

Installation Instructions - 36" Panels

Rider: The details and written instructions described in this manual are suggested installation methods to ensure a quality application of our products, and should be considered as a guideline only. METAL EXPERTS recognizes that installation techniques can vary based upon builder and geographical preferences, and that there are other acceptable ways to install our products.

(ROOF PITCH)

To ensure the required water drainage of properly installed metal roofing panels a minimum pitch of 2/12 (2/12 means there is 2" of rise for every 12" running horizontally) is required. Metal roofing stitch screws and sealant must be applied to the laps to prevent the siphoning of water over the ribs on a low slope application. If the pitch is 4/12 or greater, stitch screws and sealant are not required and underlay is optional. A good underlayment needs to be installed prior to the panels on roof pitches less than 4/12.

(ORDERING ROOF PANELS AND SCREWS)

When a vented ridge system is being used panels should be 2" short of the ridge. Where transition/pitch break flashing is required, panel lengths need to be adjusted to accommodate flashing. All sheeting lengths should be verified based on measurements prior to ordering. (See diagram on Section 6 - Pg. 7)

Metal panels should be installed with a #14 woodgrip screw with a neoprene washer (here after referred to as metal screws) in the flat of the metal of metal beside the major rib. (See Section 6 page 4 for screw patterns.)

(ORDERING AND APPLYING TRIM)

The ridge cap, which is used at the peak of a roof where opposing roof slopes join is the most common flashing. Where venting at the Ridge is desired, ensure that vented closures and a larger Ridge Cap Trim is ordered to accommodate the wider closure strip. Other typical flashings include eave flashing, gable flashing, sidewall and endwall flashing, valleys and transitions. The roof slope should be mentioned when ordering ridge caps, endwalls and eave flashing when the slope is 5/12 or greater, all standard trims are designed for a 4/12 pitch. When ordering a transition, where a steeper slope meets a lesser slope, both slopes are required.

The use of gable rake trim protects the gable end and adds to the appearance of the structure. It is to be fastened approximately every 12" to the face of the building or fascia where applicable with metal screws. On a roofline where the edge of a panel ties into a wall, a sidewall or endwall flashing it is required to slip up under the wall cladding and over the roof sheeting. In both cases, butyl sealant tape and/or caulking are required to ensure a water-tight seal between the flashing and cladding. (See diagram on Section 6 - Pgs. 6 & 7)

At the Ridge, outside or vented closures should be installed between the Ridge Cap and the roof panel to prevent the penetration of driving rain or foreign debris. The Ridge is fastened with metal screws through the rib of the metal and can be stitched to the rib or fastened down through into the strapping or solid substrate. Be sure to select the correct length to accommodate your preference of installation as both methods are acceptable.

Installation Instructions - 36" Panels *continued*

(ROOF APPLICATION)

Notice: Prior to beginning your installation use a check list to make sure you have everything you will need to install your metal roof. (See Sect. 1 - Pg. 12)

If installing over existing shingles the roof should be strapped with minimum 1" x 4" strapping at 24" centres

- Panel Installation should begin at the gable end of the roof opposite the prevailing rain bearing wind (this will help ensure that wind driven rain will not penetrate the lap).
- The minimum roof slope recommended is 4" in 12" of rise (4/12 pitch). You can apply metal roofing to as low a pitch between 2" in 12" of rise and less than 4" in 12" of rise. This is called a low slope application and requires extra steps (see above under roof pitch).
- On an end lap ensure the panel above overlaps the lower panel. Use 3-6" of overlap at the end laps. For low slope you should overlap by at least 9". Two rows of Butyl tape should be applied across the panels between the panels at end laps. It is also advisable to apply butyl tape where panels and trims meet.
- At the Gable ends extend the sheet 1" beyond the gable fascia unless you are using a Gable Trim in which case the sheet should be flush.
- An overhang of 1" at the eave is recommended.
- Measure one panel width in from the gable end and run a chalk line from the eave to the ridge.
- For the remaining panels to line up square across the roof it is critically important this first panel is laid square to the eave and ridge.
- Closures should be used along the entire eave and the ridge as well as a closure at the ends of the ridge cap.
- Screws should be placed every two feet down the length of the panel and on the left hand side of the major rib if you are working from right to left and on the right hand side if you are working left to right. Screws should be placed on both sides of the major rib along the eaves. At the ridge do not fasten until you are installing the ridge cap at which time you will drive your fastener through the ridge cap, closure and major ribs of the panel. (Refer to screw application diagram at Sect. 6 - Pg. 4)

