



**TUFF RIB 29 AND 26 GAUGE
INSTALLATION GUIDE**

This manual contains suggestions and guidelines on how to install Tuff-Rib style panels with 3/4" rib and an exposed fastener system. The installation details shown are proven methods of construction, but are not intended to cover all instances, building requirements, designs, or codes. It is the responsibility of the designer/installer to ensure that the details meet building requirements. The designer/installer must be aware of, and allow for, expansion/contraction of roof panels. The details may require changes or revisions due to each project's conditions.

Panels must be stored in a dry, well-ventilated area. To keep condensation to a minimum, make sure panels are elevated at one end for runoff of any condensation that may occur. Condensation or other moisture can form between the sheets during storage and can cause water stains or white rust underneath the paint, causing the paint to flake immediately or later. Do not store panels in direct sunlight prior to installation or in direct contact with the ground. Any outdoor storage is not recommended and is at the customer's own risk.

Do not walk on panel ribs, only in the flat areas of the panels. Do not handle panels on extremely windy days as panels can become lifting objects and lift individuals off the roof or become airborne. Metal panels can be slippery when wet or dusty. Do not work when these conditions persist. Soft soled shoes will help minimize slipping and reduce damage to panel finish. Be aware of surroundings.

Warrantied Products- Painted standing seam panels come with a 40-year manufacturer's warranty, and Galvalume comes with a 25-year warranty. All trims are manufactured from the best grade stock of the color ordered.

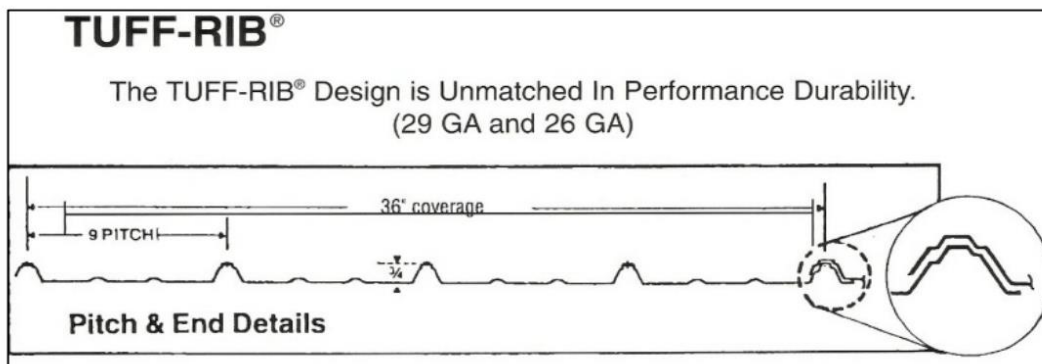
Tri State Metal Roofing Supply is not at fault for any improper installation, voided warranty due to incorrectly installing the panels and/or trim. Damage caused to the building or its people due to improper installation is not the fault of Tri State Metal Roofing Supply and you as the customer and/or installer understand these conditions by using this guide. While we have made every attempt at accuracy in this manual, we are not responsible for typographic, printing, or technical errors.

INTRODUCTION

The Tuff-Rib panel is a metal industry leader in strength and durability. This popular and versatile product features classic looks and is used in a variety of applications including, but not limited to, residential, commercial and post-frame buildings. Tuff-Rib was designed with strong ribs to increase strength and ease handling and installation. In addition, the under-lap provides extra leak resistance in the presence of extreme wind and rain.

Tuff-Rib is available in all 29-Gauge colors and most 26-Gauge colors. It is also available in unpainted Galvalume. Our paint carries a 40-year manufacturer backed warranty.

Tuff-Rib provides 36" of coverage, a rib that is $\frac{3}{4}$ " high, and is 9" on center.



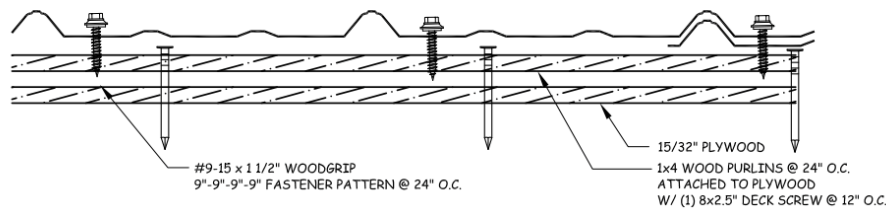
For safety purposes, always wear heavy gloves when working to avoid cuts from sharp edges. When cutting/drilling panels, always wear safety glasses and sweep off any metal shavings immediately to prevent eye injury from flying metal fragments. Walking or standing on a metal roof which does not have a plywood or other deck beneath it is not recommended. If you must walk on it, always walk on the purlins and never between. Green or damp lumber is not recommended. Moisture released from damp lumber can damage the panels.

