SSR Sculptured High Side Eave flashing.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, 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 closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Sculptured High Side Eave flashing and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above.
7. Fasten SSR Sculptured High Side Eave flashing 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.

# SSR Ridge Over Open Framing




**Seam-Loc 24 Fastening Pattern**

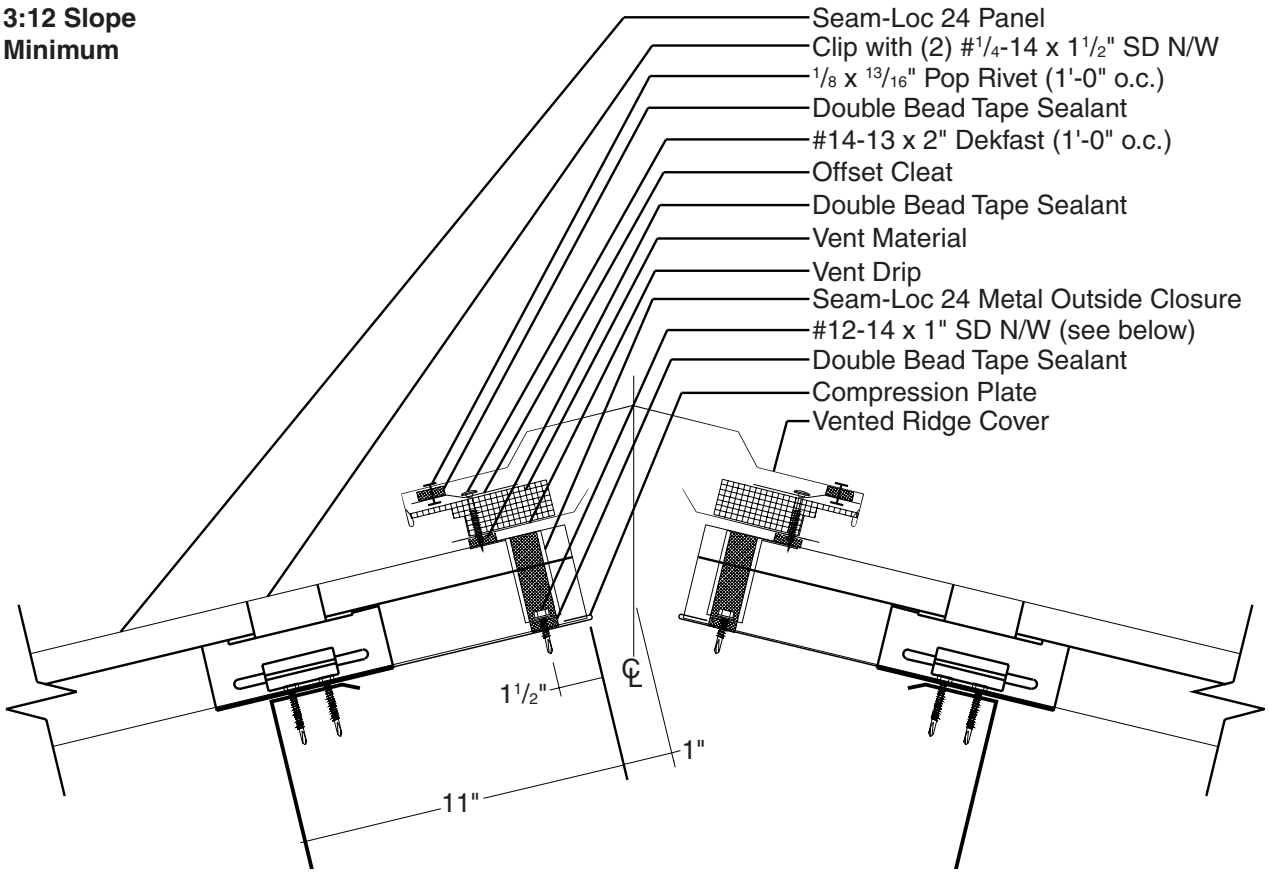


## INSTALLATION NOTES

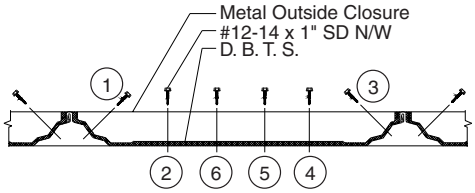
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of ridge assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2"" from panel end on both sides of ridge.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR Ridge.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, 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 Closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures on both sides of ridge. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Ridge flashing and secure to top leg of Outside Closures with #1/4-14 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, 2 1/2" o.c.

# VENTED RIDGE OVER OPEN FRAMING

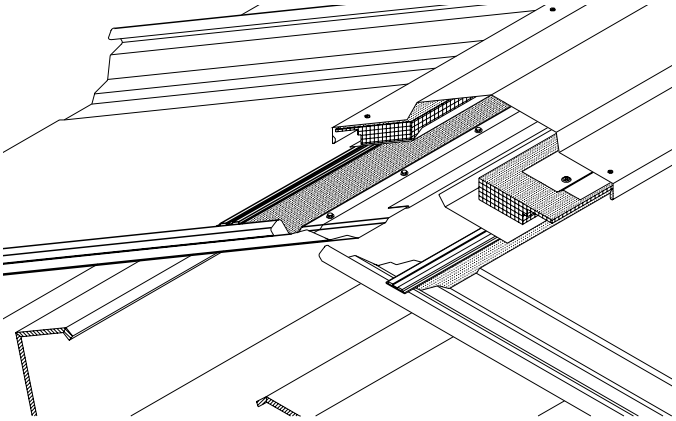
**3:12 Slope Minimum**




Note: Refer to page 19 for proper ventilation considerations.




**Seam-Loc 24 Fastening Pattern**

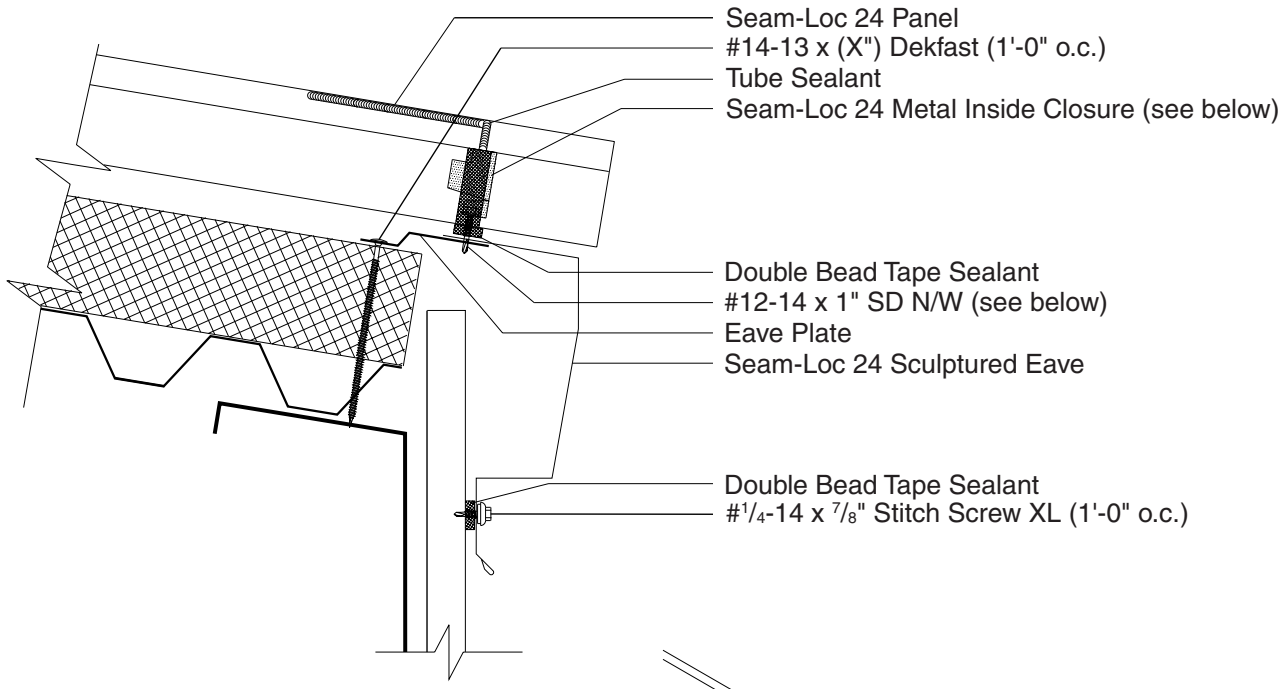


## INSTALLATION NOTES

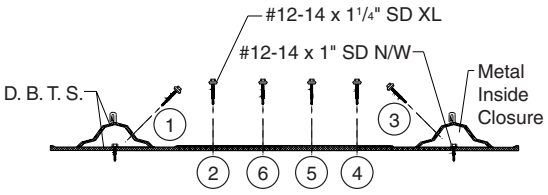
1. Once panels have been installed, slide Compression Plate under the upper edge of panels. Position Compression Plate to allow for proper installation of vented ridge assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end on both sides of ridge.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate Vented Ridge Cover.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, 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 Closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures on both sides of ridge. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install Vent Drip, Vent Material, and Offset Cleat (in order) and fasten to top leg of Outside Closure with #14 Dekfasts 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.