(SIDING APPLICATION)

The standard fastening and overlap patterns should be used when installing siding to ensure optimum performance. Hemmed corner flashings should be used for strong neat corners. Other flashings you will use when installing side panels are drip cap (over windows), "J" Trim (around windows and doors) and door jamb flashing. You should not run siding panels all the way to the ground and the bottom edge should be terminated on a base flashing. When the wall consists of more than one panel in each vertical row install panels from the bottom up so that water is directed away from, and not into, the lap joints. Siding panels installed horizontally should have butyl tape or caulking applied at the vertical laps. This will ensure weather-tite joints.

Installation Instructions - 36" Panels *continued*

(TRIMMING & CUTTING STEEL PANELS)

For cutting panels the best device(s) are hand shears, nibblers or circular saw with a proper metal cutting blade (a fine toothed hardwood blade or a standard combination blade reversed in the saw works as well). You have to be particularly careful when using nibblers or a circular saw as they both have a tendency to leave hot metal particles that can burn the paint surface or leave rust marks on panels and trims. Filings can also be left by the application of screws. All of which could impact the terms of the product warranty. Care should be taken to remove all particles after installation.

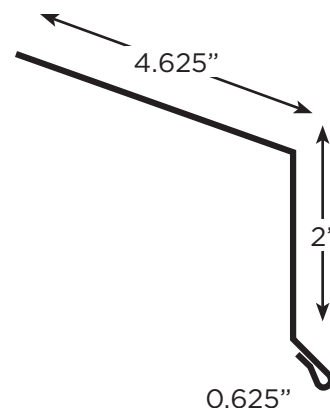
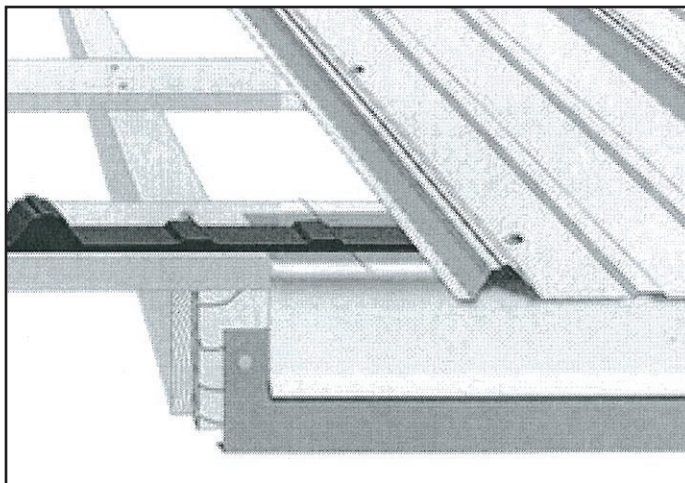
(KEEP MATERIAL DRY!)

METAL EXPERTS panel and trim paint finishes are formulated to withstand severe wet weather and rain conditions. These panels and trims are however not designed to, for a long period of time, be in continuous contact with water. Panels stored outside should be elevated 8" on one end to allow moisture run off. **Panels and trims left in wet storage WILL result in damage.** Be sure to store material that is not going to be installed immediately in a dry location. Wet material should be re-stacked and air-dried if installation is not immediate.

Installation Instructions - 36" Panels *continued*

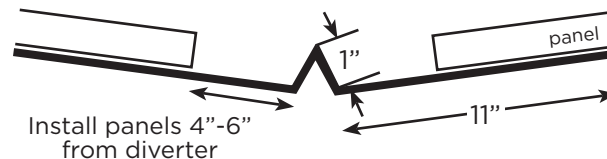
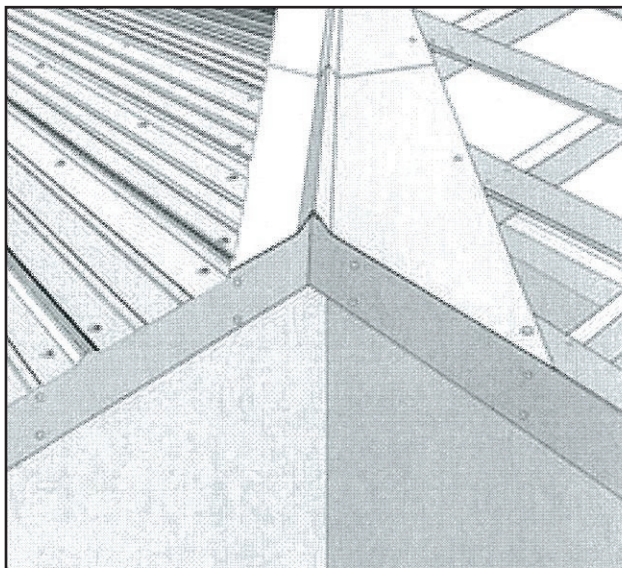
{ EAVE FLASHING }