INSTALLATION SUMMARY

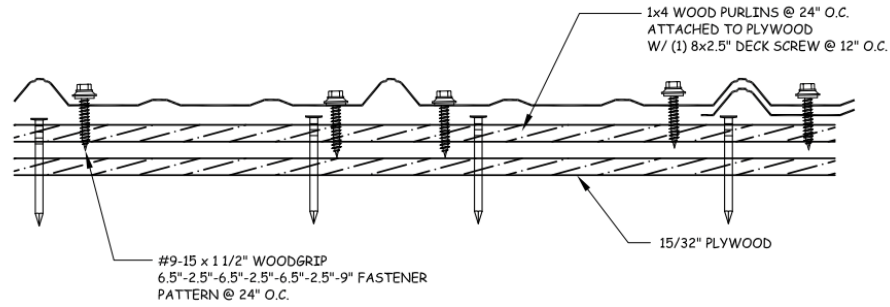
Start with applying any and all underlayment necessary for the job such as felt and ice and water. Underlayment is always recommended as a moisture barrier. This includes wood and existing shingles if the shingles are not removed prior to metal installation.

Ensure that the structure is square and true before beginning panel installation. If the structure is not square, the panels will not properly seal at the sidelaps. Apply all trim that needs to be laid under the panel (eave, valley, etc.) prior to application of the panels. Start the first panel square to the eave. Always check alignment prior to fastening to be sure they are square. Once all of the panels are installed, you can install the rest of the trim and flashing, starting at the eave edges and working your way up. A 2" minimum overlap is recommended on trim.

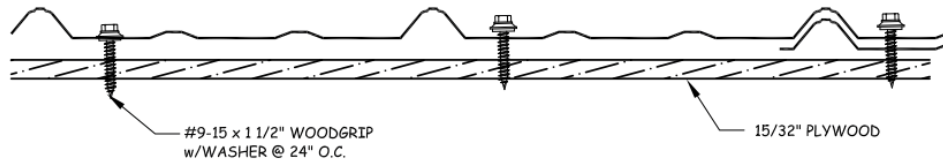
If you wish to predrill fastener holes, use a cover sheet to prevent hot shavings from sticking to the panels. For best results, start with a 1 1/2" washer wood screw in the flat of the panel (shown below). Fasteners should be applied at every purlin, in the valleys, for the best hold. It is recommended to apply a fastener every two feet going up the panels toward the ridge from the eave or vice versa. Drive the fastener so that the washer is compressed securely against the metal, but not so the washer is 'exploding' or 'spilling out the sides' of the screw to allow for expansion. Dimples caused by too tight of a screw can collect water and cause leakage. Do not leave any loose fasteners that have missed the purlins. If you miss fasten something, remove the original screw and go in with a large screw or apply caulking to fill the hole.



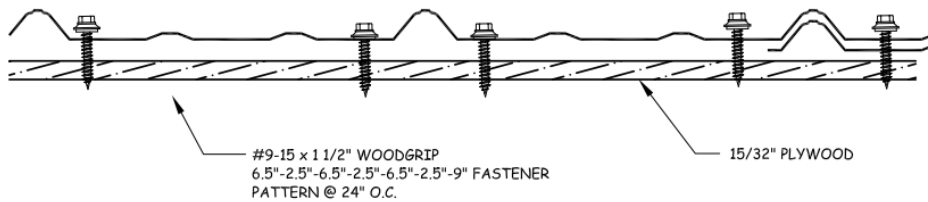
**TYPE 1 FASTENER PATTERN
W/PURLINS**



TYPE 2 FASTENER PATTERN W/PURLINS



TYPE 1 FASTENER PATTERN



TYPE 2 FASTENER PATTERN

When choosing a fastener pattern, pick the one that is best for your building code and weather requirements. It is recommended that a stitch screw (3/4" wood-grip) is placed in the overlap in line with the rest of the screws.