## Sculptured Eave Over Rigid Insulation

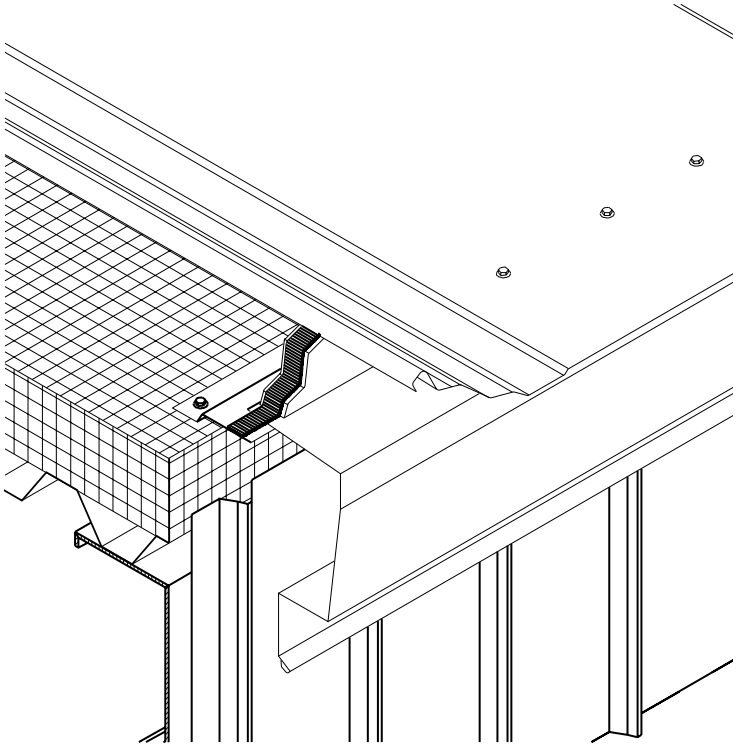
**1/4:12 Slope Minimum**




**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**




**Seam-Loc 24 Fastening Pattern**



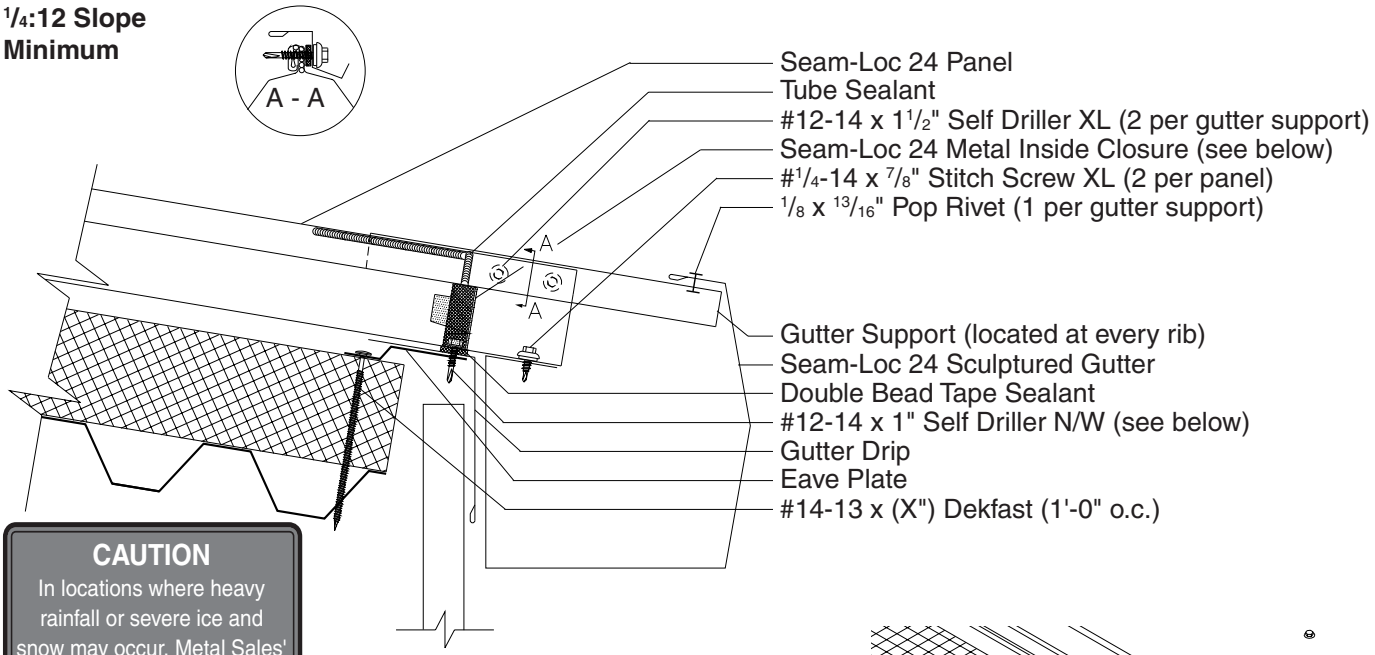
## INSTALLATION NOTES

**All Eave flashings must be installed prior to panel installation.**

1. Install Sculptured Eave back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Sculptured Eave in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c.
2. Fasten Sculptured Eave to wall with appropriate fastener, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across 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 panels and 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 (6) #12-14 x 1 1/4" Self Driller XL screws per panel.

# Sculptured Gutter Over Rigid Insulation

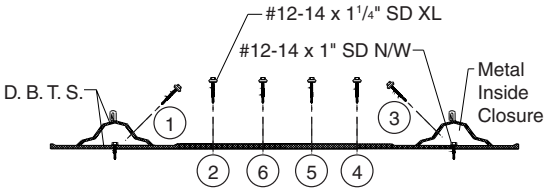
**1/4:12 Slope Minimum**



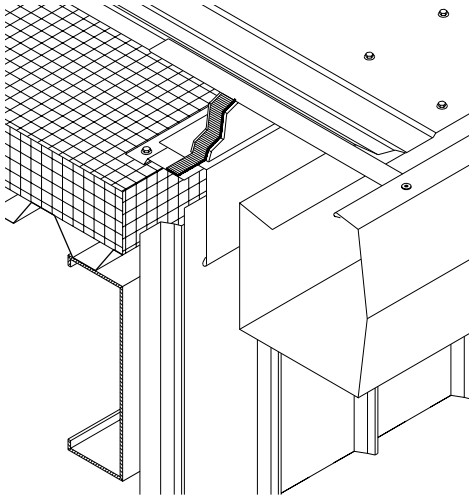

**CAUTION**

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

**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**




**Seam-Loc 24 Fastening Pattern**



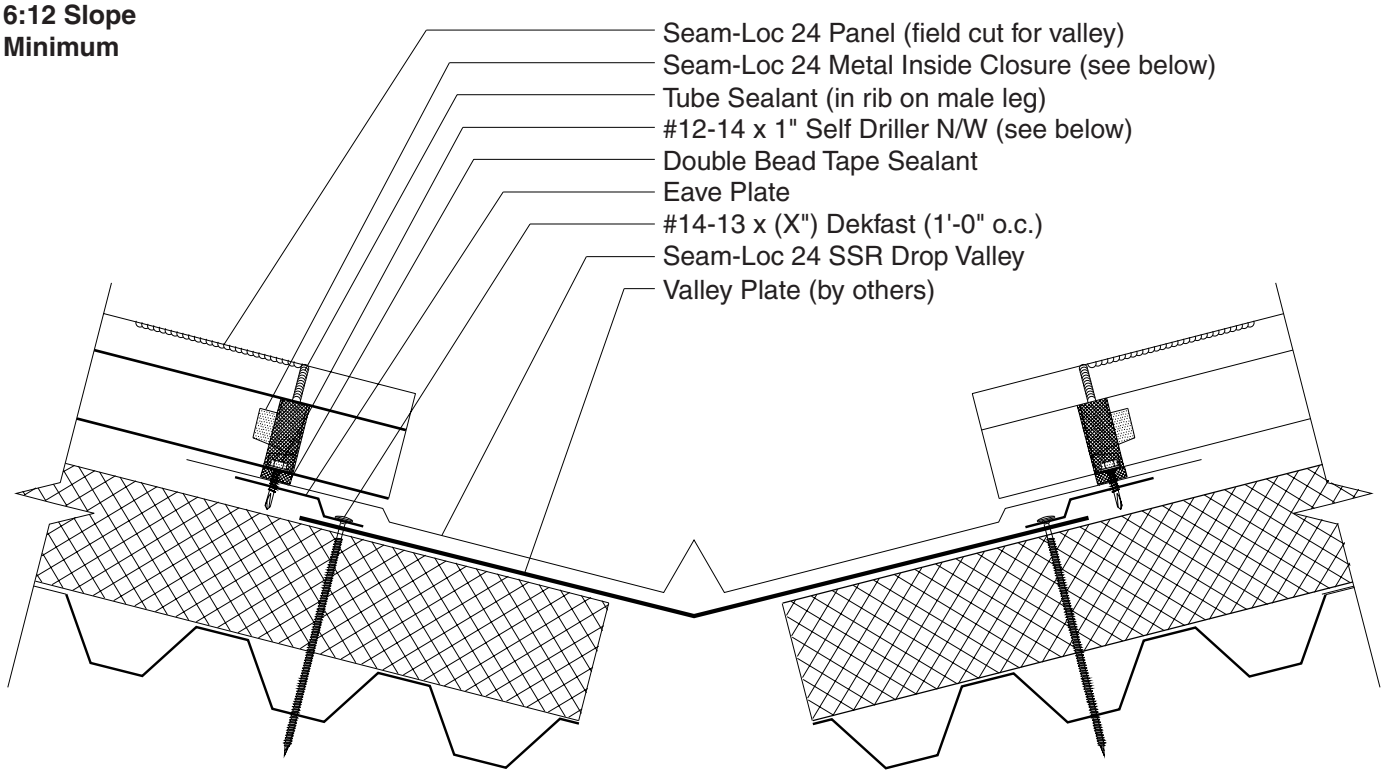
## INSTALLATION NOTES

**Gutter Drip Flashings must be installed prior to panel installation.**

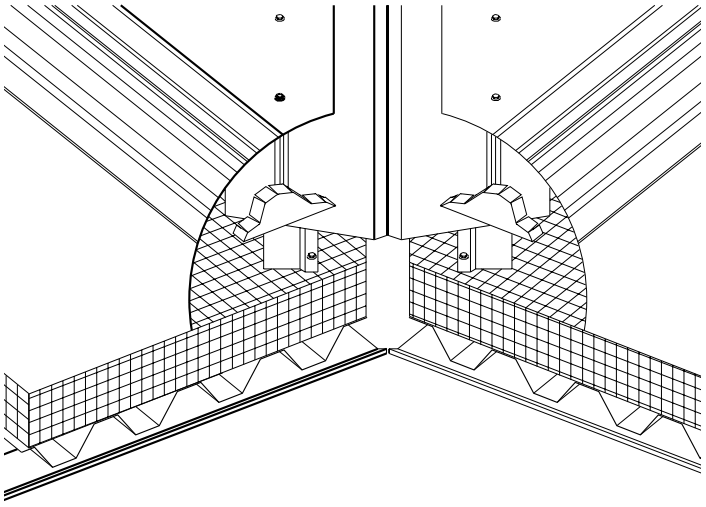
1. Install Gutter Drip back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Gutter Drip in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0"o.c.
2. Apply a row of Double Bead Tape Sealant across Gutter Drip so that sealant is centered 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"
4. Once panels and inside closures 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 the panel rib every other panel (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 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 gutter flashing. Fasten with (8) #1/4-14x7/8" Stitch XL screws or Pop Rivets.
7. Position the gutter over the SSR Gutter Supports with one end against the Rake flashing and rotate gutter 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 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 gutter contour 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.