Eave Flashing gives a finished look along the drip eave of the house, as well as providing protection for the materials they cover. The eave flashing should completely cover the top edge of the fascia. Inside closures, which seal off the open ribs of the panels, are optional.



{ PRE-FORMED VALLEY }

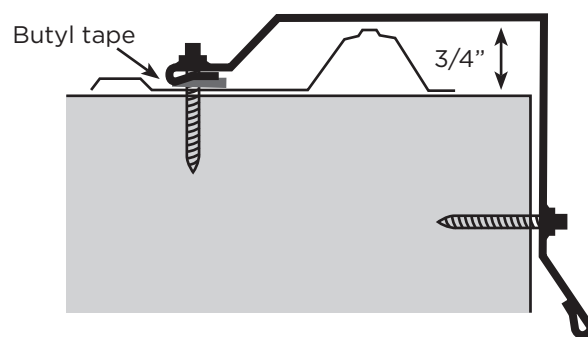
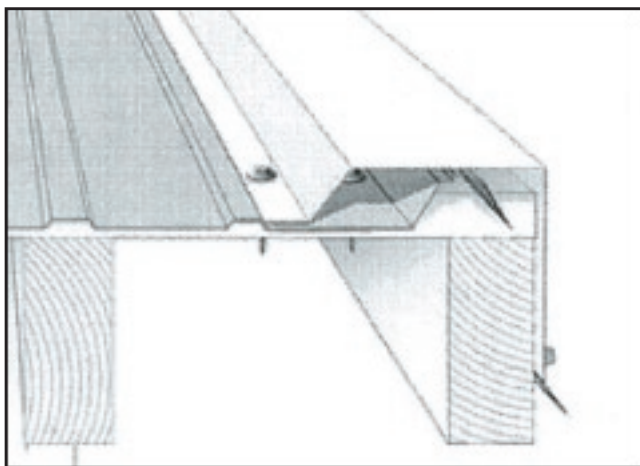
Pre-formed valleys use a diverter to prevent water from rushing under panels on the opposite side while channeling water off the roof. Expanding foam closures are often used to assure a good seal.



Installation Instructions - 36" Panels *continued*

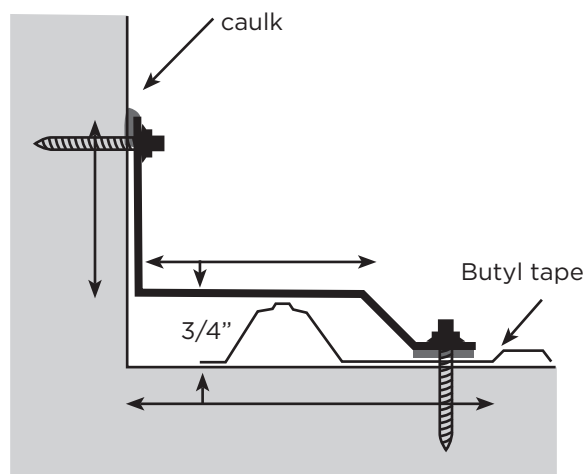
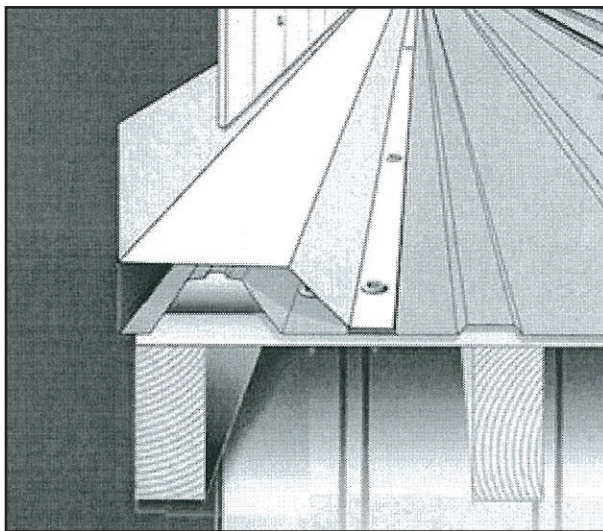
{ GABLE FLASHING }