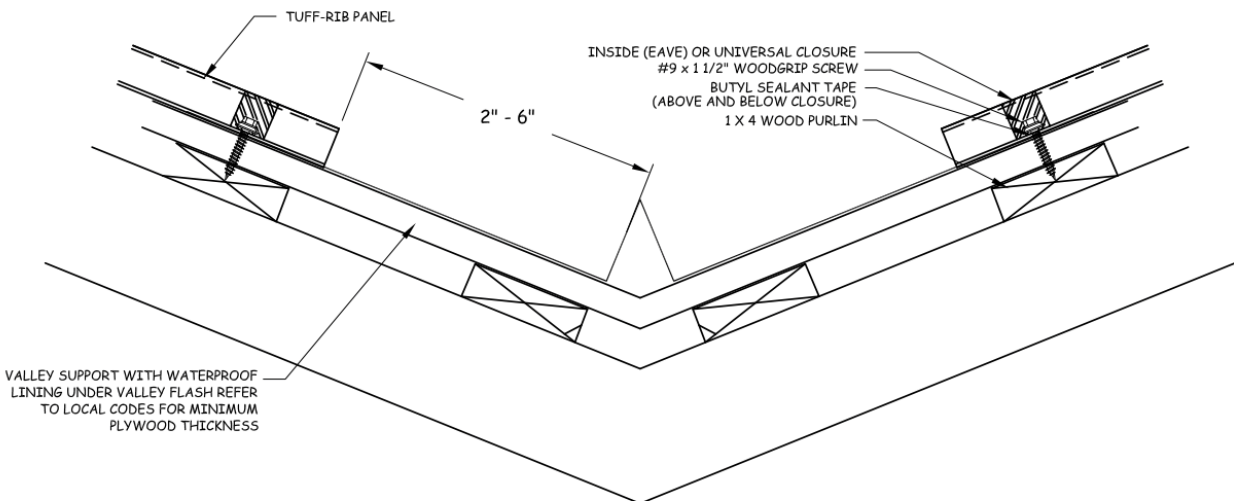
EAVE

Place the eave trim on the lower edge of the roof with the nailing flange towards the ridge and the kick pointing away from the eave (shown below). Fasten down every 12" and apply underlayment over the nail flange. Prior to installing the panels, apply inside closures to the eave for protection from bugs, weather, and dirt.



VALLEY

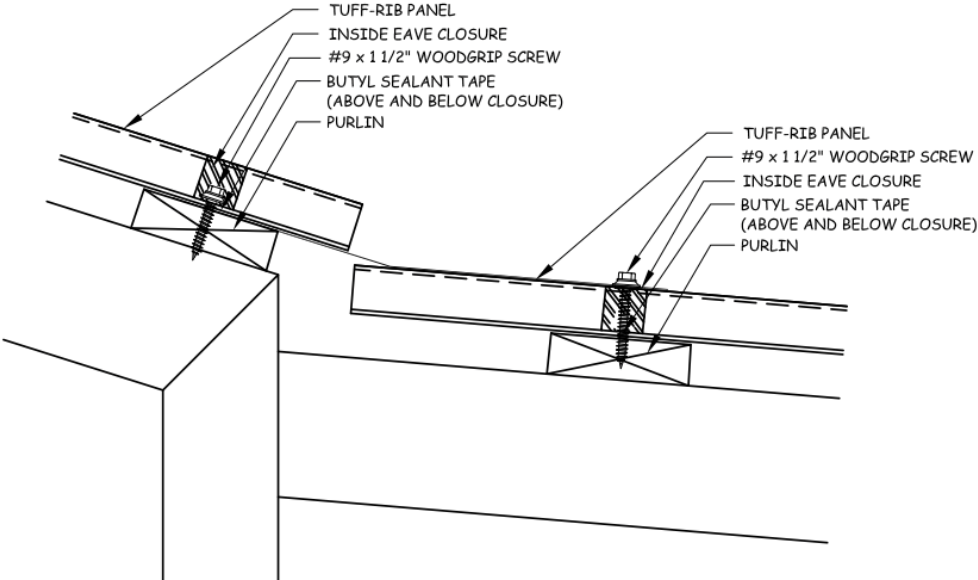
Install felt underlayment and ice and water on the bottom of the valley for maximum weather proofing. Lay the valley down and fasten 2" from the outside of the edge every 12". Apply a second layer of underlayment over the outer edge of the valley, approximately 3" down on both sides.



