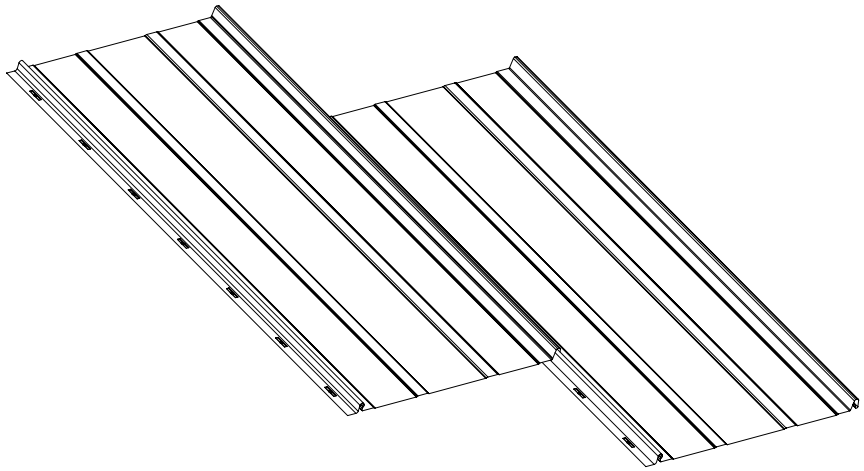
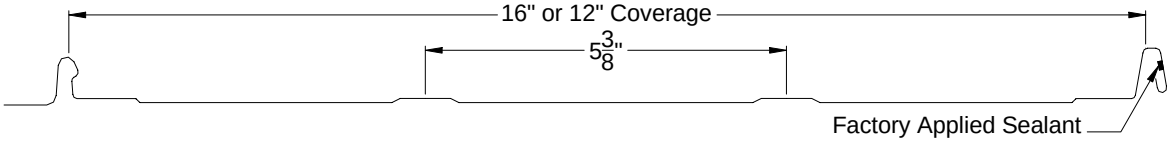
FABRAL
METAL WALL AND ROOF SYSTEMS

Climaguard™



Metal Roofing System Ordering & Installation Guide



Specifications contained herein subject to change without notice or obligation to make changes in products previously purchased.

Climaguard™

Table of Contents

Important Notice: This guide is supplied by FABRAL, Inc for use by its customers and must be read in its entirety before beginning installation. This is intended to be a guide only, and does not replace or supercede local or state building codes.

Climaguard roofing must be applied on a minimum roof pitch of 3:12 or greater.

FABRAL, Inc. assumes no responsibility for any problems which might arise as a result of improper installation or any personal injury or property damage that might occur with the products use.

In certain conditions, panels may show slight waviness commonly referred to as "oil canning." This can occur as a result of the roll-forming process. Oil-canning does not affect the structural performance of the roof system, and is not cause for rejection of material. In areas of high snow or ice accumulations, snow guards, or snow blocks, may need to be added to a Climaguard roof system to reduce or eliminate snow or ice from cascading from a higher roof and damaging lower roofs, roof valleys, gutters, or objects on the ground. Check with your installer and local building codes concerning the use of snow blocks or guards in your area and design appropriately.

MINIMUM RECOMMENDED TOOLS & EQUIPMENT

Caulking Gun—Used for miscellaneous caulking and sealing to inhibit water infiltration.

Chalk Line—Used to assist in the alignment of panels, flashings, etc.

Electric Drill—Used to drill holes such as those required for pop rivet installation.

Electric Nibblers or Metal Shears—Used for general metal cutting, such as cutting the panels in hip and valley areas.
Some installers prefer using a circular saw with a metal cutting abrasive blade. This method may be faster, but it has some drawbacks:

- *Saw cut edges are jagged and unsightly and tend to rust more quickly than sheared edges.*
- *Saw cutting produces hot metal filings that can embed in the paint and cause rust marks on the face of the panel.*
- *Saw cutting burns the paint & galvanizing at the cut edge leading to the onset of edge rust.*

End Bender Tool—Used to hand bend the ends of the panels as indicated in the details of this manual. This tool is available from FABRAL.

Locking Pliers—Standard and "Duckbill" style for miscellaneous clamping and bending of parts.

Marking Tools—Indelible markers, pencils, or scratching tools.

Rivet Tool—Used for miscellaneous flashing and trim applications.

Rubber Mallet – may be used to help snap panels together.

Scratch Awl—Can be made from old screw drivers ground to a point. Used to mark the steel, open hems, and as a punch.

Screw Gun—2,000 to 2,500 rpm Clutch type screw gun with a depth sensing nose piece is recommended to ensure proper installation of the screws. The following bits will be required:

- 1/4" hex
- #2 Combination Square/Phillips bit

Snips—For miscellaneous panel and flashing cutting requirements.
Three pairs will be required: one for left edge, one for right edge, and one for centerline cuts.

Tape Measure—25 foot minimum.

Utility Knife—Used for miscellaneous cutting.

SAFETY CONSIDERATIONS

Never use unsecured or partially installed panels as a working platform. Do not walk on panels until they are in place on the roof and all of the fasteners have been installed.

Metal roofing panels are slippery when wet, dusty, frosty, or oily. Do not attempt to walk on a metal roof under these conditions. Wearing soft soled shoes will improve traction and minimize damage to the painted surface.

Always be aware of your position on the roof relative to your surroundings. Take note of the locations of roof openings, roof edges, equipment, co-workers, etc.

Always wear proper clothing and safety attire. Wear proper clothing when working with sheet metal in order to minimize the potential for cuts, abrasions and other injuries. Eye protection and gloves are a must when working with sheet metal products. Hearing protection should be used when power-cutting metal panels. When working on a roof, fall protection is highly recommended. Follow all OSHA Safety Requirements.

Use care when operating electrical and other power equipment. Observe all manufacturer's safety recommendations.

Roof installation on windy days can be dangerous. Avoid working with sheet metal products on windy days.

DELIVERY, HANDLING & STORAGE

Always inspect the shipment upon delivery. Check for damage and verify material quantities against the shipping list. Note any damaged material or shortages on the bill of lading at the time of delivery.

Handle panel bundles and individual panels with care to avoid damage. Longer bundles and panels may require two or more "pick points" properly spaced to avoid damage that can result from buckling and/or bending of the panels. It is best to handle panels on edge (the pan of the panel perpendicular to the ground). This will decrease the chance of possible panel damage while handling.

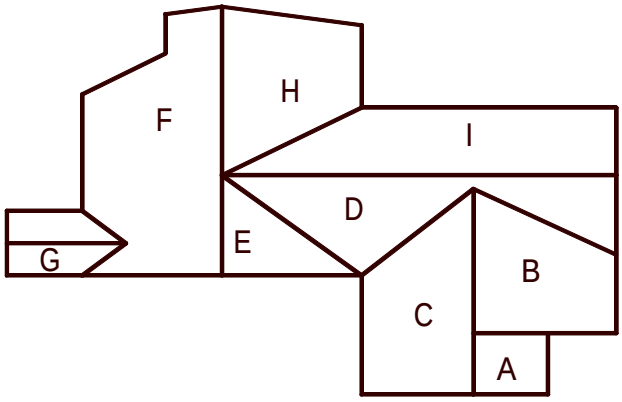
Store the panels and other materials in a dry, well ventilated area, away from traffic. Elevate one end of the bundle so that any moisture that may have accumulated during shipping can run off. If outdoor storage cannot be avoided, protect the metal with a breathable canvas or waterproof paper cover. Leave the bottom of the cover loose to allow air circulation. Do not use plastic which causes sweating or condensation.

Wear clean, non-marking, soft soled shoes when walking on the panels to avoid shoe marks or damage to the finish. Step only in the flat area of the panels. Do not step on the ribs.

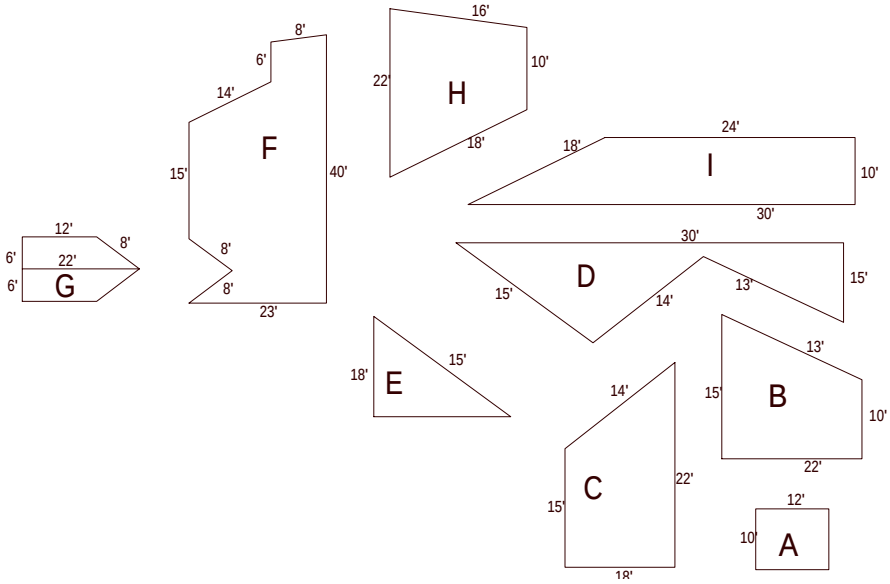
ESTIMATING & ORDERING A ROOF

Step 1

A. Sketch a birds-eye view of the roof and label each section (see example below.)



B. Sketch a diagram of each roof section. Show all measurements (see example below.) It is important to measure the exact center of the ridge to the eave edge. Do not allow anything for overhang.