Gable flashing is used to trim the edge of the roofing panel at the gable end of the roof. It should match the Eave Flashing that extends along the drip edge of the roof. If the panel is allowed to hang over the gable end, Eave Flashing can be used instead. Butyl tape between the trim and panel eliminates leaks.



{ SIDE-WALL FLASHING }

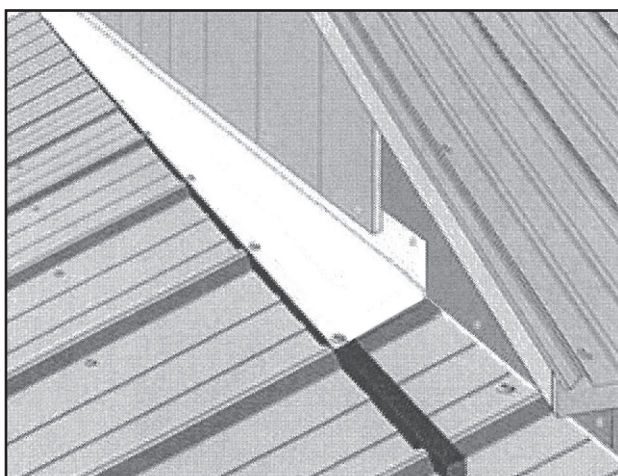
Side-wall flashing is applied when the side of the roof butts up against an adjacent wall. The wall-side of the flashing can either be covered over with siding or sealed with caulk. Butyl tape should be applied where the "foot" of the flashing attaches to the roof.



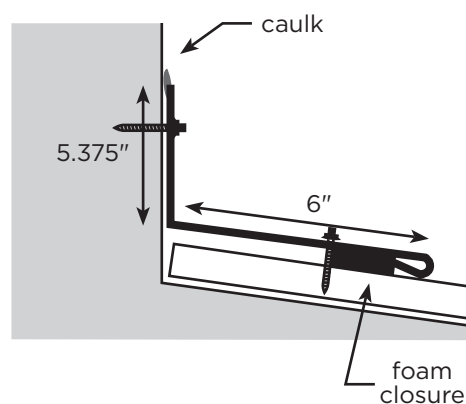
Installation Instructions - 36" Panels *continued*

(END-WALL FLASHING)

End-wall flashing is applied where the upward slope of a roof meets the wall. The wall side of the flashing can be covered with siding or counter-flashing, and outside closures are necessary to seal between the flashing and the panel. Roof slope should be mentioned and specify which trim piece needed when ordering.

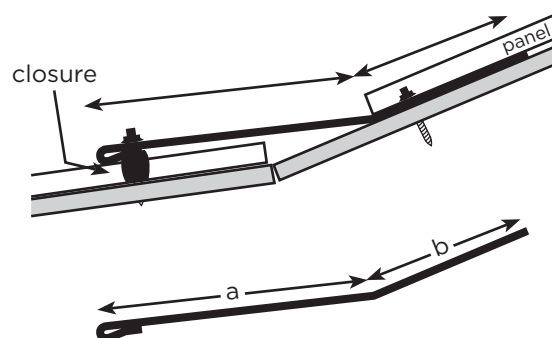
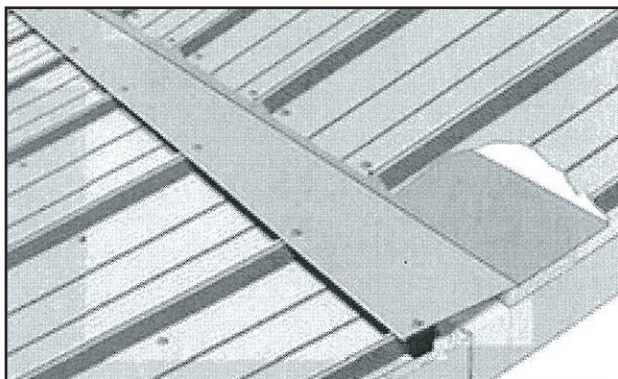


The end-wall flashing is also sealed using outside closures.



