Installation Instructions · Hybrid 35® Panel

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 on any roof, 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 should be used on any pitch. A good underlayment needs to be installed prior to the panels on roof pitches less than 4/12.

〔 ORDERING ROOF PANELS AND SCREWS 〕

When ordering metal panels for a non-vented roof, the measurement from the ridge to eave should be used, with no more than a 1" overhang at the eave. When a vented ridge system is being used panels should be 2" short of the ridge, and no more than a one inch overhang at the eave. 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 Pg. 7)

Metal panels should be installed with a #10 woodgrip screw with a neoprene washer (here after referred to as screws) in the flat of the metal beside the major rib. (See Pg. 9 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, gable, sidewall, endwall, valley and transition flashings. All trims with a pitch requirement are bent to a standard of 4/12P unless specified at time of ordering. Please note the pitch of your roof if it differs.

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 screws. On a roofline where the edge of a panel ties into a wall, a sidewall or endwall flashing is required to slip up under the wall cladding and over the roof sheeting. In both cases, Butyl Tape Sealant and/or caulking are required to ensure a water-tight seal between the flashing and cladding. (See diagram on Pgs. 5 & 6)

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 of screw to accommodate your preference of installation as both methods are acceptable.

Installation Instructions · Hybrid® 35 Panel 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 Pg. 10)

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

- An overhang of no more than 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.
- 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 Sealant should be applied across the panels between the panels at end laps. It is also advisable to apply Butyl Tape Sealant where panels and trims meet.
- At the Gable ends, extend the sheet no more than 1" beyond the gable fascia unless you are using a Gable Trim in which case the sheet should be flush with the edge of the roof as the trim must be flush with the fascia.
- 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 Pg. 10)

*Oil-canning: It is an inherent characteristic of all cold-rolled flat metal and is not a cause for rejection, nor does it affect the performance of the steel.

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. Caution should be used when installing near or coming into contact with any surface or material that could void the paint warranty (refer to Conditions that apply to these types of installations in our 40 year Warranty). 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 caulking and caulking applied at the vertical laps. This will ensure weather-tite joints.

Installation Instructions · Hybrid® 35 Panel 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 however are 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 · Hybrid® 35 Panel 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.

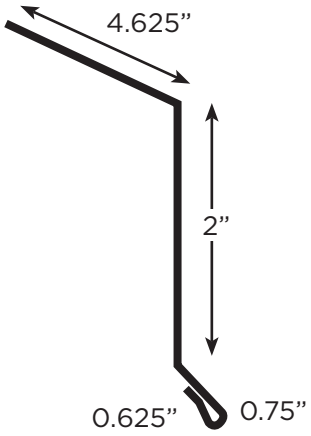


Illustration of MEEF1

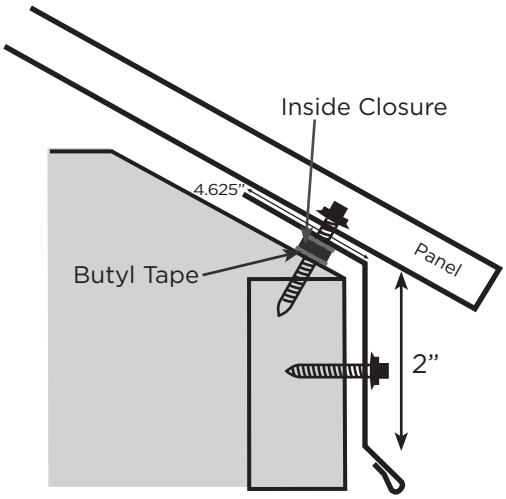


Illustration of MEEF1

Standard bent to 4/12 pitch
*Must specify if roof pitch differs

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.

