Vertical-Lok

Technical/Erection Information

IMPORTANT NOTICE

Read this manual completely prior to beginning the installation of the Vertical-Lok roofing system. Safeway details must be followed as a minimum to insure appropriate warranties will be issued. If there is a conflict between project erection drawings provided or approved by Safeway and details in this manual, project erection drawings will take precedence.

CAUTION!

- Exercise extreme caution when walking on unsecured panels; panels may have reduced load capacities until installation is complete.
- Material may be slippery, resulting from but not limited to wet conditions. Use extreme caution when walking, sitting, standing or kneeling on a metal roof to avoid a fall or other injury.
- Do not step on edges. Step toward center of all panels.
- Improper unloading or handling of bundles and crates may cause bodily injury or material damage. Multiple lift points may be required.
- Use extreme care in the operation of power lifting devices such as cranes and forklifts and follow the safety instructions provided by their manufacturer.
- Crates, boxes, and bundles may have sharp or rough edges. They may be bulky, heavy, or both. Safeway is not responsible for bodily injuries or material handling during unload-ing, storage or job-site placement.
- Always wear appropriate safety gloves, eye protection and apparel when installing panels.

ALL OSHA REQUIREMENTS & REGULATIONS MUST BE FOLLOWED WHEN USING MATERIAL

For further information, please contact OSHA: www.osha.gov
U.S. Department of Labor
Occupational Safety and Health Administration (OSHA)
200 Constitution Avenue, N.W., Washington, D.C. 20210

Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, Safeway reserves the right to discontinue products at any time or change specifications and/or designs without incurring obligation. **To insure you have the latest information available, please inquire or visit our web site at www.Safewaysteel.com.** Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs, or panel profiles. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices. For clarity, insulation is not shown in these details.

TABLE OF CONTENTS

SAFEWAY VERTICAL-LOK ROOFING SYSTEM

TM

114 Rosemont Lane
Imler, PA 16655
757-425-6223

Vertical-Lok **Engineering**

IMPORTANT -- READ THIS FIRST

CAUTION

Application and design details are for illustration purposes only and may not be appropriate for all environmental conditions or building designs. Projects should be engineered to conform to applicable building codes, regulations and accepted industry practices.

NOTE

The use of any field seaming machine other than that provided by Safeway BUILDING SYSTEMS will damage the panels and void all warranties.

It will greatly facilitate DESIGNING, QUOTING, ORDERING or ERECTING the Safeway Vertical Lok panels if you determine which system you need based on insulation requirements. Listed below are the differences between the low and high systems.

LOW SYSTEM
3/8" clearance between panel and purlin without 1" thermal spacer for added insulation.

LOW CLIP
LOW RAKE SUPPORT

HIGH SYSTEM
1 3/8" clearance between panel and purlin with 1" thermal spacer for added insulation.

HIGH CLIP **HIGH RAKE SUPPORT**
HIGH EAVE PLATE

Floating clips have a maximum of 1" movement each direction. Articulating clips have a maximum movement of 1 1/4" each direction. Thermal calculations should be performed for each project to ensure that the thermal movement of the roof is not more than the clips can handle.

FOR ROOF PITCHES GREATER THAN 4:12, CALL Safeway BUILDING SYSTEMS (757-425-6223). NOTE: As with all standing seam roof systems, a sound insulator (EXAMPLE: blanket insulation) is required between the panel and substructure. Some composite systems require additional acoustical consideration. Call Safeway for further information.

Thermal Spacer Selection Chart
For use over blanket insulation (.60 pcf maximum density) installed over purlins or joists.

	Low System	High System
No Insulation	3/8" Thermal Spacer	N/A
3" Insulation	No Thermal Spacer Required	1" Thermal Spacer
4" Insulation	N/A	5/8" Thermal Spacer
6" Insulation	N/A	3/8" Thermal Spacer

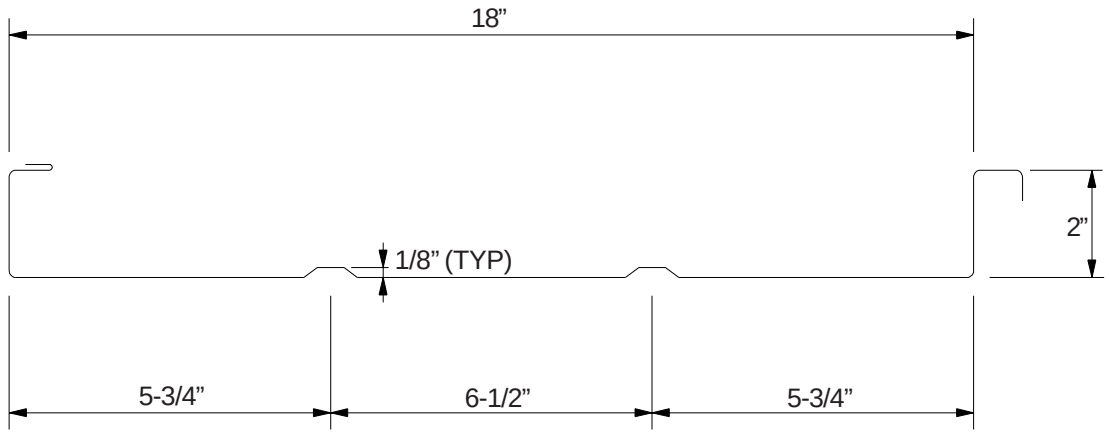
This manual is to be used by the roof system erector as a guide for the erection of the Vertical-Lok Roof. **IT IS THE RESPONSIBILITY OF THE ERECTOR TO INSTALL THIS ROOF USING SAFE CONSTRUCTION PRACTICES.** The manufacturer is not responsible for the performance of this roof system if it is not installed in accordance with the instructions shown in this manual.

SAFEWAY BUILDING SYSTEMS ERECTION DRAWINGS TAKE PRECEDENCE OVER THIS MANUAL OR ANY OTHER INFORMATION WRITTEN OR IMPLIED, REGARDING THE INSTALLATION OF THEIR ROOF SYSTEM.

If there are any questions regarding proper installation of parts or materials on this roof system, please inquire before proceeding.

Vertical-Lok Engineering - Panel Properties

Vertical-Lok Panel - 18” Coverage

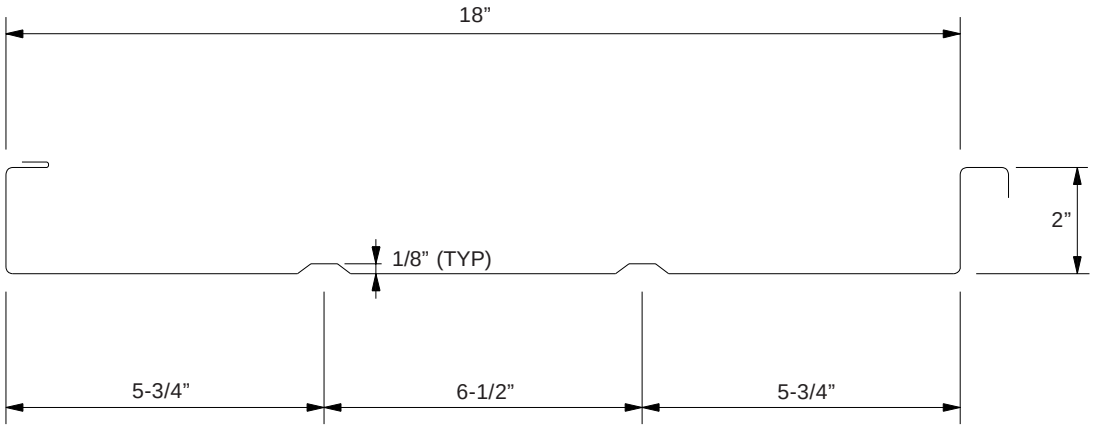


SECTION PROPERTIES								
MATERIAL			TOP IN COMPRESSION			BOTTOM IN COMPRESSION		
PANEL GAGE	F_y KSI	Weight (PSF)	I_x (in^4/ft)	Sx4 (in^3/ft)	M_a (kip-in/ft)	I_x (in^4/ft)	S_x (in^3/ft)	M_a (kip-in/ft)
24	50	1.28	0.1447	0.0834	2.4973	0.0700	0.0643	01.9253

NOTES

1. All Vertical-Lok panel properties are calculated in accordance with the *North American Specification for the Design of Cold-Formed Steel Structural Members with Commentary, 2001 Edition*, published by the American Iron and Steel Institute.
2. The moment of inertia, I_x is used in calculating deflections.
3. The section modulus, S_x, is used in calculating allowable bending moment.
4. The allowable bending moment, M_a, is used in calculating allowable uniform loads.
5. As noted, all tabulated values represent the average for one foot of panel width.

Vertical-Lok Panel - 18” Coverage



ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

SPAN TYPE	LOAD TYPE	SPAN IN FEET						
		2.0	2.5	3.0	3.5	4.0	4.5	5.0
SINGLE	LIVE LOAD	416	266	184	135	104	82	66
	WIND PRESSURE	416	266	184	135	104	82	66
	WIND SUCTION	56	39	39	39	36	32	29
2 SPANS	LIVE LOAD	320	205	142	104	80	63	51
	WIND PRESSURE	320	205	142	104	80	63	51
	WIND SUCTION	56	39	39	39	36	32	29
3 OR MORE SPANS	LIVE LOAD	401	256	178	130	100	79	64
	WIND PRESSURE	401	256	178	130	100	79	64
	WIND SUCTION	56	39	39	39	36	32	29
SINGLE SPAN W/ 5” CANTILEVER AT ONE END	LIVE LOAD	454	281	192	139	106	83	67
	WIND PRESSURE	454	281	192	139	106	83	67
	WIND SUCTION	56	39	39	39	36	32	29
SINGLE SPAN W/ 17” CANTILEVER AT ONE END	LIVE LOAD	159	159	159	159	136	101	78
	WIND PRESSURE	159	159	159	159	136	101	78
	WIND SUCTION	56	39	39	39	36	32	29

NOTES

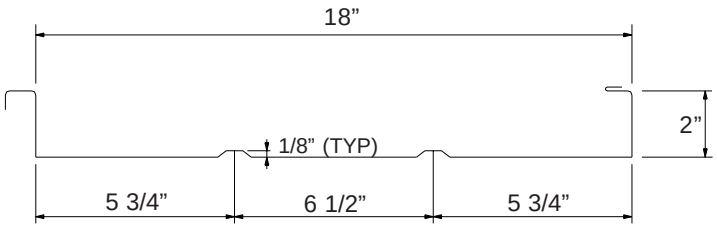
1. Tabulated values are superimposed loads: weight of panel ***has been deducted***.
2. Loads for multiple span conditions are based on equal span lengths.
3. Tabulated values incorporate deflection limit of L/240 of span.
4. Values incorporate web crippling consideration.
5. Suction values incorporate ASTM E 1592 test results and consideration of tension in the screws connecting the clips to the purlins.
6. Tabulated values apply to panel installed in accordance with this manual.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

PRODUCT CHECKLIST

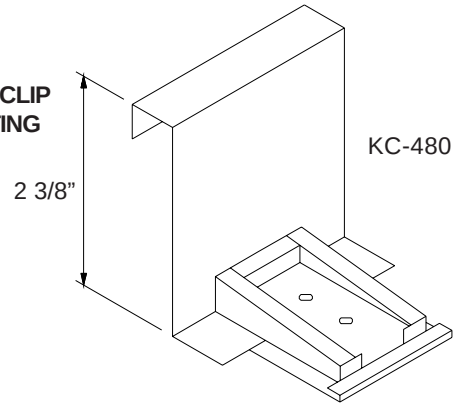
VERTICAL-LOK
18" PANEL

24 GAGE
FACTORY-APPLIED MASTIC



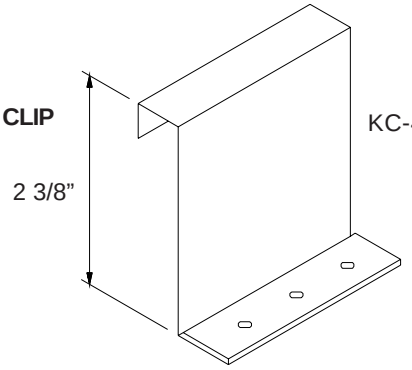
STANDARD CLIP
LOW FLOATING

KC-480



STANDARD CLIP
LOW FIXED

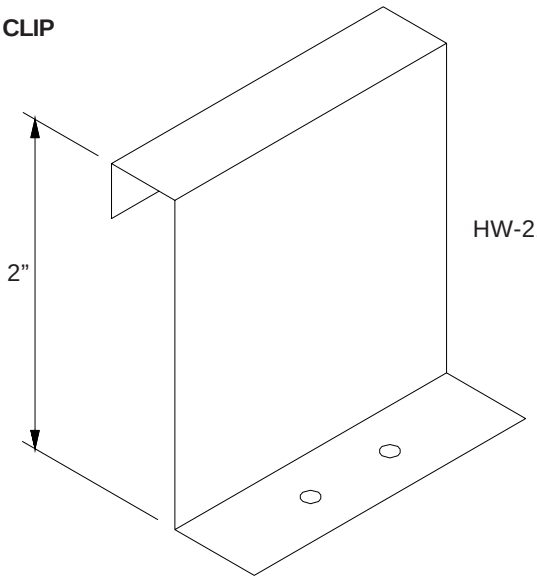
KC-470



SPECIAL ORDER

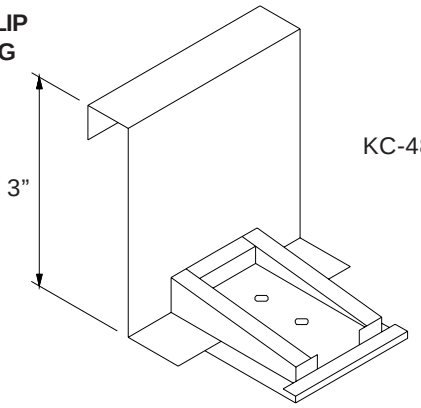
UTILITY CLIP

HW-218



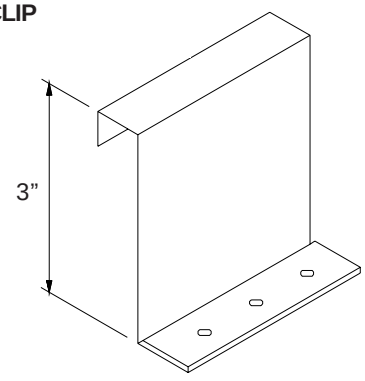
STANDARD CLIP
HIGH FLOATING

KC-485



STANDARD CLIP
HIGH FIXED

KC-475

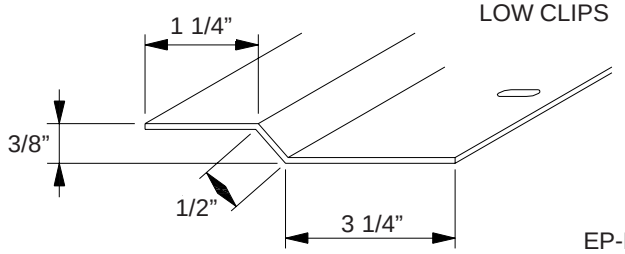


114 Rosemont Lane
Imler, PA 16655
757-425-6223

PRODUCT CHECKLIST

EAVE PLATE LOW

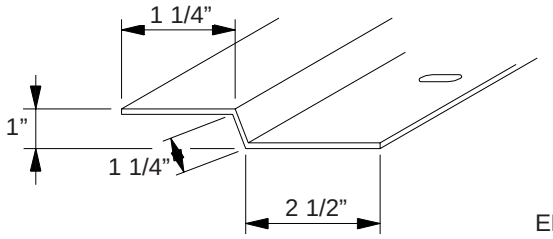
- 8'-0" LENGTH
- 16 GA. 5"
- FACTORY SLOTS
- FOR USE WITH LOW CLIPS



EP-LOW

EAVE PLATE HIGH

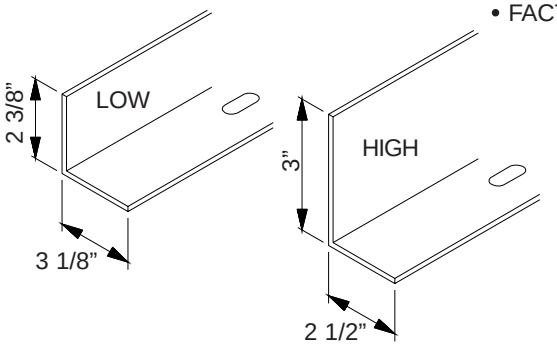
- 8'-0" LENGTH
- 16 GA. 5 1/2"
- FACTORY SLOTS
- FOR USE WITH HIGH CLIPS



EP-HIGH

RAKE SUPPORT

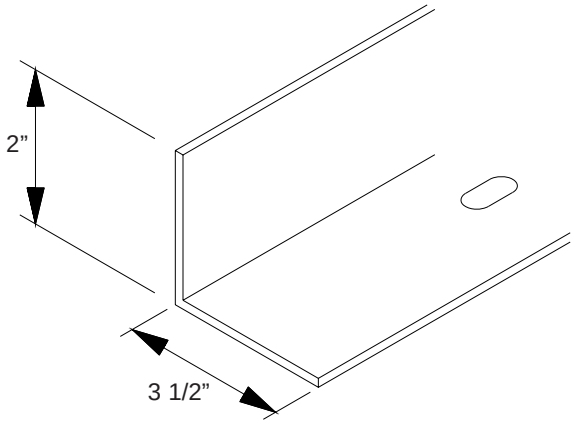
- 20'-0" LENGTH
- 14 GA. 5 1/2"
- FACTORY SLOTS



RS-LCVL
RS-HCVL

RAKE SUPPORT UTILITY

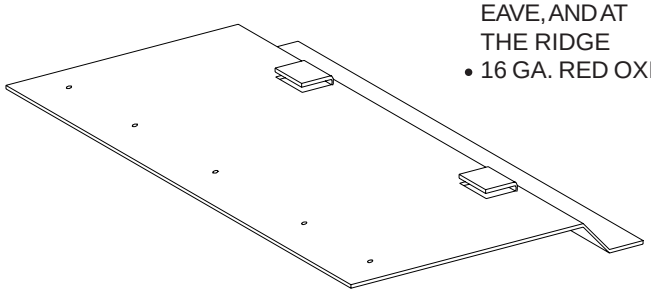
- 20'-0" LENGTH
- 14 GA. 5 1/2"
- FACTORY SLOTS
- FOR USE WITH UTILITY CLIPS



RS-UCVL

BACK-UP PLATE (18")

- FOR USE AT ENDLAPS, HIGH EAVE, AND AT THE RIDGE
- 16 GA. RED OXIDE

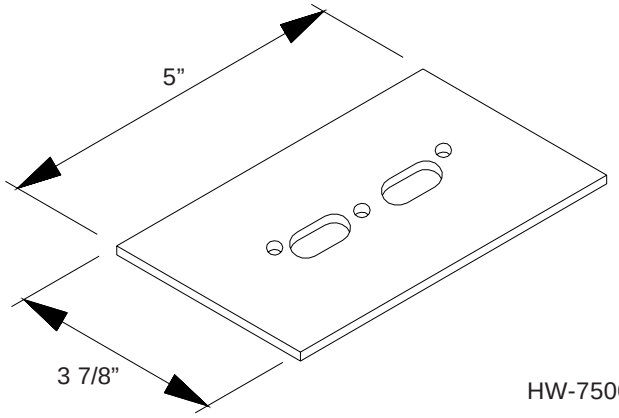


Protected by U.S. Patent No. 4,355,020

BPCVL18"

BEARING PLATE

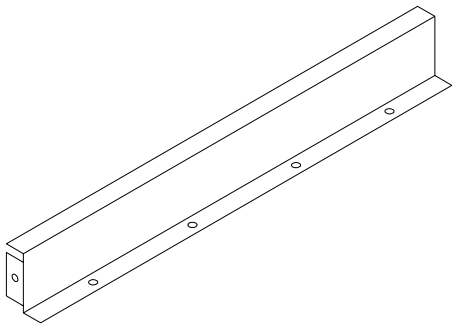
- 16 GA. GALVANIZED
- REQUIRED UNDER CLIPS FOR RIGID INSULATION APPLICATIONS



HW-7500

OUTSIDE CLOSURE (18")

- FOR USE AT RIDGE, ROOF PENETRATIONS, ETC.
- FOR 24 GA.