Additional Information Required: Roof Pitch, Skylights (Location & Size), Chimneys (Location & Size), and Size and Number of Pipe Penetrations.

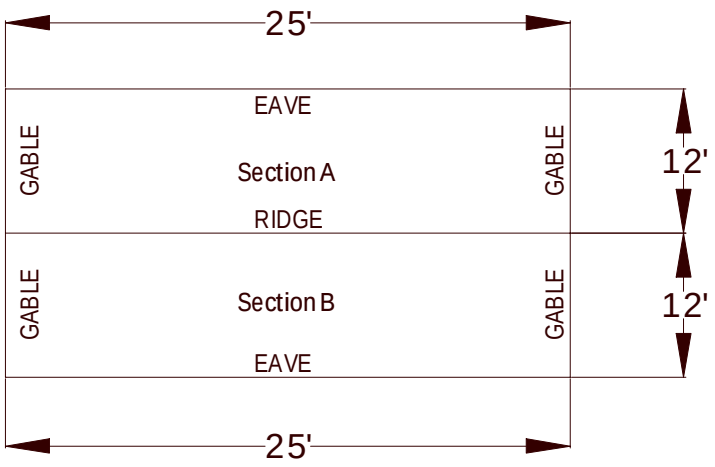
Additional Identification: Ridge, Hips, Valleys, Gables, Etc.

ESTIMATING & ORDERING A ROOF

Step 2

With the information from the diagram you completed in Step 1, you are now ready to complete your roofing panel cut list. Each panel is 16" or 12" wide so the only measurement you need is the distance from the eave to the ridge. You can then determine the number of panels needed to cover the length from gable to gable. (See example Diagram A below.)

DIAGRAM A



The length from the eave to the ridge is 12'. The length of the ridge is 25'; therefore, the number of panels to complete one side of the house is 25' ÷ 1.33'(16")= 19 pcs or 25'÷ 1' (12") = 25 pcs. Your materials list should look like Sample B.

SAMPLE B

Section A - 19 pcs. X 12'(Climaguard 16")

Or

Section A – 25 pcs. X 12'(Climaguard 12")

Now look at your roof diagram and figure out your next section of roof. Refer back to Diagram A. Section B of this sample roof is the same as Section A. Your materials list should now look like Sample C below.

SAMPLE C

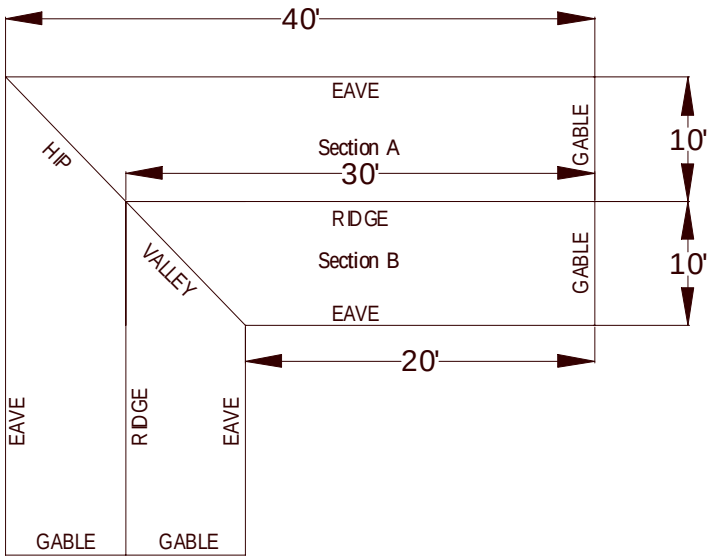
Section A—19 pcs. X 12'(Climaguard 16") or 25 pcs. X 12'(Climaguard 12")

Section B—19 pcs. X 12'(Climaguard 16") or 25 pcs. X 12'(Climaguard 12")

If your home has hips or valleys, refer to Diagram 1A on page 8.

ESTIMATING & ORDERING A ROOF
Step 2 (cont.)

DIAGRAM 1A



Start with section A. The eave length is 40' and the ridge length is 30', with a difference of 10'. You will need 23 pcs. X 10' for 16" panel or 30 pcs. X 10' for 12" panel to reach the area where the hip starts. Remember that you have 10' remaining to cover the area, or 8 (16") or 10 (12") more panels. Determine the length of each panel going into the valley by calculating the roof's pitch. Pitch is how much rise your roof has in inches for every foot of horizontal run. Use the Hip and Valley Chart below to ensure you order the correct panel length for hips and valleys, keeping in mind, that panels come cut to the nearest full inch. For example, Diagram 1A is a 4/12 pitch (4/12p). According to the chart below, we know each panel will be 17" shorter when using the 16" panel. Since we are measuring from the longest point of the angle, your first piece will be the same length as the full eave to ridge measurement and each piece after will be 17" shorter.
(Your list of Section A should look like Sample D on page 9.)

Hip & Valley Chart

When determining the panel length needed for a hip or valley, the panel will either be shorter or longer as you go up or down the hip or valley. The chart below shows you the amount to add or subtract from each panel according to the pitch of your roof.

16" Panel				
3/12p = 16 ½"	5/12p = 17 ½"	7/12p = 18 ½"	9/12p = 20"	11/12p = 21 ¾"
4/12p = 17"	6/12p = 18"	8/12p = 19"	10/12p = 20 ¾"	12/12p = 22 ¾"
12" Panel				
3/12p = 12"	5/12p = 13"	7/12p = 14"	9/12p = 15"	11/12p = 16 ¼"
4/12p = 12"	6/12p = 13 ½"	8/12p = 14 3/8"	10/12p = 15 ½"	12/12p = 17"

Note: When determining panel length, always round up to the next full inch.

SAMPLE D

Section A	24 pcs. X 10'-0"	Section A	31 pcs. X 10'
For 16" Panel	1 pc. X 8'-7"	For 12" Panel	1 pc. X 9'
	1 pc. X 7'-2"		1 pc. X 8'
	1 pc. X 5'-9"		1 pc. X 7'
	1 pc. X 4'-4"		1 pc. X 6'
	1 pc. X 2'-11"		1 pc. X 5'
	1 pc. X 1'-6"		1 pc. X 4'
	1 pc. X 1'-0"		1 pc. X 3'
			1 pc. X 2'
			1 pc. X 1'

Step 3

Refer to the Home Legend of page 16 for trim placement. From this diagram, you can determine the names and placement of the trim needed. All trim is produced in 10' sections only. Remember to allow 6" of overlap on all trims. Use the estimating section to determine trim quantities.

For applications of trims and flashings, see pages 17-26.

CLIMAGUARD
Estimator/Order Guide

Calculate total lineal feet of panels = (pcs x ft-inches) total sum = _____ln ft.
Use on next page for number of screws needed.

Accessories

Determine total lineal feet of conditions listed below and then fill that number in accordingly at each spot listed, Perform calculations to determine number of pieces for each item and circle flashing design required.

Eave _____

Ridge_____

Hip_____

Gable _____

Sidewall _____

Endwall_____

Valley_____

Transition _____

Gambrel _____

Swept Wing or Flying Gable _____

Clear Story _____

Roof Pitch _____" in 12"

Chimney (Qty. and size) _____

Skylight (Qty. and size) _____

CLIMAGUARD
Estimator/Order Guide

A. Eave _____ft ÷ 9.5** = _____pcs. (WEF1 or WEF4)

B. (Ridge _____ft ÷ 9.5) + (Hip _____ft ÷ 9.5) = _____pcs (WRH3 or WRH5)

C. Gable _____ft ÷ 9.5 = _____pcs (WGF4)

D. Sidewall _____ft ÷ 9.5 = _____pcs (WSW3)

E. Endwall _____ft ÷ 9.5 = _____pcs (WEW2) Pitch _____

F. Valley _____ft ÷ 9.5 = _____pcs (RV4) Pitch _____

G. Transition _____ft ÷9.5 = _____pcs (WTF1) Pitch from _____ to _____

H. Gambrel _____ft ÷ 9.5 = _____pcs Mod. (WTF1) Pitch from _____ to _____

I. Monoslope _____ft ÷ 9.5 = _____pcs (WRH4)

J. (Ridge _____ft ÷ 5) + (Endwall _____ft ÷ 10) + (Hip _____ft ÷ 5) + (Transition _____ft ÷10) + (Gambrel _____ft ÷ 10) + (Clear Story _____ft ÷ 10)= _____pcs (WJC2)