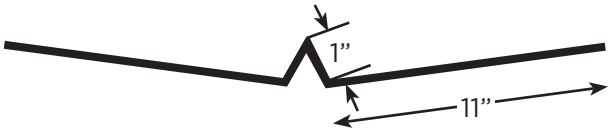


Illustration of MEVF1

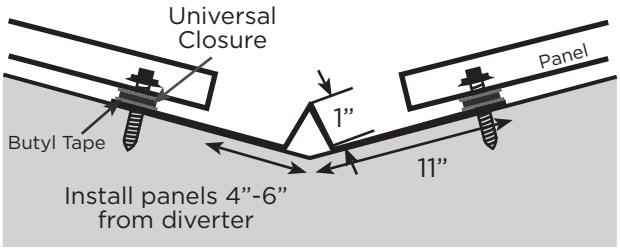


Illustration of MEVF1

Installation Instructions · Hybrid® 35 Panel 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 Sealant between the trim and panel eliminates leaks.

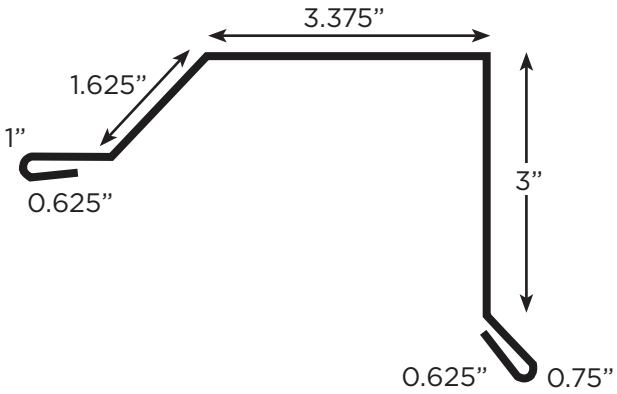


Illustration of MEGF6

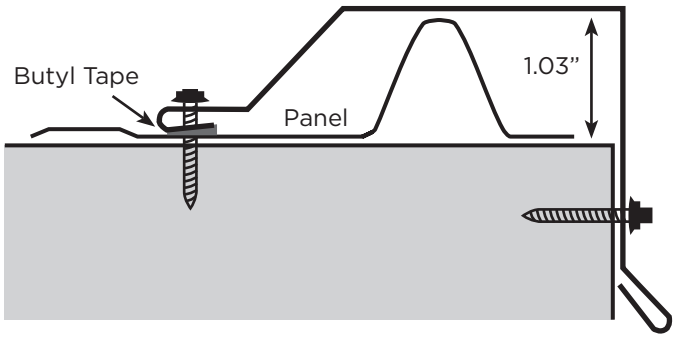


Illustration of MEGF6

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 Sealant should be applied to the panel where the fastener is placed (see illustrations below for correct placement).