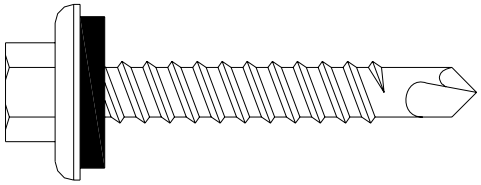
MOCLCVL4

114 Rosemont Lane
Imler, PA 16655
757-425-6223

Vertical-Lok Fasteners

PRODUCT CHECKLIST

FST#1

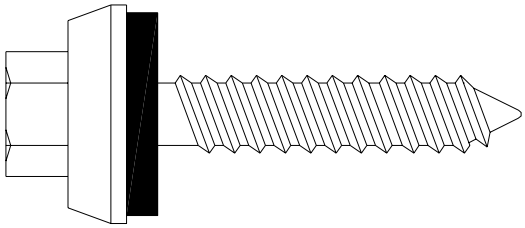


1/4" x 14 x 1 1/4" DRILLER
5/16" HEX WASHER HEAD
WITH 9/16" O.D. WASHER

- CLIP TO PURLIN
- EAVE PLATE TO EAVE STRUT
- RAKE SUPPORT TO RAKE ANGLE (FIXED SYSTEM ONLY)

FASTENER #2A

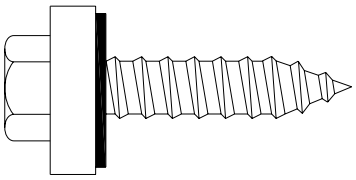
- USE IN PLACE OF SD175 AND SM75 SCREWS AT ALL STRIPOUTS



17 x 3/4" TYPE AB LONG LIFE
5/16" HEX WASHER HEAD WITH SEALING WASHER
(LONG LIFE EXTERIOR FASTENER)

SM75

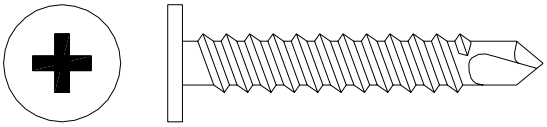
- RIDGE AND OTHER FLASHING TO OUTSIDE CLOSURE
- GUTTER TO PANEL
- GUTTER TO STRAP
- TRIM TO TRIM CONNECTIONS
- RAKE TRIM TO WALL PANEL
- DELUXE EAVE TRIM TO WALL PANEL
- DELUXE EAVE TRIM TO ROOF PANEL



1/4" x 14 x 3/4"
5/16" HEX WASHER HEAD WITH SEALING WASHER
(LONG LIFE EXTERIOR FASTENER)

FASTENER #12

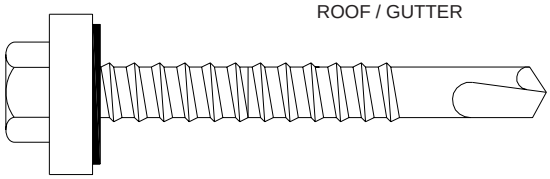
- VALLEY/HIP SUPPORT PLATES TO PURLIN
- RAKE ANGLE TO PURLINS



10 - 16 x 1" #2 PHILLIPS PANCAKE HEAD DRILLER

SD175

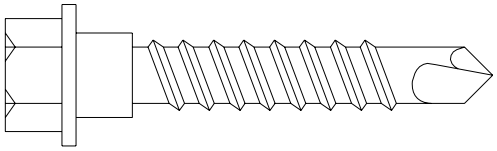
- PANEL TO EAVE PLATE
- ROOF PANEL ENDLAP
- TERMINATION TRIM TO RAKE TRIM
- OUTSIDE CLOSURE TO PANEL AT RIDGE
- RAKE TRIM TO ROOF PANEL
- RAKE TRIM TO PURLIN COVER
- SNOW GUTTER STRAP TO ROOF / GUTTER



12-14 x 1 3/4"
5/16" HEX WASHER HEAD WITH SEALING WASHER
(LONG LIFE EXTERIOR FASTENER)

FASTENER #5

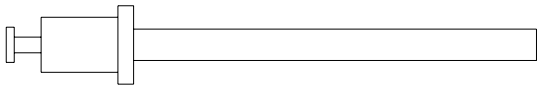
- RAKE SUPPORT TO RAKE ANGLE (FLOATING SYSTEM ONLY)
- FLOATING EAVE PLATE TO EAVE STRUT



1/4" x 20 x 1 1/4" WITH SHOULDER
5/16" HEX WASHER HEAD, NO WASHER

FASTENER #14

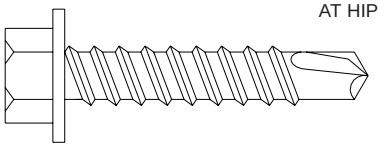
- GUTTER SPLICES, OUTLETS, AND END CAPS
- CORNER BOXES
- EAVE TRIM TO EAVE PLATE
- "Z" CLOSURES AT HIP ROOFS
- RAKE CLOSURES
- DOWNSPOUT SPLICES



1/8" x 3/16" POP RIVET

TEK1

- INSIDE CLOSURE TO EAVE PLATE OR EAVE STRUT
- OUTSIDE CLOSURE TO EAVE PLATE AT HIP CONDITION



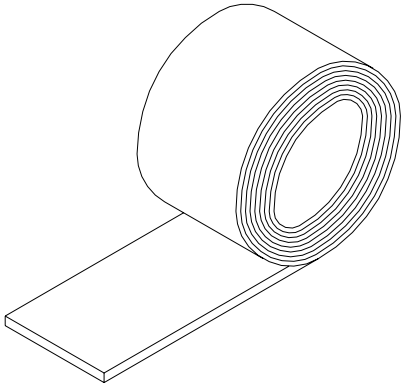
1/4" x 14 x 1" DRILLER 5/16" HEX WASHER HEAD
WITH 7/16" O.D. WASHER

114 Rosemont Lane
Imler, PA 16655
757-425-6223

PRODUCT CHECKLIST

MASTIC
1/8" x 1" x 50'

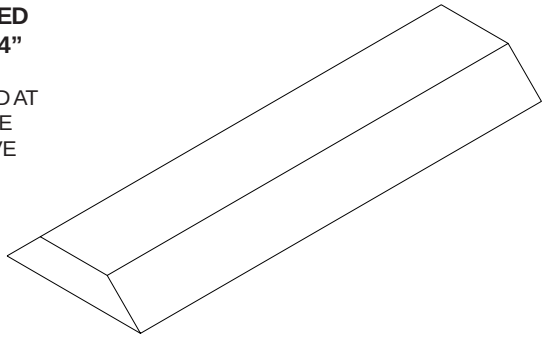
USED AT THE EAVE, OUTSIDE CLOSURES, TRIM CONNECTIONS, AND HIP CONDITIONS



95-9TI

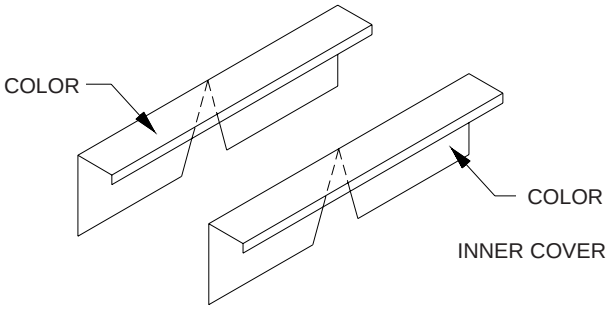
TAPE SEALER - MINOR RIB
PRE-CUT BEVELED
7/32" x 1 3/8" x 4"

USED TO FILL VOID AT MINOR RIBS OF THE PANEL AT THE EAVE



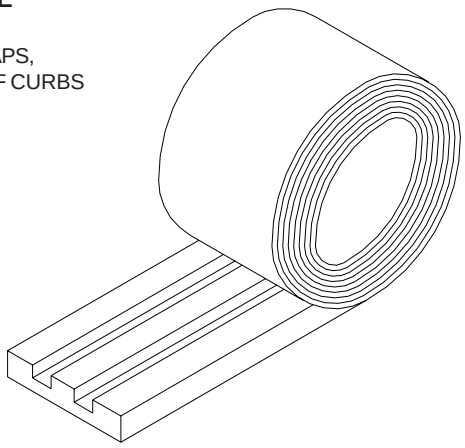
95-9Z

TWO-PIECE RIB COVER



CSLRB-1
CSLRB-0

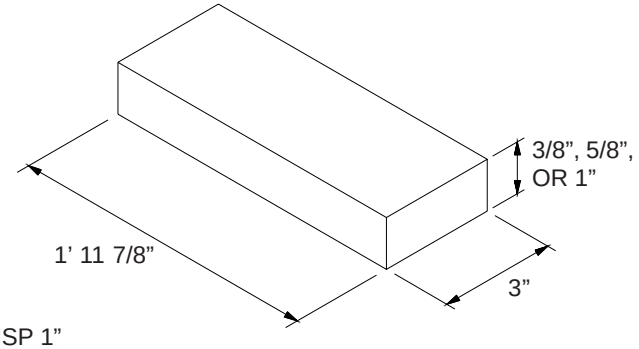
TRIPLE BEAD TAPE
3/16" x 2-1/2" x 20'
USED AT THE ENDLAPS, VALLEYS AND ROOF CURBS



82-6W

THERMAL SPACER

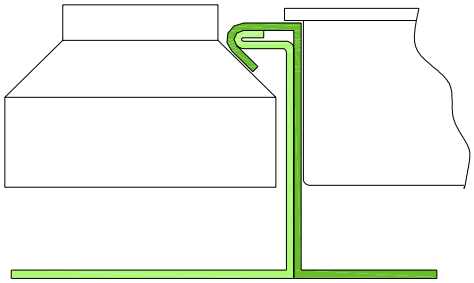
POLYSTYRENE BLOCK USED TO INCREASE THE INSULATION CAPACITY ALONG THE PURLINS



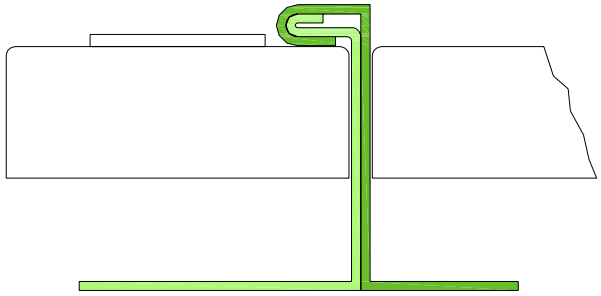
THSP 1"
THSP 5/8"
THSP 3/8"

114 Rosemont Lane
Imler, PA 16655
757-425-6223

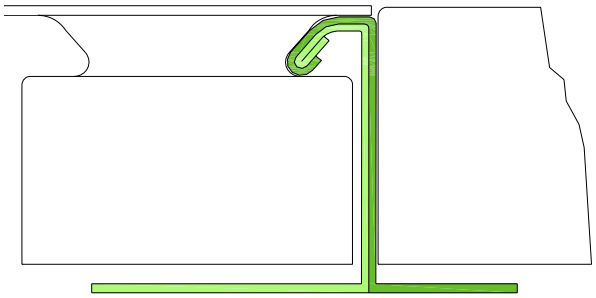
SEAMING PANEL SIDELAPS



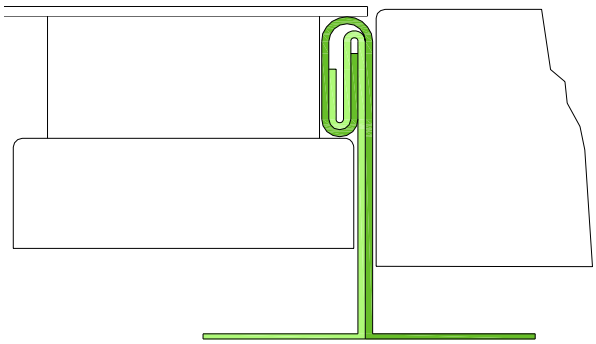
STAGE 1 - SEAMING MACHINE



STAGE 2 - SEAMING MACHINE



STAGE 3 - SEAMING MACHINE



STAGE 4 - SEAMING MACHINE

SEAMING OPERATION

CAUTION

IT IS CRITICAL THAT THE PANEL SEAMS ARE CRIMPED AND FOLDED BEFORE USING THE ELECTRIC SEAMER. FAILURE TO FOLLOW THESE GUIDELINES WILL RESULT IN DAMAGED SEAMS.

The seamer will be run in one direction only, and is capable of starting on either end of the panel. On buildings with endlaps, panels must be installed right to left. On buildings of 6:12 pitch and greater, panels must be installed left to right.

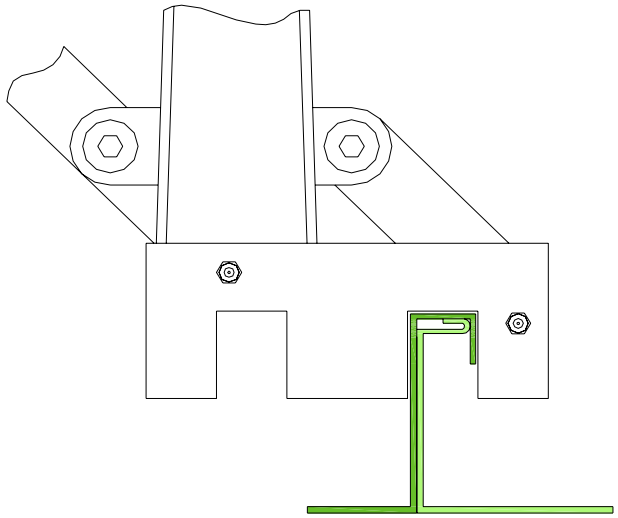
A run / jog switch is provided on the side of the unit. The jog position is a momentary contact which can be used to make sure the seamer is aligned properly. After ensuring proper alignment, move the switch to the “RUN” position, where it will remain until it is manually moved to “OFF”.

To begin seaming, pull the lever handle towards the drive motor. This will open the seamer. Set the seamer on the hand seamed section of the panel rib. Check the machine for alignment as described above. Push the lever handle away from the drive motor and begin seaming.

Stop seaming about 12” from the end of the panel. Disengage the locking bar and remove the seamer from the panel. Finish the seam with the hand tool.

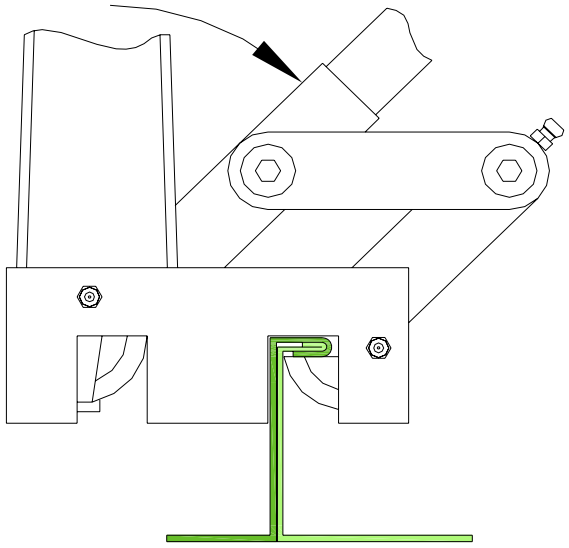
114 Rosemont Lane
Imler, PA 16655
757-425-6223

HAND SEAMING STAGE 1 - STEP1



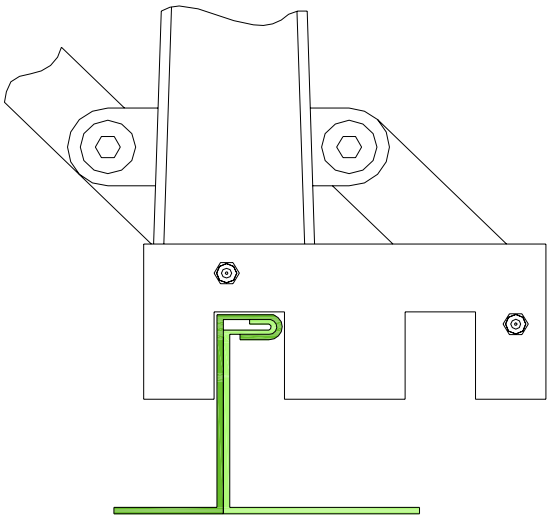
To begin seaming, set the hand tool onto the seam as shown and align the edge of the hand tool with the end of the panel.

HAND SEAMING STAGE 1 - STEP2



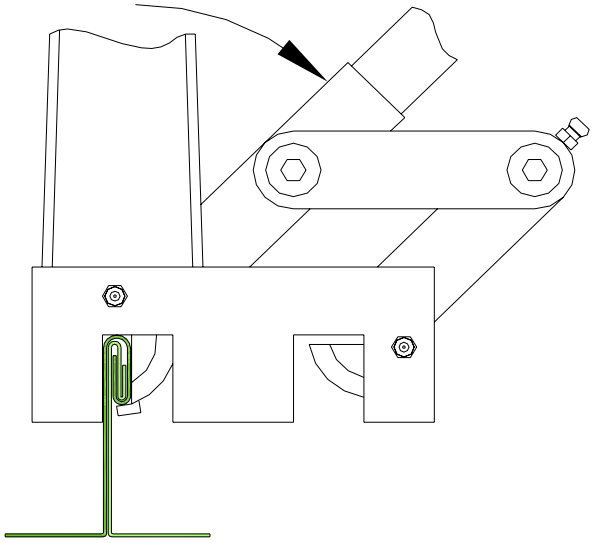
Rotate handle downward to crimp female lip. This should be done four times along the seam for a total of 24”.

HAND SEAMING STAGE 2 - STEP1



Return to the end of the panel to begin the second stage. Set the hand tool onto the seam as shown and align the edge of the hand tool with the end of the panel.

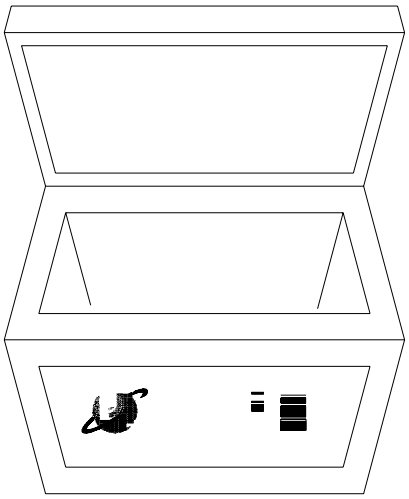
HAND SEAMING STAGE 2 - STEP2



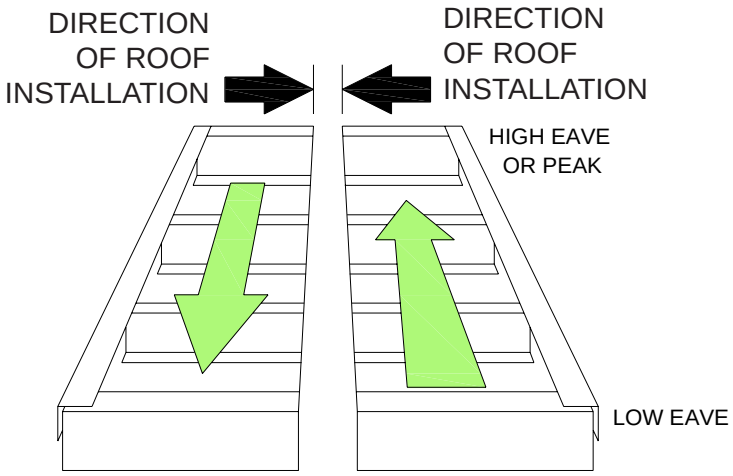
Rotate the handle downward to finish the seam. This should be done once for 6”.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

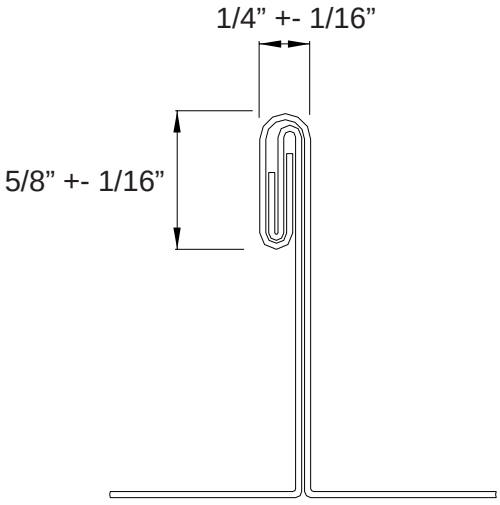
Vertical-Lok Seamer



SEAMER KIT BOX



DETERMINING DIRECTION OF SEAMER

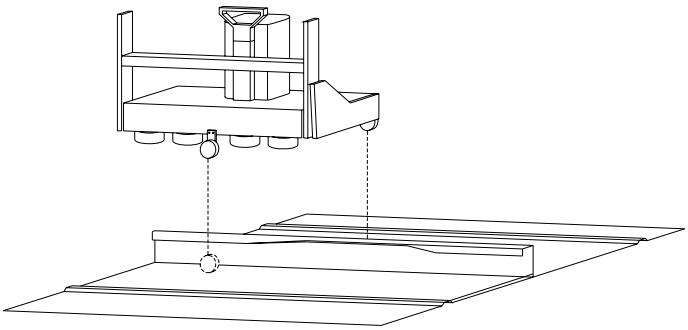


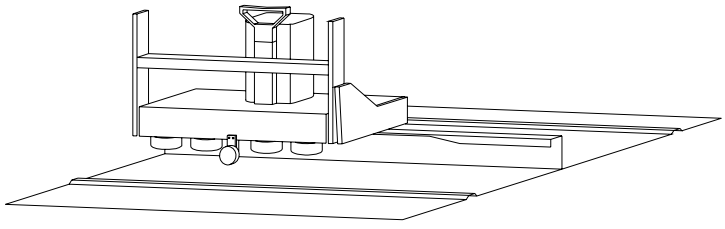
CROSS SECTION OF FINISHED SEAM

NOTICE

All seamer units are carefully inspected and tested before being shipped to a jobsite. If you encounter difficulty in operating a seamer, **DO NOT MAKE ADJUSTMENTS TO THE UNIT.**

Please call SAFEWAY Building Systems at 814-276-9611 for assistance.