K. (Total lineal feet of panels _____ft) =_____pcs #6, #8 or #10 Truss Head or Pancake Head Screws

L. (Eave _____ft) + (Ridge _____ft x 6) + (Gable _____ft x 2) + (Sidewall _____ft) + (Endwall _____ft x 2) + (Valley _____ft x 5) + (Hip _____ft x 6) + (Transition _____ft x 4) + (Gambrel_____ft x 4) + (Swept Wing Gable _____ft x 4) + (Monoslope ____ft x 3) = _____pcs #14 x 1" Mill Point Painted

M. (Eave _____ft x .0125) + (Ridge ____ft x .0125) + (Sidewall _____ft x .05) +(Endwall _____ft x .0625) + (Hip ___ft x .15) + (Monoslope _____ft x .15 =____Tubes Flex Seal or Sika Flex Caulk

N. (Perimeter of Skylights/Chimney____ft ÷5) = _____pcs WSCB1 & _____pcs WSCT3

O. (Eave _____ft x .025) + (Gable _____ft x .025) + (Ridge _____ft x .10) + (Valley _____ft x .05) + (Transition _____ft x .075) + (Perimeter of skylight / chimney_____ft x .5) = _____ Rolls of Butyl Sealant

P. End Bending Tool = _____pcs End Bending Tool

Q. (Hip + Valley) X .5 = _____ pcs Flat Strip Foam Closure

R. (Non-Vented Ridge ____ft ÷ 2) = ___pcs Climaguard Outside Closure, pre-notched

S. (Vented Ridge ____ft x .01) = _____ rolls Vent screen (Sold in 6" x 100' rolls only)

T. Pipe Flash:

_____ 1 ¼ - 2"	_____ 3 - 6"	_____ 6 - 11"
_____ 1 ¼ - 3"	_____ 4 - 7"	_____ 7 - 13"
_____ 1 ¼ - 4"	_____ 5 - 9"	_____ 12 - 26"

U. Retrofit Pipe Flash: _____ Small _____ Medium _____ Large

** Note: 9.5 results from 10' standard length flashings with 6" overlap.

CLIMAGUARD
Estimator/Order Guide
Step 3 (cont.)

When determining the number of fasteners needed, follow these GENERAL rules:

1. For every linear foot of roof panel ordered, you need 1 panel screw.
2. Remember, these are GENERAL rules; the actual amount may vary slightly for each different roof application.
3. At this point, your materials list for Diagram A on page 7 should look like Sample E below.

SAMPLE E

Using 16" Panels		Using 12" Panels	
Section A	19 pcs X 12'	Section A	25 pcs X 12'
Section B	19 pcs X 12'	Section B	25 pcs X 12'
6 pcs	Eave Trim 5/12p	6 pcs	Eave Trim 5/12p
3 pcs	Ridge Cap 5/12p	3 pcs	Ridge Cap 5/12p
6 pcs	Gable Trim	6 pcs	Gable Trim
600 pcs	1" Panel Screws	600 pcs	1" Panel Screws
250 pcs	1" Woodgrip Screws	250 pcs	1" Woodgrip Screws
150 pcs	#14 x 1" MP Screws	150 pcs	#14 x 1" MP Screws
5 pcs	WJC2 (optional)	5 pcs	WJC2 (optional)
1 tube	Flex Seal Caulk	1 tube	Flex Seal Caulk
5 Rolls	Butyl Sealant Tape	5 Rolls	Butyl Sealant Tape
1 each	Bending Tool (optional)	1 each	Bending Tool (optional)

You are now ready to order your new metal roof. Simply fill out the following form and provide it to your local FABRAL dealer or distributor. If you have any questions, or need to have your material list checked, please contact your local FABRAL dealer or distributor.

CLIMAGUARD - Order Form

Panels: Color = _____

_____ pcs. @ _____ ft. _____ in.
_____ pcs. @ _____ ft. _____ in.
_____ pcs. @ _____ ft. _____ in.
_____ pcs. @ _____ ft. _____ in.
_____ pcs. @ _____ ft. _____ in.
_____ pcs. @ _____ ft. _____ in.

Accessories:

_____ pcs. of Eave Flash WEF1

_____ pcs. of Ridge Flash WRH5

_____ pcs. of Gable Flash WGF4

_____ pcs. of Sidewall Flash WSW4

_____ pcs. of Endwall Flash WEW2

_____ pcs. of Valley Flash RV4

_____ pcs. of Valley Cleat WVC1

_____ pcs. of Transition Flash WTF1

_____ pcs. of Gambrel Flash Modified WTF1

_____ pcs. of Swept Wing Gable (Note: Contact FABRAL for details)

_____ pcs. of Monoslope Flash WRH4

_____ pcs. of J Channel WJC2

_____ pcs. of #10x1" Pancake WoodFast (Panel Screws)

_____ pcs. of #14 x 1" MP Painted

_____ pcs. of #10 x 1" WoodFast Painted

_____ pcs. of #12 x 3/4" Stitch Screw Painted

_____ pcs. of Tube Caulk

_____ pcs. of WSCB1

_____ pcs. of WSCT3

_____ pcs. of Butyl Sealant Tape

_____ pcs. of Eave/End Bending Tool

_____ pcs. of Touch-up Paint

_____ ft. of ProfileVent

_____ pcs. of Pipe Flash

_____ pcs. of Closures - CLIMAGUARD Notched Flat Strip Foam Closure.

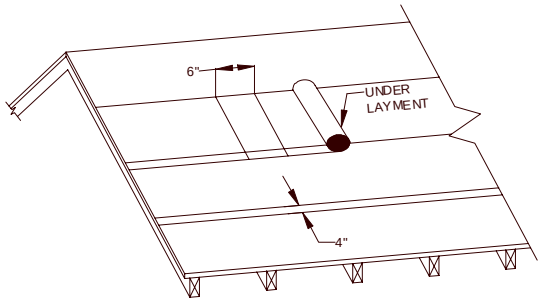
_____ Titanium UDL (Roof Underlayment)

1. Make sure there are no nails or other objects protruding from the substrate that might puncture the underlayment or damage the roof panels. Clean all debris from the deck.

2. Check all details for possible roof penetrations which must be added to the deck prior to roof panel installation (vented ridge for example).

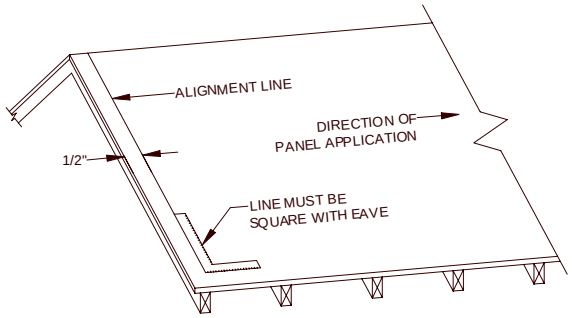
3. Cover the entire roof deck with 30-pound felt paper, or Titanium Underlayment (hereinafter referred to as underlayment). Begin at the eave at the gable end and roll out the underlayment horizontally (parallel to the eave). Allow each consecutive course to overlap the previous one by 4-6". Overlap the end a minimum of 6" when starting a new roll of underlayment. Areas of underlayment that have been torn or cut should be replaced or repaired prior to installation of the metal roof. (See Illustration #1 below) Ice & Water shield should be used in cold climates starting at the eave and extending at least 24" past exterior walls.

ILLUSTRATION #1



4. Place an alignment line along the gable end where the first roof panel will be installed. THIS LINE MUST BE LOCATED 1/2" IN FROM THE GABLE EDGE OF THE ROOF DECK AND SQUARE WITH THE EAVE LINE. Various methods exist for ensuring that the line is square. Call your nearest FABRAL representative if you need assistance. (See Illustration #2)

ILLUSTRATION #2



EXISTING ROOF APPLICATION

In many cases, FABRAL's Climaguard Panels can be installed over existing roofing without tear-off of the old roofing. For best results, use furring strips and 30 lb. felt paper over old shingles. Furring strips should be installed 12" o.c. to provide adequate panel support and walking capability. Check with your local codes or building department for the specific requirements in your area.

If the roof is to be stripped down to the existing decking, follow the procedures for new roofs on page 13. Be sure to check the existing roof and repair any damaged areas prior to installation of the new roof system.

The following steps should be taken when installing Climaguard roof panels over existing roofing.

- ❑ Inspect the roof for damage and make the necessary repairs.
- ❑ Secure any warped or loose roofing material.
- ❑ Make sure there are no nails or other objects protruding from the roof that might puncture the new underlayment or damage the new roof panels.
- ❑ Remove all moss and other debris from the roof.
- ❑ Cut off any overhanging roofing flush with the roof deck, and remove all hip and ridge caps.
- ❑ Follow the directions on page 13, #2 through #4, on roof preparation.

Note: For best results, Climaguard Roofing requires a relatively smooth and flat substrate. Application over rough and/or uneven surfaces is not recommended, as this will cause oil-canning.

PANEL INSTALLATION

Note: Before panel installation, determine which items need to be installed prior to panels (such as vent screen, eave, valley, swept wing, etc.)