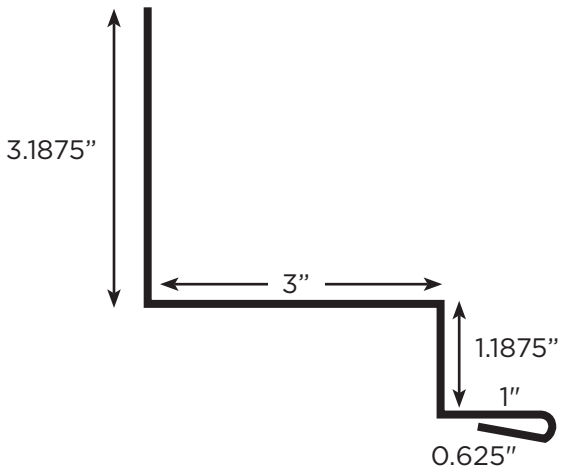


Illustration of MESW5

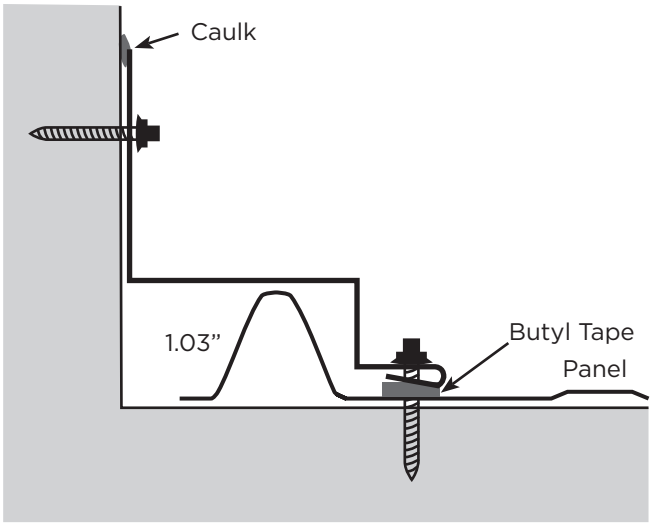
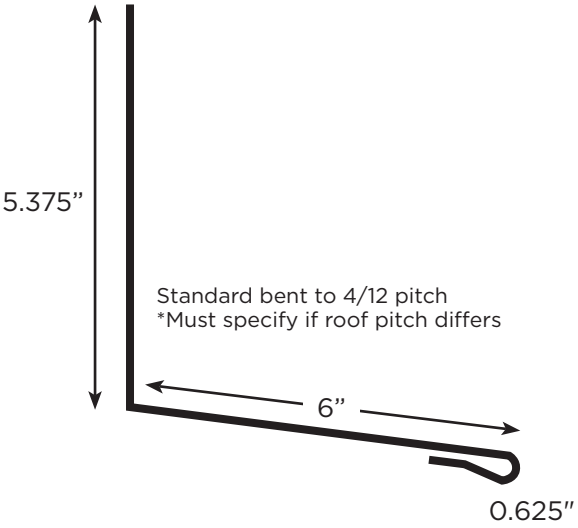


Illustration of MESW5

Installation Instructions · Hybrid® 35 Panel 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.

Illustration of MEEW1

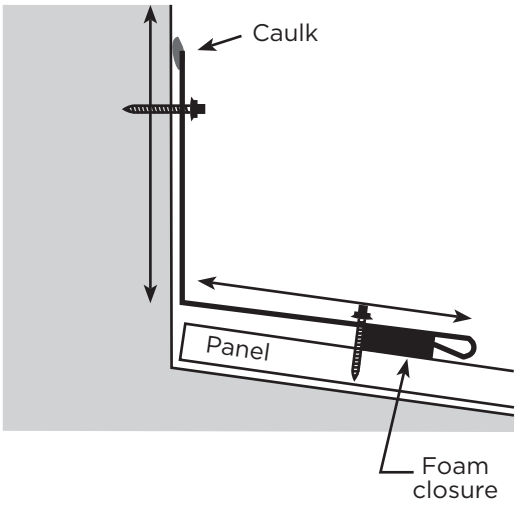


Illustration of MEEW1

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. Screws are applied through the ribs of the metal and down into the solid substrate or strapping material to secure the trim well. 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 come in lengths to match the width of the panel, 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.

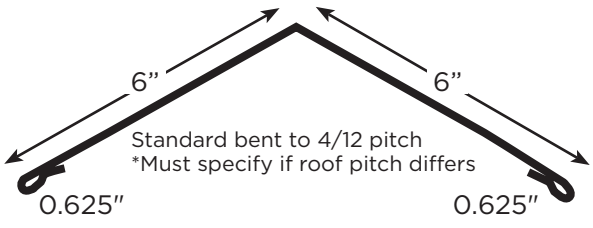


Illustration of MERC3

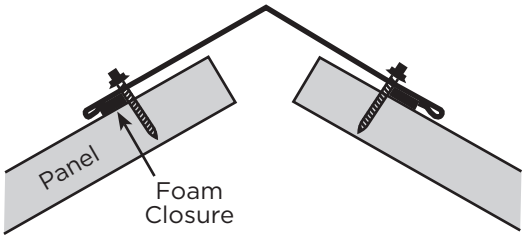


Illustration of MERC3

Installation Instructions · Hybrid® 35 Panel continued

UNIVERSAL OUTSIDE CORNER

Corner trim is most commonly used to cover where two panels meet at the corner of metal-sided buildings. Customizing corners is often necessary due to where they land on a panels major rib. Any of our standard trims can be customized by submitting a drawing with the desired dimensions and angles. Be sure to take into account the 1.03" "head space" when figuring custom dimensions for this panel.