114 Rosemont Lane
Imler, PA 16655
757-425-6223

PREPARATORY REQUIREMENTS

1. A single pitch eave strut must be used with the **Vertical-Lok** roof system.
2. Make sure a rake angle has been installed on top of the purlins.
3. The walls do not have to be erected before the roof is installed. However, for the purpose of this manual, we have assumed the wall panels have been installed.
4. All primary and secondary framing must be erected, plumbed and squared with bolts tightened according to accepted building practices.
5. The substructure (eave to ridge) must be on plane (1/4" in 20' or 3/8" in 40' tolerance).
6. **Vertical-Lok** can be erected on various types of construction. However, for the purposes of this manual, we have assumed that the roof will be installed on a new, pre-engineered metal building.
7. **Vertical-Lok** roof panels are furnished in 18" widths.
8. It is critical that the purlins or joists at the ridge and endlaps be exactly located as detailed and that they are straight from rafter to rafter. Any mislocation or bowing of these members can cause the fasteners at the endlaps or outside closures to foul as the panels expand and contract.
9. Peak purlin spacing - 18" (9" from the centerline of the building).
10. Read recommended installation techniques on pages VL15 - VL17 before proceeding with roof installation.
11. **SAFEWAY recommends the use of a screw gun with a speed range of 0-2000 RPM to properly install all fasteners referenced in this manual. Tools rated to 4000 RPM should never be used for self-drilling fasteners typically applied with metal building components.**

NOTE

It is the responsibility of the erector to install this roof using safe construction practices that are in compliance with OSHA regulations. SAFEWAY is not responsible for the performance of this roof system if it is not installed in accordance with the instructions shown in this manual. Deviations from these instructions and details must be approved in writing by SAFEWAY.

CAUTION

Diaphragm capabilities and purlin stability are not provided by CORLE'S Vertical-Lok roof system. Therefore, other bracing may be required.

CAUTION

The minimum recommended slope for the roof system is 1/4 on 12. A slope of less than 1/4 on 12 could cause severe ponding and will void material warranties.

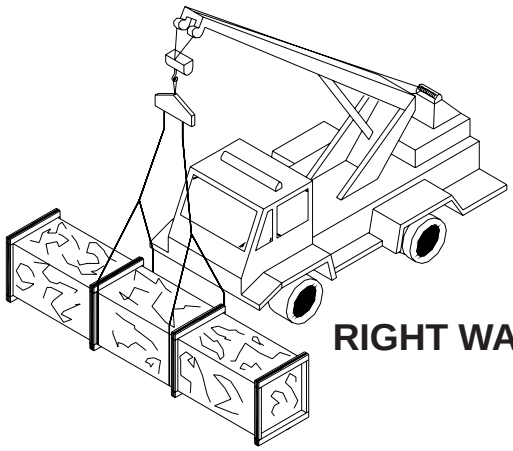
CAUTION

Application and design details are for illustration purposes only, and may not be appropriate for all environmental conditions or building designs.Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices.

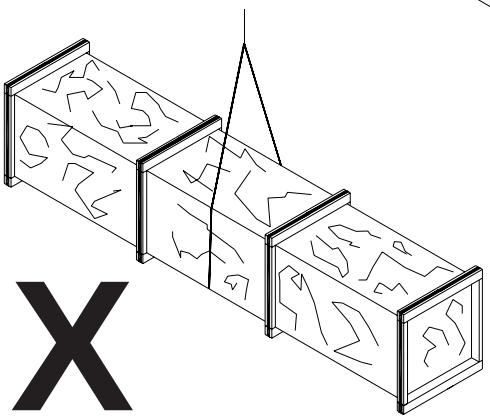
CAUTION

Light transmitting panels are not designed or intended to bear the weight of any person walking, stepping, standing or resting on them. SAFEWAY DISCLAIMS ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, that any person can safely walk, step, stand or rest on or near these light transmitting panels, or that they comply with any OSHA regulations.

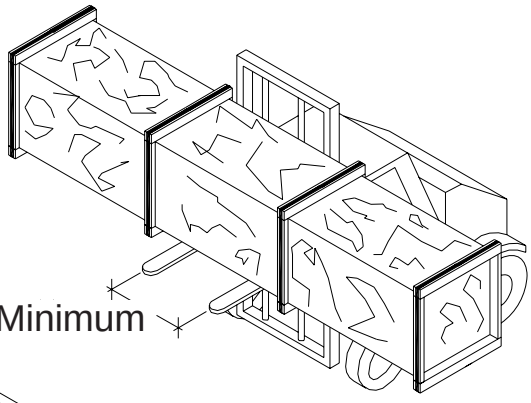
1559 Laskin Rd
Virginia Beach, Va
(757)425-6223



RIGHT WAY



WRONG WAY



RIGHT WAY

WRONG WAY

UNLOADING

Upon receiving material, check shipment against shipping list for shortages and damages. SAFEWAY will not be re-sponsible for shortages or damages unless they are noted on the shipping list.

Each bundle should be lifted at its center of gravity. Where possible, bundles should remain banded until final placement on roof. If bundles must be opened, they should be retied before lifting.

When lifting bundles with a crane, a spreader bar and nylon straps should be used. **NEVER USE WIRE ROPE SLINGS. THEY WILL DAMAGE THE PANELS.**

When lifting bundles with a forklift, forks must be a minimum of five feet apart. Do not transport open bundles. Drive slowly when crossing rough terrain to prevent panel buckling.

CAUTION

Improper unloading and handling of crates may cause bodily injury or material damage. The manufacturer is not responsible for bodily injuries or material damages during unloading and storage.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

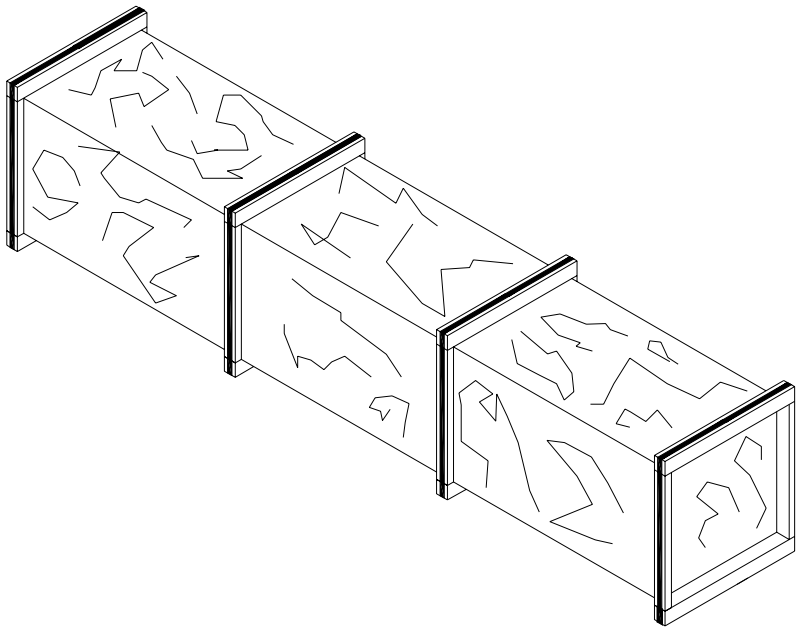
UNLOADING (continued)

FULL CRATE

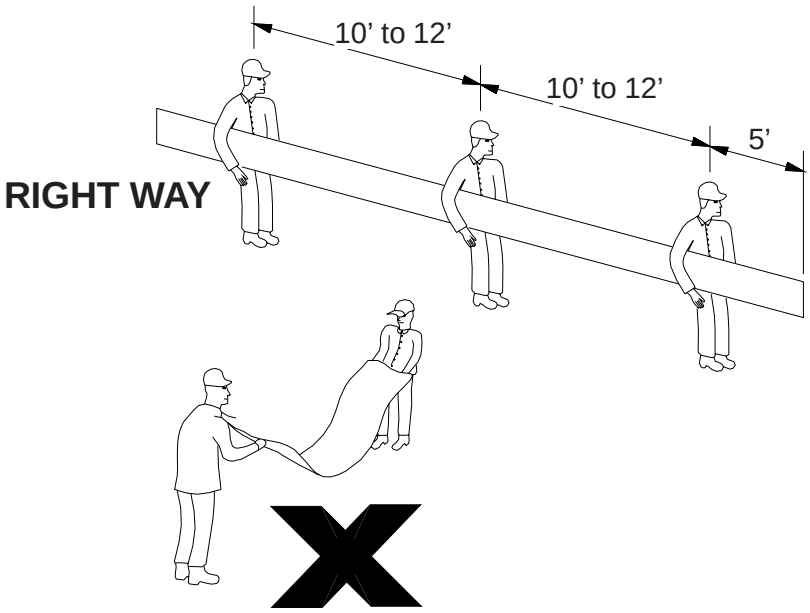
This method is used by SAFEWAY Building Sys-tems for all deliveries. 2x4's are strapped under the bundles to allow access for straps for a forklift.

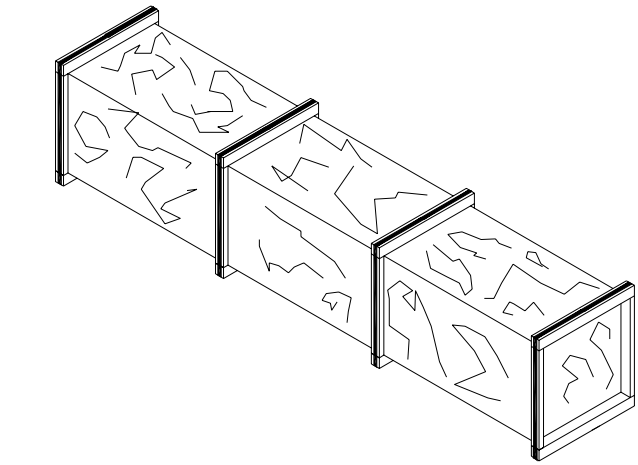
Bundles less than 25' long may be handled by a forklift. The forklift should have at least 5' between forks.

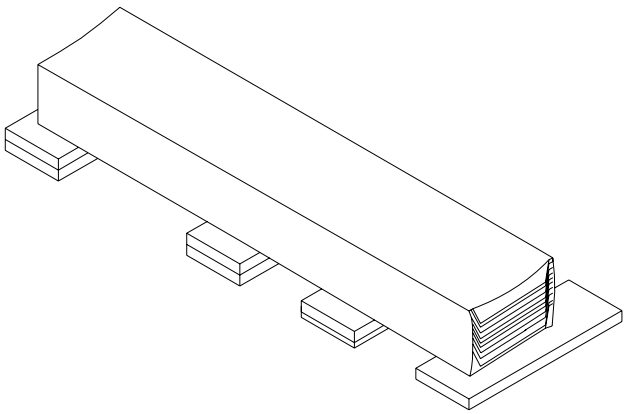
Bundles longer than 25' should be lifted using a spreader bar with nylon straps. This procedure will require an additional packaging charge to be considered at time of estimating.



114 Rosemont Lane
Imler, PA 16655
757-425-6223







PANEL HANDLING & STORAGE

Standing on one side of the panel, lift it by the seam. If the panel is over 10’ long, lift it with two or more people on one side of the panel to prevent buckling. Do not pick up panels by the ends.

NOTE

Protective gloves should always be used while handling panels. OSHA safety regulations must be followed at all times.

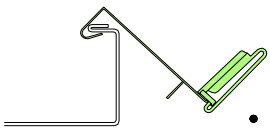
Store bundled sheets off the ground sufficiently high to allow air circulation beneath bundle and to prevent rising water from entering bundle. Slightly elevate one end of bundle. Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpaulin and the ground. **PROLONGED STORAGE OF SHEETS IN A BUNDLE IS NOT RECOMMENDED**. If conditions do not permit immediate erection, extra care should be taken to protect sheets from white rust or watermarks.

Check to see that moisture has not formed inside the bundles during shipment. If moisture is present, panels should be uncrated and wiped dry, then restacked and loosely covered so that air can circulate between the panels.

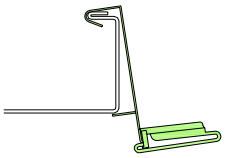
July, 2009 - Subject to change without notice.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

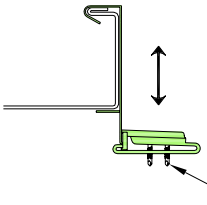
PANEL CLIP INSTALLATION



- POSITION THE CLIP OVER THE MALE LEG OF THE PANEL AS SHOWN, AND ROTATE CLIP DOWNWARD.

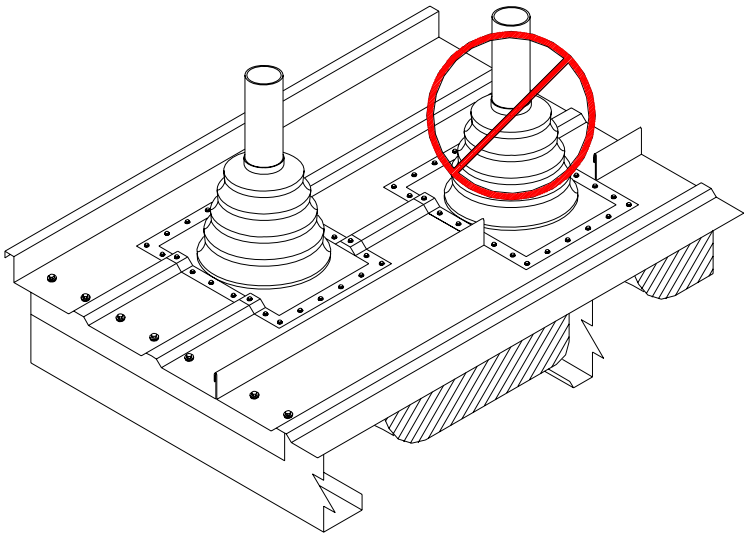


- WITH THE UPPER CLIP FIRMLY SEATED, POSITION THE BASE FIRMLY AGAINST THE PURLIN FLANGE.



- WHEN PROPERLY POSITIONED, THE VERTICAL LEG OF THE UPPER SECTION OF THE CLIP WILL BE POINTED UPWARD, AS SHOWN.

FST#1 SCREWS
(2 PER CLIP)



Never install vent pipes through the panel seam. Always install through the pan of the panel. If the pipe is too large to allow adequate water flow down the panel, install the pipe in a roof curb.

RECOMMENDED INSTALLATION TECHNIQUES

When installing clips, be sure to push them tight to the panel before installing fasteners. If you leave a gap between the clip and the panel, it will affect panel module.

1) Install a clip on the male leg of the panel at the endlap, ridge, or high eave. This should be the first clip installed as it controls the 18” module for the remainder of the panel after this clip is installed, install clips on all remaining purlins.

2) As each clip is installed, maintain an 18” module center to center of panel.

3) Do not stand on panel during clip installation where it will distort the panel and cause it to be out of module.

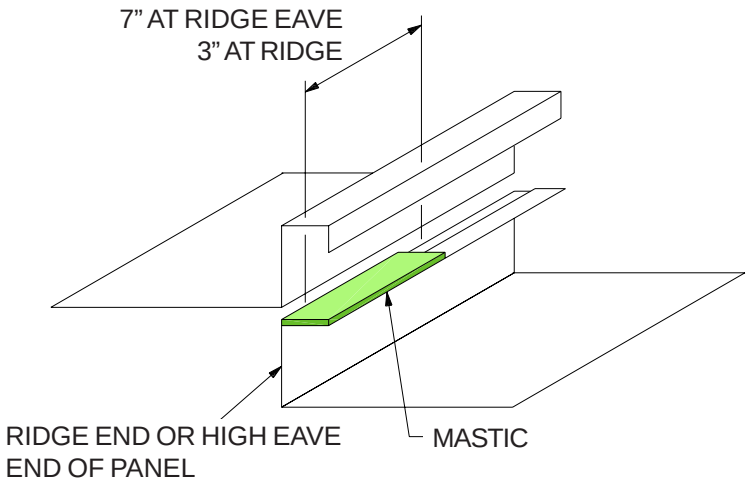
Vertical-Lok clips are supplied with factory-applied mastic. If a clip must be removed from the panel, check factory mastic - if damaged, replace with a bead of urethane sealant (not by SAFEWAY Building Systems).

As panels are installed, hand seam at each clip with hand tool. Panels should be completely seamed with electric seamer as soon after installation as possible. Refer to pages VL-8, VL-9 and VL-10 for seaming information.

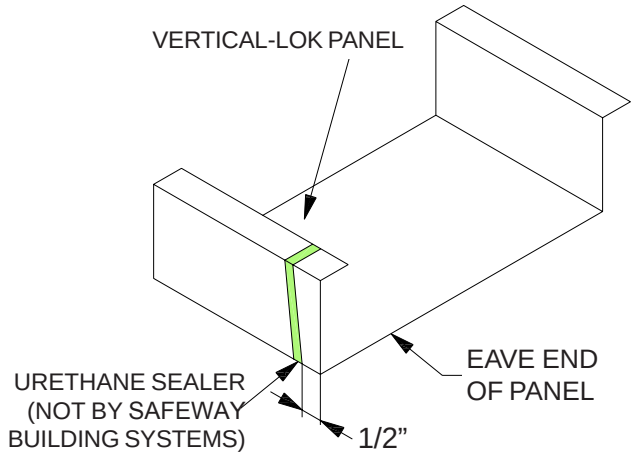
Before installing clips to second and all following panels, C-clamp the panel seam at both ends. Long panels may require one or more C- clamps in the middle. This will help hold panel module.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

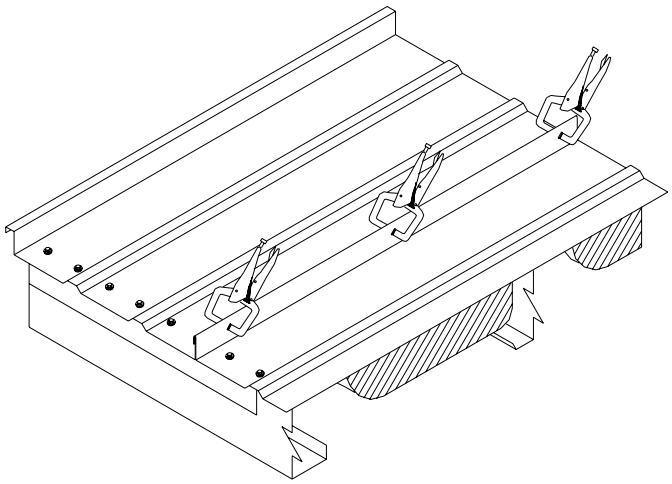
PANEL END SEALANT DETAIL AT RIDGE



PANEL END SEALANT DETAIL AT EAVE



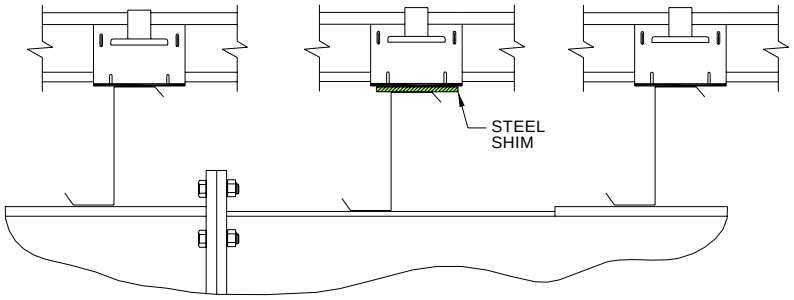
Before installing clips at second and all following panels, use locking clamps to hold the panel at each end. Long panels may require one or more clamps in the middle. This will help hold the panel on module.