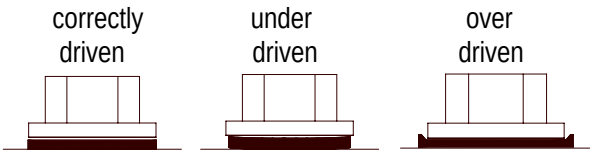
1. Install eave trim.
2. Working off the eave edge, establish a straight line up the gable edge from which you are starting. This will ensure that the first panel laid will be straight and square with the eave. (See Illustration #2 – page 13)
3. Before fastening the panel to the roof deck, check to make sure that the panel is overhanging the eave by 1".
4. Once the first panel is in proper position, secure it to the roof deck with the proper fasteners along the screw flange (#10 x 1" Pancake woodscrew on 18" centers maximum.)
5. Install the gable trim and face screw it to fascia board (see page 18). This fully secures the first panel to the roof deck.
6. Position the second panel (overlap edge on top of the underlap edge of first panel) assuring that the eave edge is in position (1" overhang). Secure the second panel to the first panel by applying slight pressure with your foot on the overlap seam (or use rubber mallet) working from the eave toward the ridge. The overlap edge of the panel contains factory-applied sealant to ensure weathertightness. Be sure that you achieve a positive engagement between panels. Fasten the panel to the roof deck as in step #3 above.
7. Each consecutive panel will be applied as in step #3 and #5 above.

CLIMAGUARD - FASTENERS

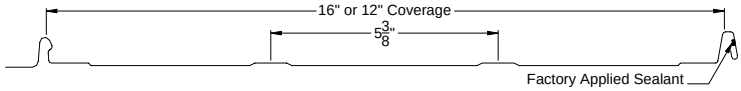
# Fasteners	Description	Use
	#10 x 1" Pancake Head Wood Fast Screw 	Panel to Deck or Trim to Wood Attachments (Unexposed)
Approx. 30 pcs. Per square of roofing	#12 x 3/4" Stitch Screw 	Panel to Panel or Trim to Panel Attachments (may be used as an alternative to blind rivets)
Approx. 30 pcs. Per square of roofing	#10-1" Wood Fast Woodscrew 	Trim to Wood (Gable) Attachments
	#14 x 1" Mill Point Screw 	Panel to Deck Attachments at ridge. Can also be used for flashing to fascia applications

Listed above are the fasteners recommended for the proper installation of the CLIMAGUARD panels. Also note the diagram below for proper installation of gasketed fasteners.

PROPER INSTALLATION OF GASKETED FASTENERS



Climaguard Panel Profile



16" Climaguard
Load Table – Steel Panels

LOAD-SPAN TABLES FOR 26 ga. CLIMAGUARD ROOFING
Allowable wind uplift loads (psf)

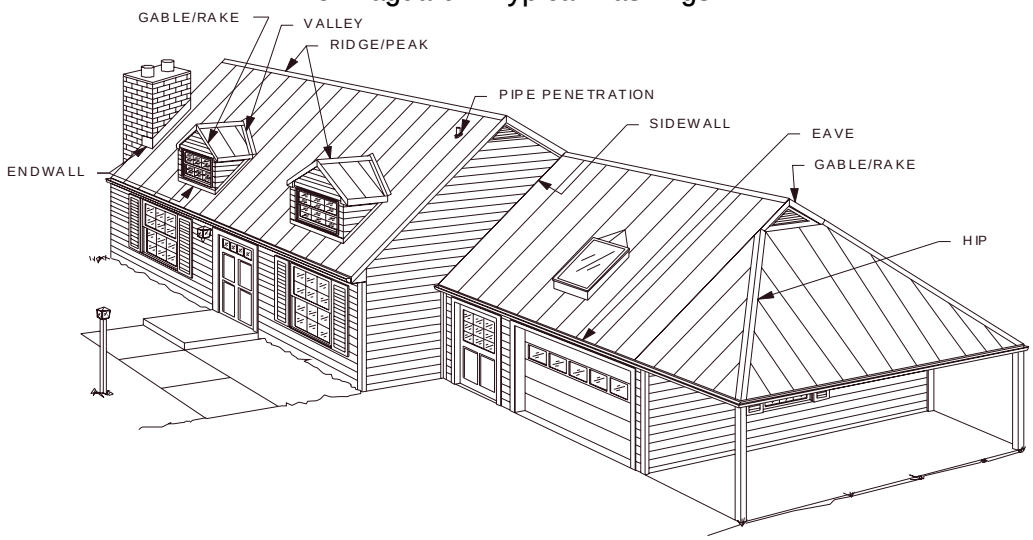
Substrate	Fastener	9"	12"	15"	18"	21"	24"
½" Plywood	#10 x 1" Pancake Head	80	60	48	40	NR	NR
5/8" Plywood	#10 x 1" Pancake Head	115.7	86.8	69.5	57.8	49.6	43.4
7/16" OSB	#10 x 1" Pancake Head	57.1	42.8	NR	NR	NR	NR

12" Climaguard
Load Table – Steel Panels

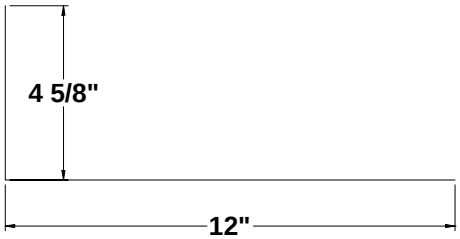
LOAD-SPAN TABLES FOR 28 ga. CLIMAGUARD ROOFING
Allowable wind uplift loads (psf)

Substrate	Fastener	9"	12"	15"	18"	21"	24"
½" Plywood	#10 x 1" Pancake Head	106.6	80.0	64.0	53.3	45.7	40.0
5/8" Plywood	#10 x 1" Pancake Head	154.3	115.7	92.6	77.1	66.1	57.8
7/16" OSB	#10 x 1" Pancake Head	76.1	57.1	45.6	38.0	NR	NR

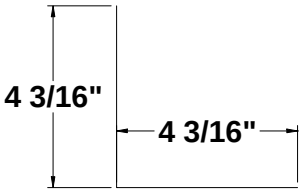
Climaguard™ Typical Flashings



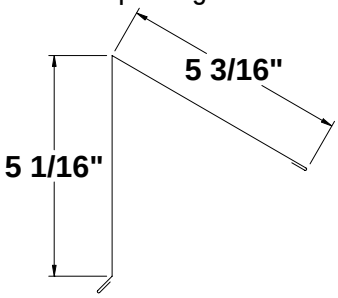
Top Flashing 2' - Skylight/Chimney - WSCT-3 (34") & 4 (58")



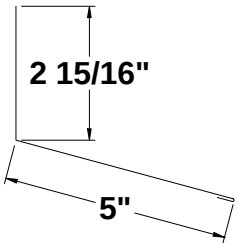
Bottom Flashing 2' - Skylight - WSCB-1 (34") & 2 (58")



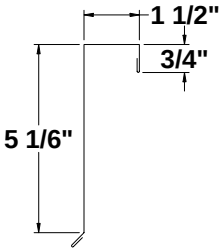
Monoslope Ridge - WRH-4



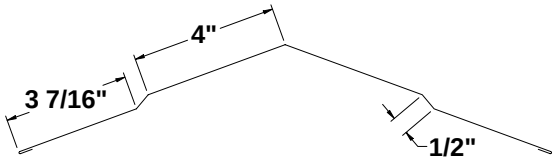
Endwall Trim - WEW-2



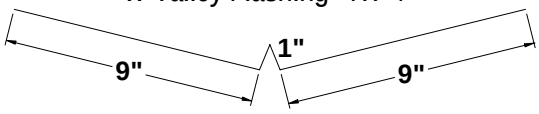
Gable Trim - WGF-4



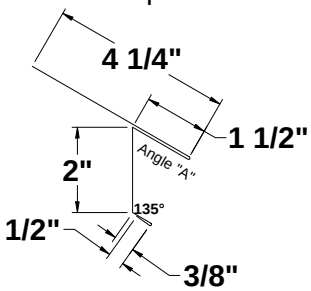
Ridge/Peak - WRH-5



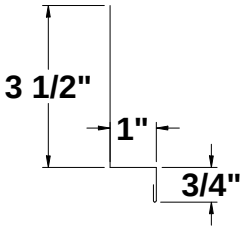
W-Valley Flashing - RV-4



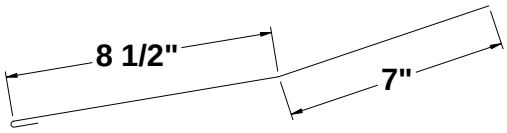
Eave Drip – WEF-1



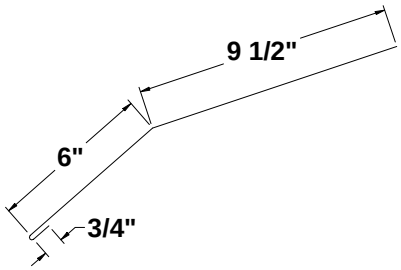
Sidewall—WSW-4



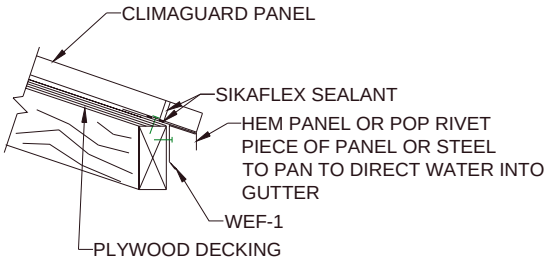
Transition —WTF-1



Gambrel/Slope Transition – Mod. WTF1
Gambrel Flashing



EAVE DETAIL

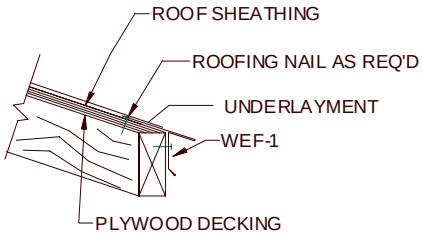


Notes:

1. Roofing underlayment not shown.
2. Attach the eave flashing under the underlayment using roof nail and fasten eave trim to fascia using #10 x 1" Wood Fast or #14 MP every 12" to 18" o.c.
3. Panels should be flush with the WEF-1.