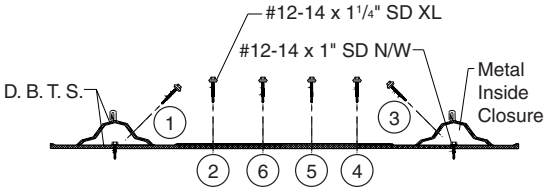
# SSR Drop Valley Over Rigid Insulation

**6:12 Slope Minimum**




**Note:**
**Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**





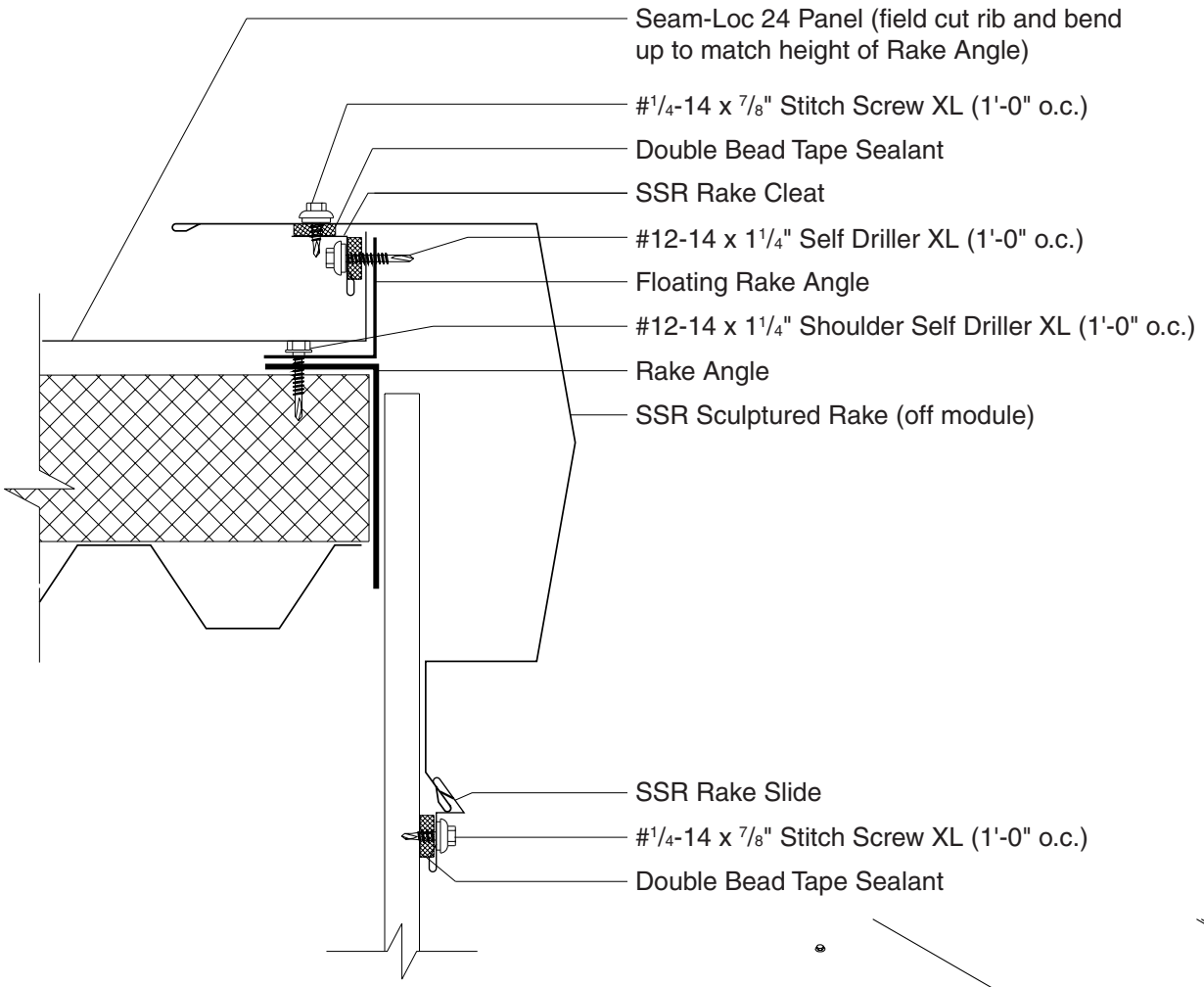

**Seam-Loc 24 Fastening Pattern**

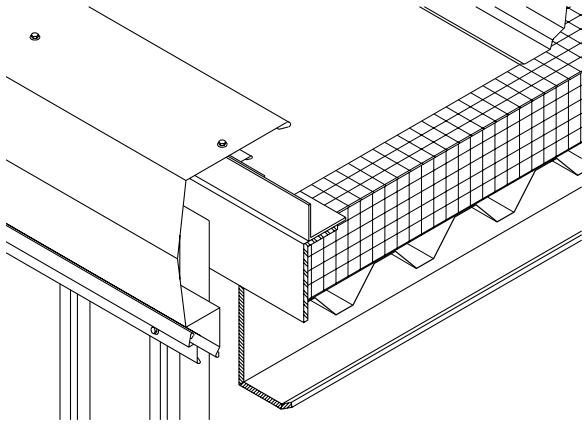
## INSTALLATION NOTES

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

1. Install Drop Valley flashing back against previously installed Eave Plates. To hold Valley in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0"o.c. into top leg of Eave Plate.
2. Apply a row of Double Bead Tape Sealant across both sides of the Drop Valley flashing 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 panels and inside closures have been installed and properly sealed, (see pages 26-27), fasten through panel, Double Bead Tape Sealant, and Drop Valley into Eave Plate with #12-14 x 1¼" Self Driller XL screws.