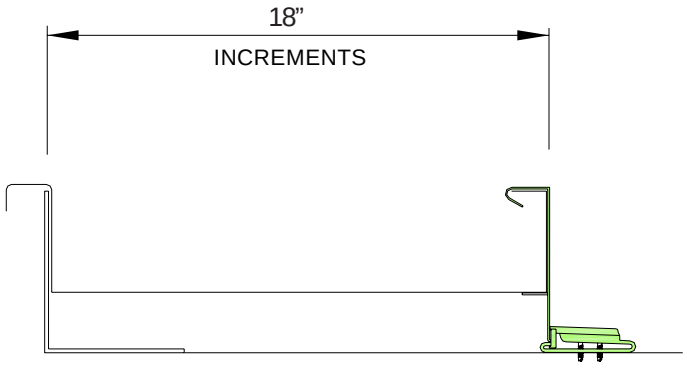
RECOMMENDED INSTALLATION TECHNIQUES (continued)

Seal panel seams at eave and valleys with urethane sealant (not by SAFEWAY Building Systems). Seal panel seam at ridge by applying a piece of mastic along the top of the male leg before the next panel is installed. Mastic should begin at the upper end of the peak panel and extend downslope 7” when using the high side eave detail on page VL-27. For all other ridge details, mastic will ex-tend 3” downslope.

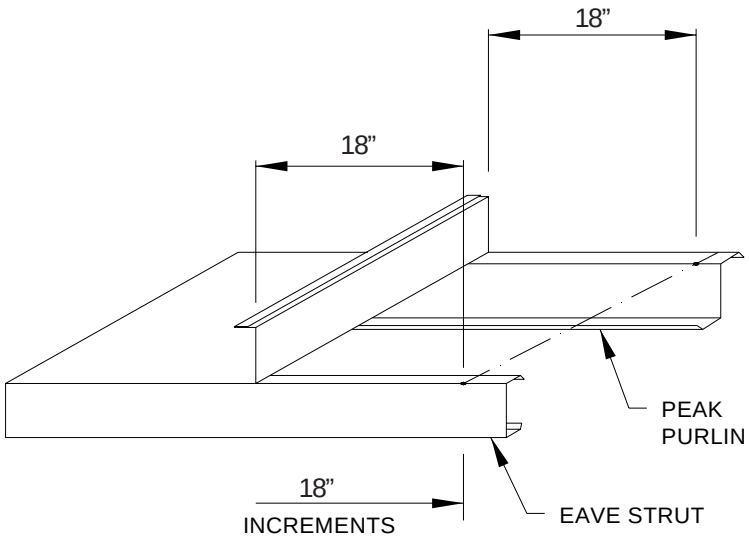
114 Rosemont Lane
Imler, PA 16655
757-425-6223



CORRECTING OUT OF PLANE SUBSTRUCTURE



PANEL CLIP LOCATION



CORRECTING OUT OF PLANE SUBSTRUCTURE

Occasionally, a purlin may be encountered that is lower (out-of-plane) than those adjacent to it. When a clip is attached to this purlin, it will go down further than those adjacent to it, distorting the seam. This can cause the next panel sidelap to be difficult to seam together in this area. To compensate for this lower purlin, a steel shim may be placed under the clip to bring it up to the proper height (in plane). This shim should be no thicker than 1/4”. If 1/4” is not enough, then structural modification will be necessary.

Avoid “stair-stepping” of the panels at the eave. This will cause problems engaging back-up plates at the endlap and ridge.

Any “stripped out” fasteners at the endlaps or outside closures should be immediately replaced with Fastener #2A. Place a 1” long piece of mastic over the “stripped out” hole before installing Fastener #2A. This will allow the fastener threads to be coated with mastic and provide a good seal.

NEVER ALLOW PANELS TO COME INTO CONTACT WITH LEAD, COPPER, GRAPHITE, GASOLINE, OR HARSH CHEMICALS AS THIS WILL VOID THE GALVALUME WARRANTY.

CHECK ROOF FOR PANEL ALIGNMENT.

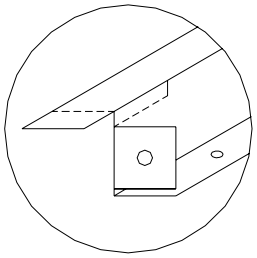
Check the roof every three or four runs for panel alignment as it is being erected. This can be accomplished by two different means.

1) Measure from the rake support to the seam of the last completed panel run. Take measurements at the ridge, eave, and all endlaps.

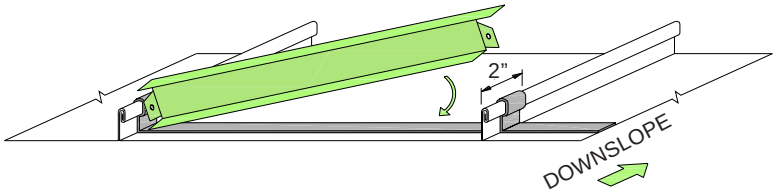
2) Attach a stringline to the eave plate and ridge purlin, running parallel to the rake support. The stringline should stay ahead of the work and can be moved across the roof as construction progresses. Measure from the stringline back to the last completed panel run. Take measurements at the ridge, eave, and all endlaps.

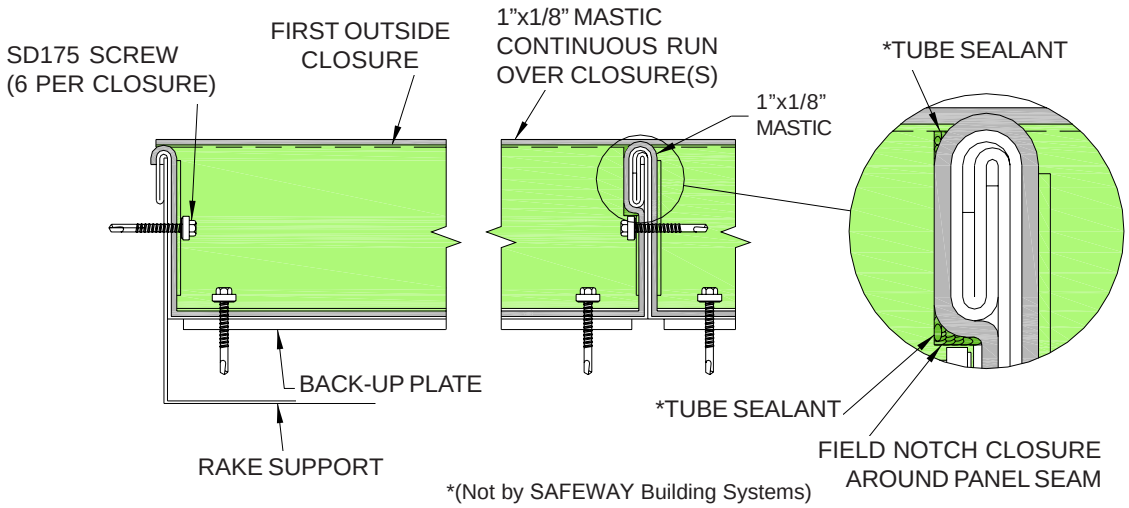
114 Rosemont Lane
Imler, PA 16655

Vertical-Lok Typical Details - Outside Closure



FIELD CUT OUTSIDE CLOSURE
BEFORE INSTALLATION (ONE END ONLY)





*(Not by SAFEWAY Building Systems)

NOTES

1. Panels must be seamed before the outside closures are installed.
2. Install mastic across width of panel. The downslope edge of tape sealant should be 2” from end of panel. Begin tape sealer at top of seam. Roll tape sealer under seam, and continue down seam, across width of panel, up to and across the top of the adjacent seam. Field cut the end of the outside closure that accepts the seam of the panel.
3. Install first outside closure. Attached to panel with SD175 screws at building peak or high eave, or fastener #14 at hip condition. Vertical leg of outside closure should be 2” from end of panel.
4. Install mastic across top leg of first outside closure where it laps over seam and continue tape sealer across next panel. Field cut and install next and all subsequent outside closures.

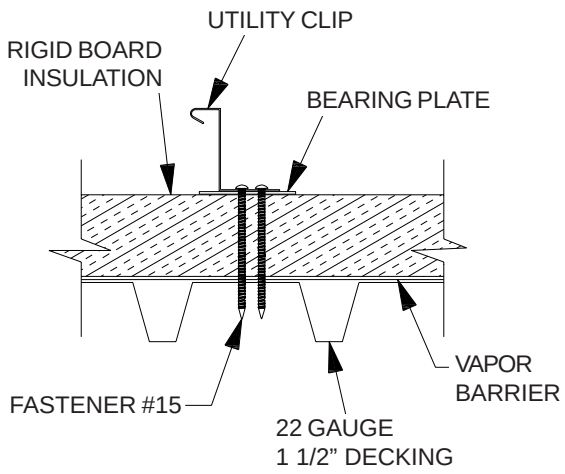
114 Rosemont Lane
Imler, PA 16655

Vertical-Lok

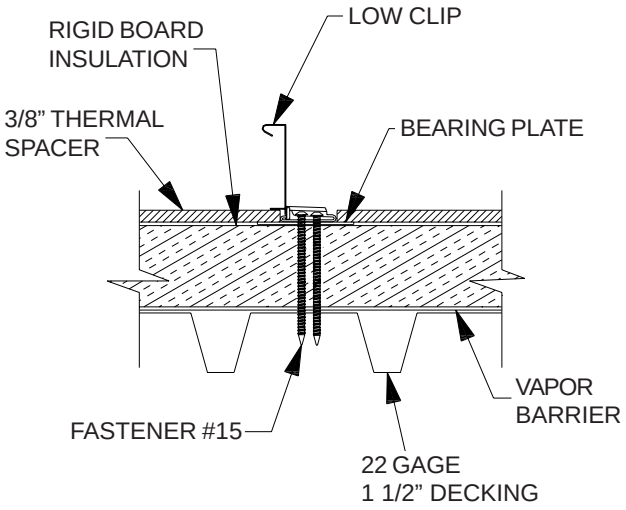
RIGID BOARD INSULATION WITH METAL DECK

CROSS SECTION OF RIGID BOARD INSULATION OVER METAL DECK

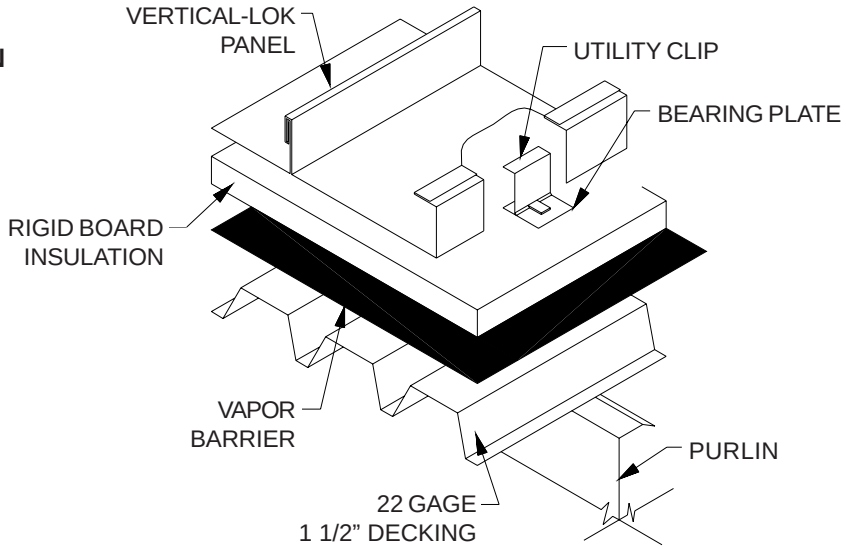
STANDARD



LOW CLIP ALTERNATE



ISOMETRIC VIEW OF RIGID BOARD INSULATION



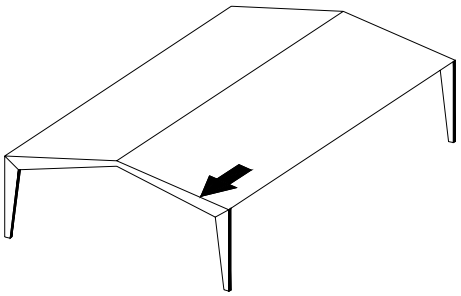
NOTES

1. Metal deck to be 1 1/2" deep, 22 gage.
2. Rigid board insulation to be minimum of 1" thick.
3. Clips and bearing plates to be installed simultaneously with fastener #15 into the metal deck. Length to be determined by thickness of insulation plus depth of metal deck. Fasteners should extend a minimum of 1/2"below metal deck.
4. SAFEWAY Building Systems recommends the use of 3/8" thermal spacer between clips to reduce the potential for wind induced panel movement.
5. Rigid board insulation must have a minimum density of 2 PCF.

114 Rosemont Lane
Imler, PA 16655

Vertical-Lok Erection Sequence

Step 1



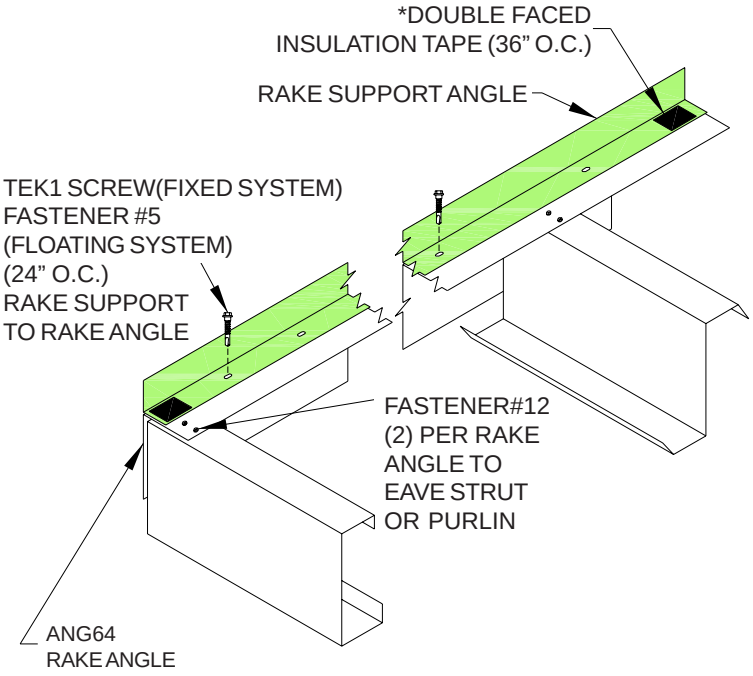
RAKE SUPPORT

Attach the rake support on top of the rake angle with the proper self-drilling fasteners on 2'-0" centers with a fastener in the first and last prepunched slot. The vertical leg is to be installed flush with the steel line. Center fasteners in slots.

IT IS IMPORTANT THAT THE RAKE SUPPORT IS INSTALLED STRAIGHT AND SQUARE WITH THE EAVE AS IT CONTROLS THE ALIGNMENT OF THE ROOF SYSTEM.

Install 6" long pieces of double-faced tape on 3'-0" centers to the top of the horizontal leg of the rake support. This will help hold the insulation in place at the rake.

Roll out insulation from eave to peak laying the side of the insulation on top of rake support. The first roll should be 3' wide. This will keep insulation sidelaps 6" from roof panel sidelaps (based on 1'-6" wide panels).



*NOT SUPPLIED BY SAFEWAY BUILDING SYSTEMS

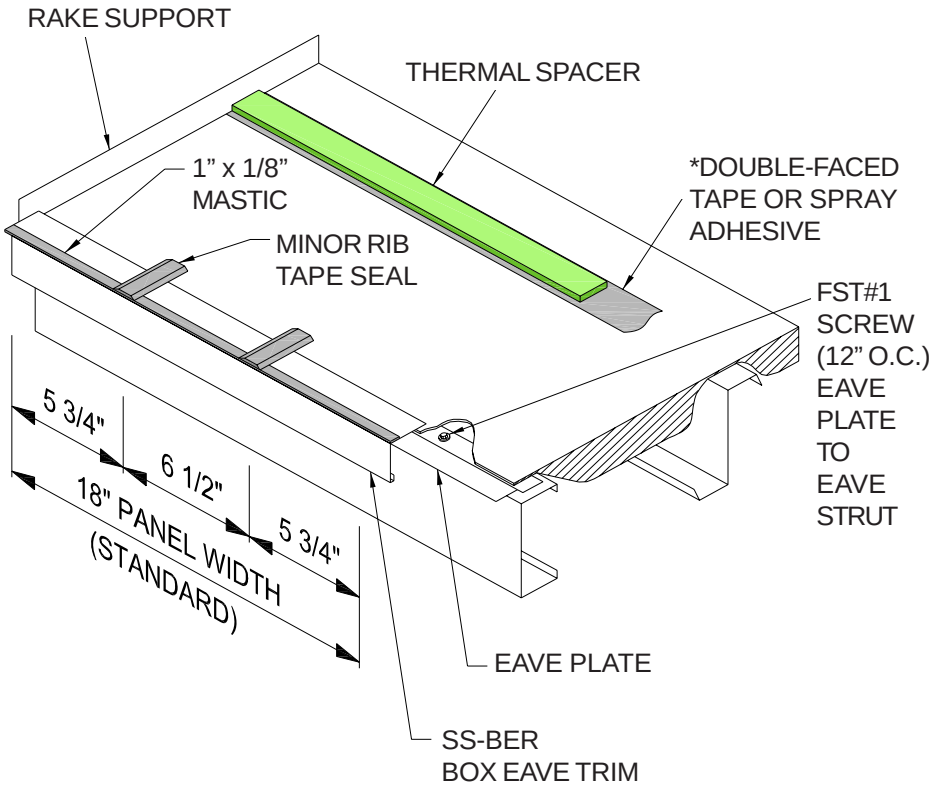
CAUTION

(For Floating Systems Only)

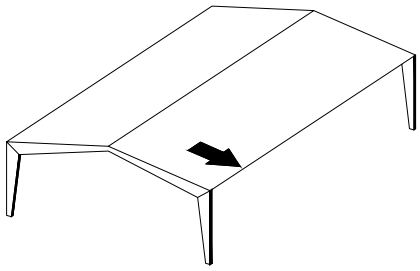
It is important that shoulder fasteners are installed through the CENTER of the slotted holes of the rake support to allow for expansion and contraction.

114 Rosemont Lane
Imler, PA 16655

Step 2



* NOY BY SAFEWAY BUILDING SYSTEMS



EAVE PLATE

The eave plate must be flush with the wall panel and will be attached over the insulation with FST#1 SCREWS at each pre-punched slot.

THE FIRST EAVE PLATE WILL BUTT AGAINST THE VERTICAL LEG OF THE RAKE SUPPORT.

Do not install fasteners in eave plate beyond insulation so next roll can be installed.

Place mastic across the eave trim, flush with the outside edge.