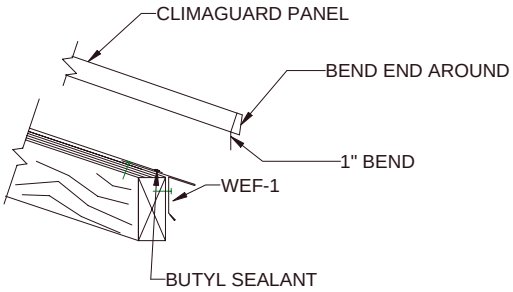
HEMMED EAVE DETAIL

STEP 1



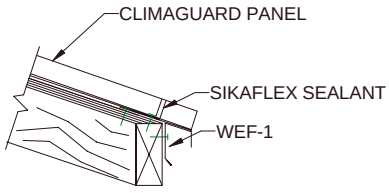
1. Install one-piece WEF-1 Eave trim and screw fasten to fascia 12 to 18" c/c.
2. Tack top edge in place with roofing nails.
3. Make a mark 1" up from the end of the panel and cut along base of each rib with tin snips.
4. Use bending tool to form a hem under the pan.

STEP 2



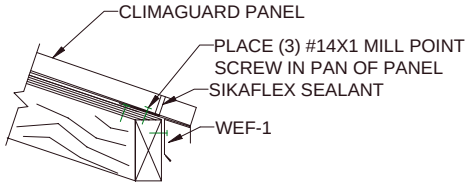
5. Cut first 1" of underlap rib off completely.
6. Remove inboard leg and rib top from overlap rib with tin snips 1" from end of panel. Bend tab around rib end after panel is installed.
7. Place Butyl Sealant over eave trim.
8. Slide panel hem over eave trim. Snap first 2" to 3" of panel together and then slide panel tight (in cold weather) or with gap (in warm weather) to the eave trim.

STEP 3



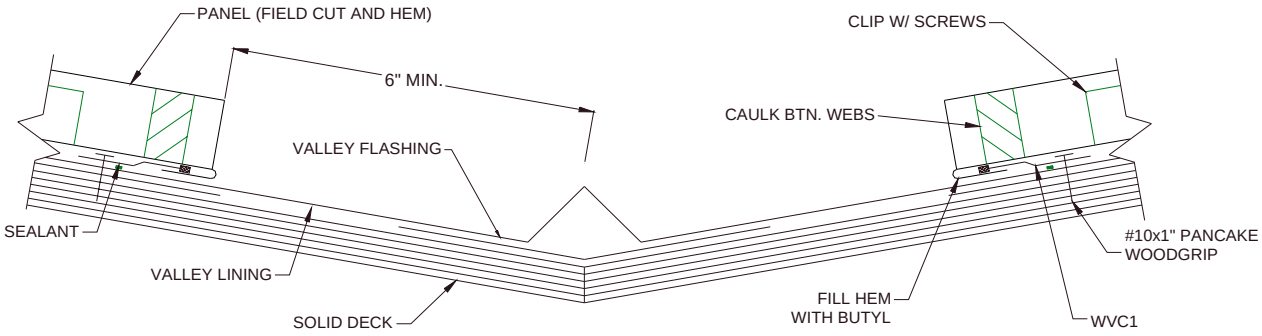
9. Snap panels together along entire length and fasten with screws at required spacing.
10. Caulk with Sikaflex on underside of lap leg.
11. The eave hem can be tightened by crimping with duck-bill vise grips or flanging tool after panel installation is complete.

FIXED EAVE



Note: Due to thermal expansion, fixing the eave is not recommended in applications where panel lengths are 25 ft. or greater.

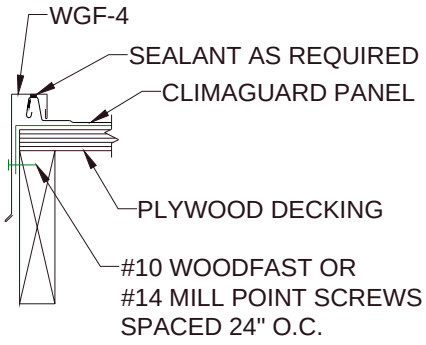
VALLEY DETAIL



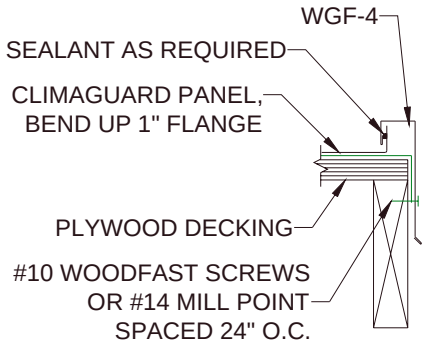
Notes:

1. Ice and water shield or similar membrane is recommended in all valleys. Install this before installing roofing felt.
2. Roofing underlayment not shown.
3. Place a second layer of 36” roofing underlayment in the center line of the valley with 18” of underlayment on each side of the valley. Additional underlayment may be required in cold climates due to ice damming.
4. When valley flashing is overlapped, 6” of lap is recommended with sealant applied under the lap.
5. Refer to above detail.

START GABLE DETAIL



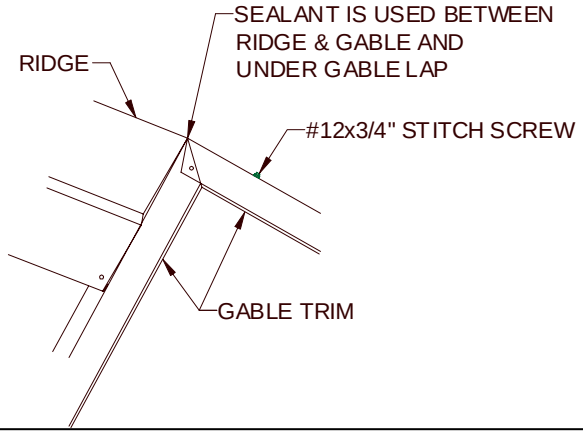
FINISH GABLE DETAIL



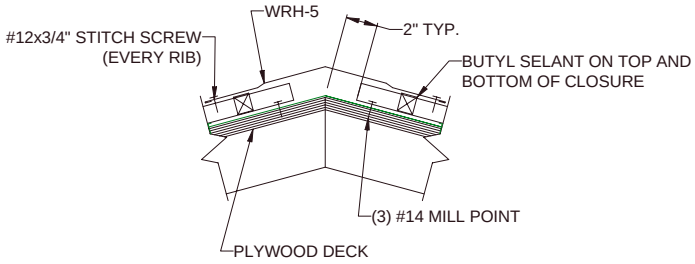
Notes:

1. Roofing underlayment not shown.
2. Install the gable trim by placing it over the seam rib as shown and fasten it to the fascia board at 24” on center.
3. The eave end of the gable trim can be closed off by snipping and folding.
4. For gable detail at ridge, see page 19.
5. When the last roof panel overhangs the gable end cut off excess and finish as shown above.

RIDGE & GABLE DETAILS



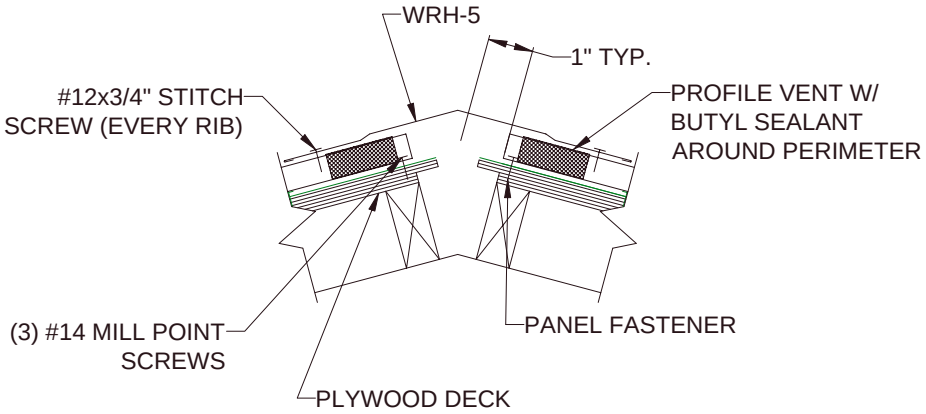
RIDGE DETAIL



Notes:

Refer to installation instructions below.