(PITCH BREAK/TRANSITION FLASHING)

Transition flashing prevents leakage at the point where two different roof pitches meet. It is sealed on the lower side with outside large closures, and can be sealed underneath the upper panels with inside small closures. The transition flashing provides a continuous drainage where two slopes meet.



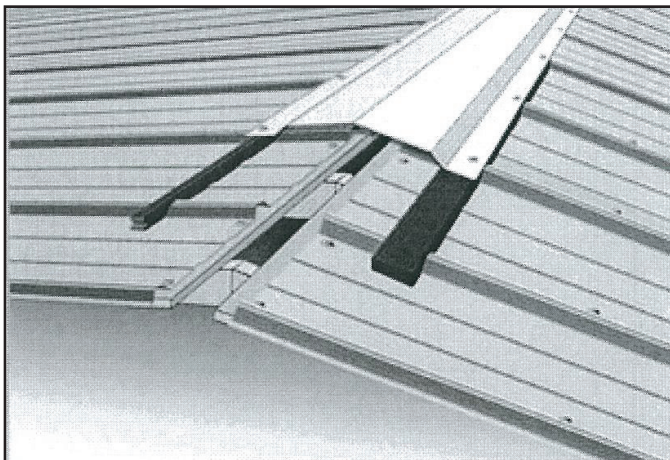
Installation Instructions - 36" Panels *continued*

{ RIDGE CAP }

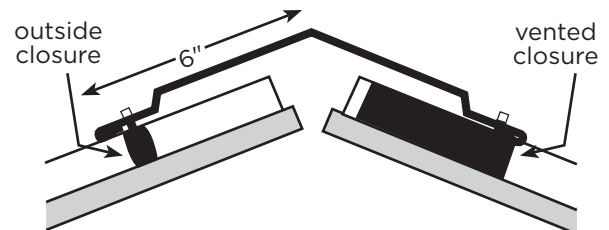
The Ridge Cap is used to seal the point at which two upward slopes meet. This can be both along the ridge of the roof as well as covering for a hip. Either woodgrip or self-drilling lap TEK screws are applied through the ribs of the metal. Since debris, insects, and blowing rain can find easy access under the ridge cap closures are required to either completely or partially seal the opening. Closures under ridge caps come in two types: solid, and vented.

Solid closures ("Outside Closures") are the same width as the panels. They lock together in a row placed directly under the screws that attach the ridge cap, and form a solid, water-tight, air-tight barrier.

Vented closures are the same lengths as the panels, and form a water-retardant, insect resistant barrier that allows hot air to escape from the attic, and is better than many of the other more elaborate and expensive vent systems.



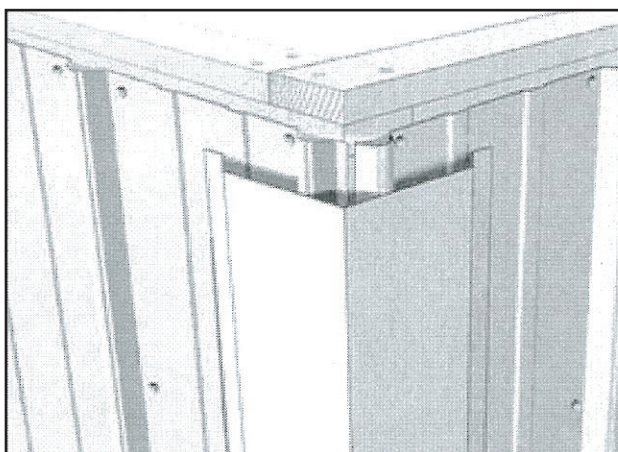
Ridge cap showing outside closure and profile vent.