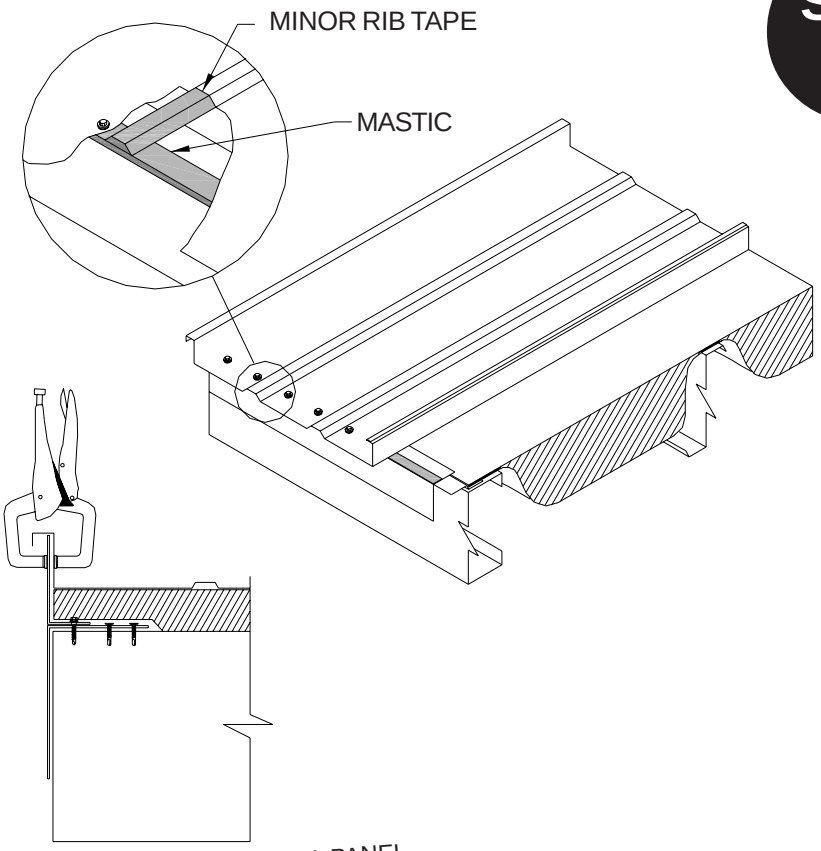
THERMAL SPACER FOR THE HIGH SYSTEM ONLY

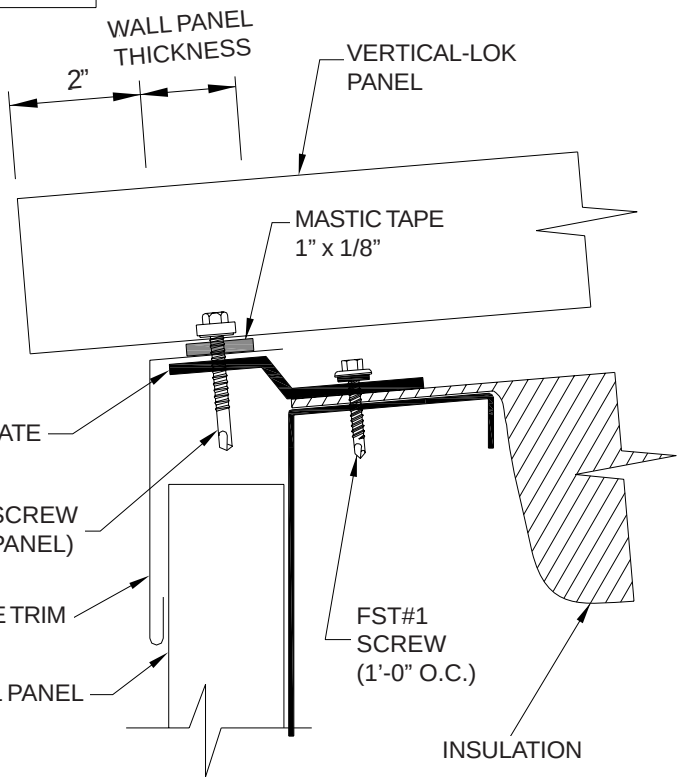
Position the thermal spacer on top of the insulation over each purlin and against the rake support prior to installing the roof panel.

Using double faced tape or spray adhesive, adhere the thermal spacer to the insulation. The thermal spacer increases the insulation capacity along the purlins.

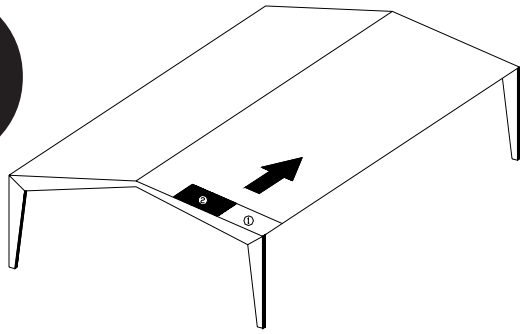
114 Rosemont Lane
Imler, PA 16655

Vertical-Lok Erection Sequence





Step 3



FIRST PANEL

Apply minor rib tape sealer to the under-side of the minor ribs of the panel. Position so that this tape sealer will cross the mastic on the eave trim when panel is installed.

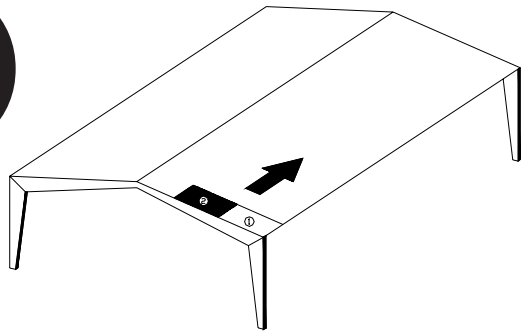
Position the panel so that it overhangs the eave strut by the thickness of the wall covering plus 2”. The upper end of the panel must be 7” beyond the web of the purlin.

Place the female lip of the panel over the rake support. To prevent wind damage, secure the female lip to the rake support with vise grips or temporary fasteners. Fasteners must go through rake support. The panel will not be fastened permanently to the rake support until the rake trim is installed.

114 Rosemont Lane
Imler, PA 16655

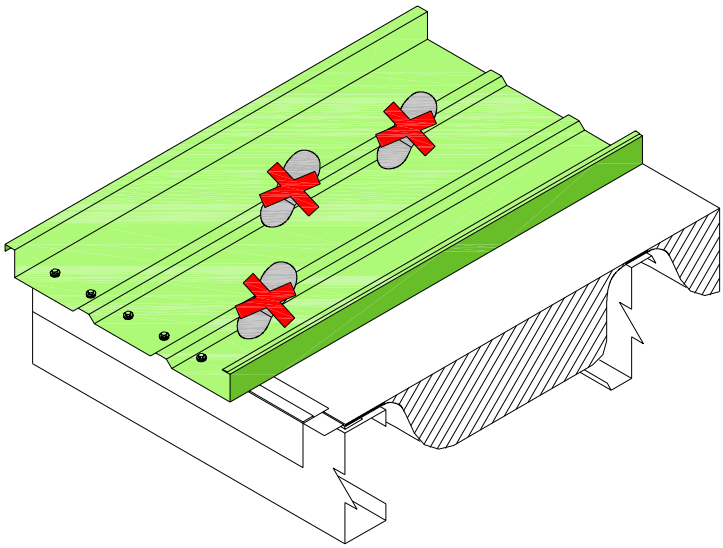
ROOF INSTALLATION - STEP #3 CONTINUED - FIRST PANEL

Step 3 cont.

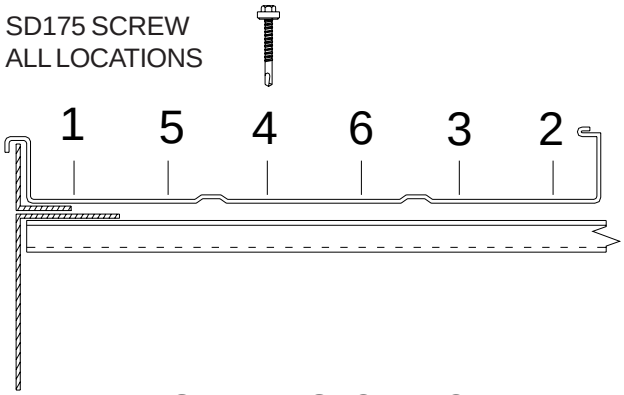


CAUTION

DO NOT WALK ON MINOR RIBS.



SD175 SCREW
ALL LOCATIONS



FASTENER SEQUENCE
FIRST RUN EAVE

NOTE

ALL PRIMARY AND SECONDARY FRAMING SHOULD BE ERECTED, PLUMBED, AND BOLTS TIGHTENED PRIOR TO SHEETING.

Attach the panel to the eave strut with SD175 screws. Six fasteners are required at this location.

NOTE

IT IS ESSENTIAL THAT THE ERECTOR MAINTAIN AN 18" MODULE AT ALL CLIP LOCATIONS, AS WELL AS AT THE EAVE.

Installing fasteners in proper sequence is important as it helps maintain panel module.

CAUTION

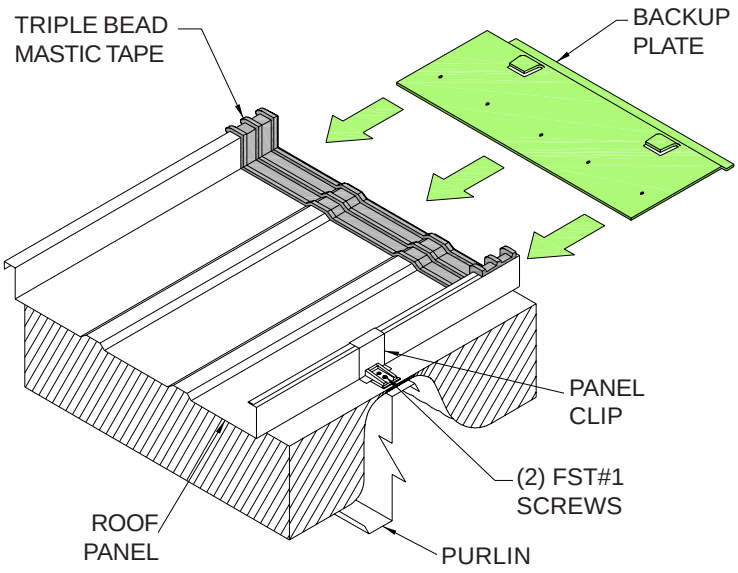
Do not, under any circumstance, step on the panel at the seam or at the panel ends until the adjacent side, end panels or eave fasteners are fully attached. The roof panel may not support the weight of a person at these locations and could affect panel module.

CAUTION

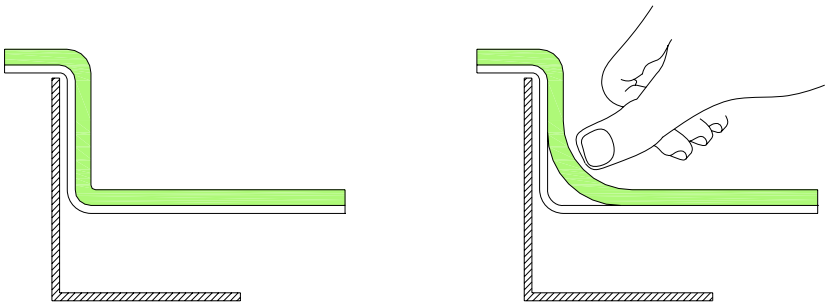
To prevent rust, the roof should be swept clean of any drill shavings at the end of each day.

114 Rosemont Lane
Imler, PA 16655

Vertical-Lok Erection Sequence

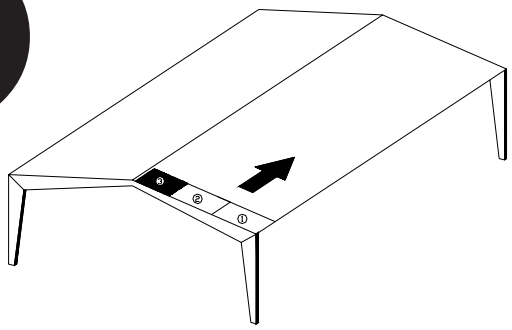


MASTIC INSTALLATION



RIGHT WAY WRONG WAY

Step 4



BACK-UP PLATE*

This step will occur for a panel endlap or full-length panel.

NOTE

All back-up plates on first panel run will require field modification to avoid fouling rake support.

Slide a back-up plate onto end of panel. Make sure the teeth on top of the back-up plate are on the top of the panel.

Place triple bead tape or mastic over the entire width of the panel. Position the mastic so that the edge is even with the end of the panel. Install the mastic tape so that it follows the panel configuration.

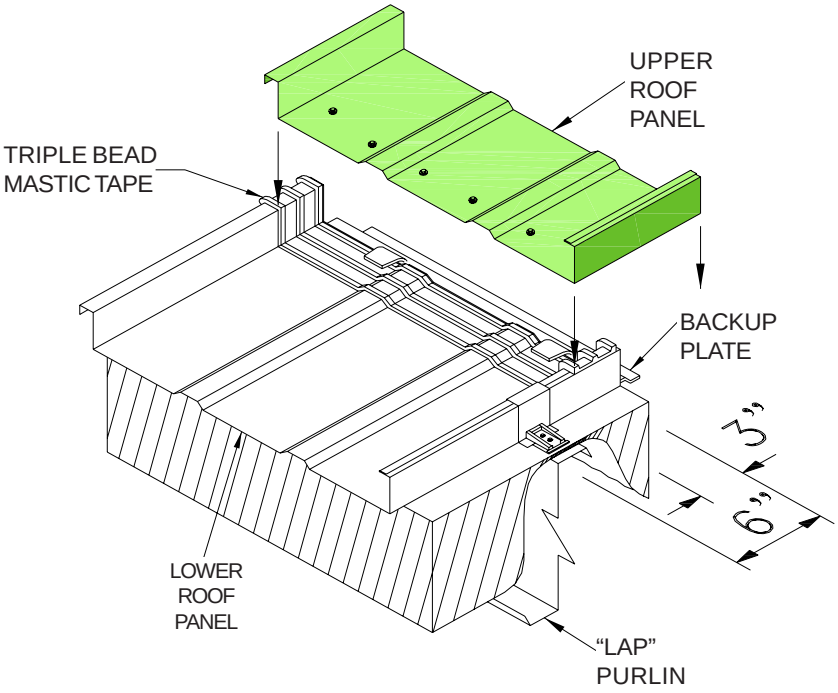
CAUTION

Forcing the mastic back into the corners will lessen the thickness of the tape sealer where it is needed most.

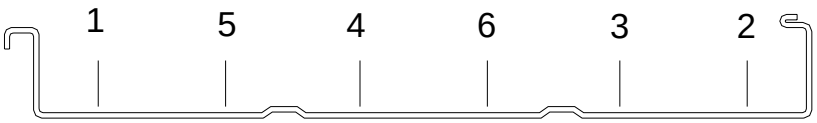
*Protected by U.S. Patent No. 4,655,020

114 Rosemont Lane
Imler, PA 16655

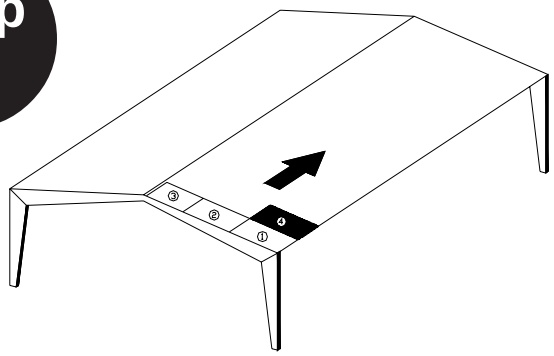
Step 5



SD175 SCREW
ALL LOCATIONS



FASTENER SEQUENCE
PANEL ENDLAP



ENDLAP PANEL

NOTE

Step 5 applies only where more than one sheet is used in a single slope.

Position female lip of upper panel over rake support, while holding male side of panel up away from the triple bead tape. Install SD175 screws in sequence as shown at 1-1/2" from the end of the upper panel. This will center the fastener on the triple bead tape. Fasteners must penetrate through the triple bead tape.

To ensure that the male legs do not separate at the panel endlap, clamp the horizontal ledge with a locking C-clamp. This will allow room for the lower panel of the next run to be installed without removing the clamp.

CAUTION

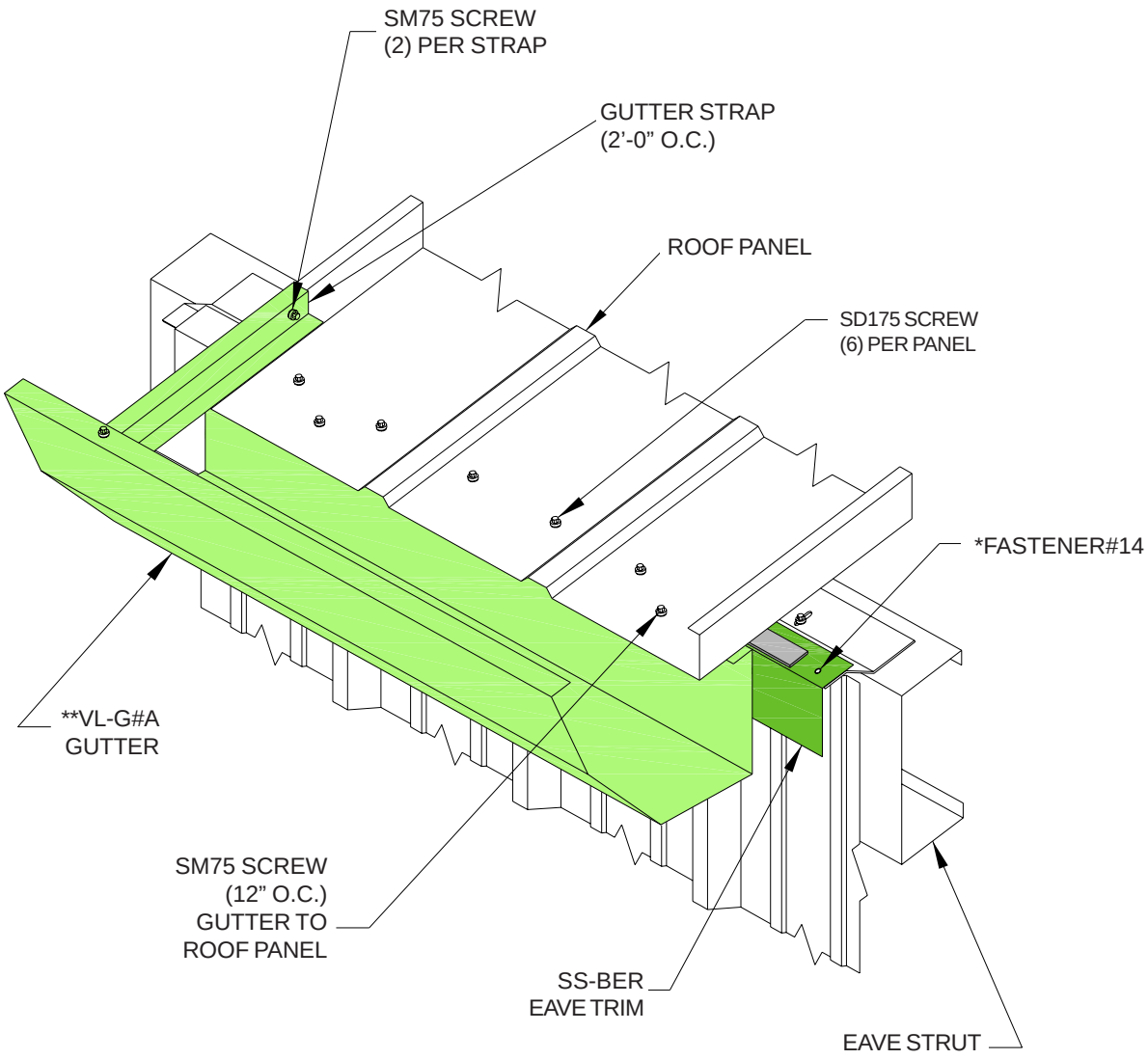
The roof should be swept clean of any drill shavings at the end of each day to prevent rust.

114 Rosemont Lane
Imler, PA 16655

TRIM DETAILS - STANDARD GUTTER

*3 PER TRIM - TRIM TO EAVE PLATE - INSTALL MASTIC OVER FST#14.
(FST#14 HOLDS TRIM UNTIL ROOF PANEL SCREWS ARE INSTALLED).

**#=ROOF PITCH



NOTES

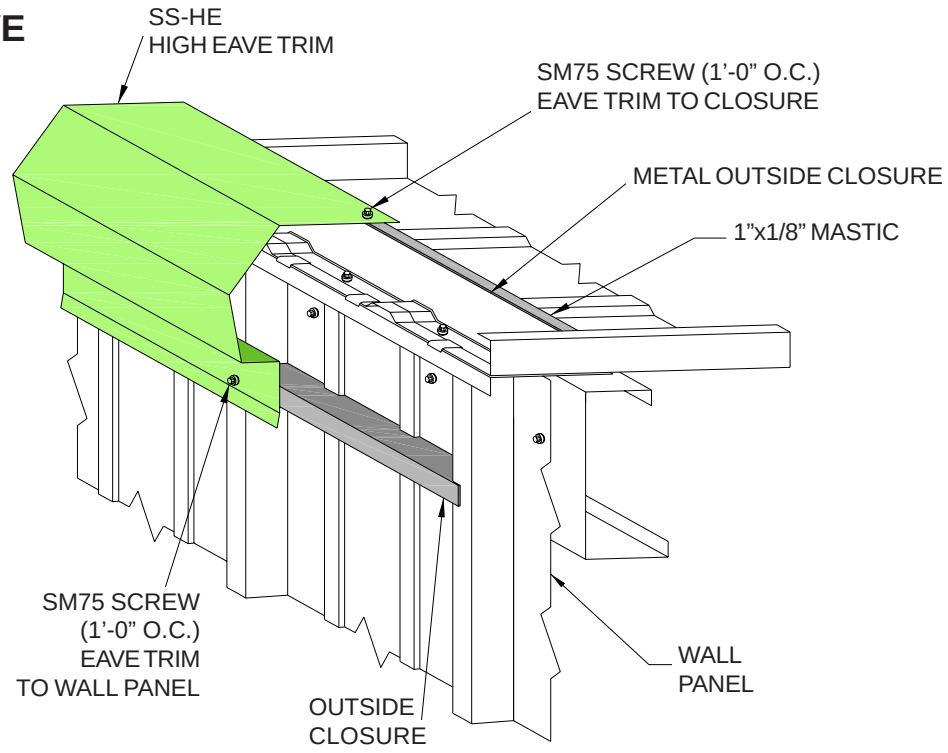
THE ABOVE GUTTER SHOULD NOT BE USED IN AREAS THAT EXPERIENCE SNOW LOADS OF 10 PSF OR HIGHER. SEE PAGE VL-39 FOR THE GUTTER DETAIL FOR THESE AREAS.