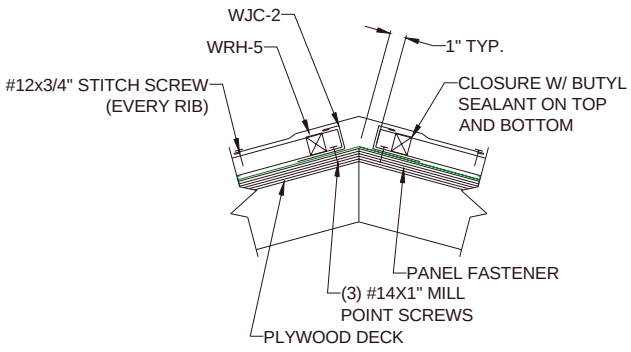
VENTED RIDGE



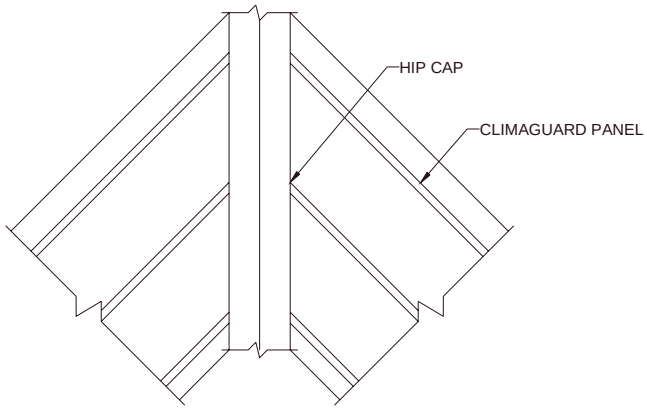
Notes:

1. The gable flashing must be installed prior to installing the ridge.
2. Roofing underlayment not shown.
3. Plywood should be held back or cut back 1” from each side of the ridge.
4. Install ProfileVent on each side of the ridge.
5. Attach the panels.
6. Fasten the ridge cap using #12 x 3/4” stitch screws on each panel rib 1” back from the edge of the ridge cap.

HIP DETAIL



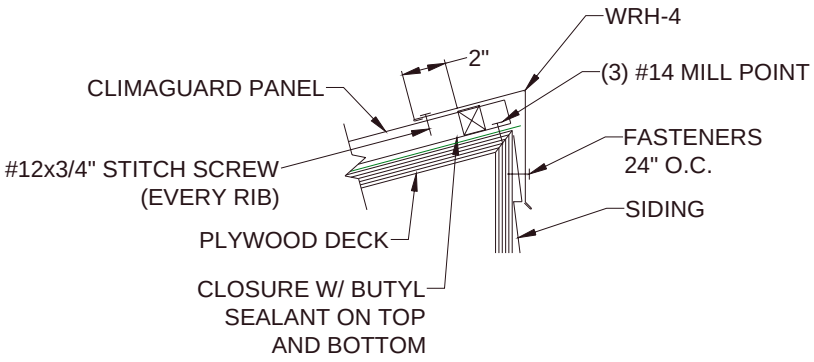
HIP ROOF—PLAN VIEW



Note:

1. Hip flashing attachment is the same as for the ridge (see page 19).
2. Roofing underlayment not shown.
3. Attach the eave flashing under the underlayment using #10 x 1” pancake head woodscrews on 24” centers.

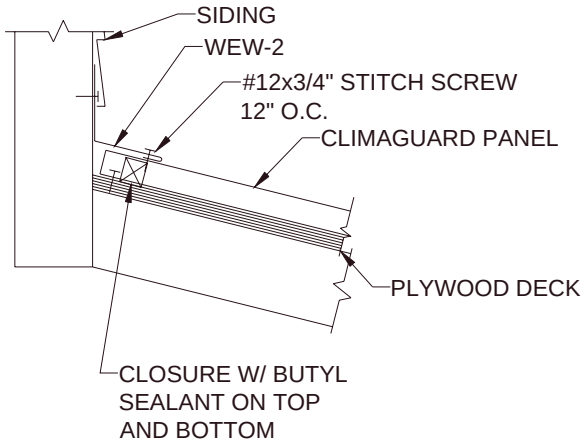
CLEAR STORY



Notes:

1. Roofing underlayment not shown.
2. Apply sealant to the bottom of the foam closure and position it on the roof panel approximately 2” back from the edge of the flashing as shown.
3. Apply sealant to the top of the foam closure.
4. Install flashing as shown.
5. When more than one length of flashing is used, a 6” minimum overlap is recommended. Apply sealant between the laps.

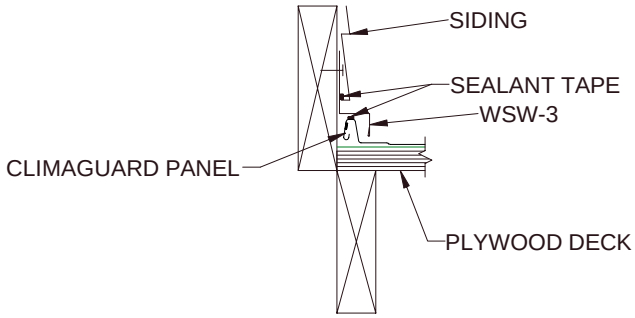
ENDWALL DETAIL



Notes:

1. Roofing underlayment not shown.
2. Install the foam closure as shown using sealant on the top and bottom.
3. Install endwall flashing as shown.
4. When more than one length of endwall trim is needed, a 6" minimum overlap is recommended with sealant between the lap.

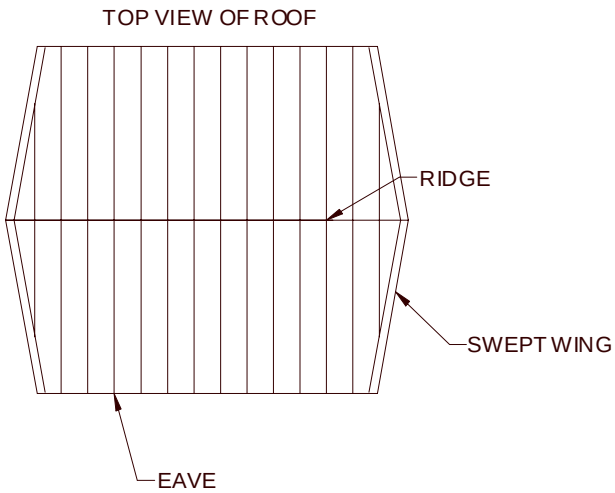
SIDEWALL DETAIL



Notes:

1. Roofing underlayment not shown.
2. The sidewall flashing is placed over the rib seam and extends behind the siding as shown.
3. When the rib seam does not end up next to the wall, cut the panel and bend a 1" return flange up against the wall.

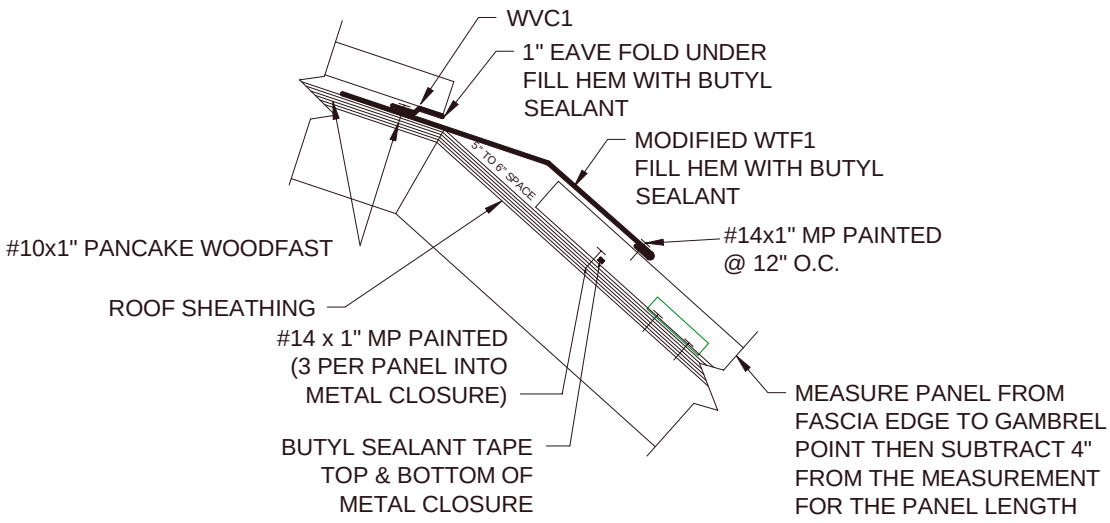
SWEPT WING GABLE



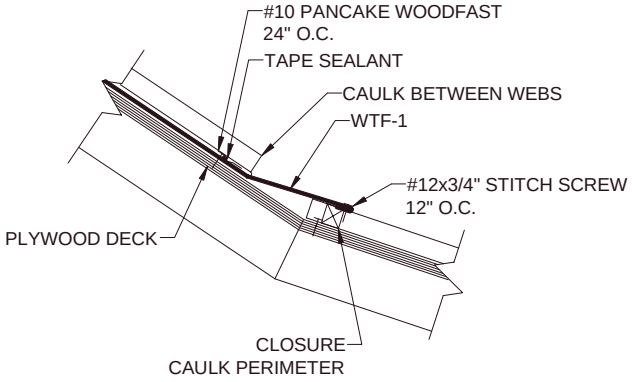
Note: Contact FABRAL for job specific details.

