

APPENDIX 1 | SHEATHING REQUIREMENTS

DOC PS-1 15/32" PLYWOOD; DOC POS-2 15/32" OSB

SHEATHING REQUIREMENTS

Decking for Solar Roof shall be a code-compliant wood structural panel conforming to DOC PS-1 or DOC-PS-2, rated Exposure 1 or better; or code-compliant closely-fitted solid sheathing boards. Minimum thicknesses for installation of Solar Roof shall be 15/32" for plywood, 7/16" for OSB, or 3/4" for board sheathing. Sheathing and supporting framing shall be free of damage, defects, or decay which could impact strength, serviceability, or fastener performance.

Where the existing sheathing does not meet these requirements, use one of the following remediation routes:

(a) Sheathing overlays, where permissible by the Authority Having Jurisdiction, shall be provided such that the net embedment of all roofing fasteners is not less than 3/4".

(b) Sheathing replacement, with a performance class in compliance with all applicable code requirements, shall be performed, with a minimum thickness greater than or equal to those specified above.

Do not install Tesla Solar Roof over widely spaced sheathing boards (sometimes referred to as "skip sheathing"). Retrofitting the existing structure with solid sheathing would be necessary. Verify the capacity of the existing structure to carry this additional load. As this procedure is beyond the scope of this manual, contact Tesla for engineering support prior to such modification.

ROOF PITCH RANGE

2:12 - 24:12

Certain features can be installed up to 62:12

APPENDIX 1 | SHEATHING REQUIREMENTS CONTINUED...

DOC PS-1 15/32" PLYWOOD; DOC POS-2 15/32" OSB

HIGH WIND SHEATHING SCHEDULE

In high wind zones fasten sheathing to local applicable building code for HVHZ (2322.2.8).

APPENDIX 2 | UNDERLAYMENT SPECIFICATIONS

Model #SR-SAUL-1, PN: 16113738-00-A

Certified to ASTM D1970/ICC AC48; ICC AC188; and ASTM E108 Class A

SR-SAUL-1 is a self-adhering peel and stick roofing underlayment designed for sloped roof applications to help protect against water infiltration from ice dams and wind-driven rain. It is installed with Solar Roof V3 as a single layer application.

INSTALLATION GUIDELINES

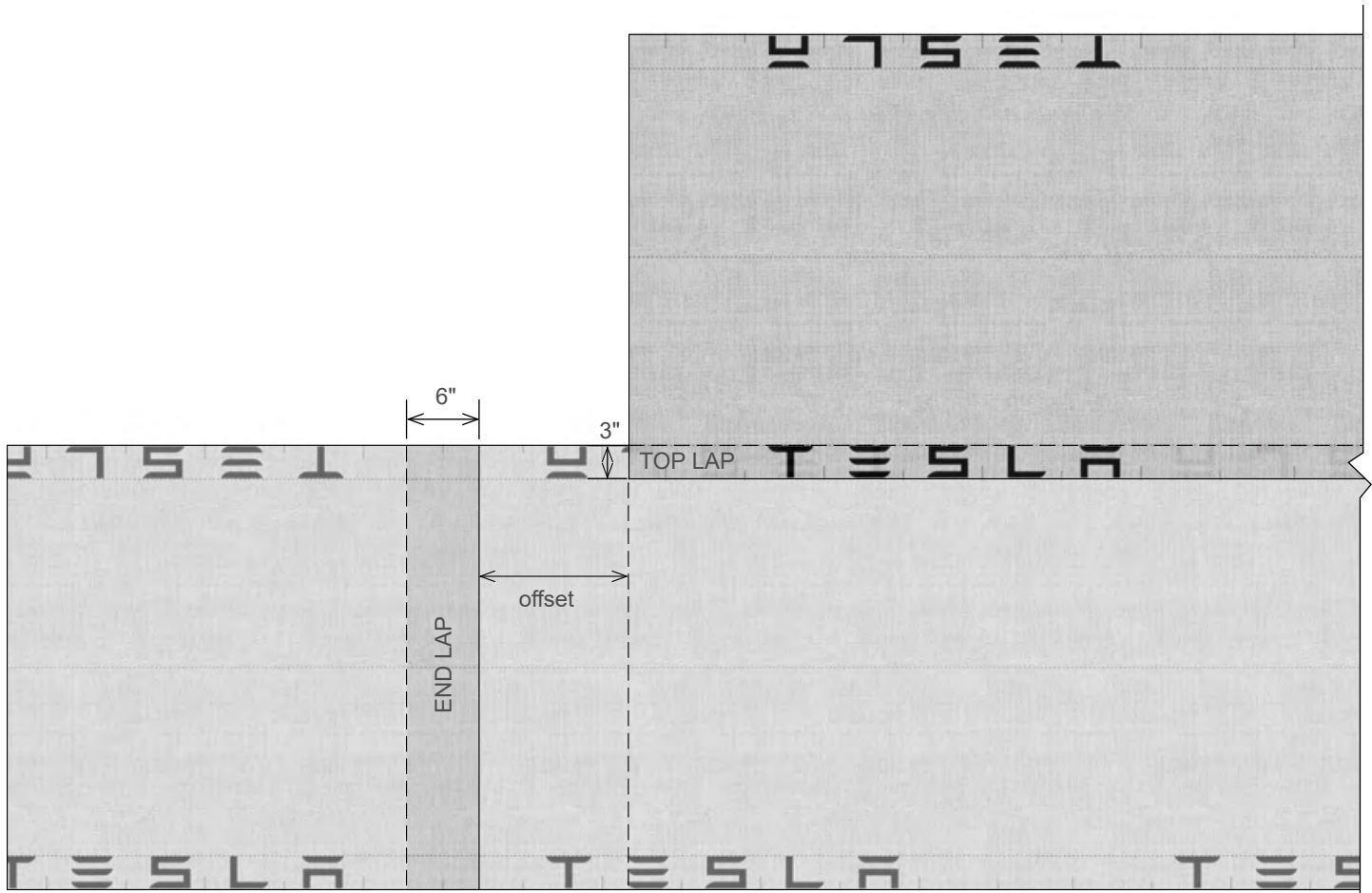
SR-SAUL-1 is installed onto the bare decking surface or onto existing roofing material if a project plan specifies an overlay system. It is acceptable to install SR-SAUL-1 directly on an existing ice/water shield if all debris is cleared. During installation, offset the edge of the underlayment 1/2" from the drip edge of the roof for aesthetics. Refer to Underlayment Work Instructions for detailed guidance.

SR-SAUL-1 can be laid out in a variety of orientations, including horizontal, vertical or diagonal. The orientation is chosen by the crew depending on convenience of installation:

- Horizontal: along the length of the eave drip edge.
- Vertical: along the length of the rake drip edge.
- Diagonal: along angled features such as a hip or valley.

Install the underlayment with the printed side up. Follow these lapping guidelines for all seams:

- Top lap: Lap each succeeding course 3" over the preceding course fully concealing the upside-down Tesla logo.
- End lap: Lap a minimum of 6". Offset end laps a minimum of 6' on adjacent courses.
- Use a roller along the entire face of the underlayment to ensure an adequate seal.



APPENDIX 2 | UNDERLAYMENT SPECIFICATIONS

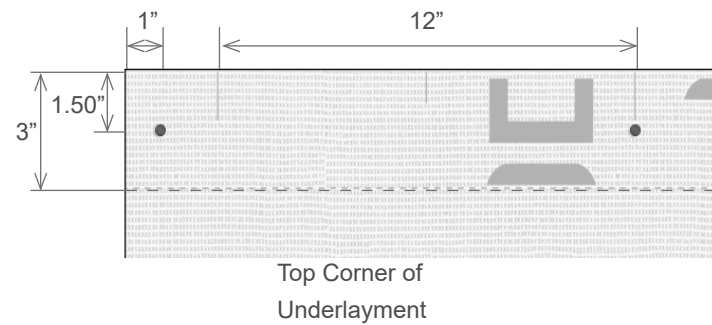
Model #SR-SAUL-1, PN: 16113738-00-A

COLD WEATHER APPLICATION

At temperatures -4°F (-20°C) or below, blind nail the upper most overlap edge using $3/8"$ head roofing nails $1"$ or longer. Space nails at $12"$ intervals along upper side lap area $1"$ in from the edge using the guide marks. For best results, warm Cobalt FR to room temperature prior to application.

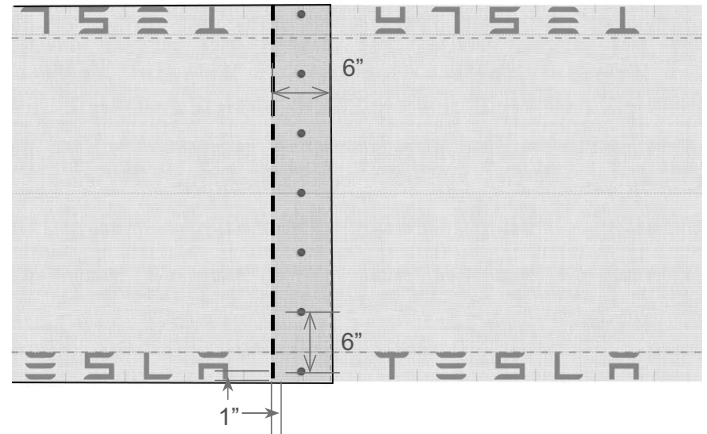
Horizontal laps

Lap $3"$ min. Fasten every $12"$ with nails.



End laps

Lap $6"$ min. Fasten every $6"$ with nails.