Installation Instructions - 36" Panels *continued*

{ UNIVERSAL OUTSIDE CORNER }

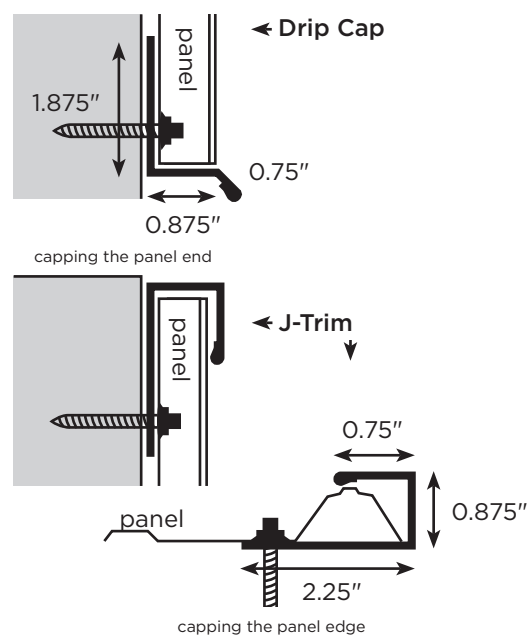
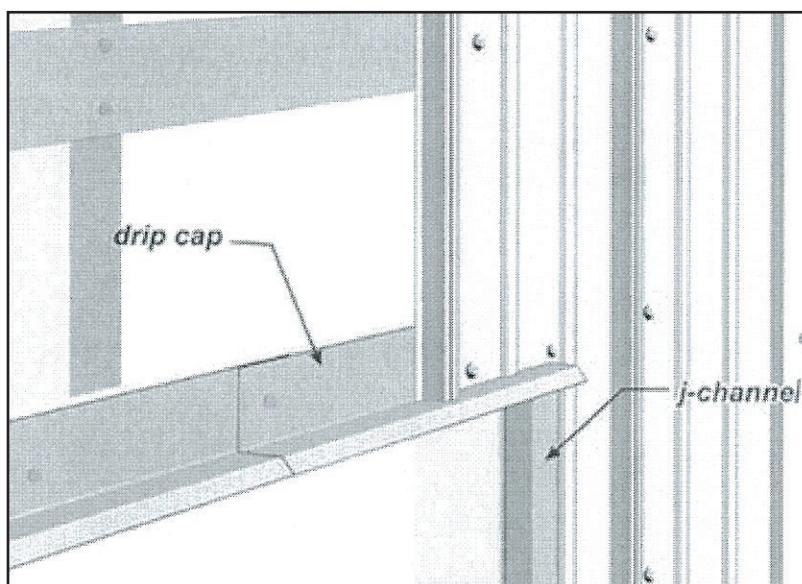
The Rake and Corner trim can be used as a gable trim or a corner for metal-sided buildings. Customizing rakes or corners is often necessary due to their landing on a panel rib. Both can be ordered as custom trim items by specifying custom dimensions. Be sure to take into account the 3/4" "head space" when figuring custom dimensions.



When used as corner trim, the Universal Outside Corner straddles the ribs of the panels where they meet at the corner of the building. The TUFF-RIB outside corner may serve as a gable rake.

{ DRIP CAP & J-TRIM }

The drip cap is commonly used to trim out the bottom of panels over doorways and windows, and occasionally takes the place of base flashing at the bottom of a wall. J-trim is used to cap raw panel edges where run-off is not a problem, and is most commonly used to cap the top sides of skirting, trim around the bottom, sides of windows and doors, and in many cases the top of windows for aesthetics and continuity.



Installation Instructions - 36" Panels *continued*

		<p>3/4" Inside Corner - Used on inside corners where two walls using metal panels intersect or where wall and ceilings meet.</p>
		<p>Outside Corner Cap - Used to finish an outside corner when minimum coverage is required.</p>
		<p>Snow Break Flashing - These are placed horizontally across the ribs of the roof panels to impede or break up the flow of snow off the roof. It is generally placed above entry ways or traffic areas.</p>
		<p>Base Flashing - Used as a trim on the bottom of wall panels to prevent any rodent access. Also used as a Gable End Wall Divide.</p>
		<p>Door Jamb Flashing - To provide a maintenance free trim on all overhead and sliding door openings.</p>
		<p>Valley Flashing 24" - Standard flashing used in valleys to protect against any moisture penetration. Expanding closures are used to provide a good seal.</p>
		<p>Residential Rake Cap - Designed to be used on gable ends where roof panels extend beyond the gable fascia.</p>
		<p>Peak Cap Flashing - Used on the top leading edge of "mono" roof systems to prevent penetration of moisture and foreign objects.</p>