# SSR Sculptured Rake (Off Module) Over Rigid Insulation



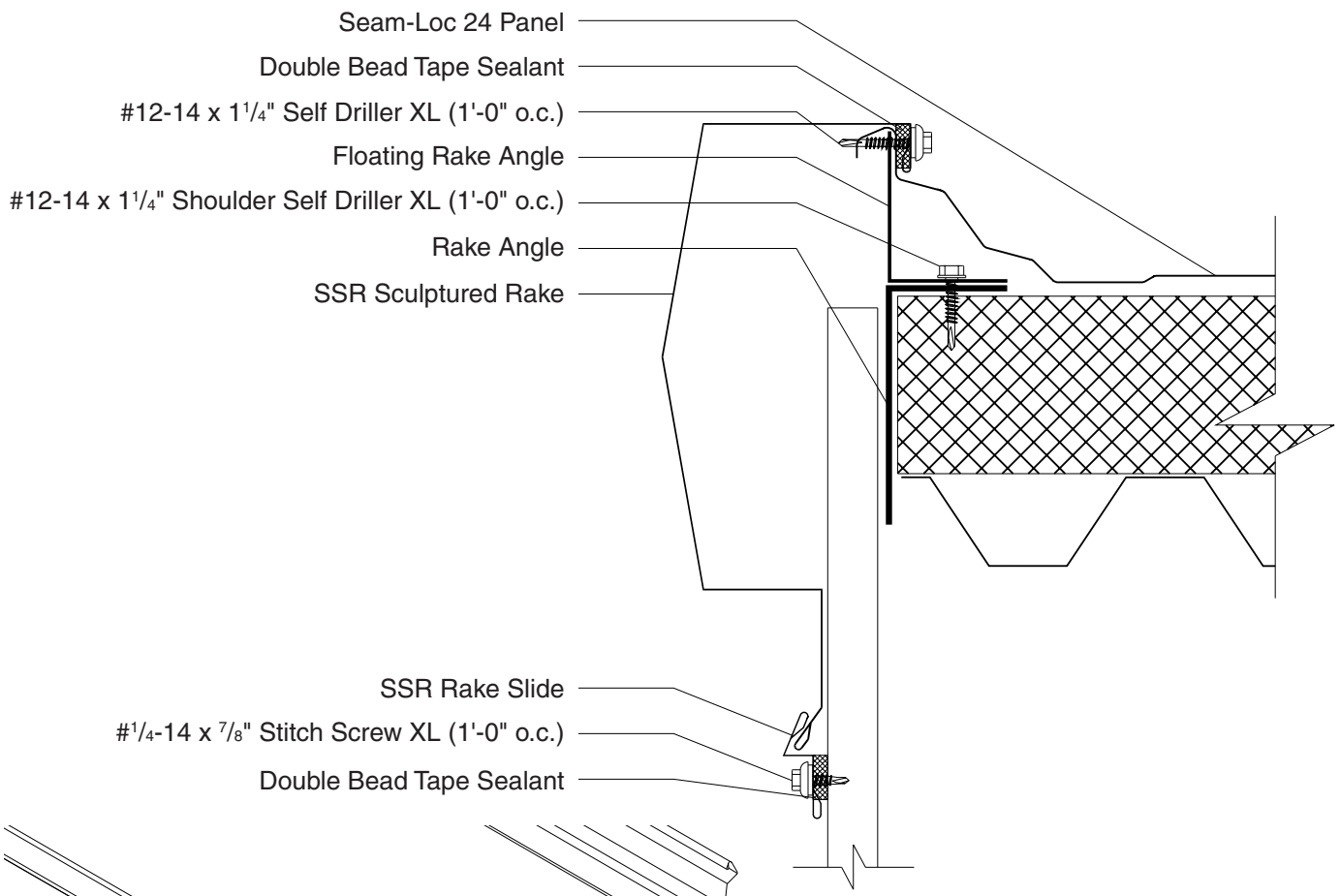



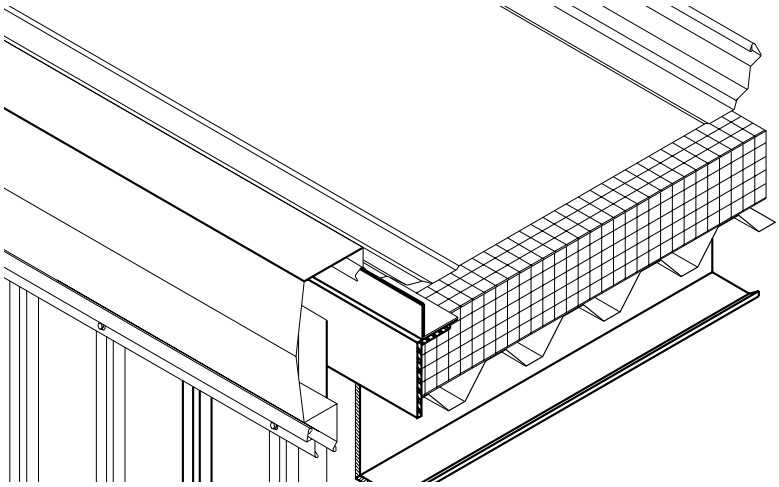
## INSTALLATION NOTES

**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, 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 flashing so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into SSR Rake Cleat with #¼-14 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 Rake flashing.
6. Install SSR Rake Slide over lower leg of SSR Rake flashing 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.

# SSR Sculptured Rake (on module) Over Rigid Insulation



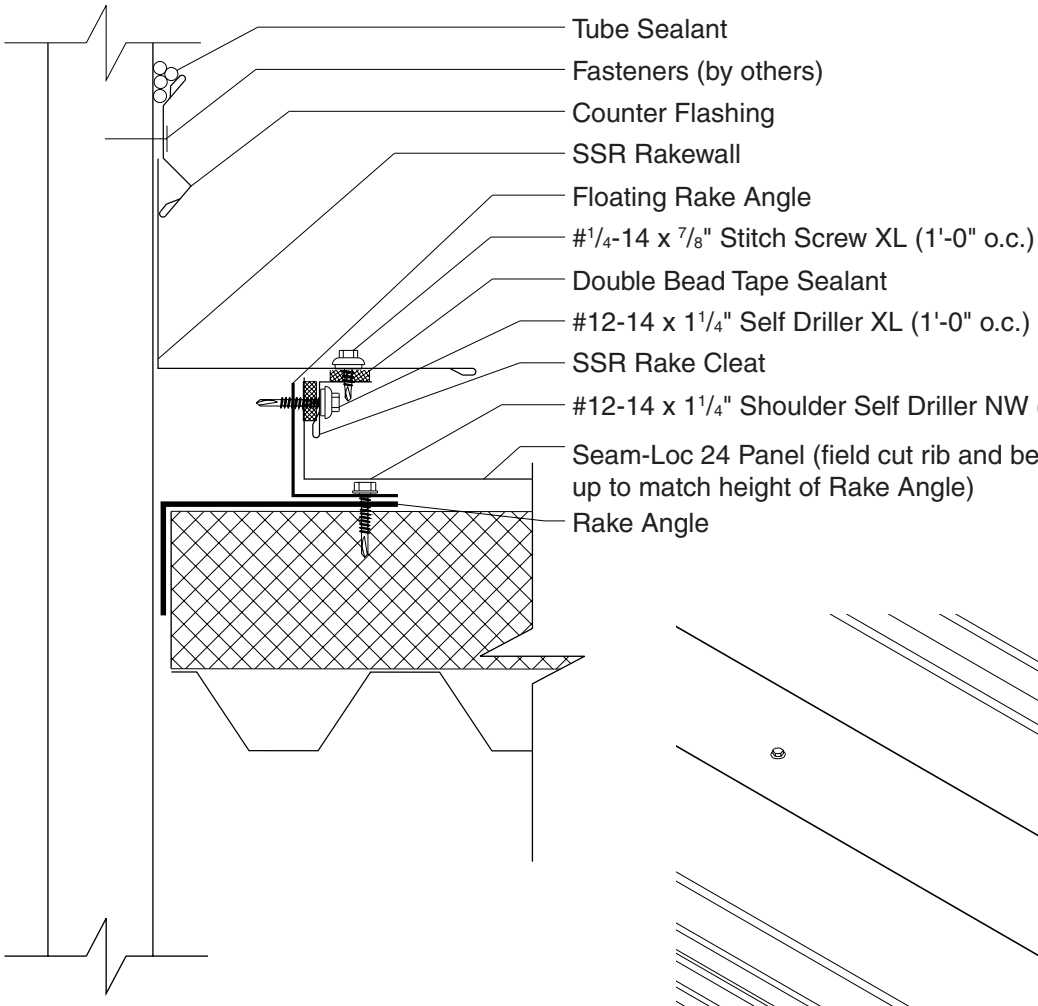



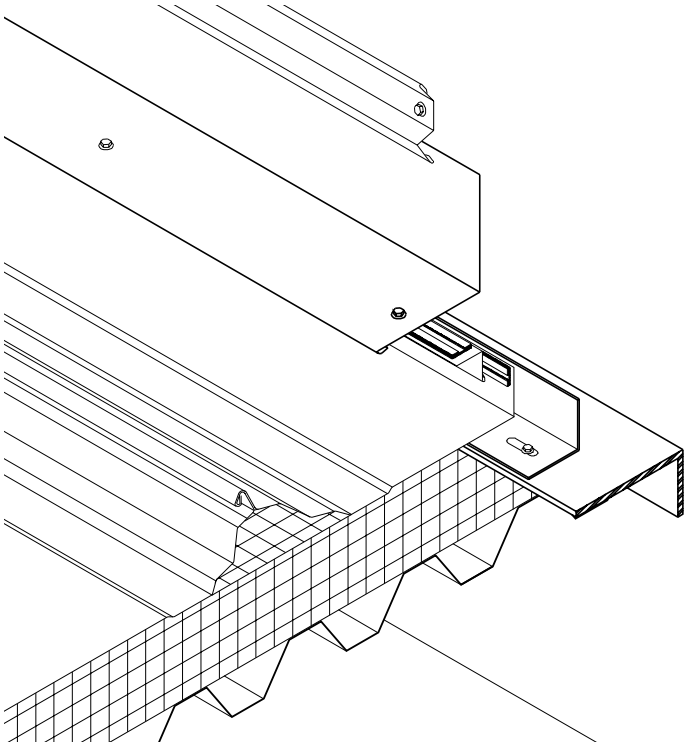
## INSTALLATION NOTES

**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, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1¼" 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 flashing so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into SSR Rake Cleat with #¼-14 x ⅞" 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 Rake Flashing.
6. Install SSR Rake Slide over lower leg of SSR Rake flashing and Double Bead Tape Sealant. Fasten with #¼-14 x ⅞" 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, 2½" o.c.