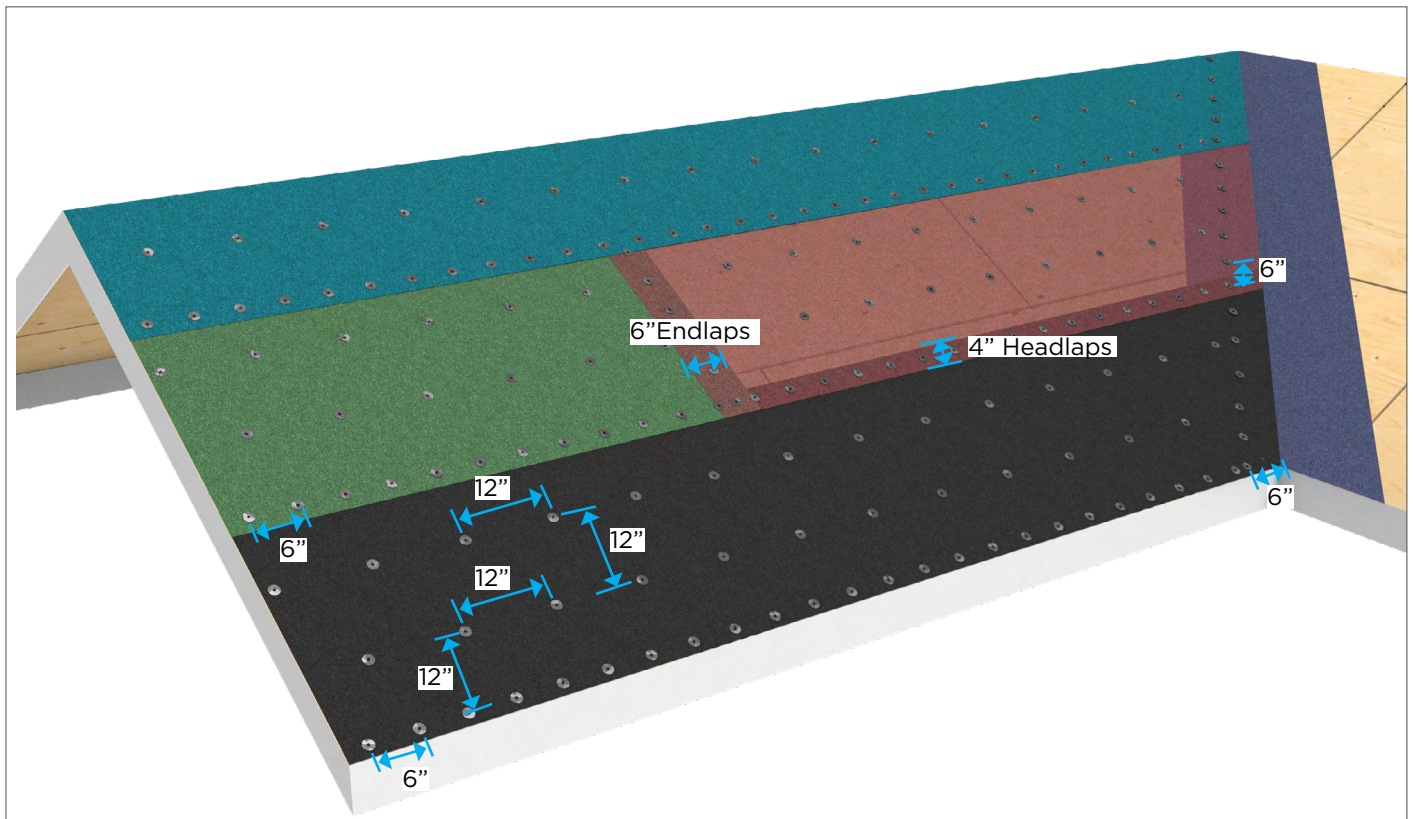


APPENDIX 3 | HIGH VELOCITY HURRICANE ZONES SPECS

Model #SR-SAUL-1, PN: 16113738-00-A

MECHANICAL UNDERLAYMENT SPECS

Secure mechanical base sheet (ASTM D226 Type II) to the wood deck using the FBC code required “tin cap” and roofing nails. The nail shall be a minimum 12 GA ring shank with a 0.375” (9.5mm) head diameter. The length shall be sufficient to penetrate the sheathing fully, typically not less than 3/16” (4.8mm) stick-through. The “tin caps” shall be a minimum 32 GA (0.010”) corrosion-resistant caps 1-5/8” (41mm) to 2” (51mm) in diameter. Fasten eaves, headlap, and overlap with tin caps at a 6” spacing. Mid sections from the headlap and eave shall be fastened 12” from that point, and 12” from each other, then stagger for each additional course. All headlaps need to be overlapped a min of 4” with each endlap overlapping a min 6”. Endlaps will be staggered from the bottom course mid way from each section.



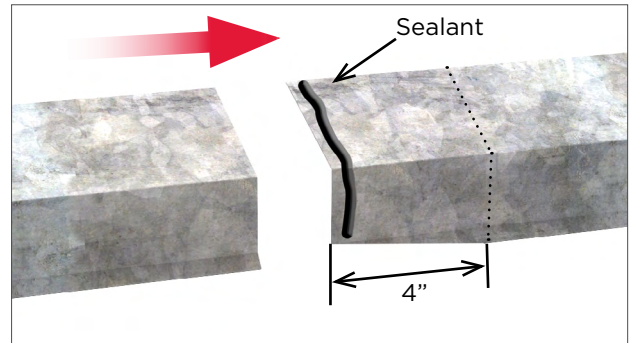
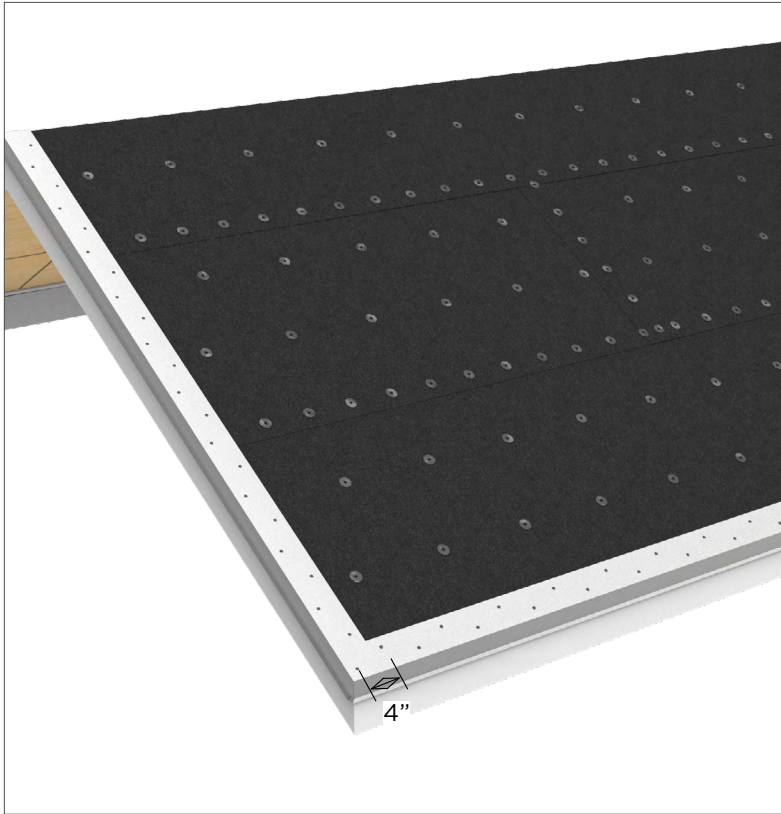
APPENDIX 3 | HIGH VELOCITY HURRICANE ZONES SPECS

Model #SR-SAUL-1, PN: 16113738-00-A

DRIP EDGE

Drip edge should be fastened with a minimum 12 GA 1-1/4" long ring shank nails spaced a minimum 4" OC in a staggered pattern.

Rows shall be approximately 3/4" to 1" from each edge of the horizontal flange. Overlapping sections of drip edge shall be a minimum 4" and requires a bead of sealant between.

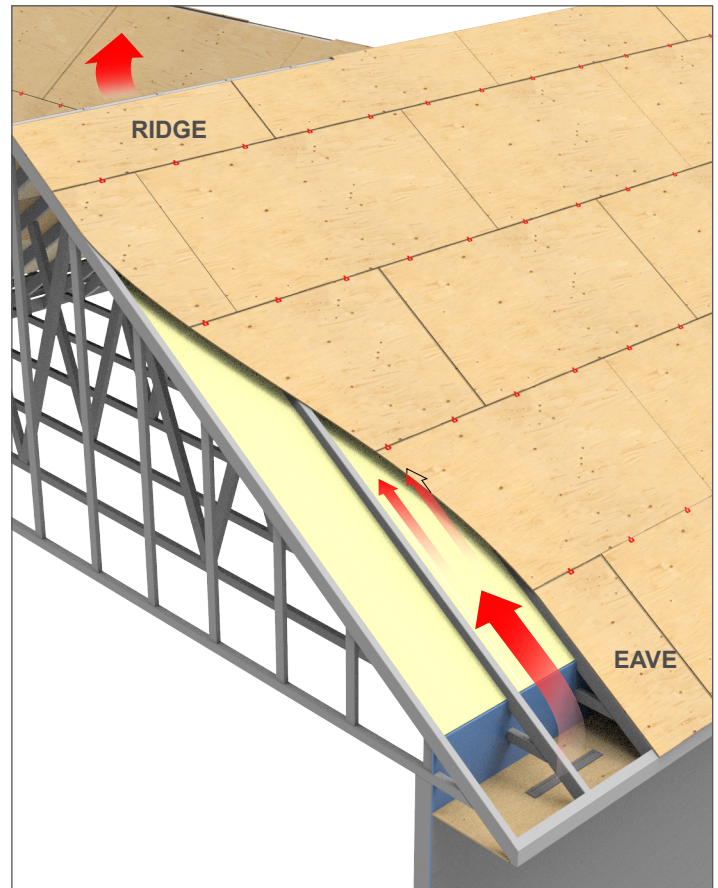
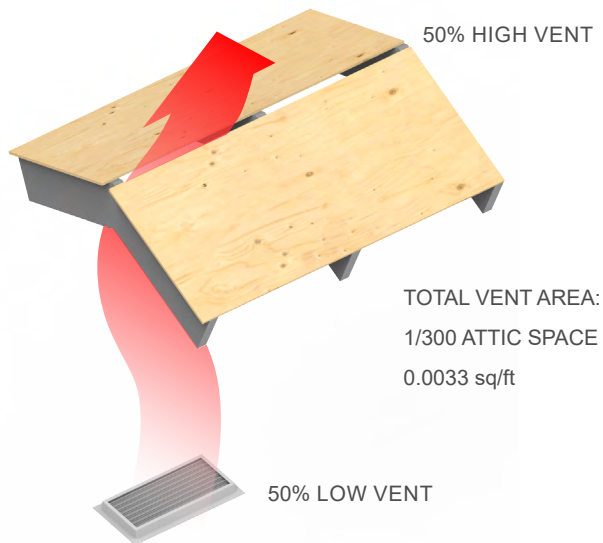


Example of Drip Edge Being Spliced Together

APPENDIX 4 | WILDLIFE URBAN INTERFACE COMPLIANCE

TYPES OF VENTS

The type of vents used on Solar Roof are continuous vents at the soffit and ridge which have ratings based upon square inches per linear foot. For proper airflow the vents need to be sized correctly. Discrete vents such as eyebrow vents do not comply with Solar Roof design. Do not cut vents into lofted ceilings.



706A.2 REQUIREMENTS

Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with wire mesh, vents, other materials or other devices that meeting one of the following requirements :

2. Vents complying with all of the following:

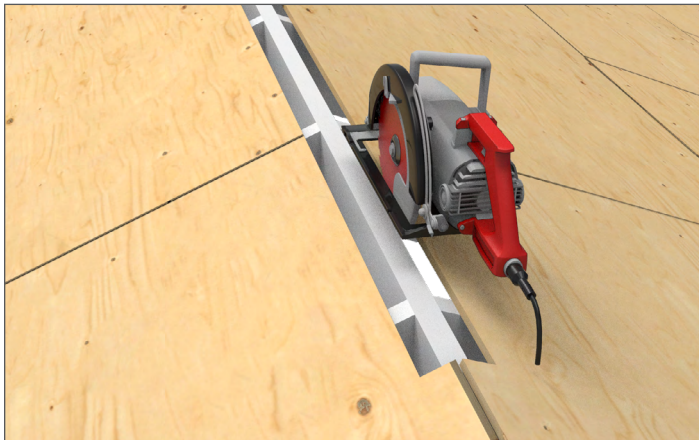
2.1 The dimensions of the openings therein shall be a minimum of 1/16-inch (1.6 mm) and shall not exceed 1/8-inch (3.2 mm).