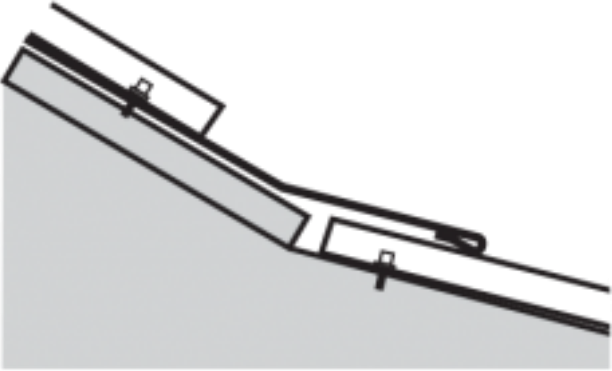
TRANSITIONS

Install the lower roof panels as well as outside closures to the lower roof panels. Install the transition over the lower roof panels and make sure the closures are covered by the flashing. Fasten the flashing on top of all major ribs on the lower roof panels. After the flashing is fastened to the lower roof panels, fasten the upper leg on top of the underlayment every 12".

Upper slope

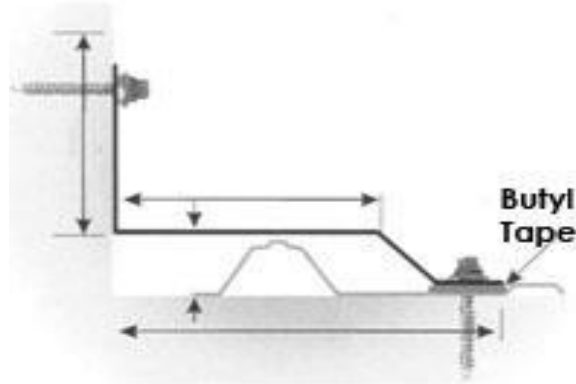


Lower slope



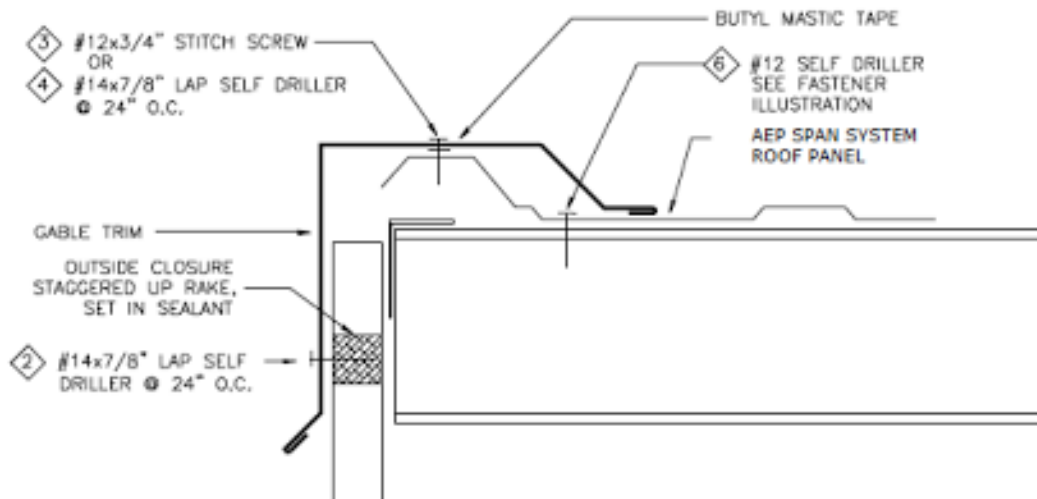
SIDEWALL

Install the roof panels prior to installing the sidewall. Once roof panels are installed, apply the sidewall to the top of the panels. Add Butyl Tape along the screw line for maximum hold. Fasten the sidewall using color matching screws into the nail flange, through the Butyl Tape into the wood every 12". Fasten the nail flange to the wall every 12". Butyl Tape can be used along the upper nail strip if the building code calls for it or the installer feels it will be best.