1. In high rain & snow areas, FABRAL recommends that a high grade underlayment, such as ice and water shield, be placed along the entire swept wing gable. Install this prior to installing 30# roofing felt.
2. Parallel to the face of the flashing, place two beads of 3/16" bead mastic 3" apart, 4" and 7" back from the face of the flashing.
3. Panels must be field cut holding 3" minimum back from face of flashing.
4. Fasten the panels through the flashing and into the deck using two fasteners (#10 x 1"WoodFast or #14 x 1" MP) equally spaced at the end of the panels.

GAMBREL DETAIL



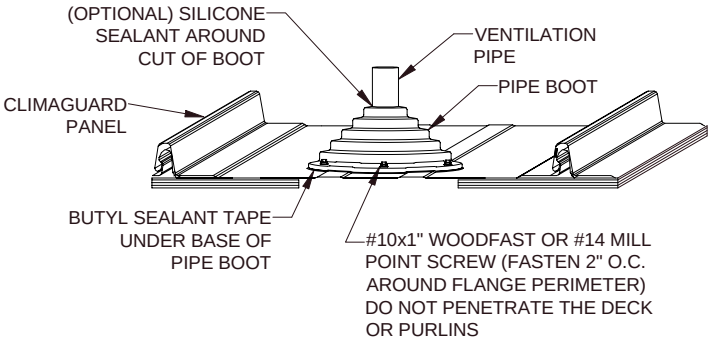
SLOPE TRANSITION (WOOD FRAMING)



Notes:

1. Roofing underlayment not shown.
2. Bottom panels of the pitch change or transition must be installed first.
3. Apply sealant to the bottom of the foam closure and set in place. Apply sealant to the top of the closure.
4. Install Pitch Change trim using stitch screws to each rib seam of the bottom transition panels.
5. Apply sealant as indicated above.

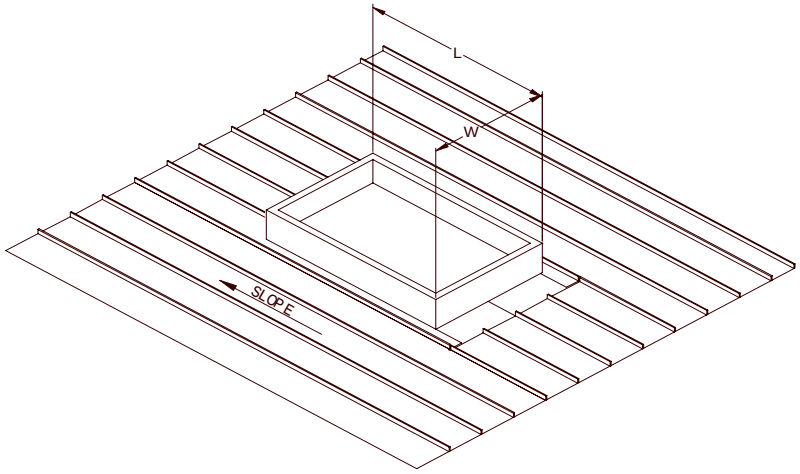
PIPE FLASHING



Notes:

1. Cut the hole in the flashing 20% smaller than the pipe diameter.
2. Slide the flashing down the pipe.
3. Form the flashing to the roof profile.
4. Apply sealant around the perimeter of the underside of the flashing base and fasten to roof using #10 x 1 or #14 x 1 woodscrew fasteners 2” o.c. as shown.

PROCEDURE FOR THE INSTALLATION OF SKYLIGHT FLASHING

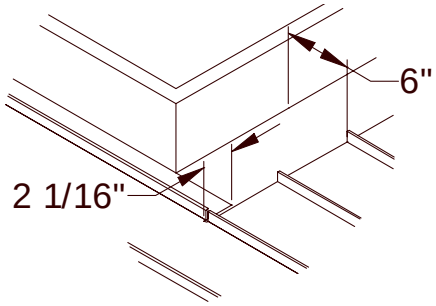


Notes:

1. Do not fasten down the panels a minimum of 24" uphill from the skylight.

2. Whenever possible, position the skylight curb so the ribs of the roof panels do not interfere with the flashing.

3. Cut the Climaguard panels as close to the left, right and downhill sides of the curb as possible. Cut the uphill side 6" up from the curb as indicated above.



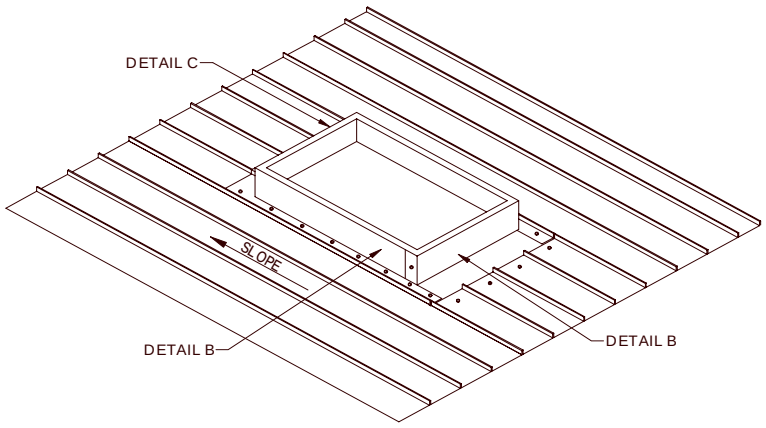
Notes:

1. The skylight flashing will be 4" wider than the width of the curb (2" on each side).

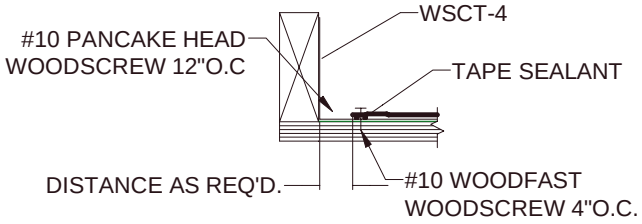
2. Cut a 1/8" slot in the two uphill corners of the Climaguard panels, slightly wider than 2" so the uphill flashing can slide through the two slots.

Note: Contact Fabral regarding skylight details when skylight is downslope more than 10 ft. from ridge. Applications where this is present may cause panel distortion due to thermal movement.

SKYLIGHT FLASHING PREPARATION (cont.)



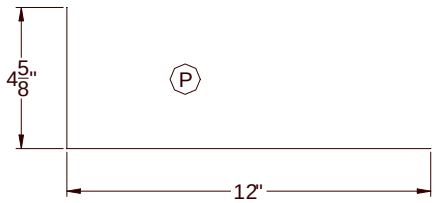
SKYLIGHT FLASHING (SIDE)



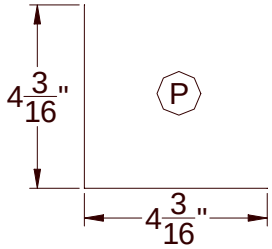
Notes:

1. In reference to details A, B, and C, refer to page 25.

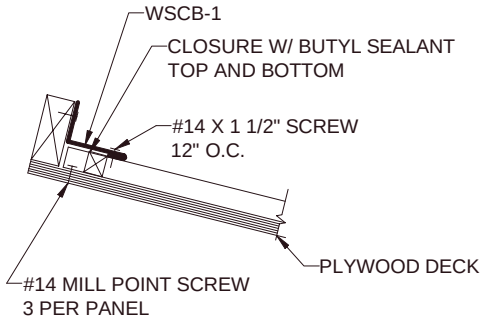
SKYLIGHT TOP FLASH



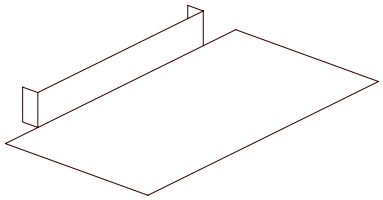
SKYLIGHT BOTTOM FLASH

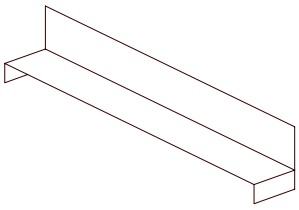


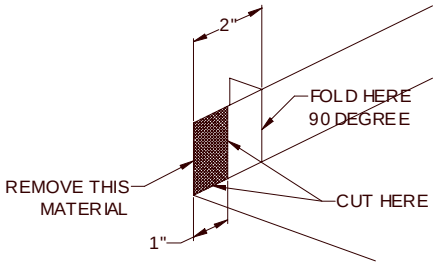
SKYLIGHT DOWNHILL



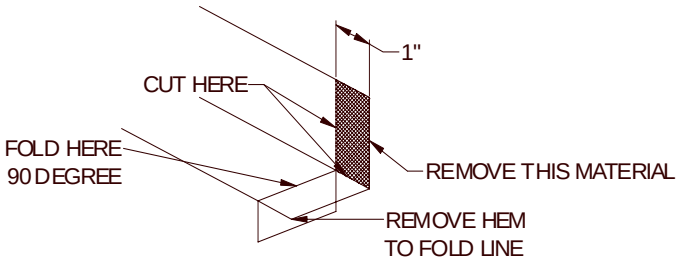
SKYLIGHT FLASHING PREPARATION
Detail A







Detail C

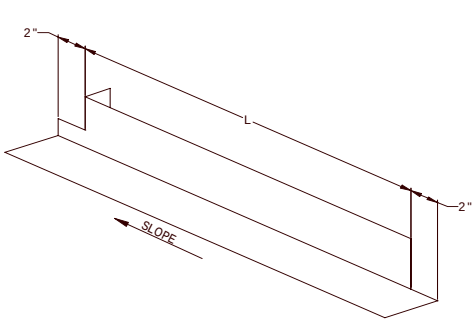


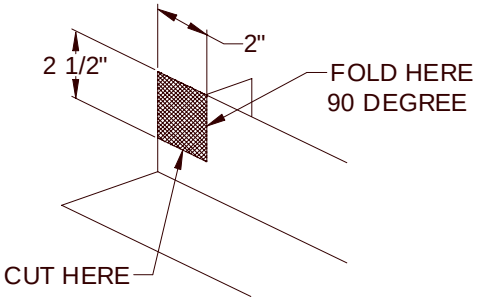
Notes:

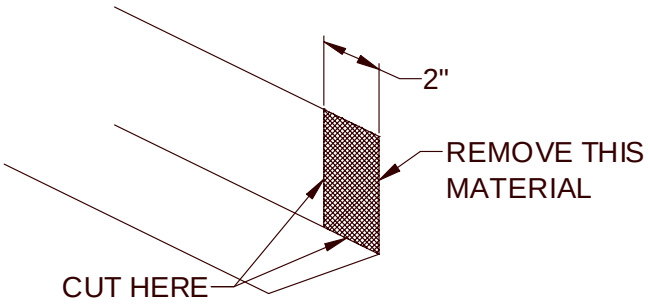
1. Trim both ends of the uphill and downhill sides of the skylight flashing as indicated.
2. Slide the uphill flashing into the slots of the Climaguard roofing and apply a liberal amount of sealant.
3. Assemble the skylight as indicated below and on page 24.
4. Trim and assemble chimney flashing similarly.

SKYLIGHT FLASHING PREPARATION

Detail B



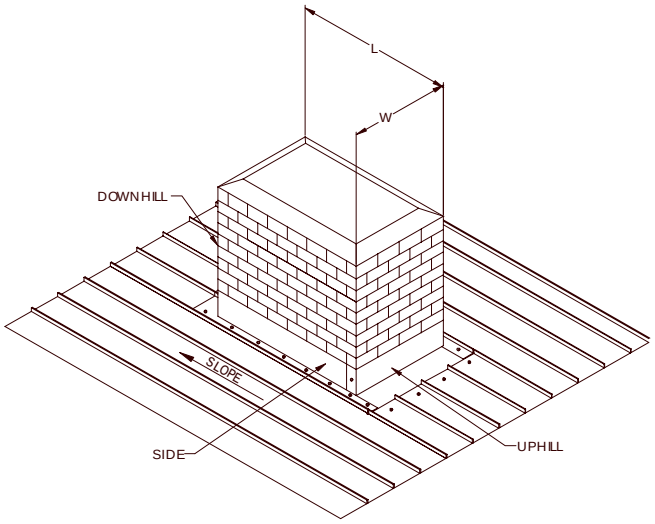




Notes:

1. Trim and bend the right side skylight flashing as indicated.
2. Trim the left side in a similar fashion. (Keep in mind the up from the downhill ends.)

CHIMNEY FLASHING

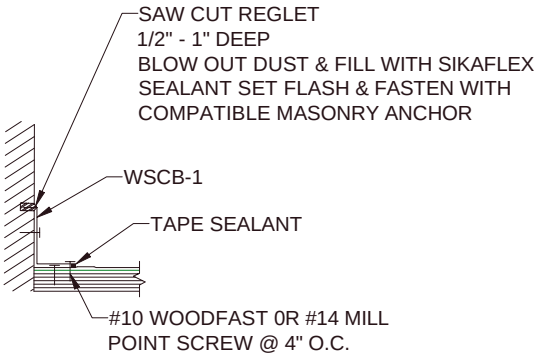


Notes:

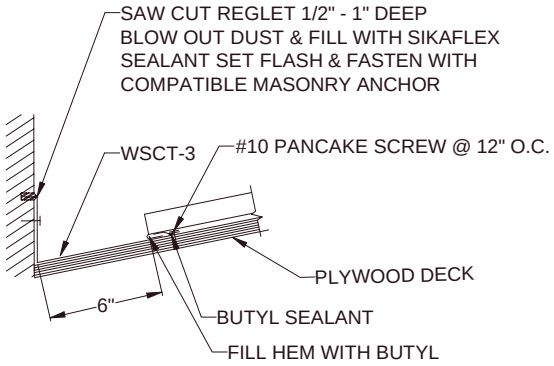
1. Procedures for the installation of Chimney Flashings are similar to the Skylight's (refer to pages 23-25).
2. The reglet shown may be deleted if the chimney is clad with siding. Lap the siding over the flashing and caulk.
3. Be sure to specify the slope and the orientation when ordering this assembly.

Note: Contact Fabral regarding chimney details when chimney is located downslope more than 10 ft. from ridge. Applications where this is present may cause panel distortion due to thermal movement.

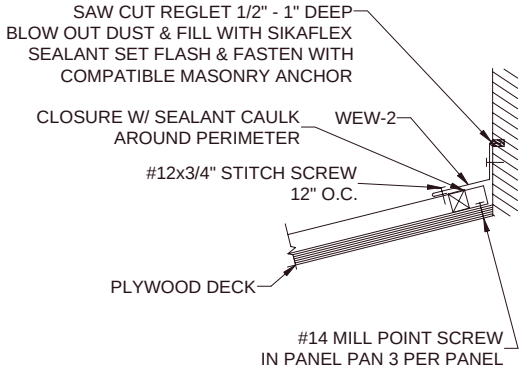
CHIMNEY FLASHING (SIDE)



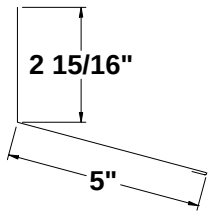
CHIMNEY FLASHING (UPHILL SIDE)



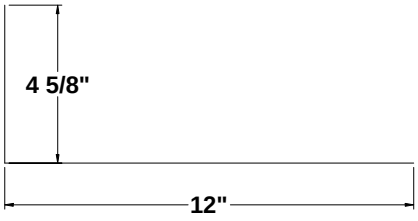
CHIMNEY FLASHING (DOWNHILL SIDE)



CHIMNEY (DOWNHILL)



CHIMNEY (UPHILL)



CLIMAGUARD TRIM PARTS

See page 16 for Illustration of Trim Conditions

Key Terms

CHIMNEY OR SKYLIGHT
See pages 23-26.

EAVE TRIM
This piece is used at the eave or gutter edge of the building, and must be installed before any panels.

ENDWALL
This piece is used when the upper end of panel butts into a vertical wall.

HIP CAP
This piece covers projecting angles formed at the intersection of the two sloping roof planes.

FASTENERS
3/4" Stitch Screw
This fastener is used to attach two pieces of metal to each other.

#14 x 1" Mill Point
This fastener is used to fasten into panel near ridge, and can also be used to secure flashings and pipe boots.

#10 x 1" Pancake WoodFast
This fastener is used to attach roofing panels to the roof deck. (Used to fasten into Climaguard fastener strip.)

#10 x 1" WoodFast
This fastener is used to fasten flashing to fascia boards at eave or gable.

GABLE TRIM
This piece is installed on the house between the ridge and the eave, holding down the first panel edge and the last panel edge.

GAMBREL CONDITION
This trim is used to transition from a low slope on the upper roof to a steep slope on the lower roof.

MONOSLOPE RIDGE
This piece is used at the top of a single sloped roof.

RIDGE CAP
This piece is used at the peak of the roof. The ridge can be ventilated by leaving the foam closure out.

SIDEWALL
This piece is used when the roofing panel is installed parallel to a vertical wall.

SLOPE TRANSITION
This piece is used where two roofs of different pitch meet; the top section being steeper than the lower section.

W-VALLEY
Used to flash the valley formed by intersecting roof planes.

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