2.2 The materials used shall be noncombustible.

2.3 The materials used shall be corrosion resistant.

Certification: TAS 100(A)

APPENDIX 4 | WILDLIFE URBAN INTERFACE COMPLIANCE CUTTING RIDGE VENTS



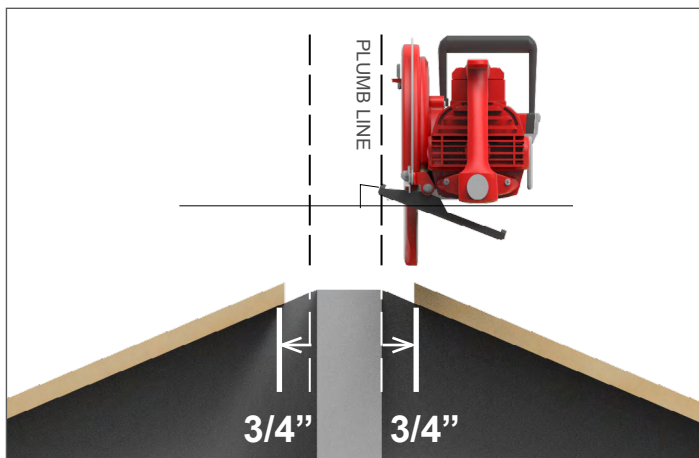
WHEN AND HOW TO CUT RIDGE VENTS

The dust and debris created from cutting the ridge back can cause safety risks when underlayment and/or glass is already installed. Ridge vents are cut prior to underlayment installation. This will also keep the circular saw blade clean.

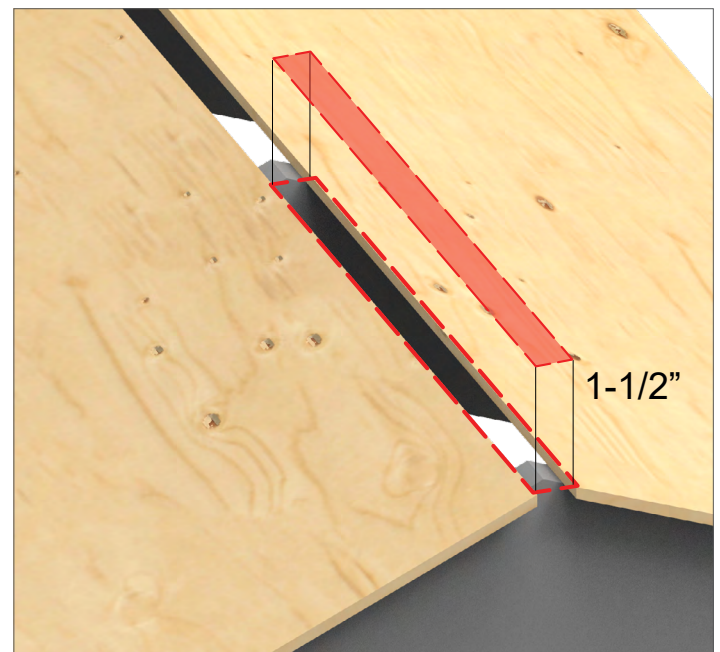
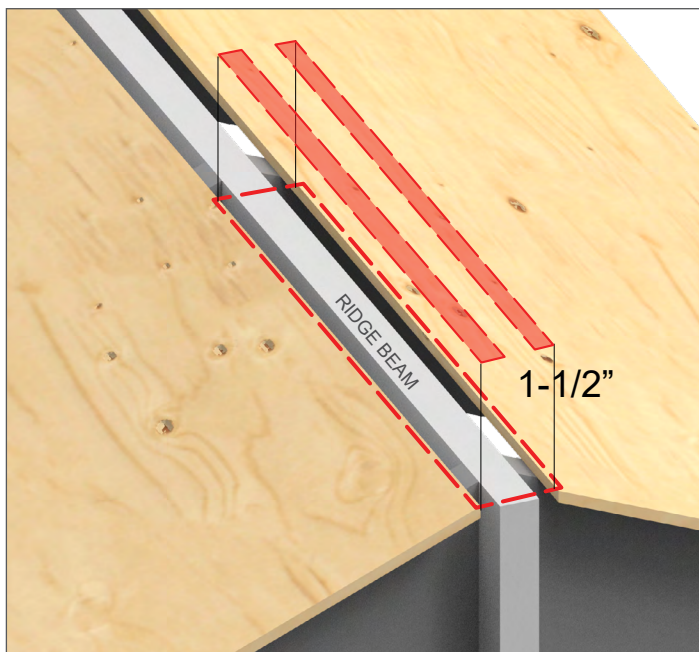
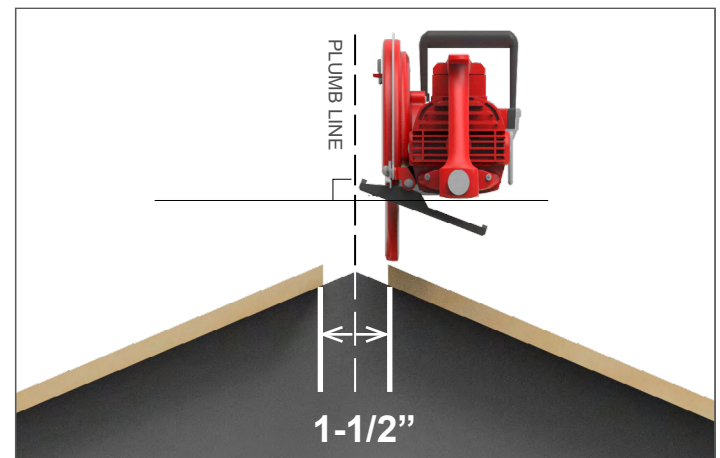
Use a circular saw with the blade angled so the cut is plumb. Cutting a plumb line will maximize the amount of available space to mount feet and brackets at the ridge.

Check that the depth of the blade allows for the cut only to penetrate through sheathing and not into framing members. Once the opening is created, temporarily seal the vent with underlayment to protect the home from moisture. The recommended ridge vent size opening is as a $\frac{3}{4}$ " wide on either side. If a ridge beam is present, a total of $1\text{-}1/2$ " between both sides of the ridge will suffice.

With ridge beam, up to 2" width



Without ridge beam



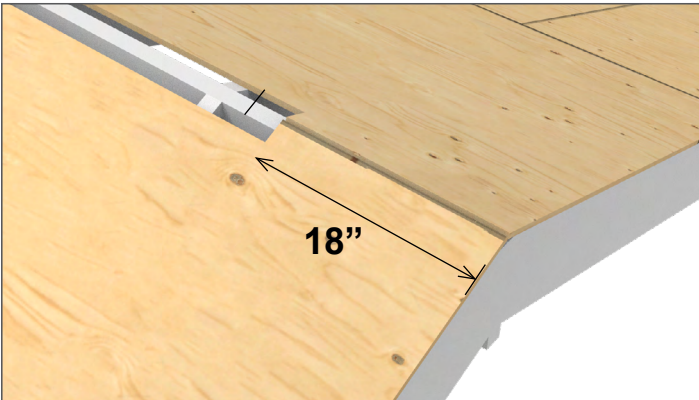
APPENDIX 4 | WILDLIFE URBAN INTERFACE COMPLIANCE

CUTTING RIDGE VENTS

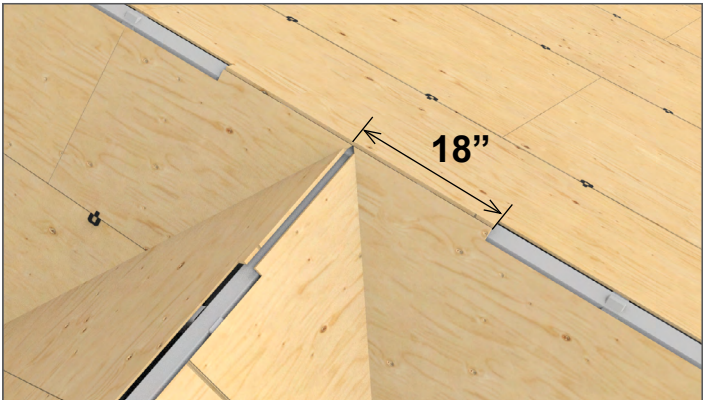
HOW TO CUT VENT SLOTS

The ridge vent is only cut into attic spaces only. It should not extend into valley areas or rakes. Offset the vent a minimum of 18" away from valleys, rake edges, sidewalls or ridge interactions.

Offset the vent a minimum of 18" away from rake edges



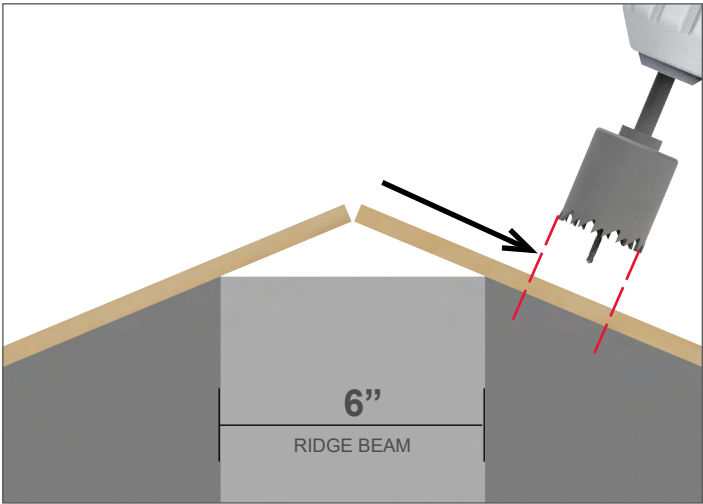
Offset the vent a minimum of 18" away from valleys



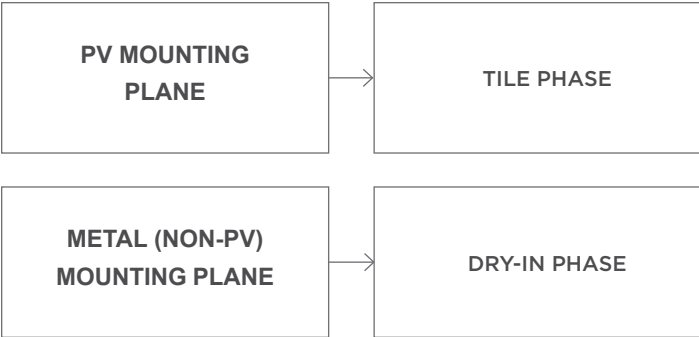
LARGER BEAM SIZES (4x, 6x)

If the beam width is wider than 2", do not cut ridge vent slots during the dry in phase. Instead, the ridge is vented using holes, which are cut between feet after tiles have been installed. This ensures sufficient surface area for mounting brackets and feet to be fastened. A large vented slot with a significant offset from the ridge apex will remove too much material and interfere with the installation of the last course of tiles and ridge cap assembly.