The Universal Outside Corner is designed to straddle the ribs of the panels where they meet at the corner of the building. The HYBRID 35® outside corner may also serve as a gable rake if desired.

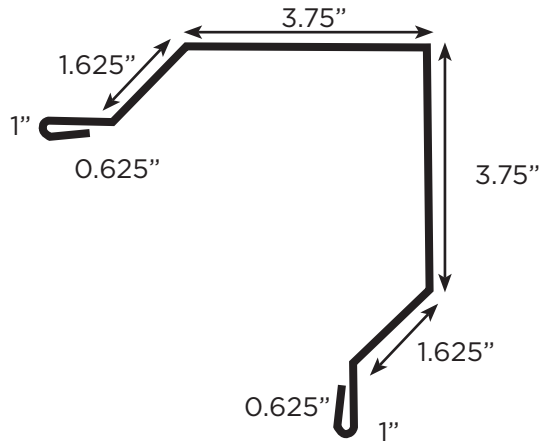


Illustration of ME0SC7

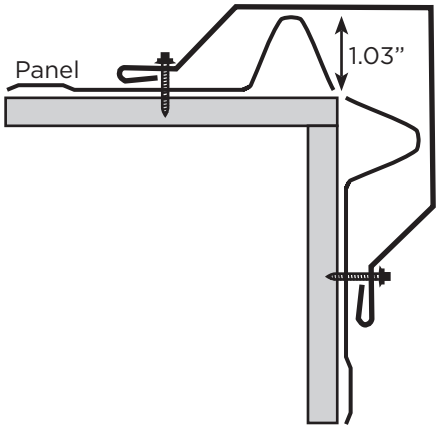


Illustration of ME0SC7

See page 8 for an alternative corner trim option.

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.