# RAKEWALL (OFF MODULE) WITH COUNTER FLASHING OVER RIGID INSULATION



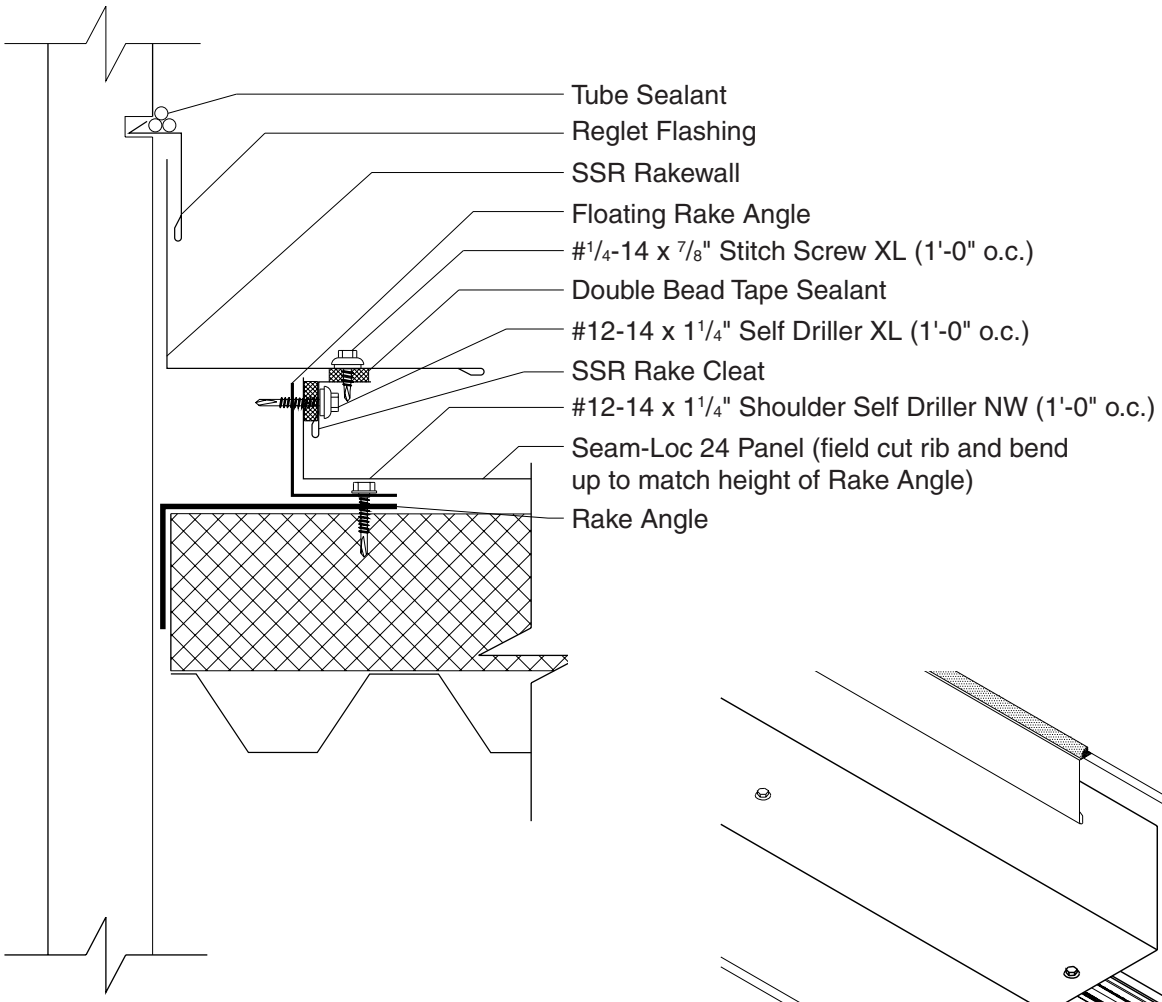



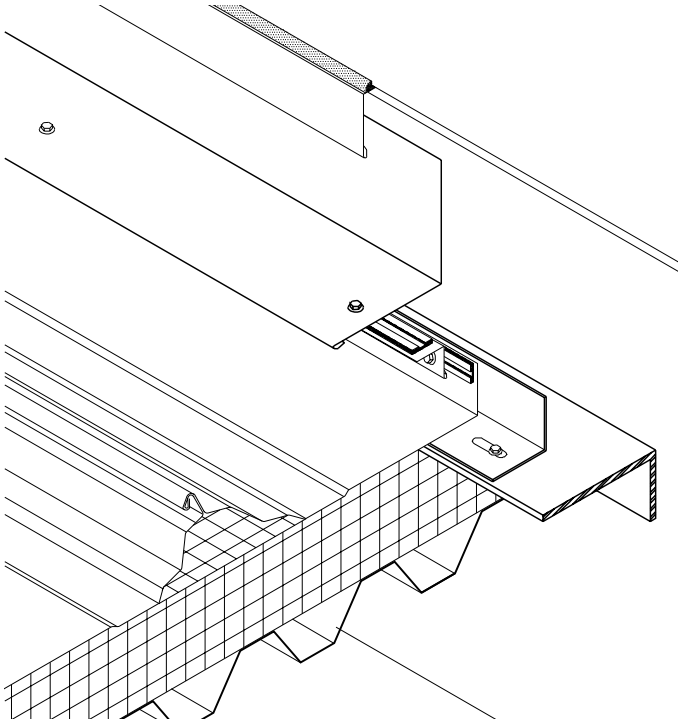
## INSTALLATION NOTES

**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, 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, Tape Sealant, and into SSR Rake Cleat with #¼-14 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.

# RAKEWALL (ON MODULE) WITH REGLET FLASHING OVER RIGID INSULATION



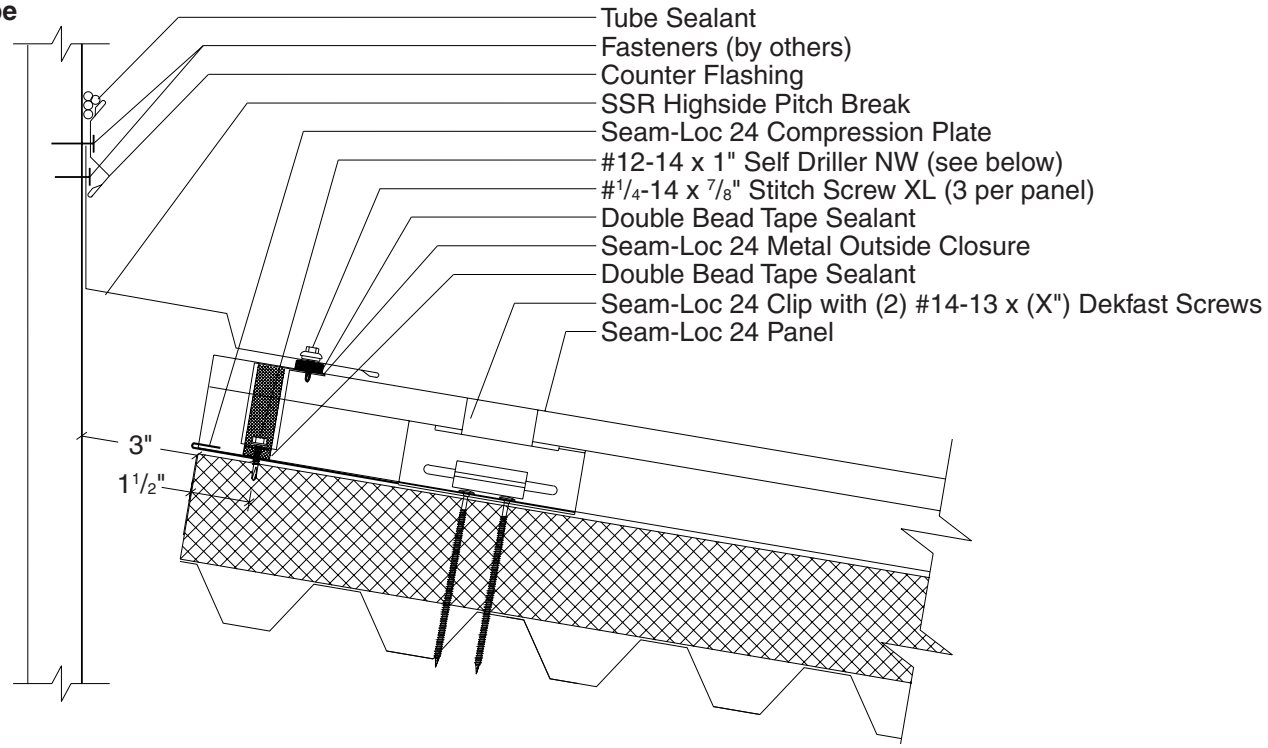
## INSTALLATION NOTES

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

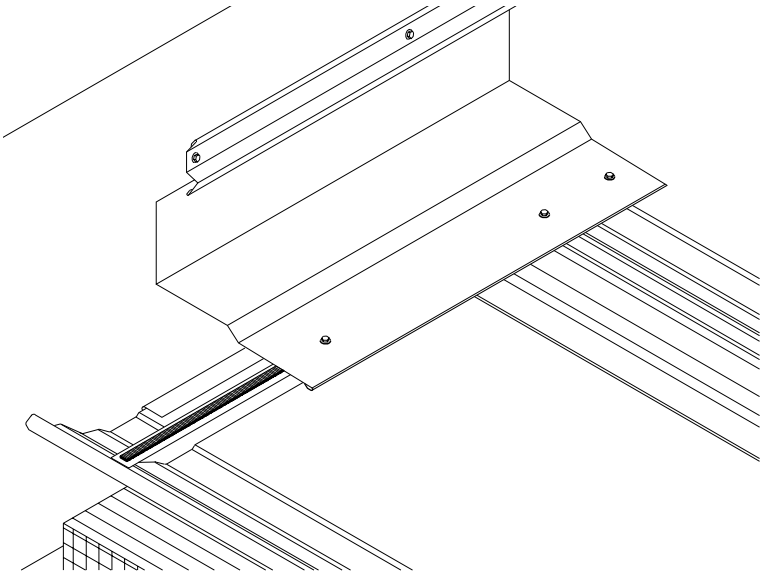
1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of field bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, tape sealant, panel, and into floating rake zee 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, 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.

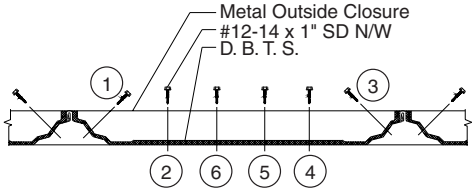
# Endwall with Counter Flashing Over Rigid Insulation