For Rest of Roof Metal Tile, venting holes can be drilled during the dry in phase. Avoid drilling through rafters. Drill maximum of 3 holes between each rafter on standard spaced rafters.



*Tile assembly not shown



APPENDIX 5 | HIGH WIND TILES, 140 TO 194 MPH WINDS

PN: 1558848-00-A, 1558939-00-A, 1558938-00-A

In high wind regions, additional feet are installed at the first row starter course to prevent tile uplift at the eave. The Full Tile, 2/3 Tile, and 1/3 Tile are specialty High Wind Tiles. The 5/6 tile, 1/2 Tile and 1/6 Tile use existing tiles with additional feet installed.

140-194 MPH WIND

FULL TILE

PN: 1558848-00-A



5 FEET

5/6 TILE

PN: 1525181-00-B



6 FEET

2/3 TILE

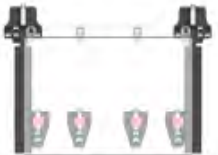
PN: 1558939-00-A



5 FEET

1/2 TILE

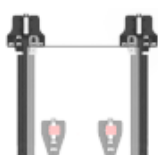
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4 FEET

1/3 TILE

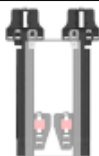
PN: 1558938-00-A



2 FEET

1/6 TILE

PN: 1525185-00-B



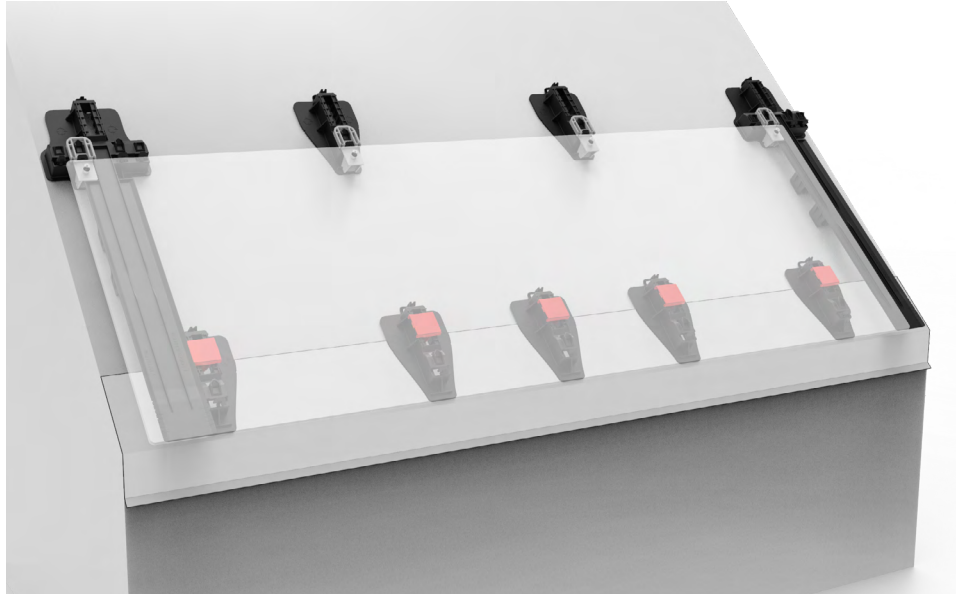
2 FEET

APPENDIX 5 | HIGH WIND TILES, 140 TO 194 MPH WINDS

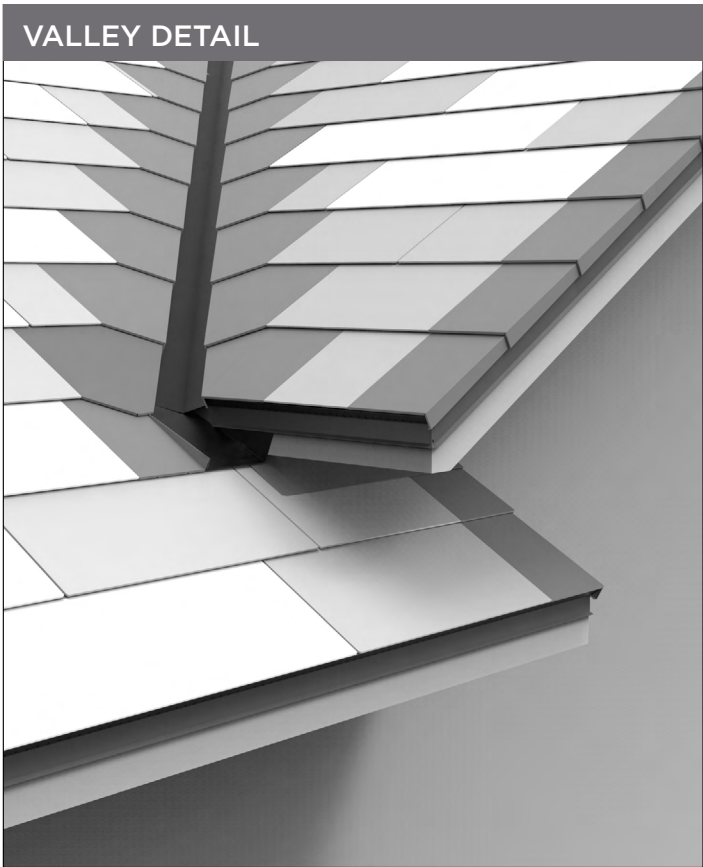
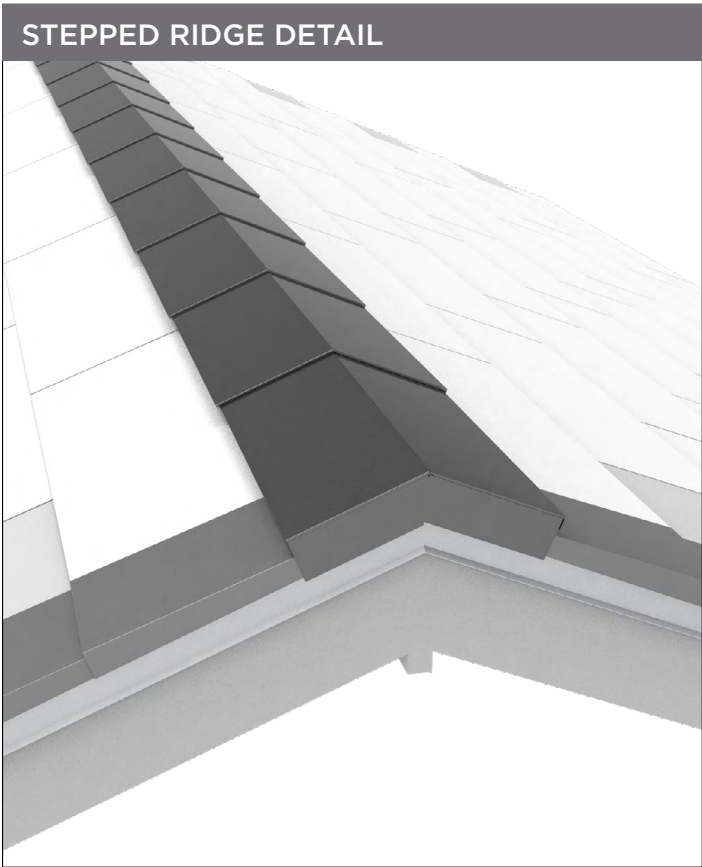
PN: 1558848-00-A, 1558939-00-A, 1558938-00-A

HIGH WIND INSTALLATION

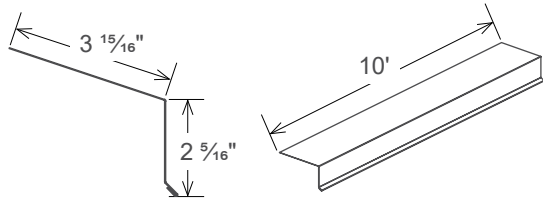
A high wind full tile starter course installation has 5x roofing feet.