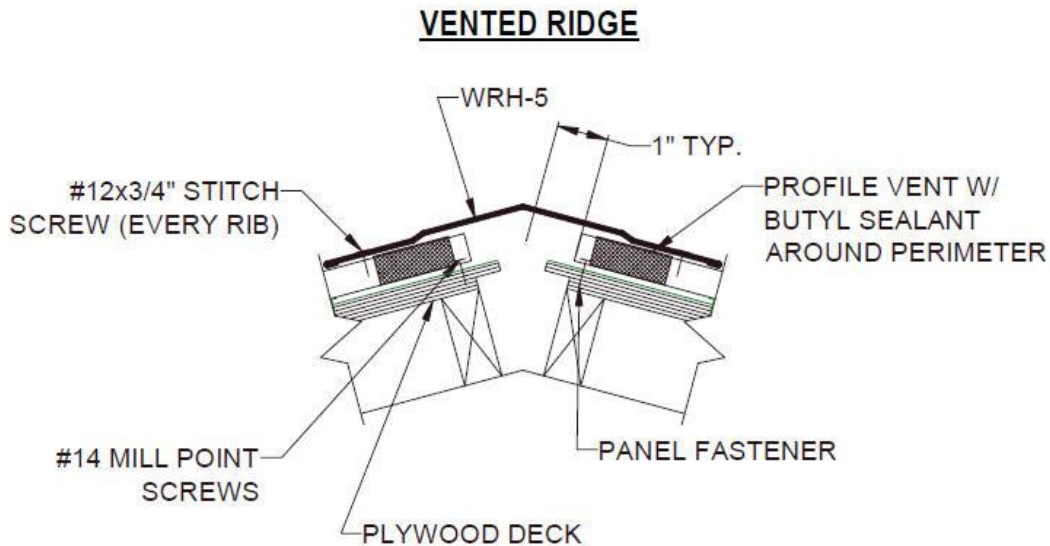
GABLE RAKE

Install all roof panels prior to installation of the gable. Once the panels are installed, place the gable on top of the edge of the roof sheet and fasten every 12". Butyl Tape is recommended between the screw flange and roof panel for maximum hold and weather proofing. Fasten into the flange over the rib as well as along the face of the piece toward the kick and hem.



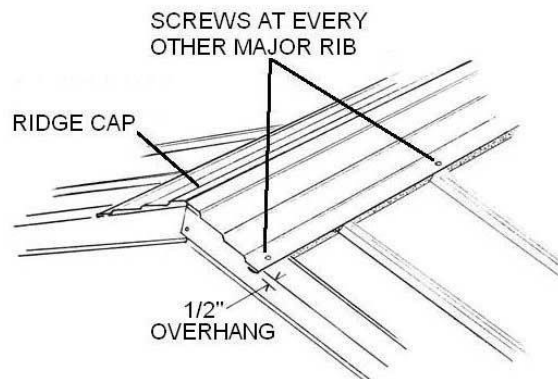
RIDGE CAP

Install all roof panels prior to installing the ridge cap. When installing panels, leave 2" on both sides for a vented ridge. After the panels have been installed, place the outside foam closure vent on the roof, lining up with the ribs. You can do one or two rows. Use caulking and/or Butyl Tape for an extra hold. Place the ridge cap on the ridge, covering the closures. Fasten the ridge with $\frac{3}{4}$ " to 2" screws into **every rib**. This is about every 9".



HIP RIDGE/'SINGLE BREAK RIDGE CAP'

A hip is like a ridge cap installation. Make sure all panels are installed prior to installing the hip ridge. However, it is not necessary to leave 2" of space on either side of the hip ridge. Once the panels are installed, apply the **hip foam closures** (expandable strip closure) on both sides. Then place the ridge on the hip and fasten on every major rib on both sides of the roof or every 9".