**1/4:12 Slope Minimum**




**Note:**
**Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



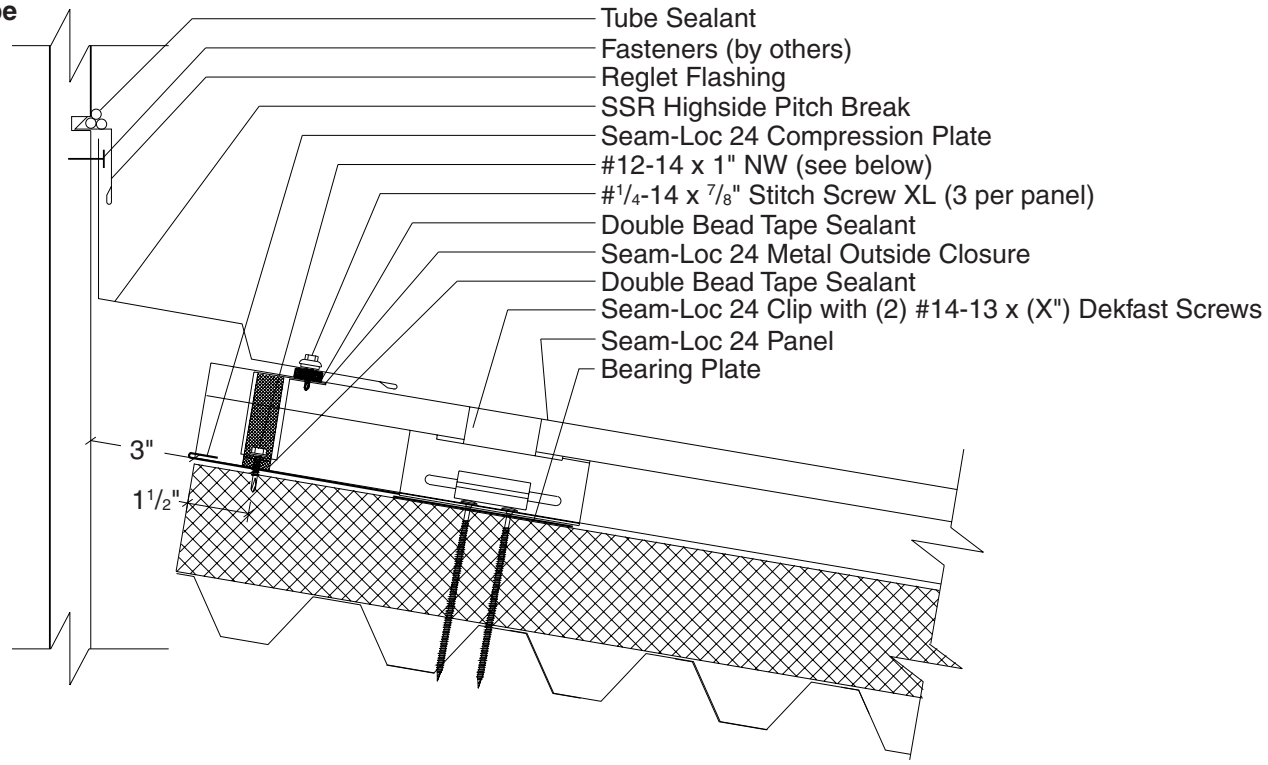



**Seam-Loc 24 Fastening Pattern**

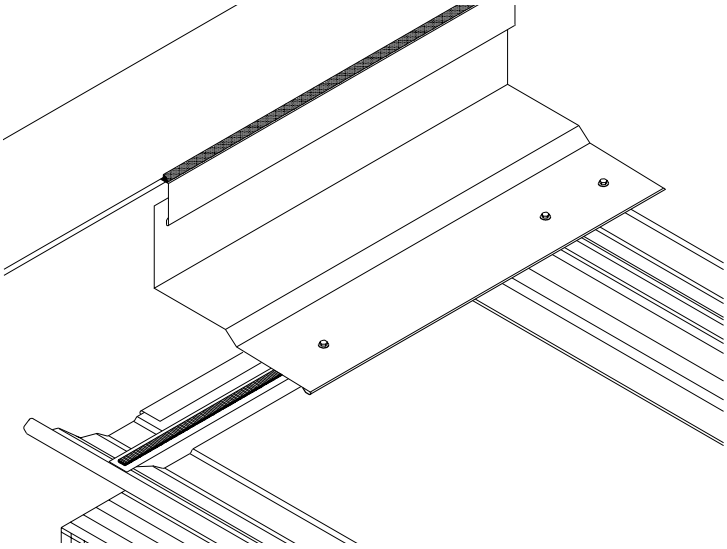
## INSTALLATION NOTES

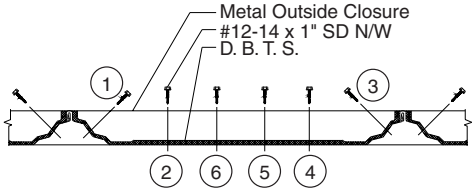
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, 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 closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of 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.

# Endwall with Reglet Flashing Over Rigid Insulation




**Note:**
**Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



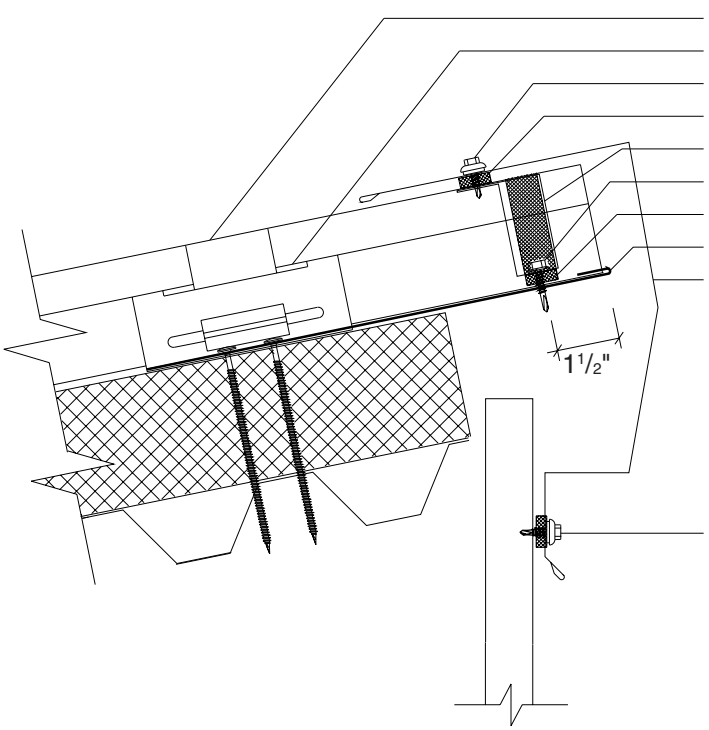



**Seam-Loc 24 Fastening Pattern**

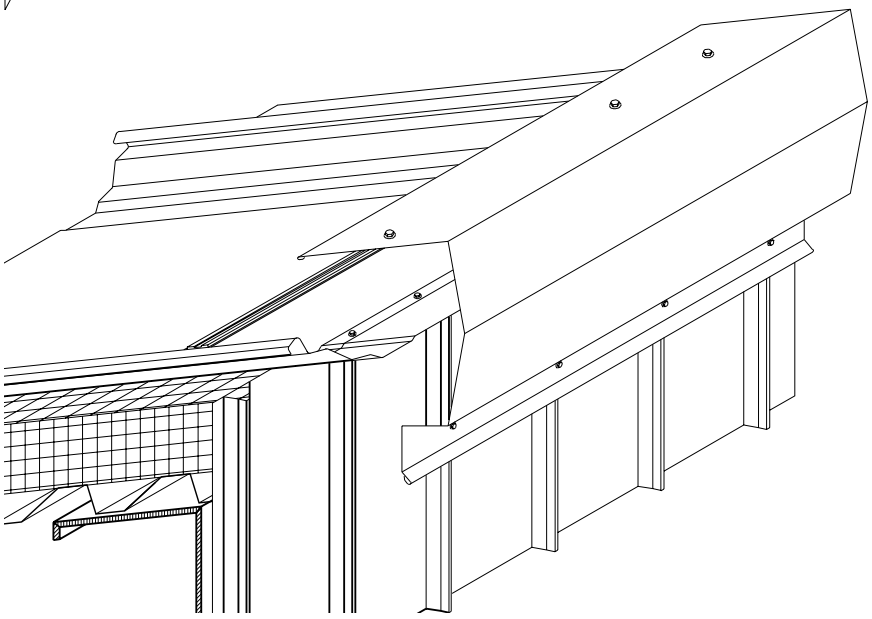
## INSTALLATION NOTES

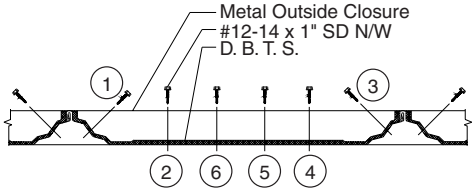
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, 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 closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of 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.

# Sculptured High Side Eave Over Rigid Insulation




**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



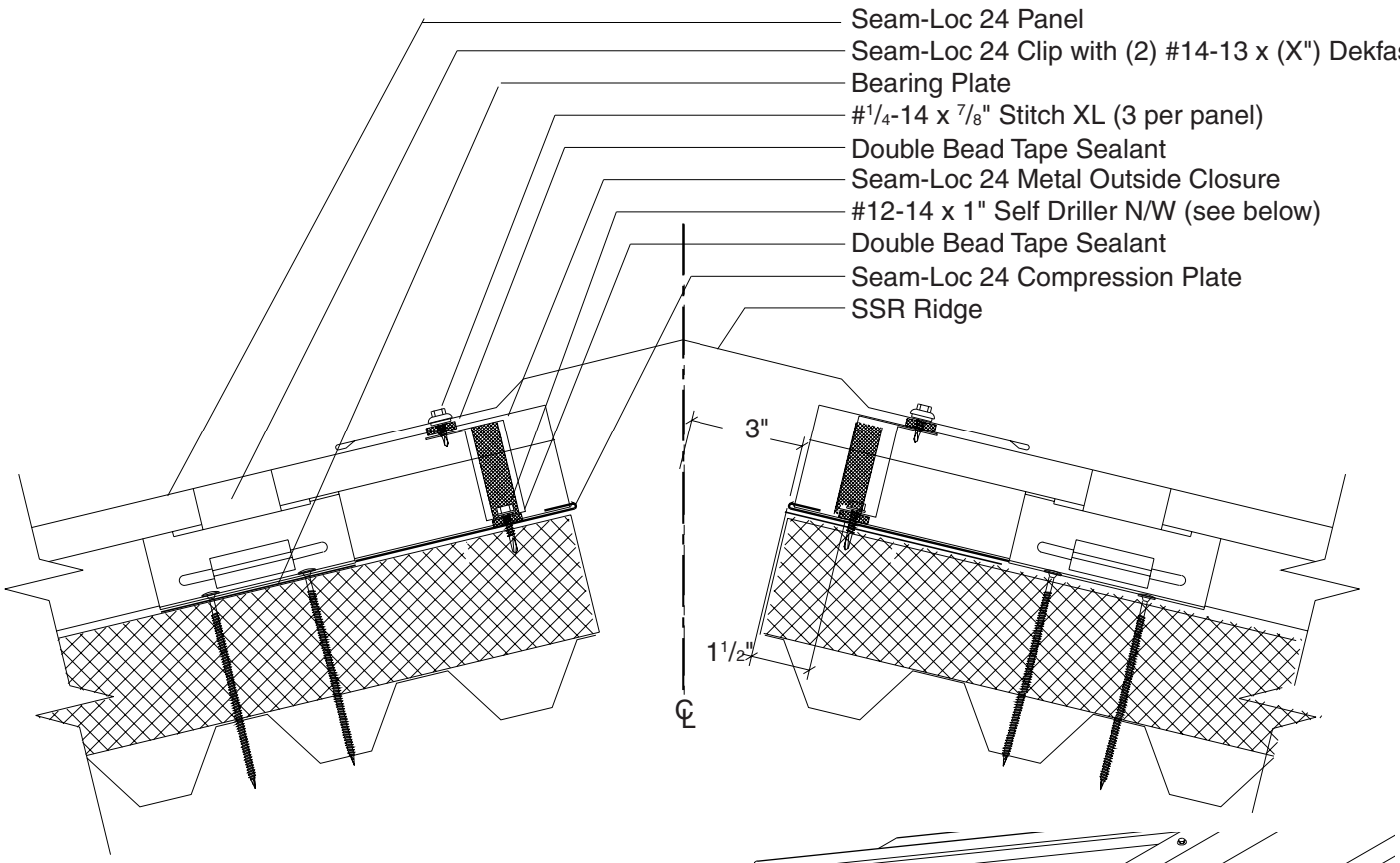



**Seam-Loc 24 Fastening Pattern**

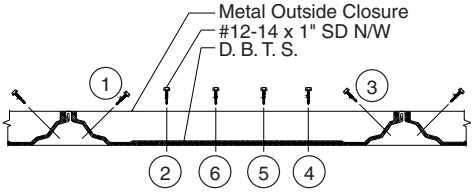
## INSTALLATION NOTES

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 Seam-Loc 24 Outside Closures over tape sealant. Before continuing make sure Outside Closure placement will accommodate SSR Sculptured High Side Eave flashing.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, 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 closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Sculptured High Side Eave flashing and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above.
7. Fasten SSR Sculptured High Side Eave flashing 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.