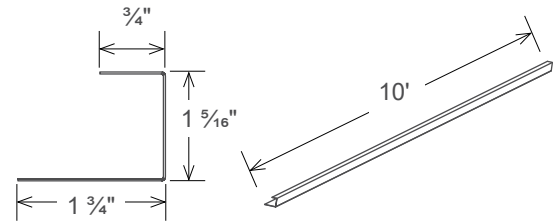
APPENDIX 6 | FLASHING COMPONENTS



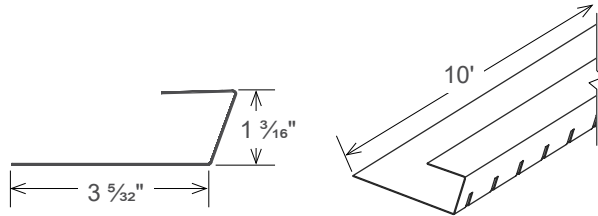
FLASHING, DRIP EDGE



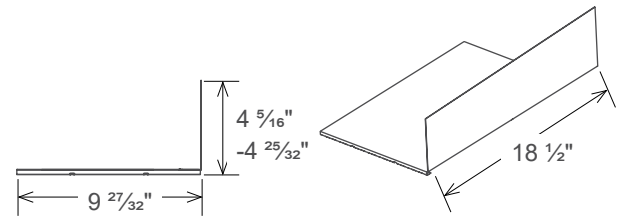
DECK, C CHANNEL



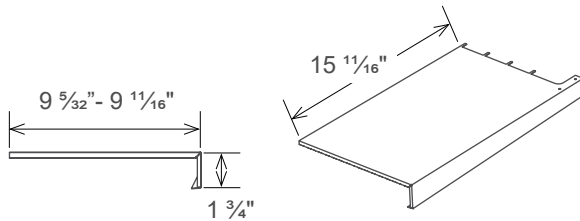
TRIM, STARTER



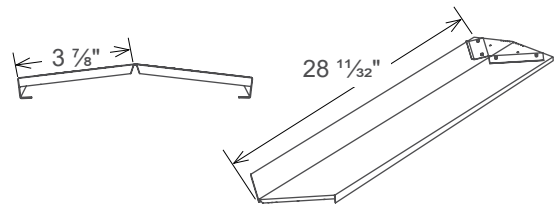
FLASHING, SIDEWALL STEP



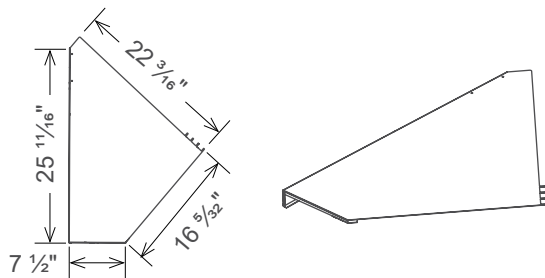
TRIM, RAKE



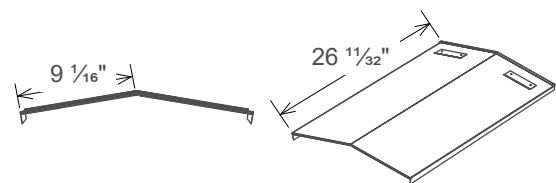
FLASHING, HIP CAP



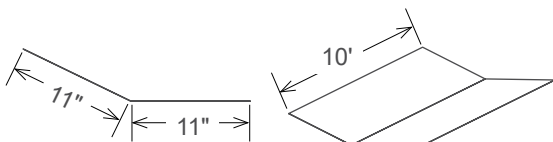
TRIM, VALLEY



FLASHING, CAP, RIDGE



FLASHING, VALLEY



APPENDIX 7 | FASTENER SCHEDULE

Category	Part	Feature	1/2" Self Tapping Screw Schedule	
				
Cleats & Rails (Mounted)	Vented Ridge Flashing	Ridge	per contact point to Ridge Bracket	1
	Peakwall Support Rail Flashing	Peakwall	through Peakwall Bracket	2
	Low Profile Starter Trim	Round Obstructions	through Pipe Flashing	12" OC
Caps and End Caps	Ridge End Cap	Ridge	through Vented Rail	2 (1 per side)
			through Deck C-Channel	2
			to lock angle	1
	Peakwall End Cap	Peakwall	through Vented Rail	1
			through Support Channel	2
	Hip Cap	Hip	through C-Channel	2 (per side)
	Starter Hip Cap	Hip, Eave	through C-Channel	2 (per side)
Trim	Hip Trim	Hip	through Hip C-Channel	2
	Adjustable Hip Trim	Hip	through Hip C-Channel	2
			through Support Bracket (if installed)	1
			to lock angle	1
	Standard Valley Trim	Valley Valley	through C-Channel	2
			through Support Bracket	1
	Two-part Valley Trim	Valley	through C-Channel	2
			through Support Bracket	1
			to lock angle	1
	Rake Trim	Rake	through C-Channel	2
	Angled Eave	Angled Eave	through C-Channel	2
			through Support Bracket	1
			to lock angle	1
	Obstruction Trim	Pipes, Heat Vents, OSD	through C-Channel	2
Step	Step Flashing	Sidewall	through C-Channel	2
Tile	Metal Tile	Ridge, Peakwall	per Support Bracket	1

APPENDIX 7 | FASTENER SCHEDULE

Category	Part	Feature	Mounting Hardware Schedule	Fastener Schedule (per component)
Bracket	Support Bracket	Valley	Minimum of 1 Bracket per Valley Trim	2x Fasteners Per Bracket
		Hip	Install Bracket if fits without cutting	4x Fasteners Per Bracket
		Metal Tile	Install Bracket every 7" o.c. (max.)	4x Fasteners Per Bracket
	Peakwall Bracket Flashing	Peakwall	1 Bracket every 15" o.c. (max.)	4x Fasteners Per Bracket
	Ridge Bracket	Ridge	1 Bracket every 15"	4x (2 per side) Fasteners Per Bracket
Cleats & Rails (To Deck)	Zee Pitch Transition Flashing	Transition	-	12" o.c.
	C-Channel	Rake, varies	-	6" o.c.
	Obstruction C-Channel	Round Obstructions	Install Obs. C- Channel every 6" under Pipe Flashing	12" o.c., min. of 3x per Bracket
	Starter Trim	Eave	-	12" o.c.
Pipe	Lower Extension	Pipe Flashing	all seams 1" back from edge	2
	Pipe Flashing	Obstruction	Install Obstruction C-Channel every 6"	uproof and downroof

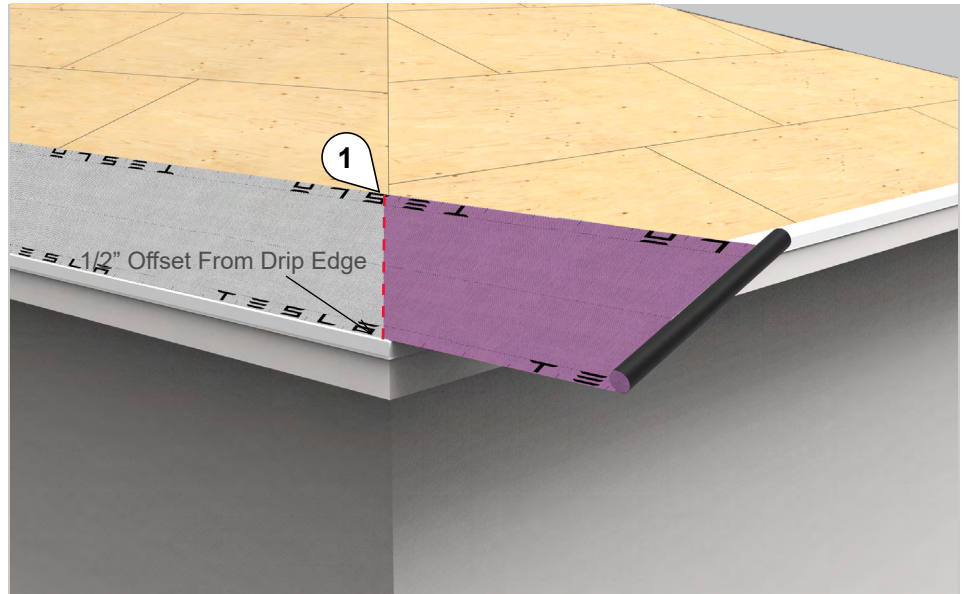
Category	Part	Feature	2.25" Concealer Screw Schedule	
Counterflashing	Reglet	Wall, Brick or Natural Stone	into kerf with Min. 4" Flashing Overlap	8" o.c.
	Surface Mount	Wall, Stucco or other	through studs with Min. 4" Flashing Overlap	8" o.c., with washer (12" o.c., with washer)

APPENDIX 8 | INSTALL PROCESS

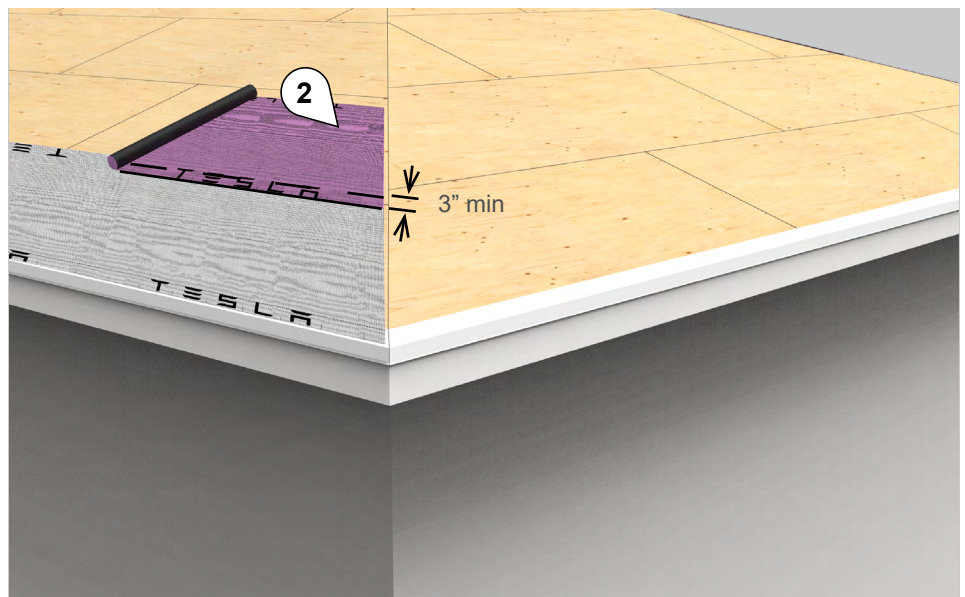
HIP DECK LEVEL

Place the first full roll course of underlayment 1/2" away from the drip edge flashing, cutting along the hip line (1).

Pro-Tip: Flip the roll and begin installing the underlayment across the row above in the opposite direction. This is the most efficient use of underlayment as it reduces waste from cutting triangles each row. For details check out this video clip: [Cutting Underlayment Efficiently](#).

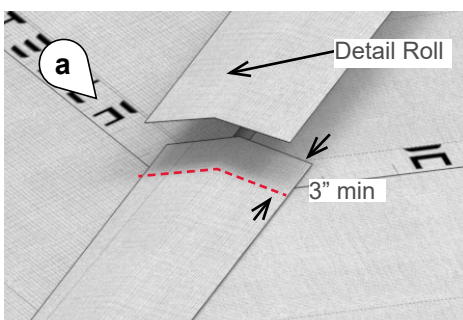


Overlap the underlayment below by 3" and continue down the row maintaining the minimum 24" offset from the end laps of the row below (2).

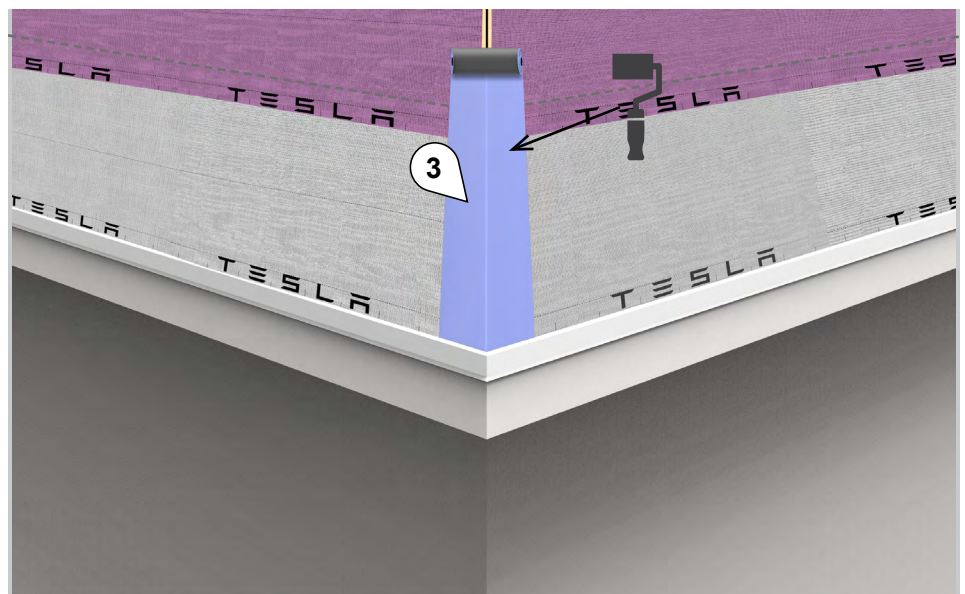


Once both mounting planes are complete, a detail roll to cap the hip shall be used and any endlap shall overlap a minimum of 3". (a).

Note: It is important to use the hand roller to ensure the detail roll has an adequate bond to the underlayment.