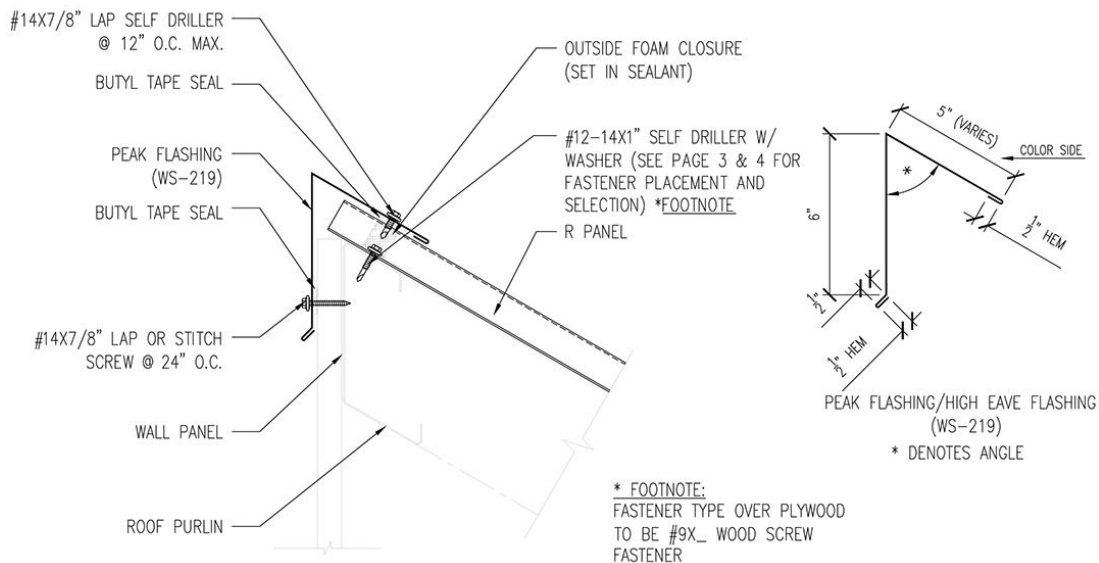


PEAK FLASHING

Similar to a gable, a peak flashing is for a single sloped roof. This flashing is meant to cover the peak of the roof and flush against the back side of the building like a drip edge to give a finished and clean look.

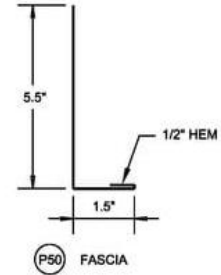
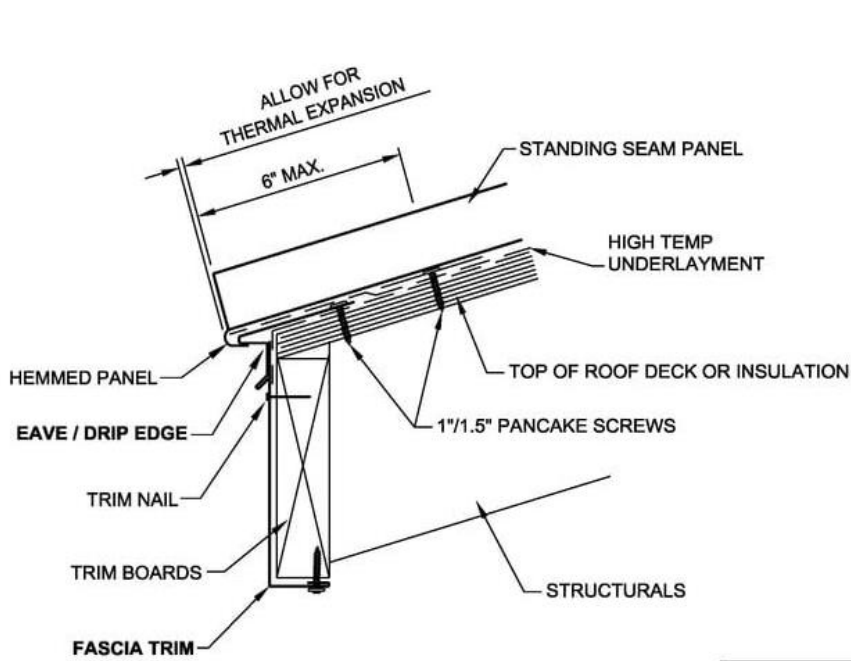
Install all roof panels and trim prior to installing the peak flashing. Install **outside** closures along the upper portion of the roof. After the closures are installed, lay butyl tape along the back side of the peak. Apply caulking sealant along the closures if desired. Place the peak flashing over the panels and closures. Once placed where desired, fasten the top cap on every major rib of the roof panel or 9" to 12" apart depending on the style of panel you have installed.

Once the top portion of the flashing is fastened, apply fasteners every 9" along the butyl tape seal for maximum weather sealing and wind protection.

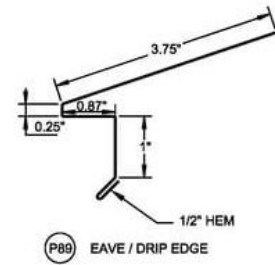


FASCIA

Fascia is an "L" style trim piece that covers the wood fascia. Apply the fascia over the soffit and fascia material fastening every 12".