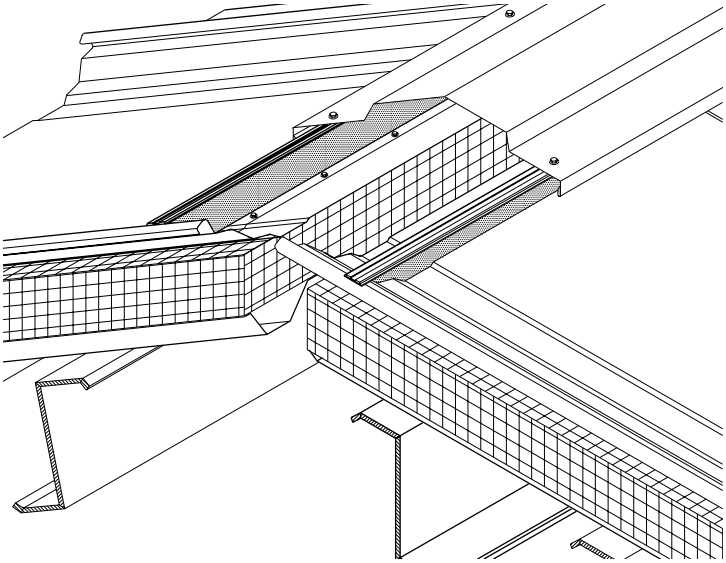
# SSR Ridge Over Rigid Insulation




**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



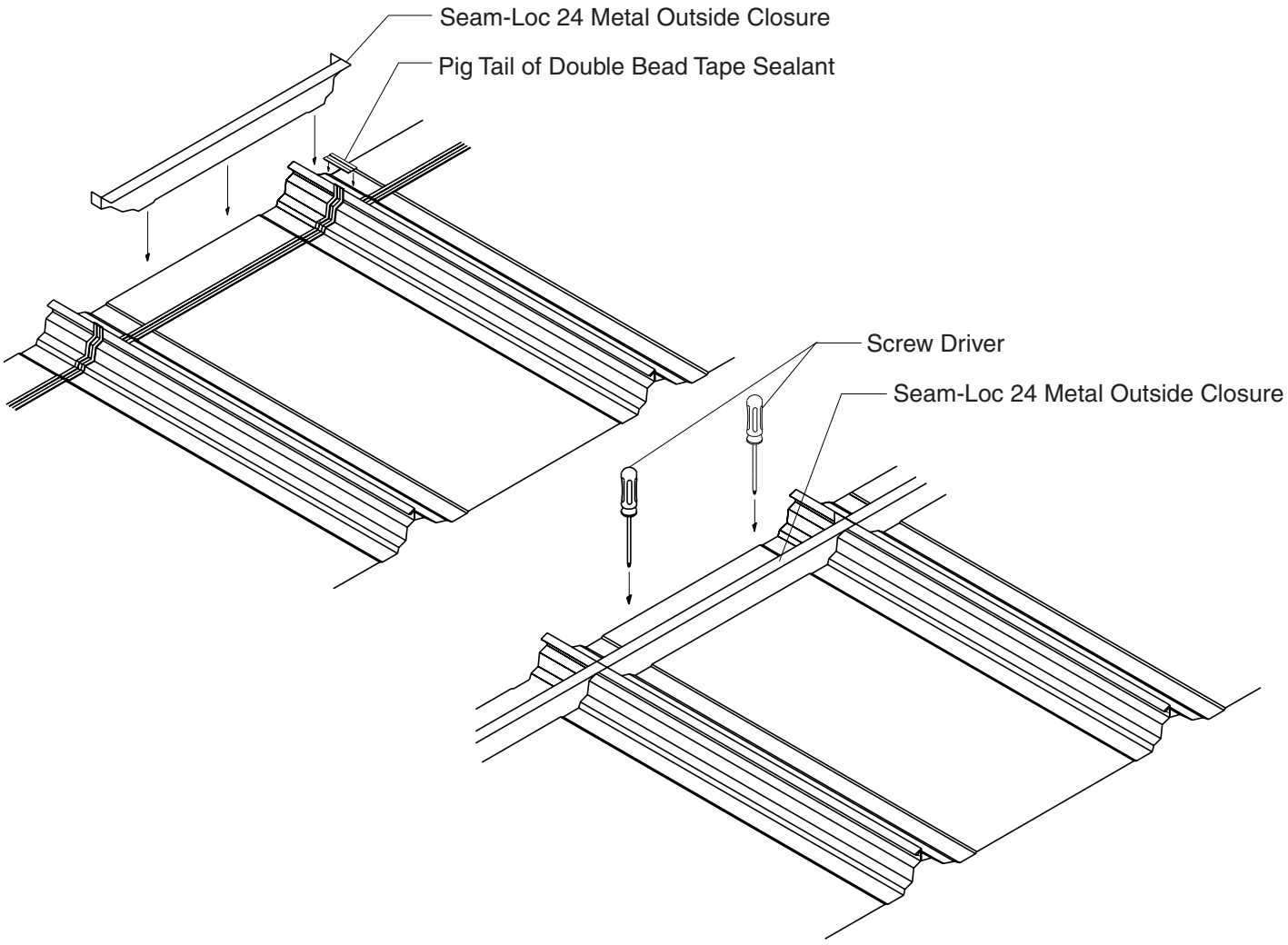

**Seam-Loc 24 Fastening Pattern**

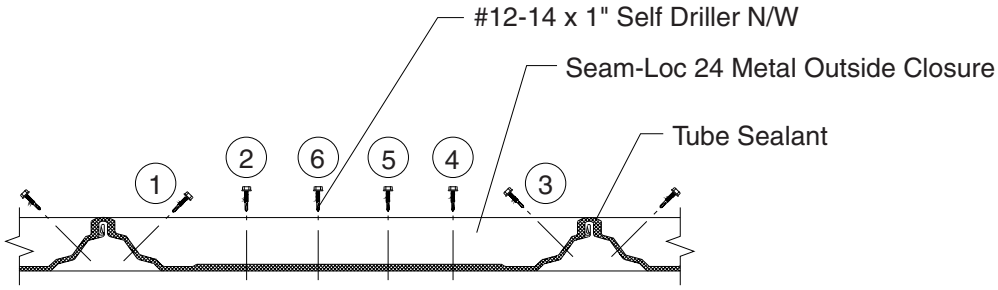


## INSTALLATION NOTES

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 1 1/2" from panel end on both sides of ridge.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR Ridge.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, 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 Closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures on both sides of ridge. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Ridge flashing and secure to top leg of Outside Closures with #1/4-14 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, 2 1/2" o.c.

# Installation of Seam-Loc 24 Metal Outside Closure



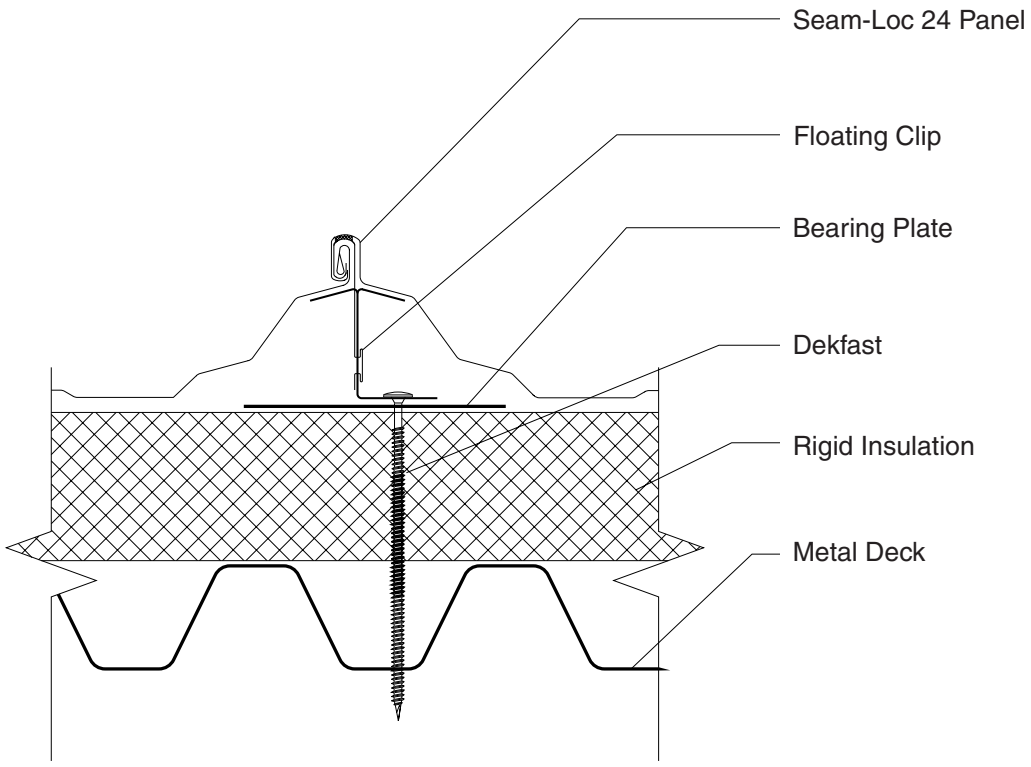

## INSTALLATION NOTES

**Note: The Metal Outside Closure is used to close off the high end of the panel applications for open framing. 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.)**