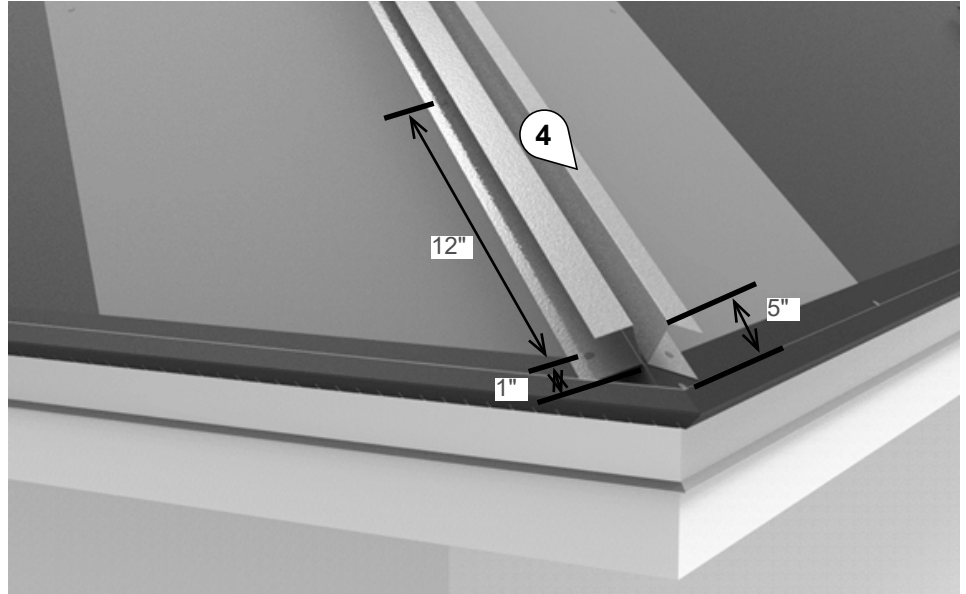
Example of Detail Roll Endlapped



APPENDIX 8 | INSTALL PROCESS

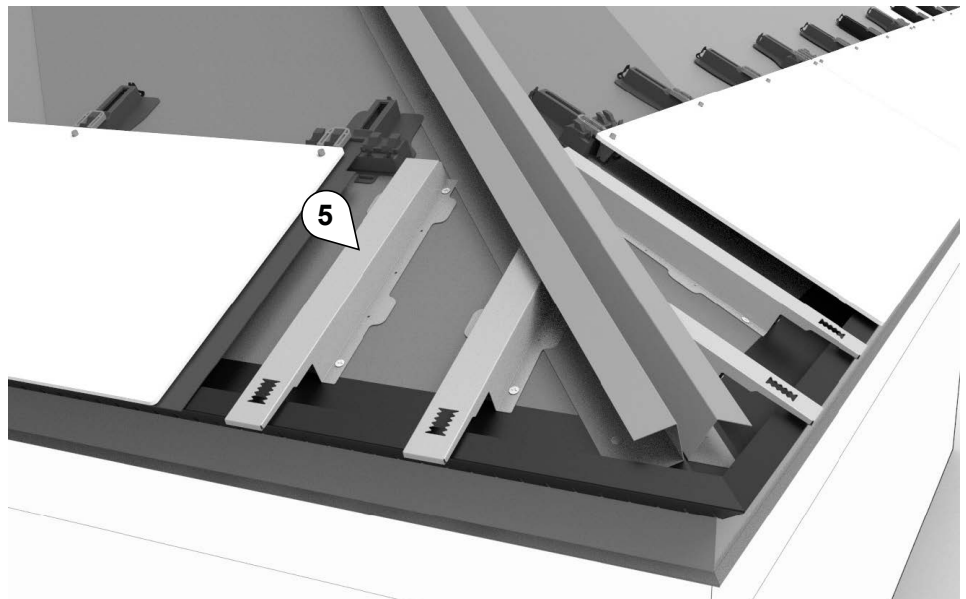
HIP TILE LEVEL

Install the Hip C-Channel 5" away from the edge of Starter Trim Flashing, then fasten 1" away from corner edge and every 12" or at rafters with appropriate fasteners.

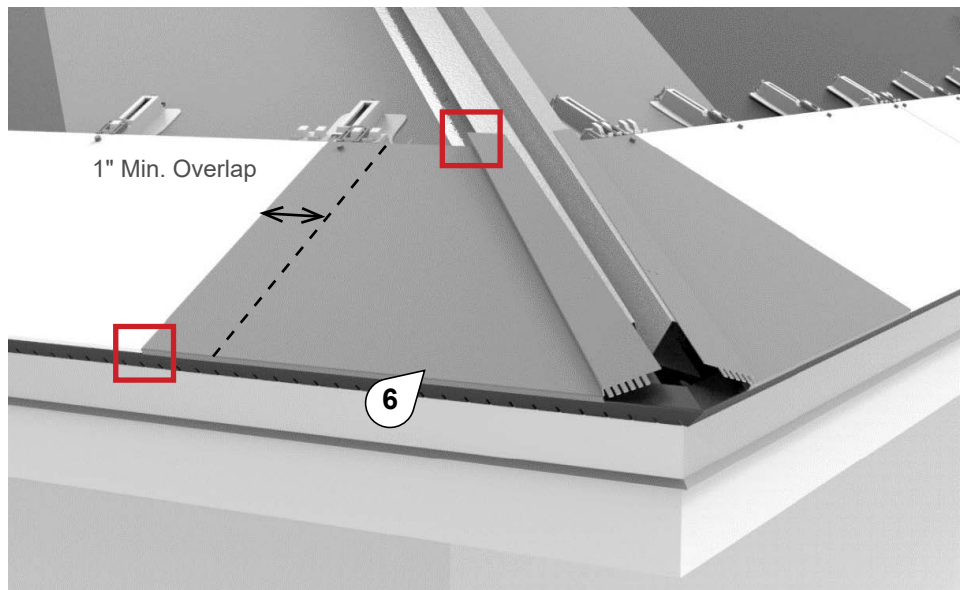


4 SUPPORT BRACKETS AT FIRST ROW

Install 2x Support Brackets at each side of the hip eave corner. Fasten the Support Bracket to the deck using a minimum of 4x fasteners



When placing hip trim into place, ensure there is a 1" overlap on the tile. Next, check the two points of contact at the top edge at C-Channel with the edge of the trim flashing, and the hook of the trim flashing is engaged over the bottom drip edge on the tile.

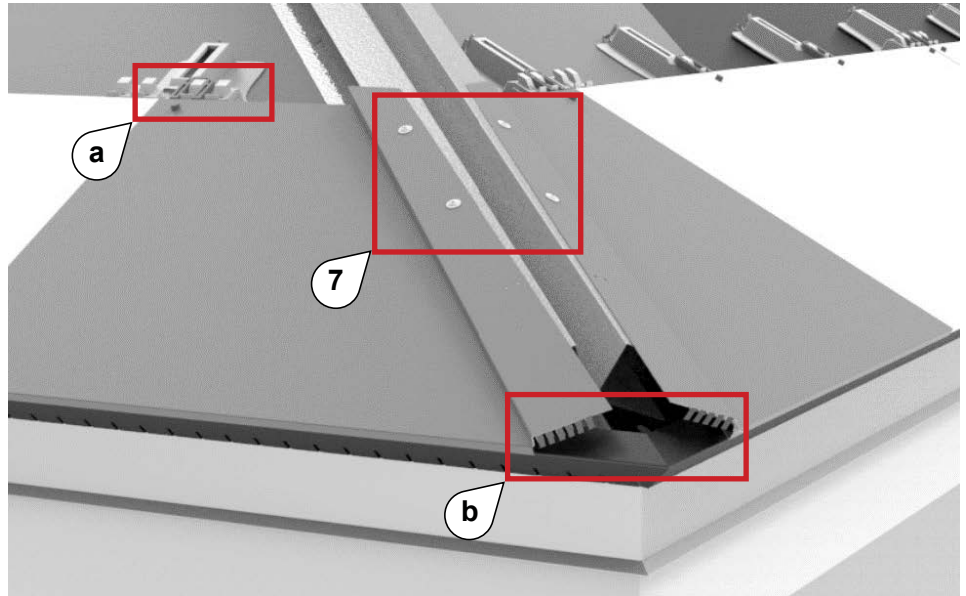


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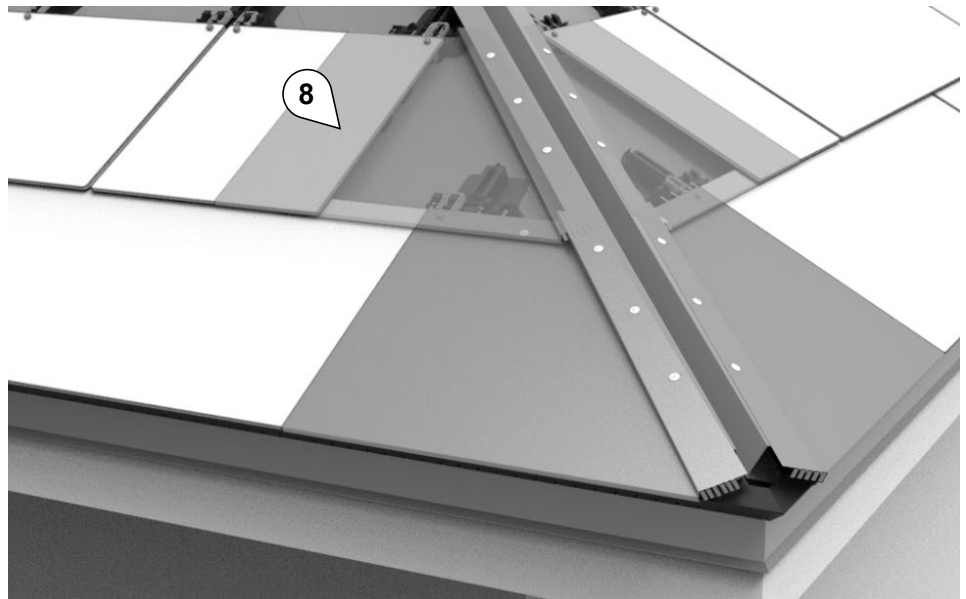
HIP TILE LEVEL

Install the Hip C-Channel 5" away from the edge of Starter Trim Flashing, then fasten 1" away from corner edge and every 24" or at rafters with appropriate fasteners.

- a. For assistance purposes, the tile tabs are bent over the tile when possible.
- b. Ensure the WUI fingers are moved down.