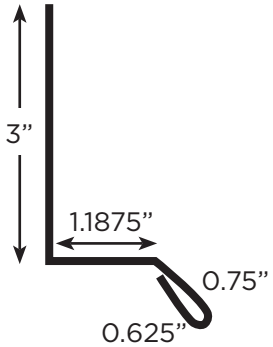


Illustration of MEDC6

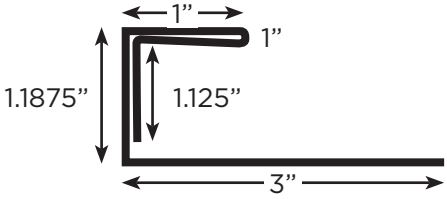


Illustration of MEJT7

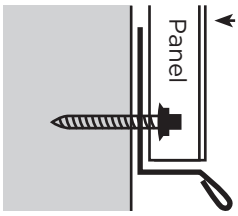
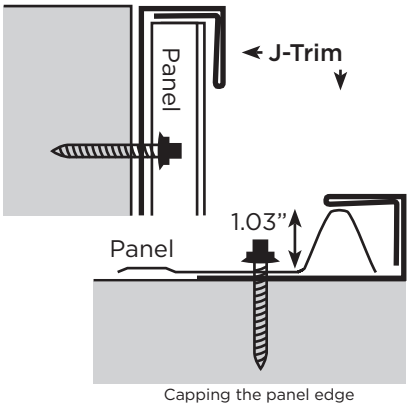
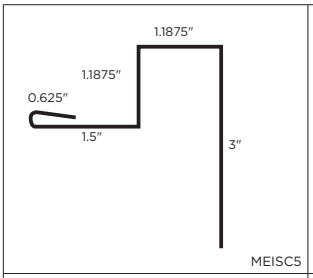
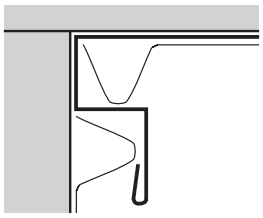
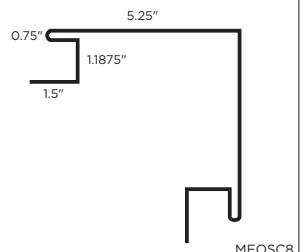
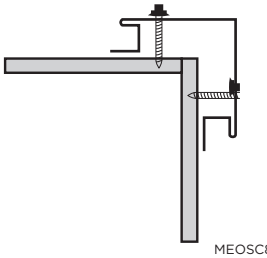
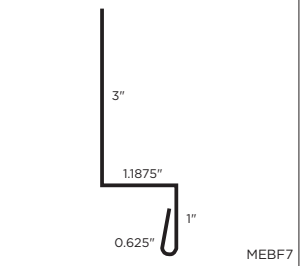
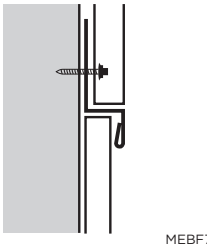
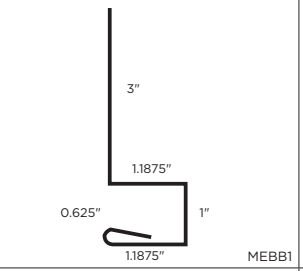
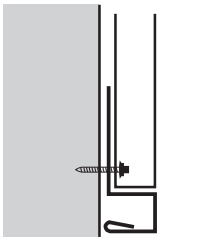
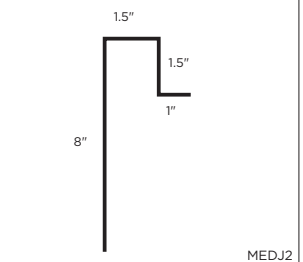
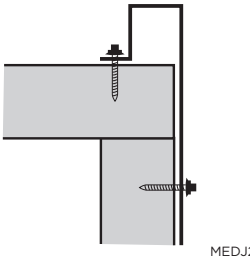
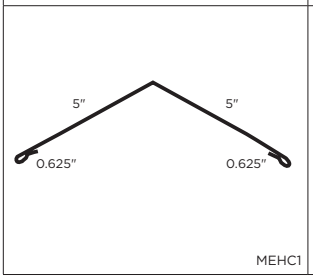
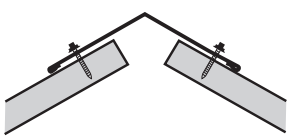


Illustration of MEDC6



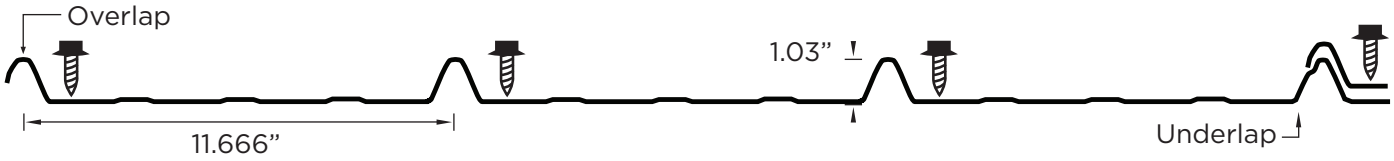
Capping the panel edge
Illustration of MEJT7