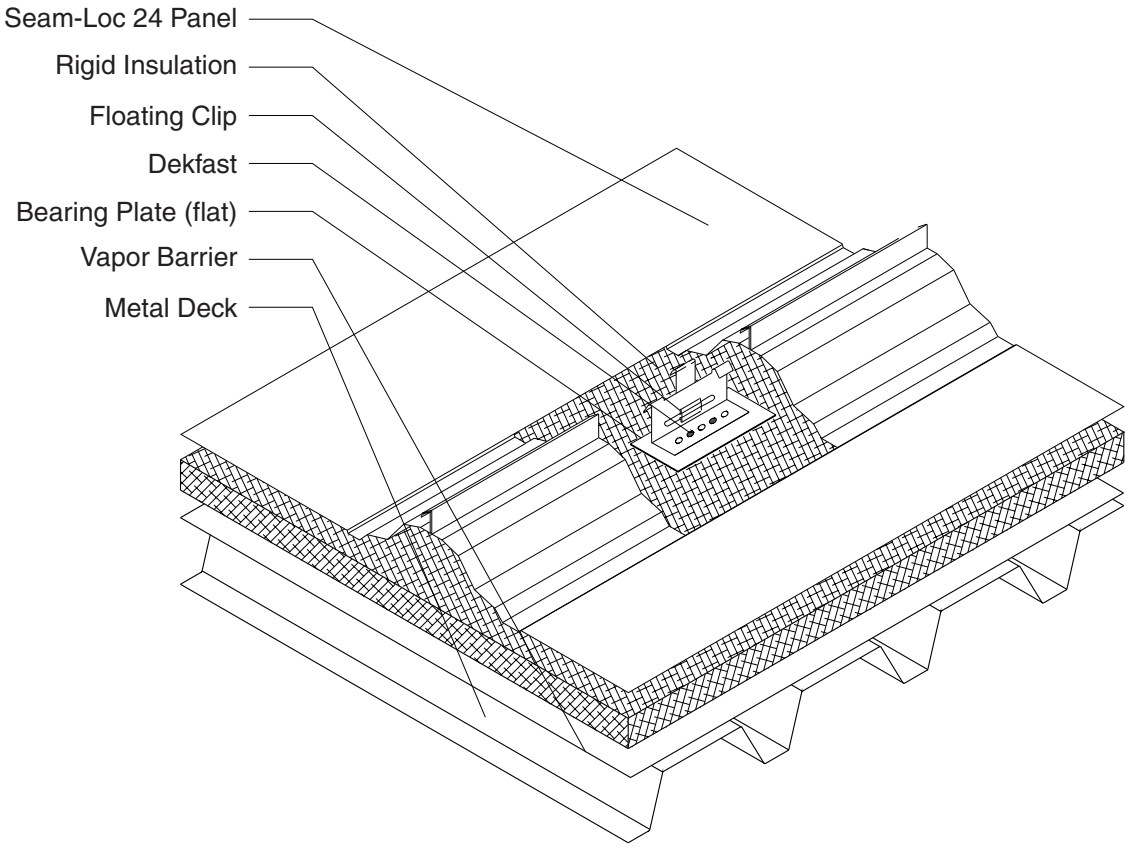
**Steps:**

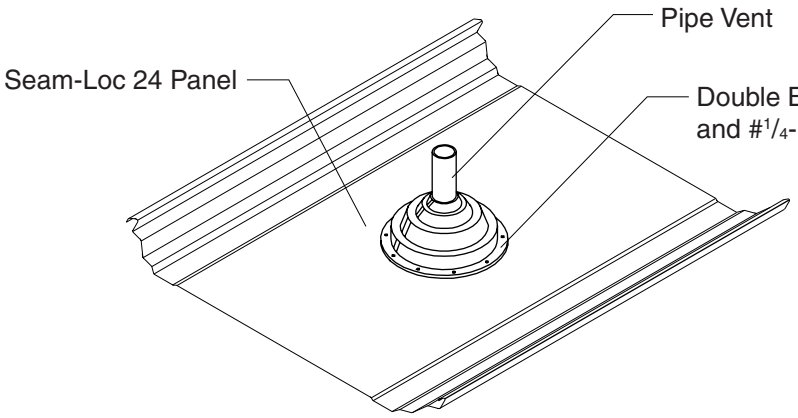
1. Once panels have been installed and seamed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of flashing assembly. Use C-clamps to hold Compression Plate in place.
2. Apply Double Bead Tape Sealant down the female leg. across the panel and up the male leg $1^1/_2$" 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 $1^1/_2$" from the end of the panel. Use screw driver to properly align panel, 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, sealant, panel, and Compression Plate.
5. Apply a continuous $^3/_8$" diameter bead of Tube Sealant (if necessary) where the Metal Outside Closure meet the panel seams and fill any and all gaps left around closure.

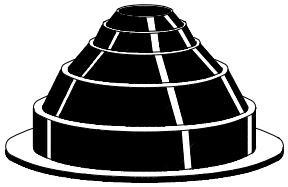
## FLOATING SYSTEM WITH BEARING PLATE




## FLOATING SYSTEM WITH BEARING PLATE ISOMETRIC

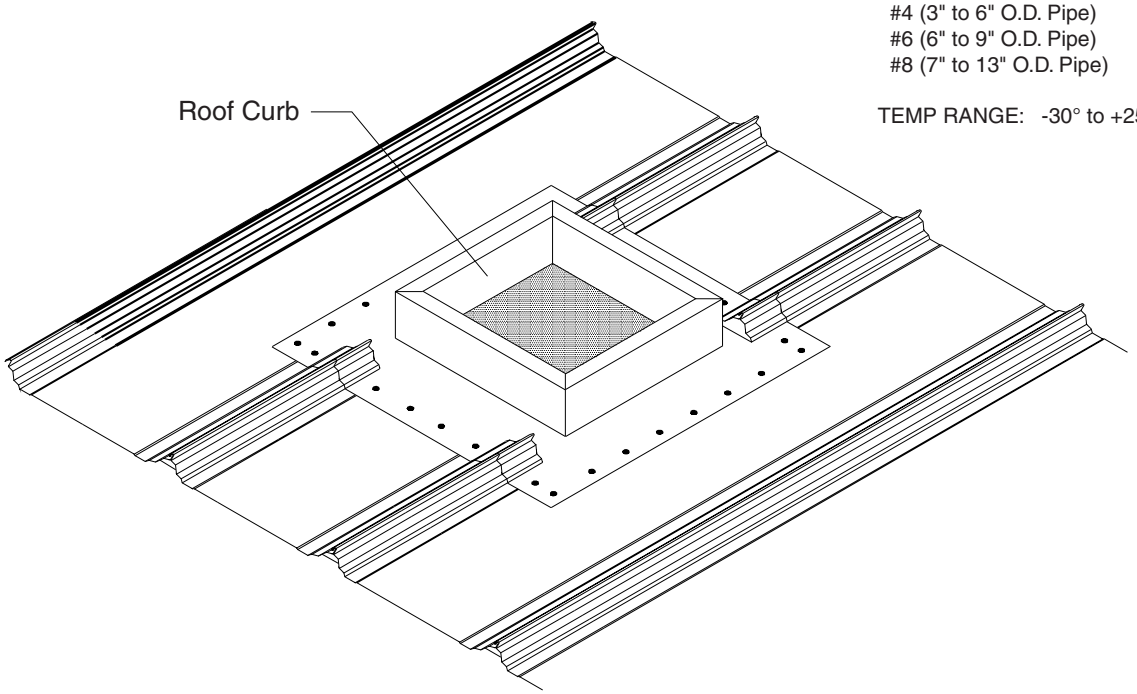




Mini (1/4" to 1 1/8" O.D. Pipe)
#2 (1 3/4" to 3" O.D. Pipe)
#4 (3" to 6" O.D. Pipe)
#6 (6" to 9" O.D. Pipe)
#8 (7" to 13" O.D. Pipe)

TEMP RANGE: -30° to +250°




## GENERAL NOTES

Size and location of all roof penetrations should be an important consideration. Areas around roof vents or rooftop units may show that corrosive fumes are emmitted 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 |

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

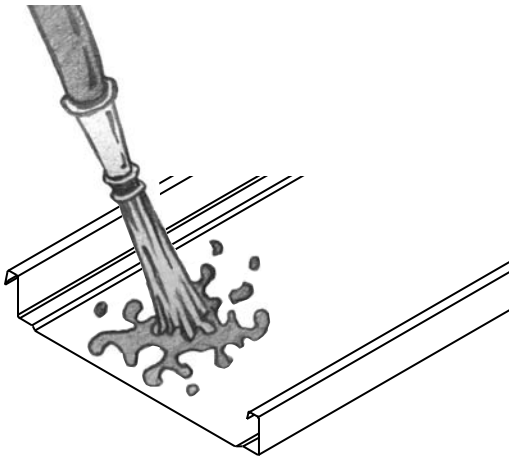
In many cases, simply washing the building with plain water using a hose or pressure sprayer will be adequate. In areas where heavy dirt deposits dull the surface, a cloth or soft bristle brush and solution of water and detergent ($^1/_3$ cup of laundry detergent per gallon of water for example) may be used. This should be followed by an adequate rinse of water. Do not use wire brushes, abrasives, or cleaning tools which will abrade the coating surface.

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

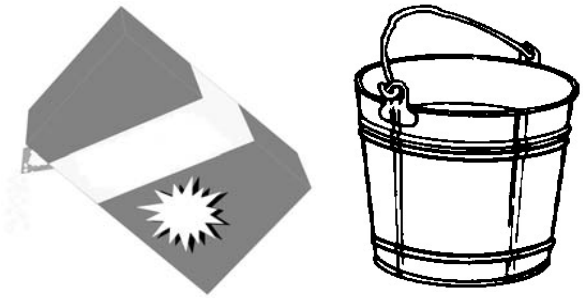
$^1/_3$ cup detergent (Tide® or equivalent)
$^2/_3$ cup trisodium phosphate (Solex® or equivalent)
1 quart of 5% sodium hypochlorite solution (Clorox® or equivalent)
3 quarts of water

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**