SEE PAGE VL-6 FOR FASTENER SELECTION

114 Rosemont Lane
Imler, PA 16655
757-425-6223

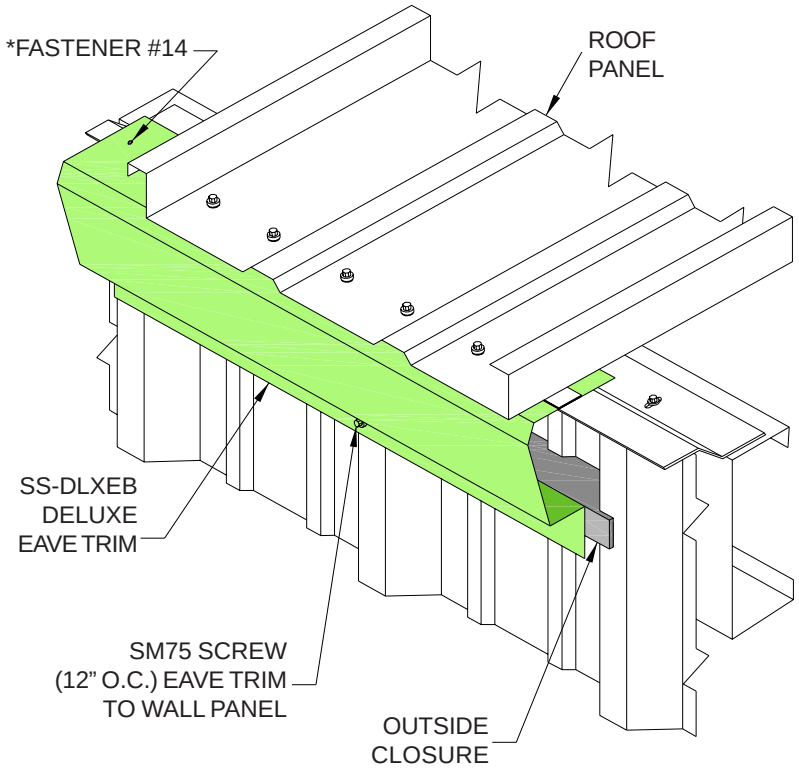
TRIM DETAILS SCULPTURED EAVE

HIGH EAVE



LOW EAVE

*3 PER TRIM - TRIM TO EAVE PLATE - INSTALL MASTIC OVER FST#14.
(FST#13 HOLDS TRIM UNTIL ROOF PANEL SCREWS ARE INSTALLED).



NOTE

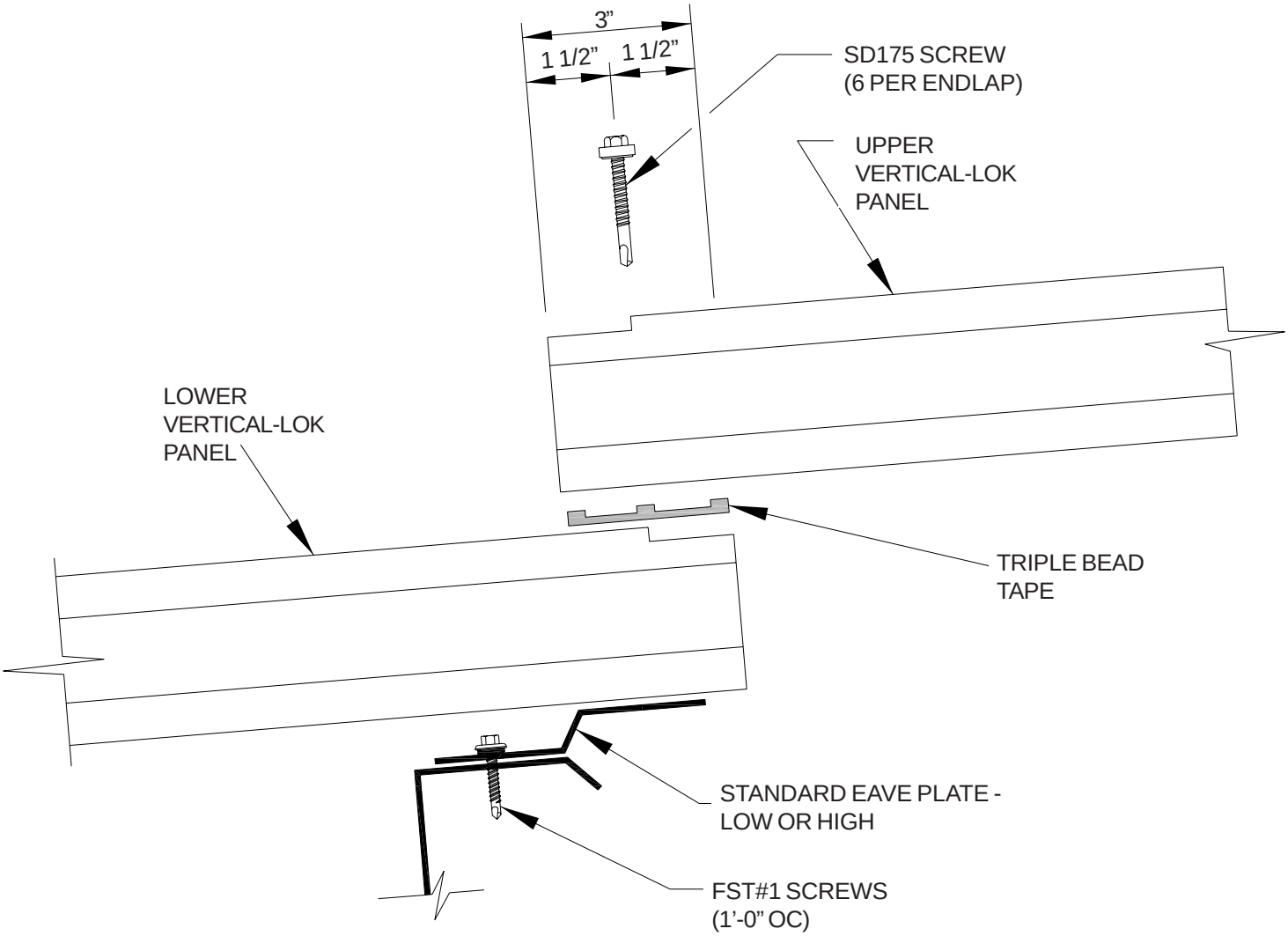
Top leg dimension of high side eave trim may have to be increased to accommodate wall panel thickness.

NOTE

This optional scultured eave trim is available. However, under certain conditions, it may induce staining of wall panels.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

MID SLOPED FIXED CONDITION (ENDLAP)



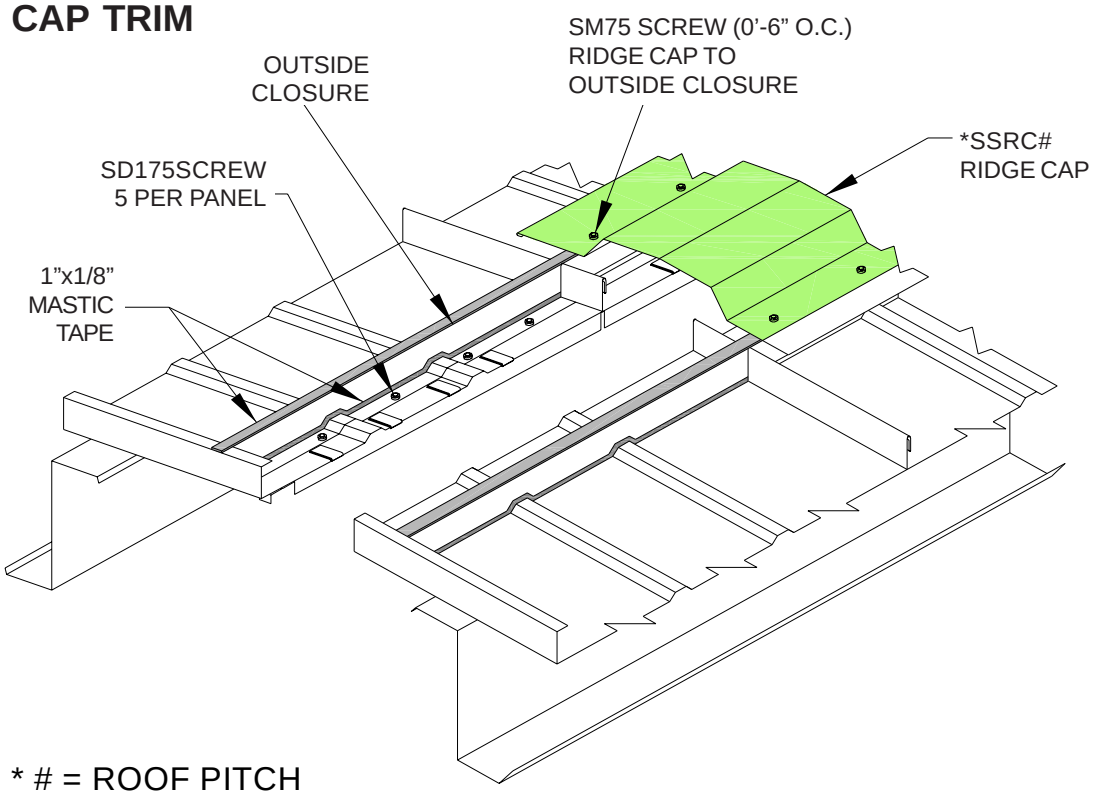
NOTES

1. This special detail is for use when a panel run exceeds the thermal movement capabilities of the panel clip.
2. A positive panel attachment is made at the mid-point in the panel run allowing for thermal movement to the eave and ridge.
3. The standard floating ridge condition must be used in conjunction with this special eave detail.
4. The Floating Eave Plate must be used to allow for panel movement at the eave.
5. Floating clips have a maximum movement of 1” in each direction. Articulating clips have a maximum movement of 1 1/4” in each direction. Thermal calculations must be performed for each project to ensure that the thermal movement of the roof will not exceed the design of the clips and 2” slot in the special eave plate.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

Vertical-Lok Trim Details

RIDGE CAP TRIM



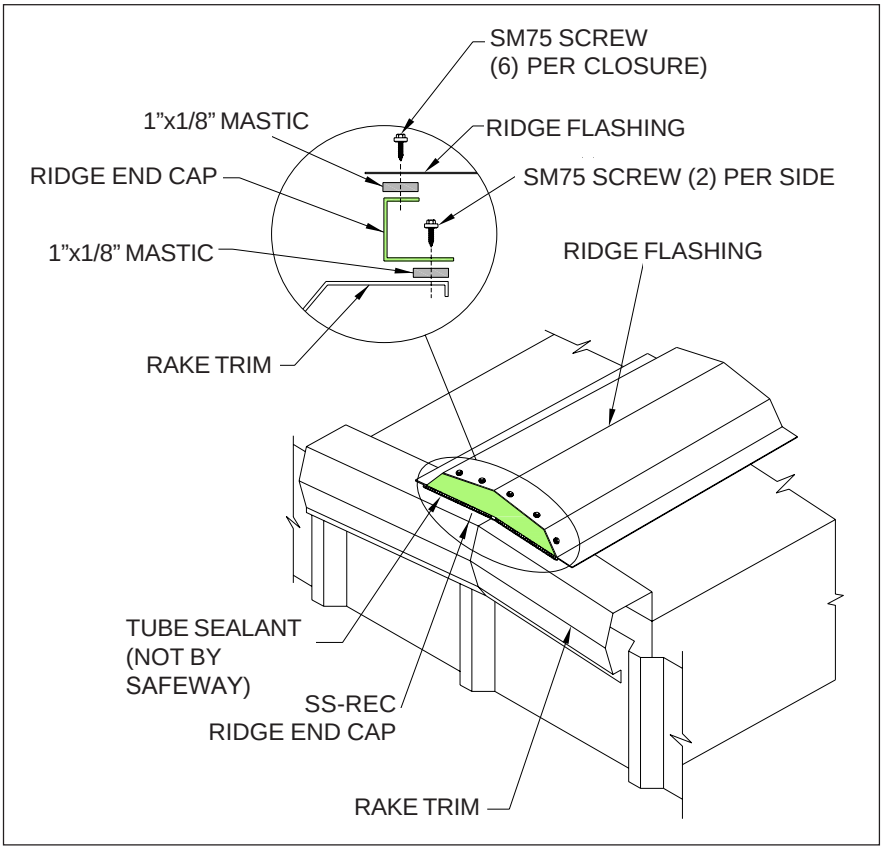
* # = ROOF PITCH

NOTES

1. INSTALL THE RIDGE FLASHING STARTING AND ENDING 2-1/2" OUTSIDE THE STEEL LINE.

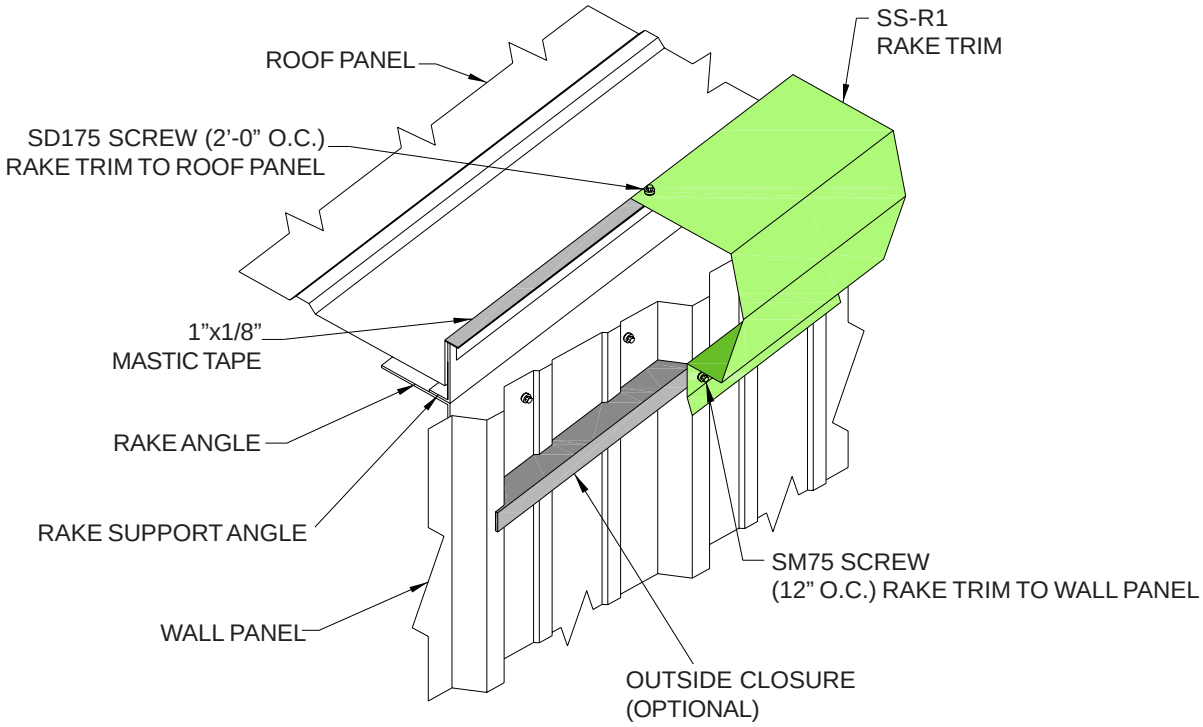
2. LEAVE 6" UNFASTENED ON EACH END TO ALLOW THE RAKE TRIM TO BE INSTALLED LATER.

3. DO NOT INSTALL THE SM75 SCREWS FOR THE RIDGE CAP THROUGH THE LOCK OF THE STANDING SEAM ROOF.

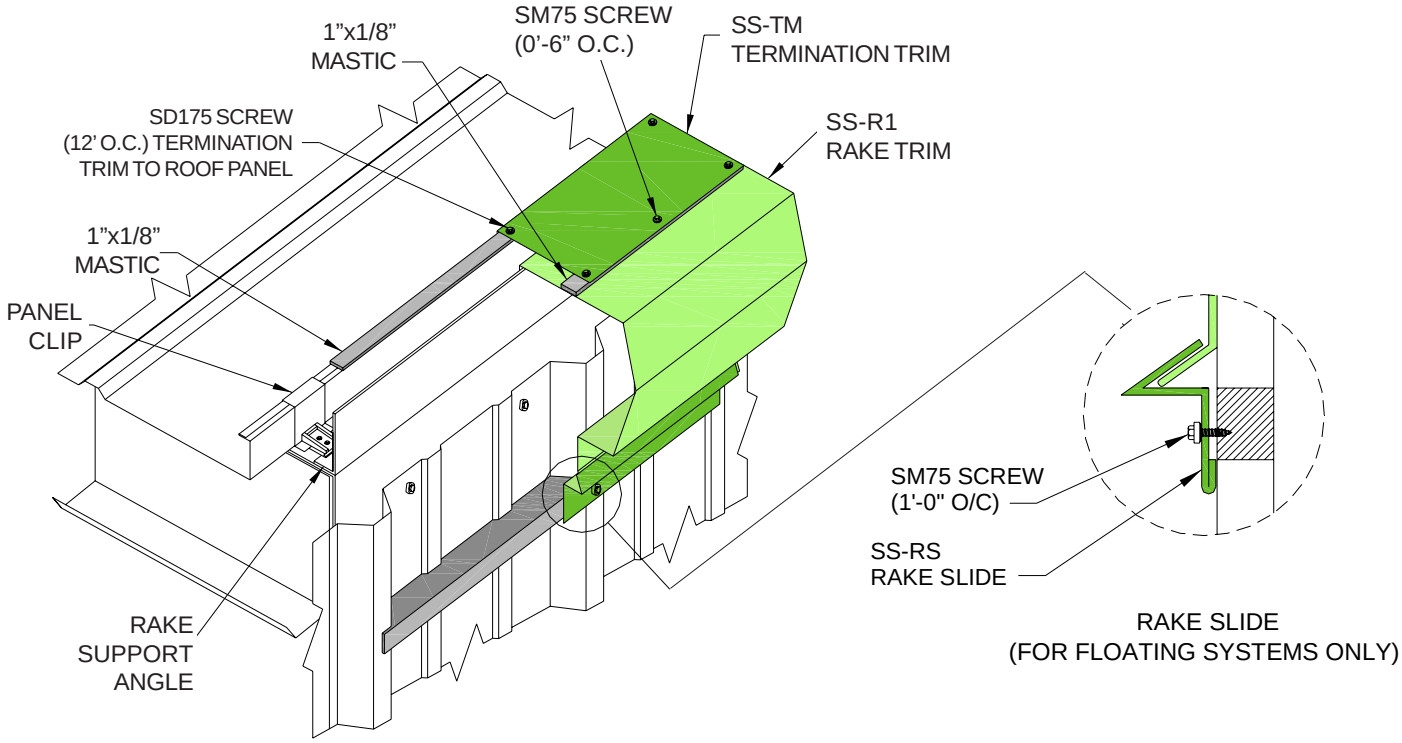


114 Rosemont Lane
Imler, PA 16655
757-425-6223

RAKE TRIM (ROOF SURFACES </= 90’ 0 EAVE TO PEAK)