Installation Instructions · Hybrid® 35 Panel continued

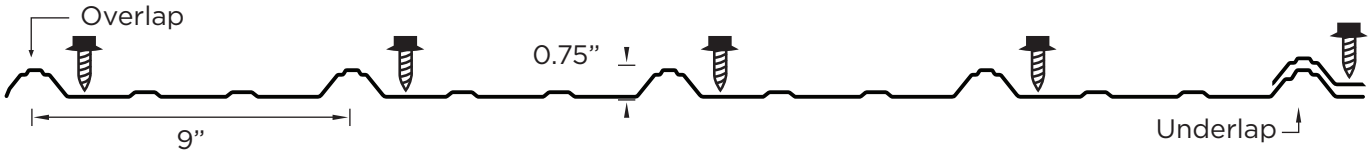
 MEISC5	 MEISC5	**Inside Corner -** Used on inside corners where two walls using metal panels intersect or where wall and ceilings meet.
 MEOSC8	 MEOSC8	**Outside Corner -** Straddles the ribs of the panels where they meet at the corner of the building
 MEBF7	 MEBF7	**Base Flashing -** Used as a trim on the bottom of wall panels to prevent any rodent access. Also used as a Gable End Wall Divide.
 MEBB1	 MEBB1	**Box Base Flashing -** Used as a trim on the bottom of wall panels to prevent any rodent access.
 MEDJ2	 MEDJ2	**Door Jamb Flashing -** To provide a maintenance free trim on all overhead and sliding door openings.
 MEHC1	 MEHC1	**Flat Hip Cap -** 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.

Screw Pattern

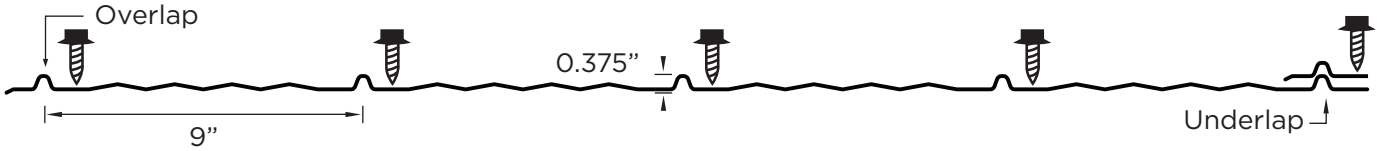
HYBRID 35®



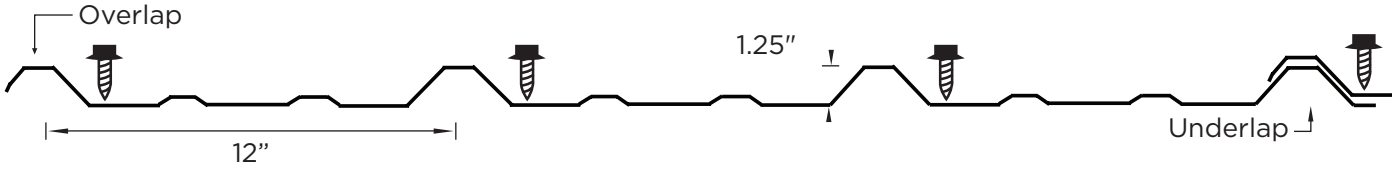
TR-936®



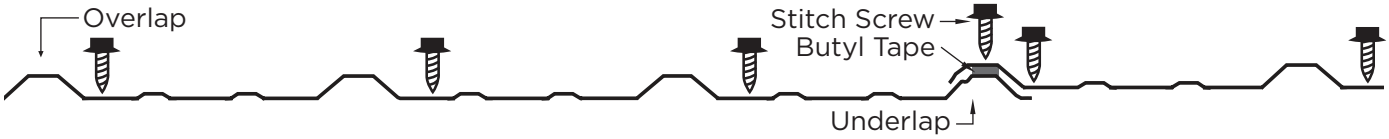
LR-936®



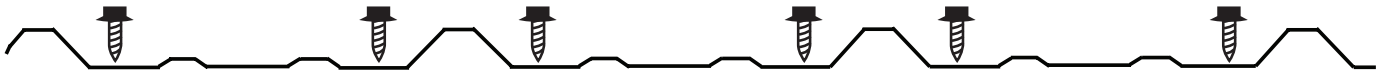
PBR-1236®



High Wind or Low Pitch Application - PR-936® Illustrated



Bottom Edge Screw Pattern - PBR-1236® Illustrated

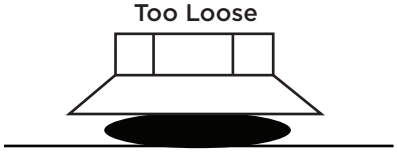


FASTENER APPLICATION

Correct

Sealing material slightly visible at edge of metal washer. Assembly is water tight.