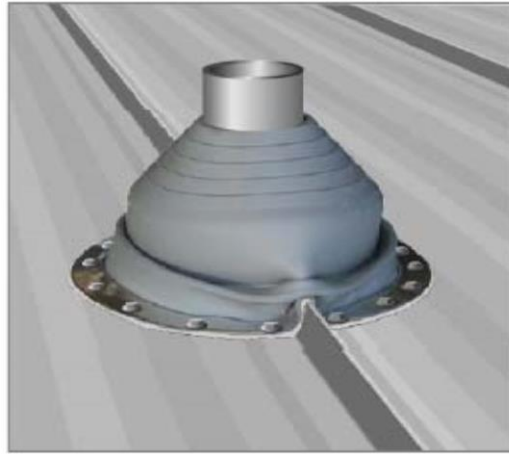


*P49, P51, P52 are other Fascia options



*SPECIFY PITCH

PIPE BOOTS AND ACCESSORIES



Pipe boots provide a water-tight seal around roof vents and come in a variety of sizes. They seal with caulk under the base and around the pipe, conforming to the shape of the panel ribs.

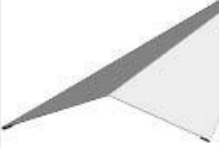
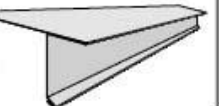
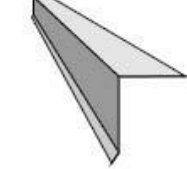
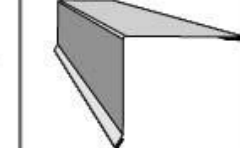
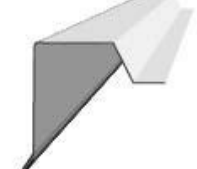

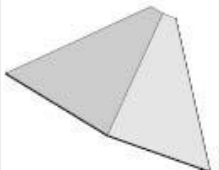


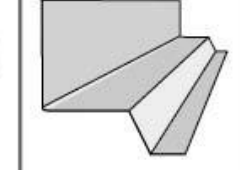
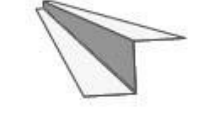





Other accessories include electrical boots, touch-up paint, butyl tape, ice and water, felt underlayment, nails, and more. Be sure to ask about needed accessories when ordering.

Guide to Misc. Accessories

<i>item</i>	<i>application</i>
pipe boot	Fits over vent and heat pipes. Available also in <i>heat-resistant</i> boots.
electrical boot	Fits around pipes with inaccessible tops (such as weatherheads).
touch-up paint	Hides scratches and mars encountered in installation.
butyl tape	General purpose low-cost sealant, used on panel laps and under trim.
TurboShear HD®	The best tool for cutting metal roofing panels. Great for angle cuts.
low profile insulation	Greatly reduces radiant heat when installed under panels.
Pancake screws	Used in all applications attaching metal to wood. 1", 1½" sizes.
Woodgrip® screws	Used in applications attaching metal to wood. 1", 1½" sizes.

SUMMARY OF MOST COMMON TRIMS AND FLASHINGS

<i>item</i>	<i>Summary of Trims and Flashings special order information</i>
Ridge caps	State roof pitch when ordering. Attached with Z-flashing
Extended Drip Edge	Specify roof pitch when ordering.
Gable flashing	Use butyl sealant between step rake and panel. Butyl tape is optional, you can use caulk also
Valleys	Specify pitch when ordering.
Sidewall	Use butyl sealant between sidewall flashings and panel. Butyl tape is optional, you can use caulk also
Endwall	Specify pitch when ordering. Attaches with Z-flashing
Transition flashing	Specify pitches of both roof sections.

 Ridge cap (pg. 11)	 Extended eave drip (pg. 8)	 Eave drip (pg. 8)	 Gable rake (pg. 9)	 Step rake	 valley (pg. 8)
 Transition flashing (pg. 10)	 Endwall (pg. 10)	 Sidewall (pg. 9)	 Step Sidewall	 Z-flashing	
 Pancake screws	 Woodgrip® Screws	 Electrical Boots	 Pipe Boots (pg. 11)	 Butyl Tape	