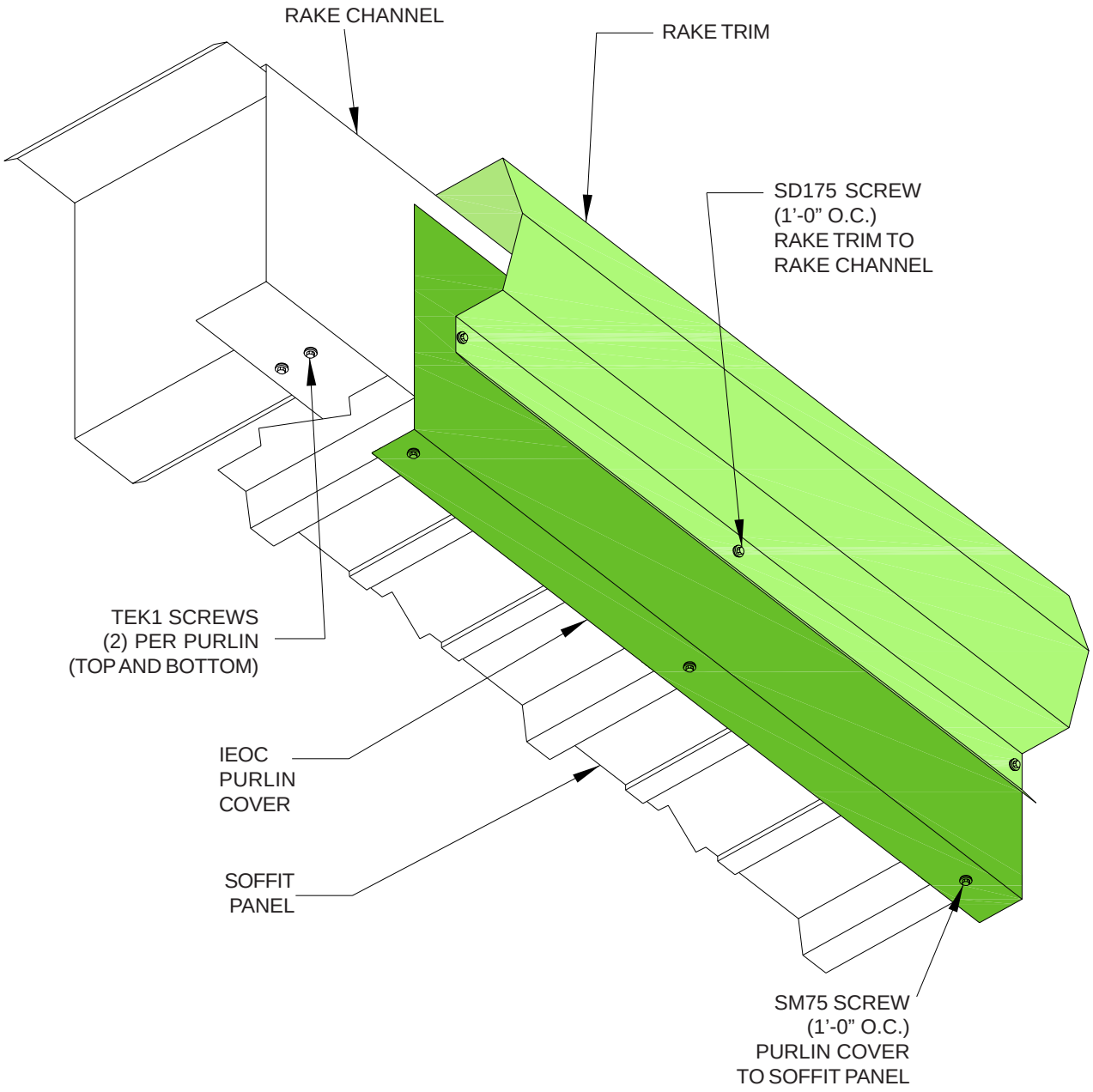


RAKE SLIDE (FOR GREATER THAN 90’ WIDE EAVE TO PEAK)



114 Rosemont Lane
Imler, PA 16655
757-425-6223

TRIM DETAILS - RAKE EXTENSION

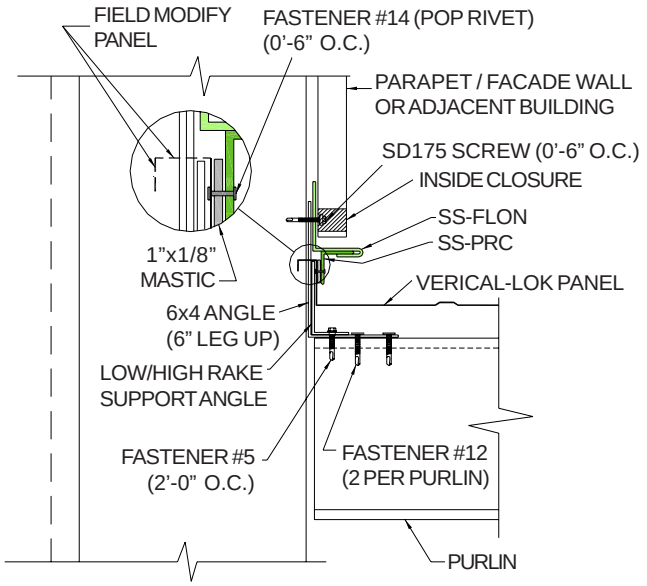


114 Rosemont Lane
Imler, PA 16655
757-425-6223

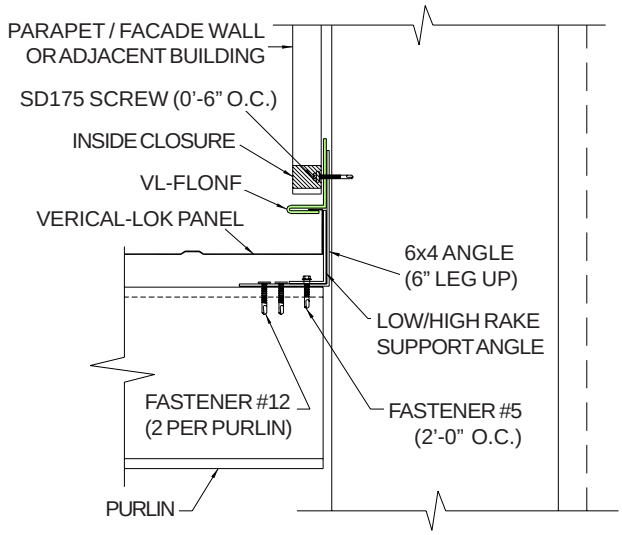
- ROOF TO ADJACENT BUILDING
- PARAPET TO ROOF
- FACADE TO ROOF
- GABLE CANOPY TO ROOF

TRIM DETAILS - PARALLEL TRANSITIONS
FLOATING-ON MODULE

(STARTING)

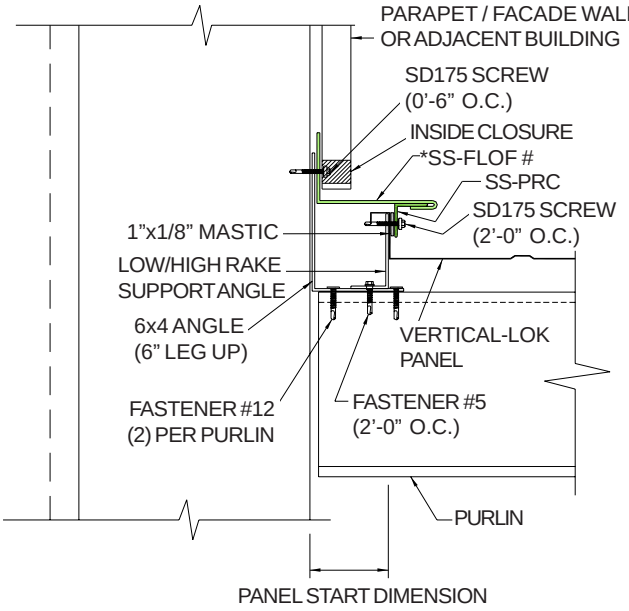


(ENDING)

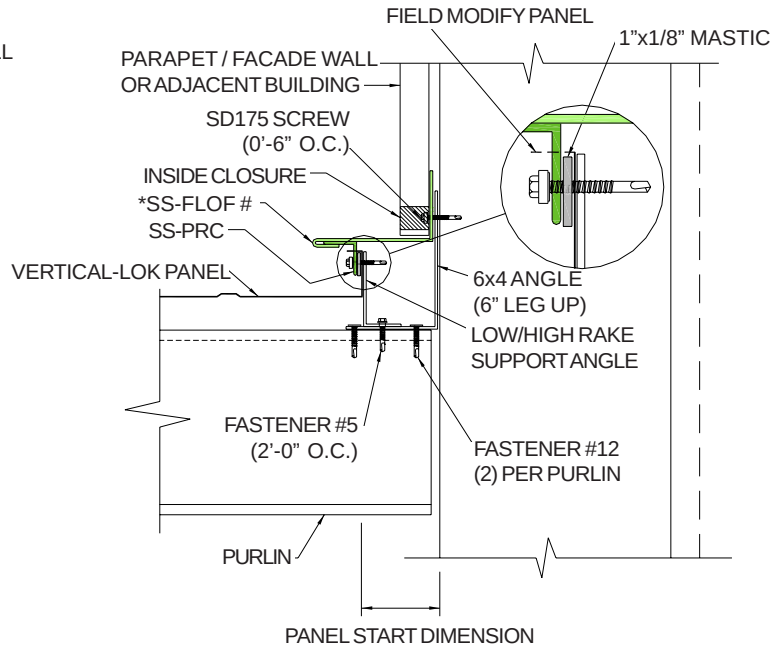


FLOATING-OFF MODULE

(STARTING)



(ENDING)



*# = PANEL START DIMENSIONS IN INCHES

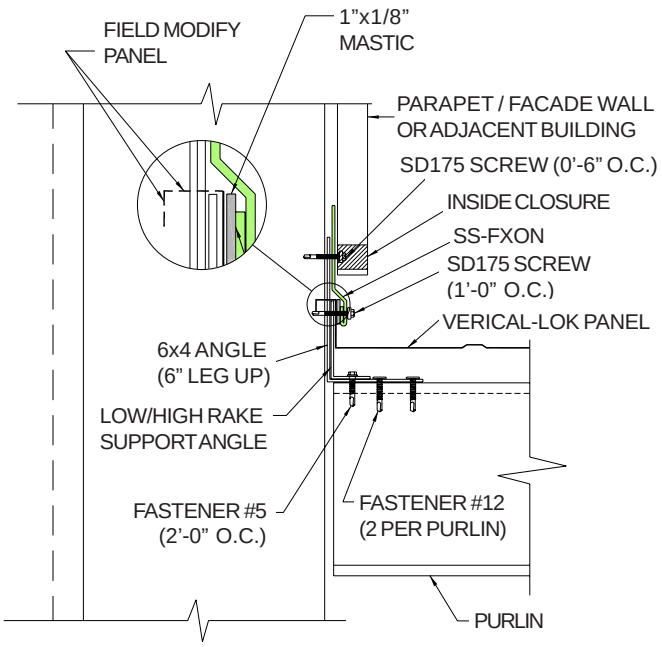
114 Rosemont Lane
Imler, PA 16655
757-425-6223

Vertical-Lok Trim Details

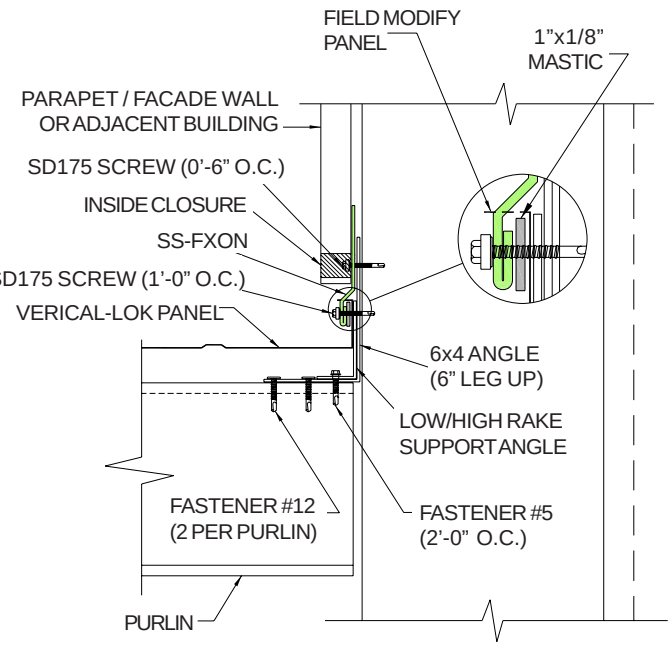
- **ROOF TO ADJACENT BUILDING**
- **PARAPET TO ROOF**
- **FACADE TO ROOF**
- **GABLE CANOPY TO ROOF**

PARALLEL TRANSITIONS
FIXED ON MODULE

(STARTING)

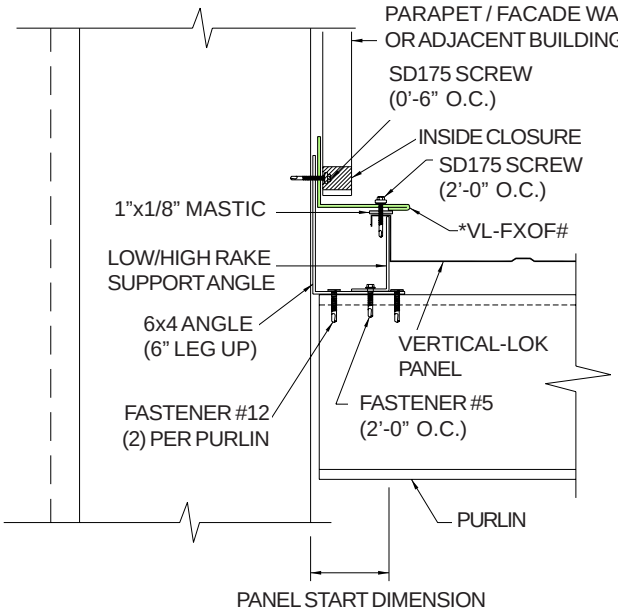


(ENDING)

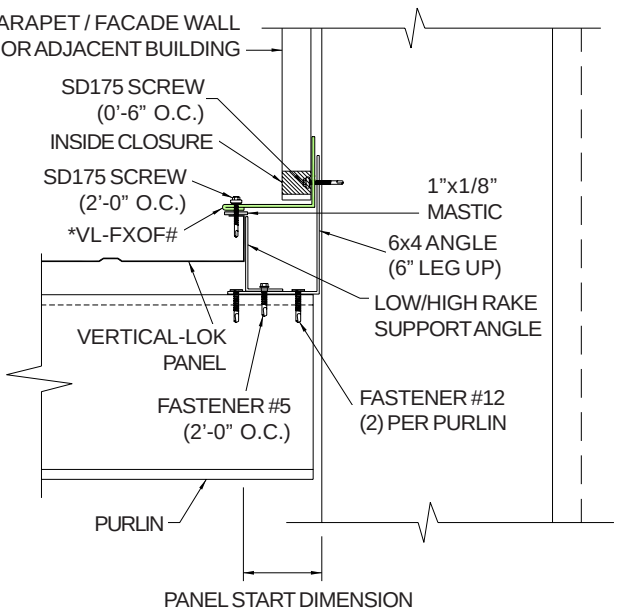


FIXED OFF MODULE

(STARTING)



(ENDING)