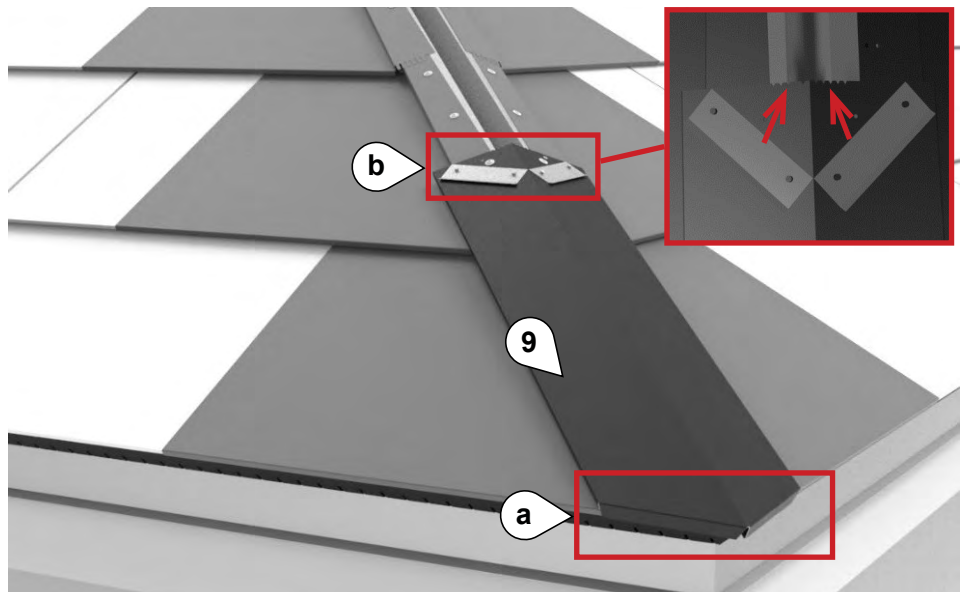


Continue installing both sides of the trim with the same steps until complete.



Place the starter hip cap over the hip trim. The starter will sit relatively flush to the starter hip trim.

- a. Hook the Hip Cap Starter over the Trim Flashing.
- b. Use notches at the top to align the Hip C-Channel's edge, then fasten the hip cap down into the Hip C-Channel with 2x self-tapping screws at the pre-drilled holes.

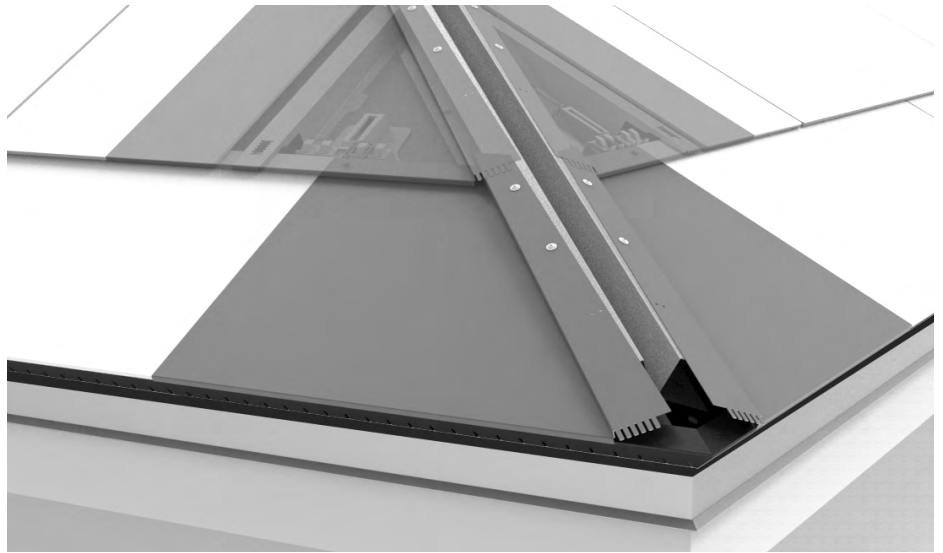


APPENDIX 8 | INSTALL PROCESS

HIP TILE LEVEL

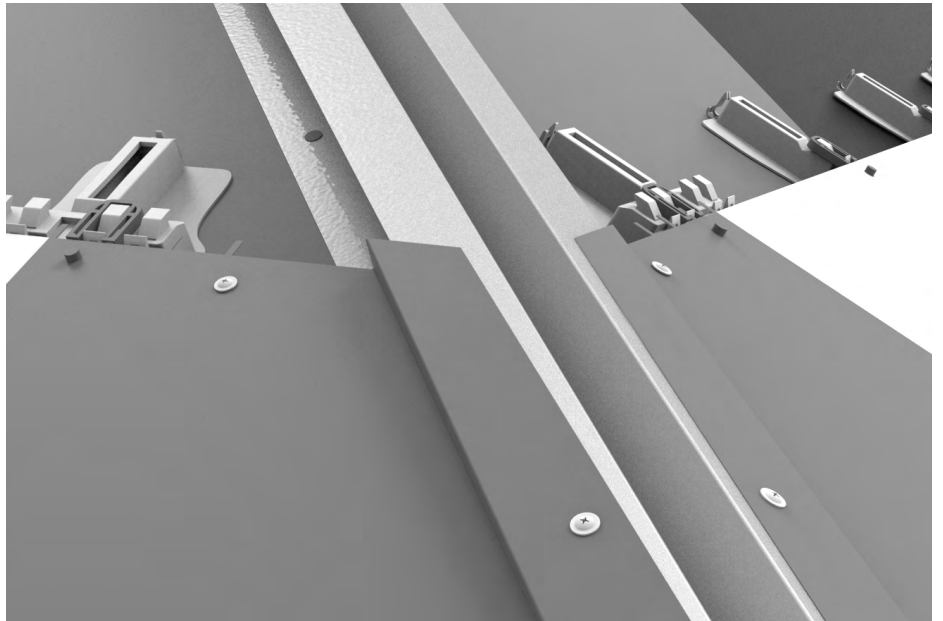
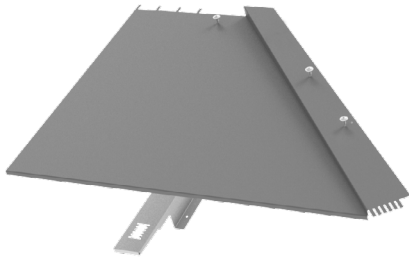
SUPPORT BRACKET

Fasten Support Bracket under Trim if it fits without modification. In areas where the Support Bracket does not fit, no Brackets need to be installed. Fasten the Support Bracket to the deck using a minimum of 4 screws.



HIP TRIM

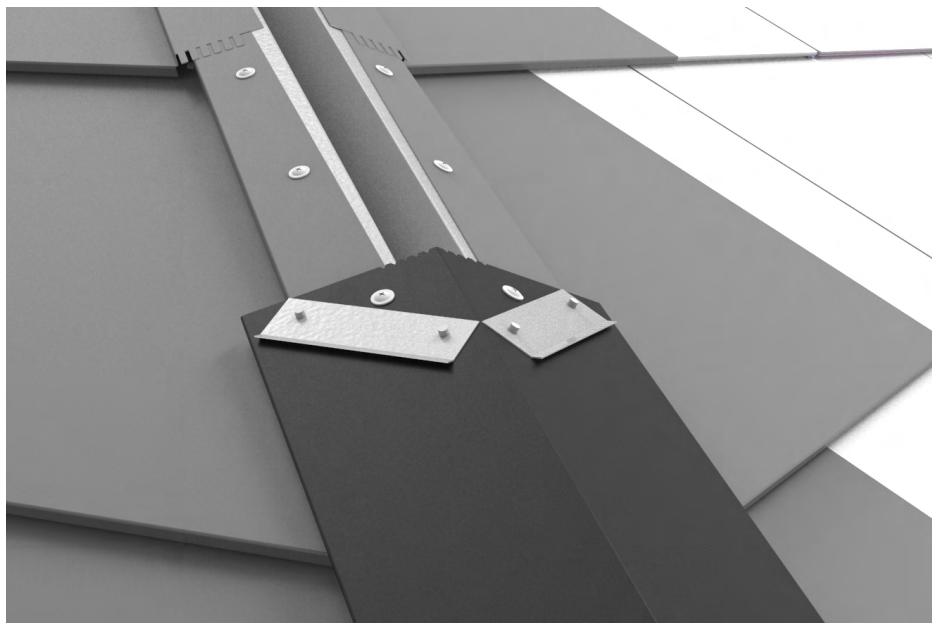
2 Self-Tappers through the C-Channel in the lower two holes. 1 Self-Tapping screw through Support Bracket (if installed).



STARTER HIP CAP

HIP CAP

2 Self-Tapping Screws, one per side fastened through C-Channel.



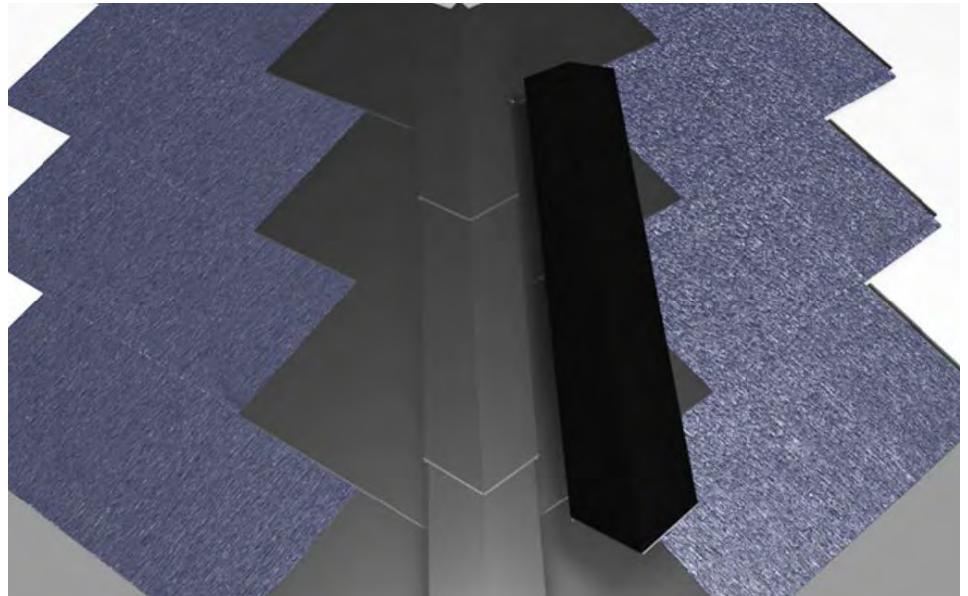
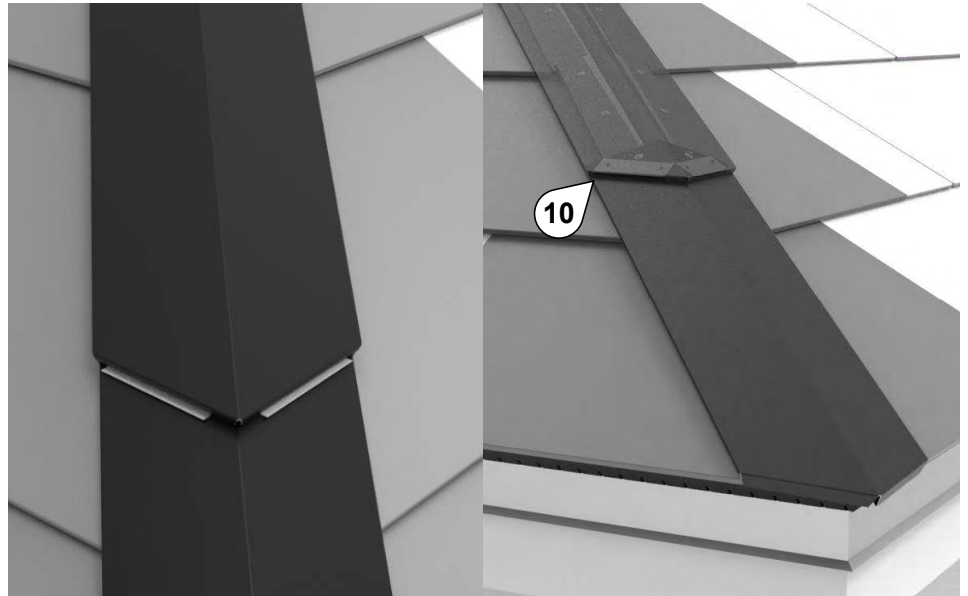
APPENDIX 8 | INSTALL PROCESS

HIP TILE LEVEL

Install the hip cap by placing them over the cleats of the starter hip cap, then shift down to put into place. This method will help minimize scratches. Next, use the top notches as a guide, then fasten the hip cap down into the hip c-channel with 2x self-tapping screws at the pre-drilled holes.