Too Loose



Sealing material not visible, not enough compression to seal properly.

Too Tight

Sealing material extruded beyond edge of washer.

Please note: using an impact style screw gun to install fasteners voids the warranty.

Material & Installation Check List

{ MATERIALS CHECK LIST }

- [ ] Strapping
- [ ] Underlay/Ice & Water Shield
- [ ] Roofing/Siding Panels (prepare a cut list)
- [ ] All required Trims
- [ ] Fasteners (stitch screws necessary for low slope app)
- [ ] Closures
- [ ] Ridge Cap Vented Closures
- [ ] End Closures (for ridge cap)
- [ ] Butyl Tape Sealant & Caulking
- [ ] Insulation
- [ ] Roof Boots

{ INSTALLATION TOOLS CHECK LIST }

- [ ] Chalk Line
- [ ] Pencil or Scratch Tool
- [ ] Utility Knife
- [ ] String Line
- [ ] 25' Measuring Tape
- [ ] Screw Gun w/appropriate Hex Head Sockets (the use of an impact drill risks voiding warranty on screws)
- [ ] Hex Driver(s)
- [ ] Vice Grips – Standard & Duckbill
- [ ] Snips – Right, Left & Centering cuts
- [ ] Caulking Gun & Caulk
- [ ] Hammer
- [ ] Drill & Bits (to pre-drill holes)

{ NICE TO HAVE }

- [ ] Power Shears

{ SAFETY CHECK LIST }

- [ ] Gloves
- [ ] Ear Plugs
- [ ] Safety Vest
- [ ] Safety Harness & Tie Down
- [ ] Soft Sole Footwear
- [ ] Head Cover
- [ ] Sunscreen
- [ ] Safety Glasses - Sunglasses

Packaging & Storage

PACKAGING: Roofing, siding and trims are packaged using protective packaging to help protect the goods in shipping and handling. See "Storage Instructions" to help ensure the goods are stored correctly before installation.

The customer should take whatever steps necessary to ensure the goods remain dry after delivery. Roofing and siding sheets are protected with wood battens on or near each end and down the length of the panel to ensure safe shipment. Additional wood skids will be used when deemed appropriate by Metal Experts® for that order. Additional crating charges may apply to specific orders. This kind of protection helps ensure the goods are not damaged during shipping, handling and storage.

STORAGE INSTRUCTIONS: If metal and siding panels are not to be used immediately the panels should be stored in a dry place. The panels should be unbundled and stood on end indoors, if possible. It is very important to store the panels in a dry, well ventilated area. If the product cannot be stored indoors, elevate one end of the bundle 8" to allow any moisture to run off while being stored. DO NOT store panels in direct contact with the ground. Make sure to put some type of a block under the bundles when set on the ground. Ensure there is good airflow around the entire bundle to avoid moisture build up. Avoid storing panels near alkaline materials such as fertilizer, cement, lime, salt, etc. Moisture trapped between the panels will cause paint to bubble and white rust to form on unpainted panels. **METAL EXPERTS® assumes no liability for panels that are not properly stored.**

PANEL CUTTING: When cutting painted panels, ensure the metal particles and fragments do not end up on the painted surface. Metal particles on painted surfaces will result in rusting and pitting in that area. We suggest that the panel be turned upside down and all cutting be done looking at the backside of the material. Installers should be certain to wipe away any debris from the material after cuts to prevent this problem. Panels should be cut in an area where the metal particles do not end up on other panels or building material. **Failure to remove metal particles from the panel(s) may result in a voided warranty**.

WHITE RUST/OXIDATION: White rust on bare galvanized metal will oxidize when installed outside. It is the result of zinc oxidation in the absence of oxygen. This occurs in coil or bundles of sheet metal that are nested and absorb moisture from humidity in the air or direct rainfall. The oxidation appears as a white chalky build-up on the surface of the metal. This can be stopped by applying a vinegar solution or light oil, such as WD-40.