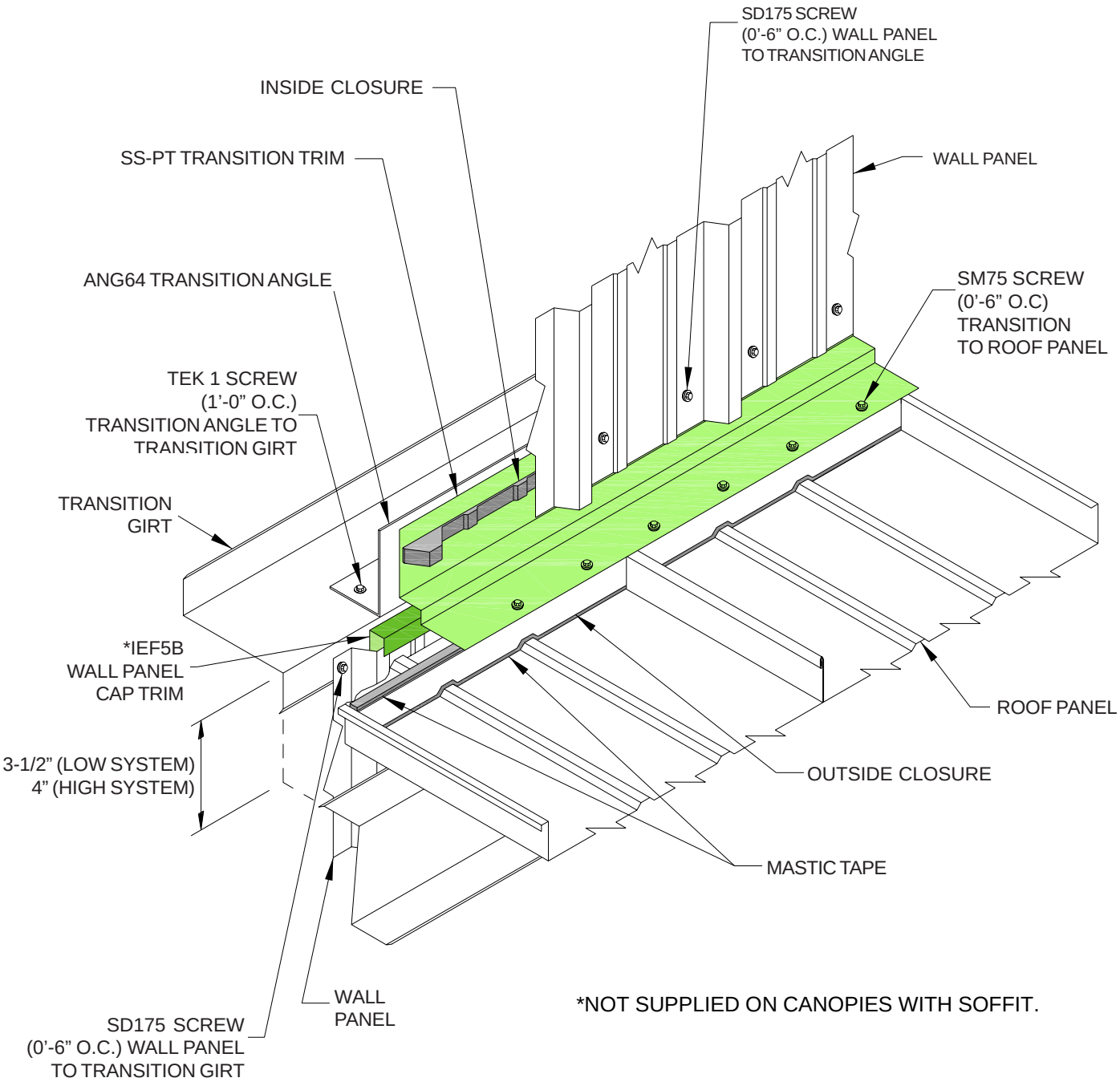
* # = PANEL START DIMENSIONS IN INCHES

114 Rosemont Lane
Imler, PA 16655
757-425-6223

Vertical-Lok Trim Details

- **LEAN-TO CONNECTION**
- **SINGLE SLOPE CANOPY CONNECTION**
- **FACADE TO ROOF**
- **PARAPET TO ROOF**

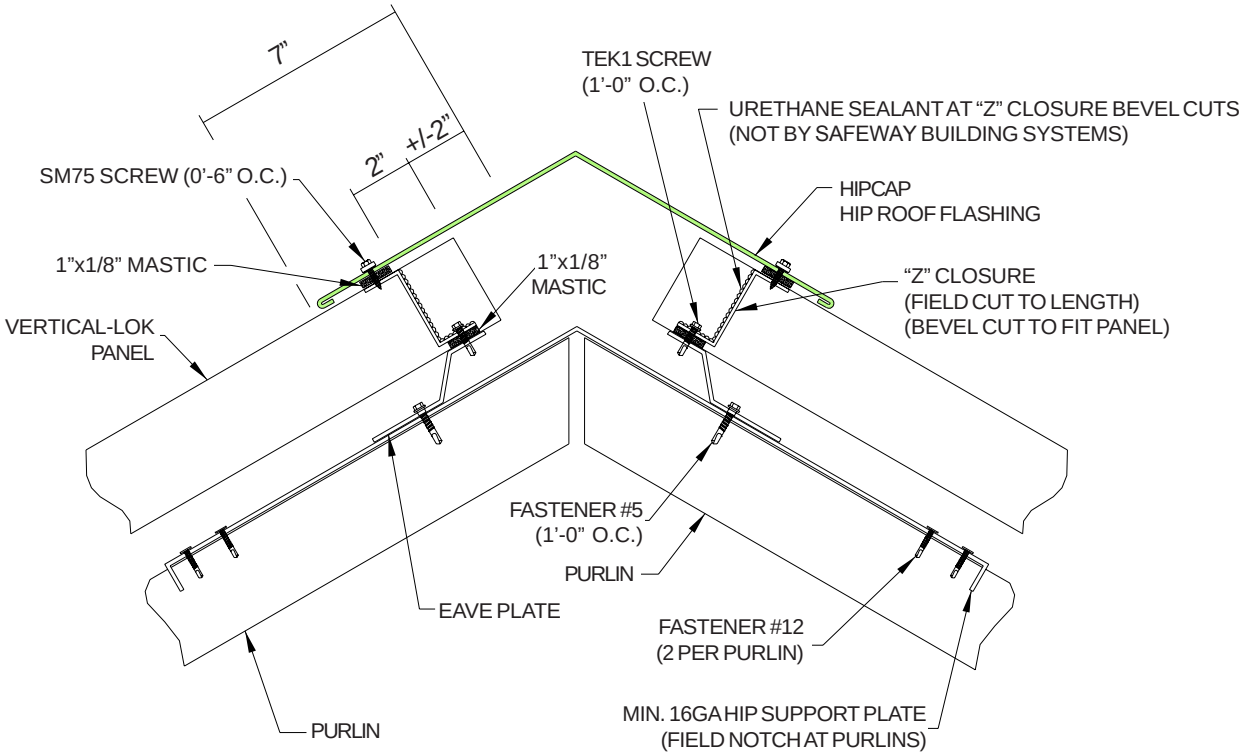
PERPENDICULAR TRANSITIONS

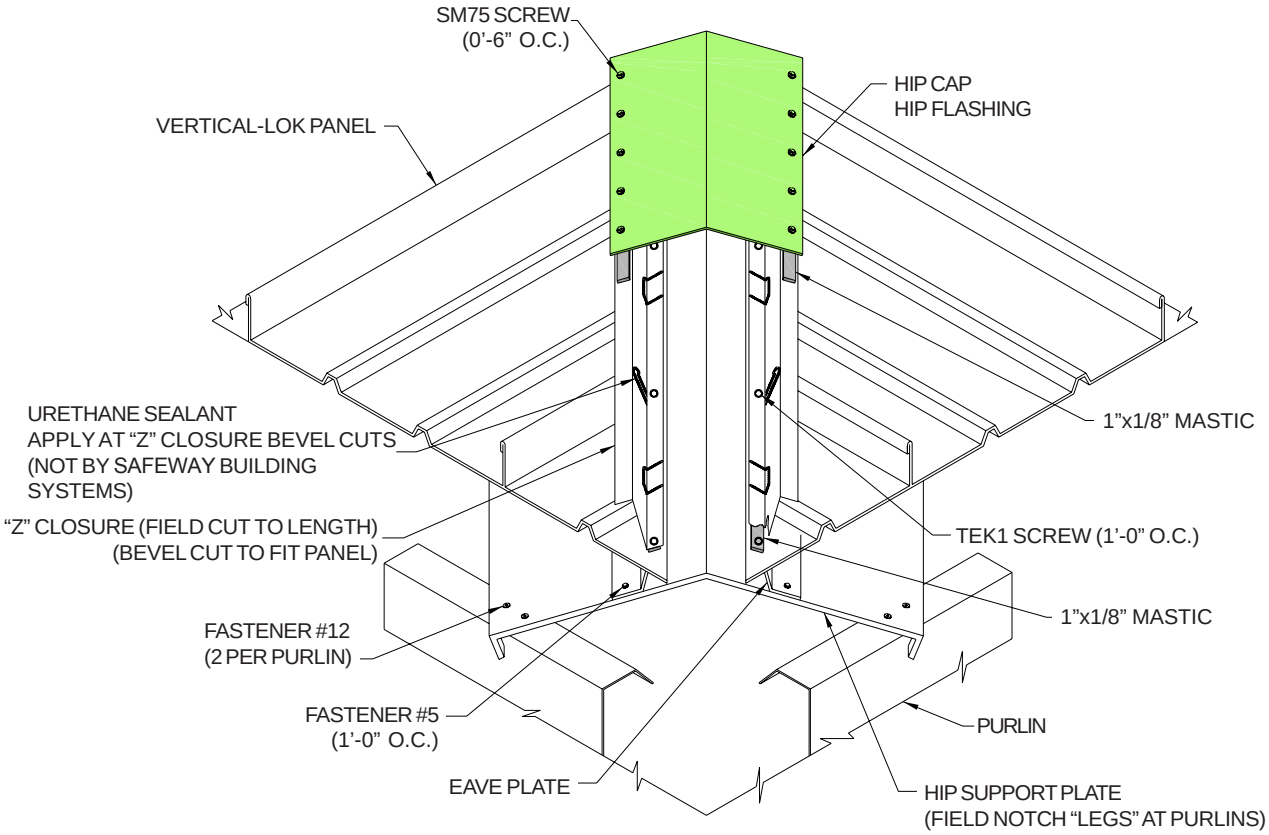


*NOT SUPPLIED ON CANOPIES WITH SOFFIT.

114 Rosemont Lane
Imler, PA 16655
757-425-6223

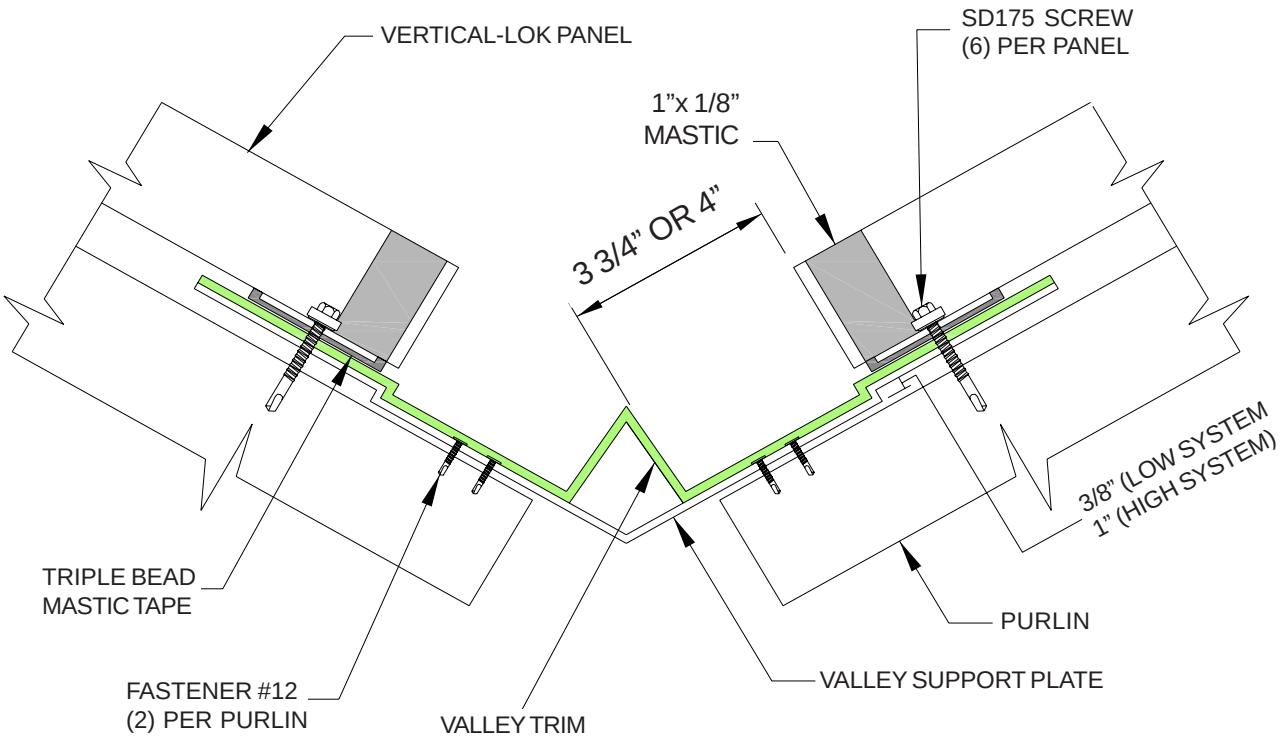
TRIM DETAILS - HIP





114 Rosemont Lane
Imler, PA 16655
757-425-6223

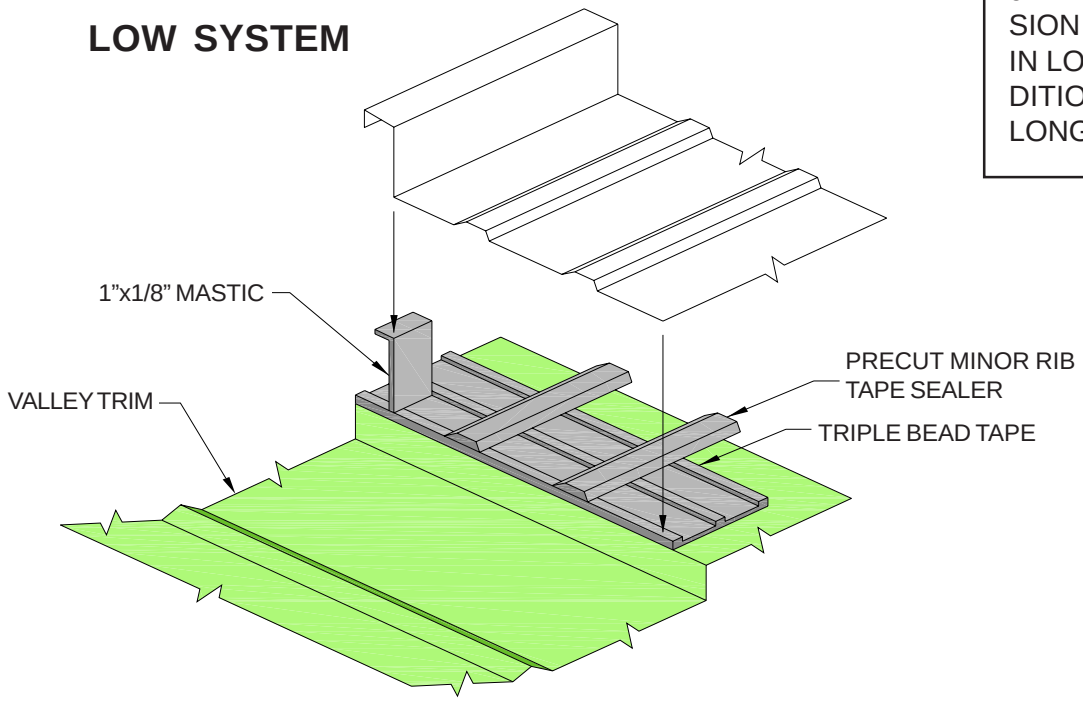
TRIM DETAILS - VALLEY



NOTE

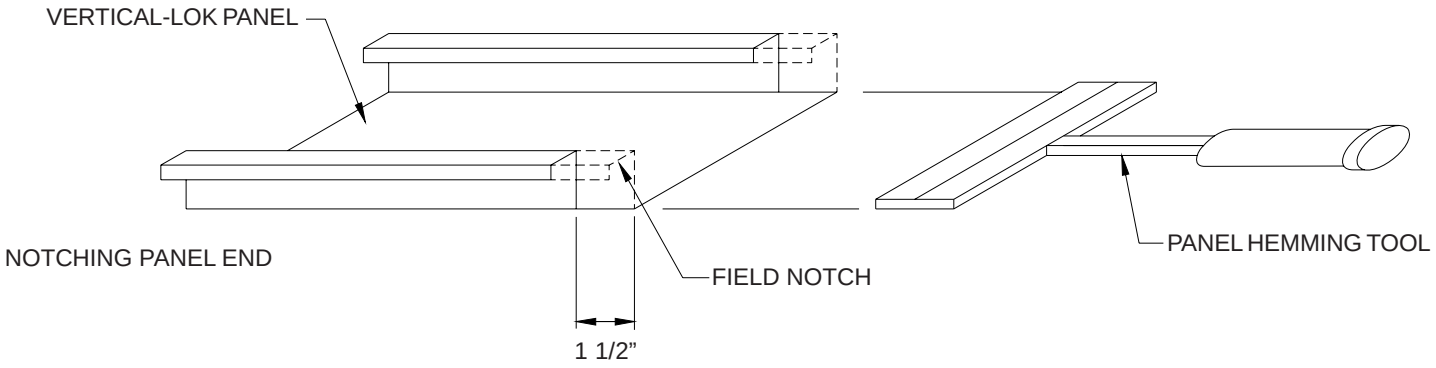
9" VALLEY DIMENSION MUST BE USED IN LOW SLOPE CONDITIONS IN VALLEYS LONGER THAN 30'-0"

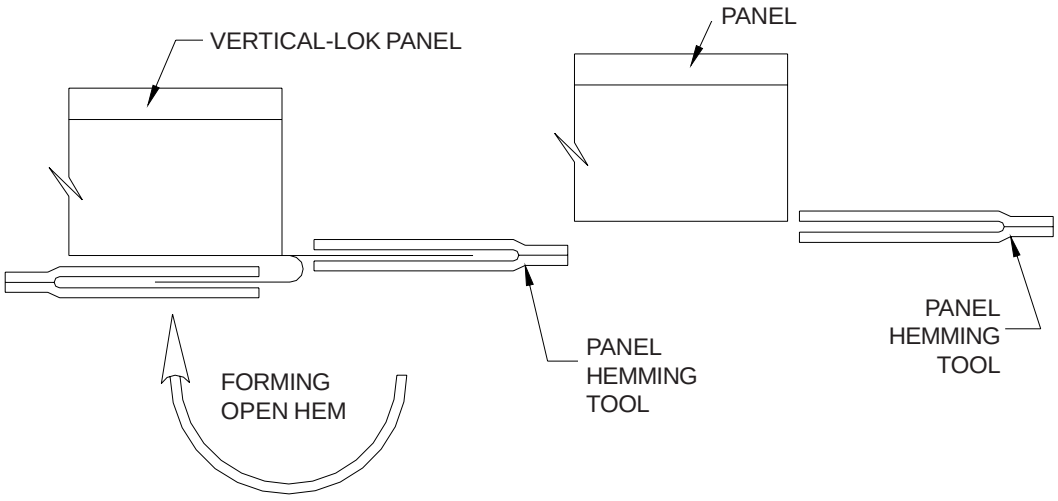
LOW SYSTEM



114 Rosemont Lane
Imler, PA 16655
757-425-6223

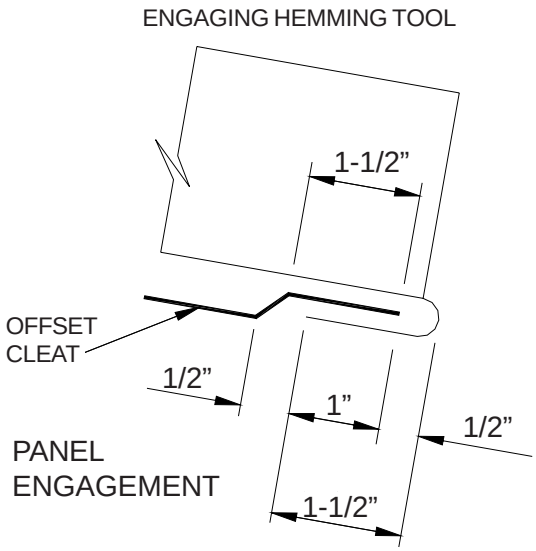
Vertical-Lok Field Hemming Panel End





NOTES

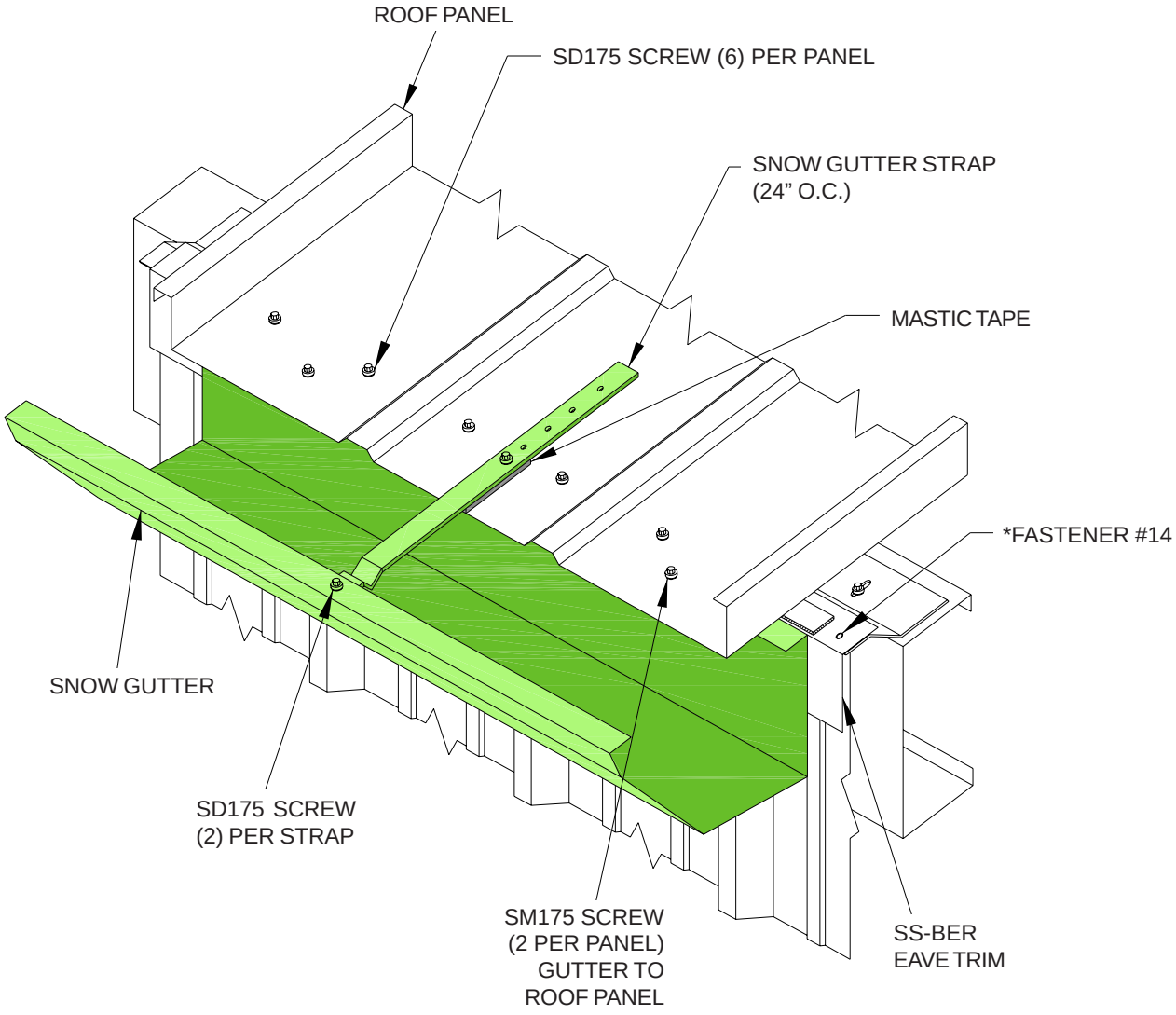
1. FIELD NOTCH MALE AND FEMALE LEGS OF PANEL 1 1/2”.
2. ENGAGE PANEL HEMMING TOOL ONTO PROTRUDING PAN OF PANEL.
3. BEND PAN OF PANEL DOWN TO FORM AND OPEN HEM.
4. HEM MAY BE TIGHTENED WITH PAIR OF VISE GRIP “DUCK BILLS”.
5. PANEL ENGAGEMENT SHOWN ABOVE IS FOR PANEL RUNS UP TO 100’ LONG.



114 Rosemont Lane
Imler, PA 16655
757-425-6223

SNOW GUTTER INSTALLATION

*3 PER TRIM - TRIM TO EAVE PLATE - INSTALL MASTIC OVER FST#14.
(FST#14 HOLDS TRIM UNTIL ROOF PANEL SCREWS ARE INSTALLED)



NOTES

1. USE MINOR RIB TAPE SEALER TO FILL VOIDS IN PANEL AT MINOR RIBS AS SHOWN ON PAGE VL-21.
2. ATTACH PANEL TO EAVE PLATE WITH SD175 SCREWS. USE 6 SCREWS PER PANEL.
3. ATTACH BACK LEG OF GUTTER TO ROOF PANEL WITH SM75 SCREWS
4. INSTALL GUTTER STRAP(S) 2'-0" O.C. USE (2) SD175 SCREWS PER STRAP.
5. THIS SYSTEM ALLOWS FOR THE ROOF OR WALL TO BE INSTALLED FIRST.
6. INSTALL THE SD175 SCREW THROUGH THE HOLE IN THE GUTTER STRAP THAT IS OVER THE EAVE PLATE.

Notes:

™

SAFEWAY Building Systems
1559 Laskin Road
Virginia Beach, VA 23451

Phone: 757-425-6223 - Fax: 757-425-0485
www.SAFEWAYSTEEL.COM