Note: Another way to install the hip cap is to use two small pieces of sheet metal placed between the starter and the hip trim to help guide the Hip Cap Starter over the Hip Trim. Then remove the sheet metal once the Hip Cap Starter is in place.

Optional: When reaching an intersection where the hip terminates and the span is less than 12" use a Transition Hip Cap in place of a Hip Cap.



APPENDIX 8 | INSTALL PROCESS

PEAKWALL AND RIDGE BRACKETS

BRACKETS: 1" SCREWS OR RING SHANK COIL NAILS WITH REDUCED 15" SPACING
RIDGE BRACKET
PEADKWALL BRACKET

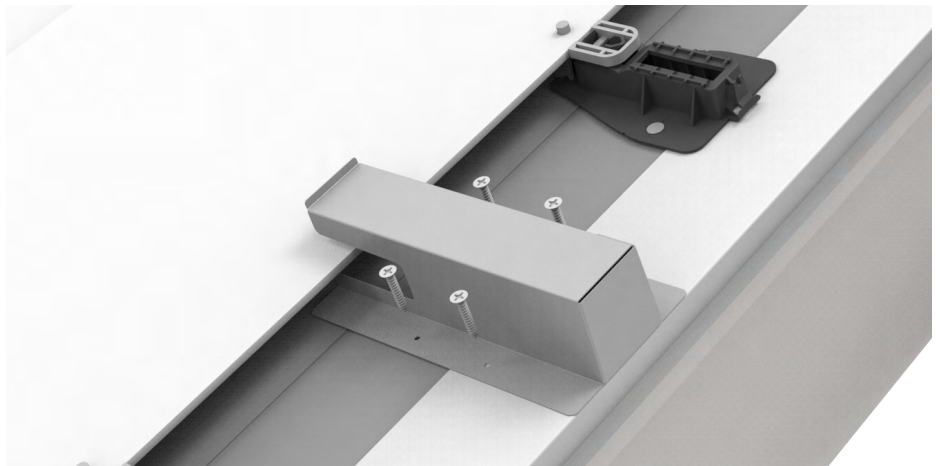
SUPPORT BRACKETS: REDUCED SPACING AT SELECT STARTER AREAS
FIRST ROW OF HIP, X4 SUPPORT BRACKETS REQUIRED

CLEATS: INSTALLED AS ADDITIONAL SUPPORT IN SELECT AREAS
INSTALL ZEE PITCH TRANSITION FLASHING AT HEADWALL

BRACKET

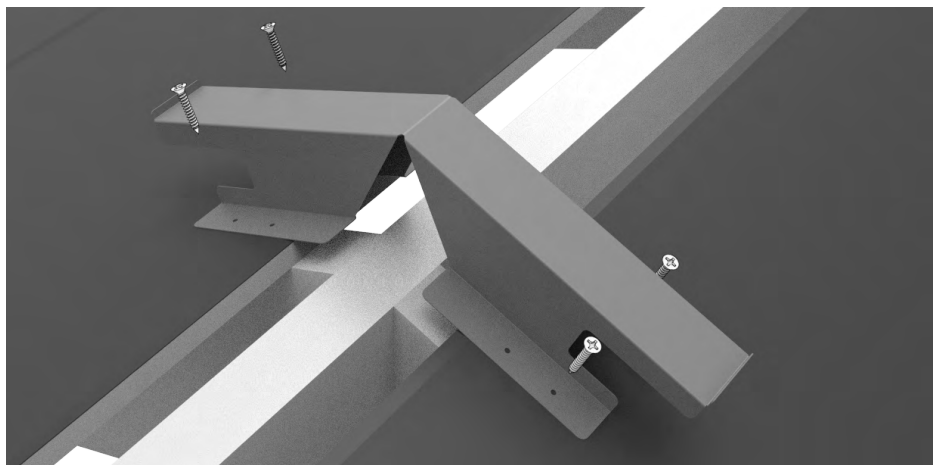
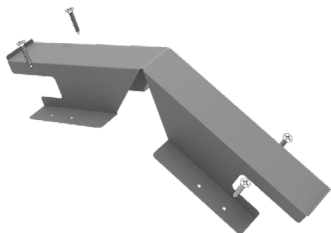
PEAKWALL BRACKET FLASHING

4x Fasteners per Peakwall Bracket Flashing.
Installed every set of feet appx. 15" intervals in
High Wind Areas.

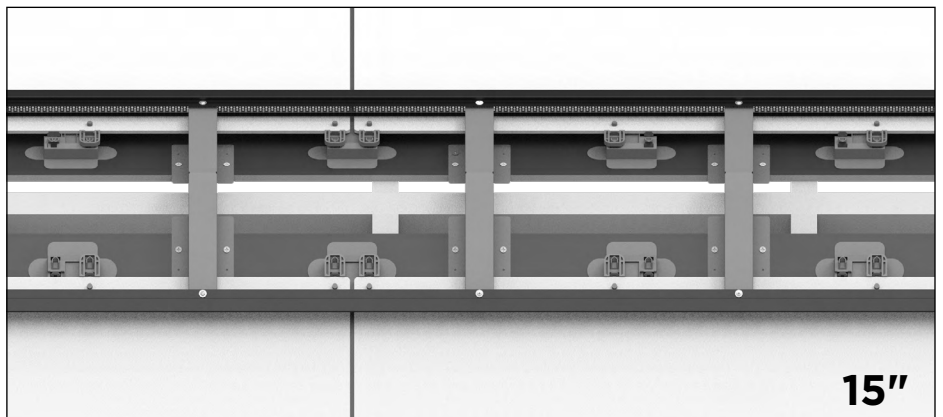


RIDGE BRACKET

4x fasteners, 2x per side.



Installed every set of feet appx. 15" intervals in
High Wind Areas.

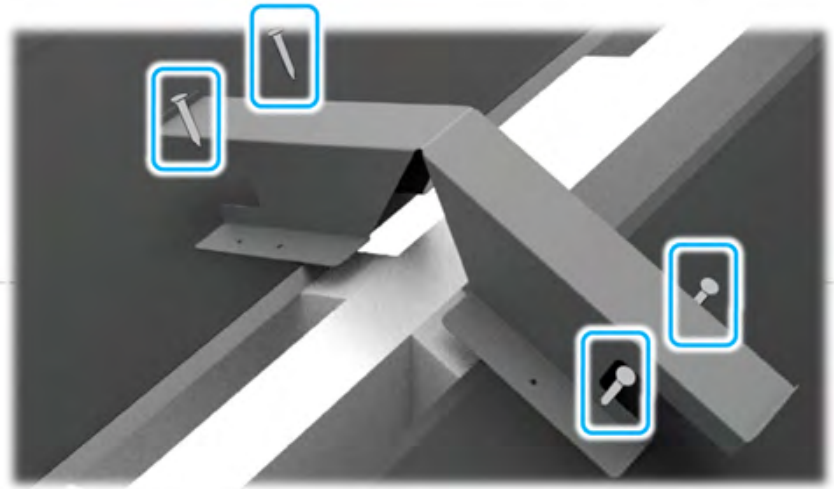


APPENDIX 8 | INSTALL PROCESS

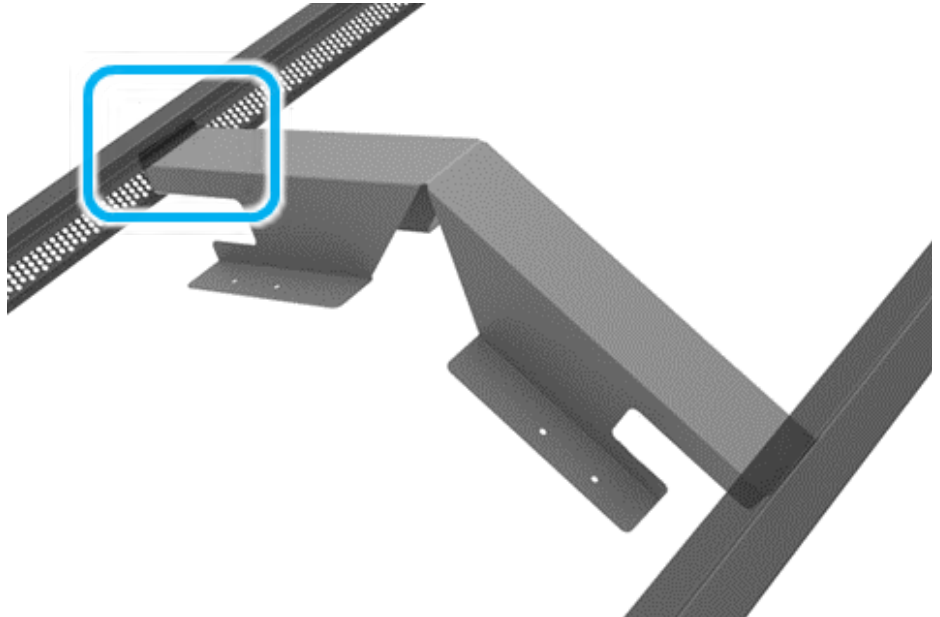
RIDGE

1. Secure the ridge bracket with appropriate fasteners, ensuring that both feet areas are sitting flat on the mounting plane. Space brackets ~30 inches apart.

NOTE: Its best practice to install every other foot.

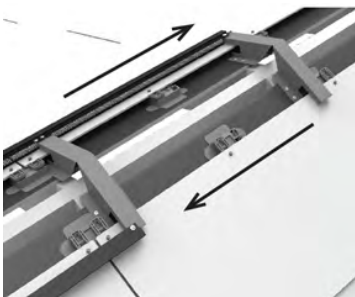


2. Position a vented ridge flashing over the support bracket, ensuring that the top flange of the support bracket is touching the back bend of the vented ridge flashing.



3. Secure the vented ridge flashing with 1 self-tapping screw per bracket per side.

NOTE: Situations where 2x self-tapping screws per bracket per side are needed include: high wind areas, or two vented ridge flashings installed next to each other on the same bracket foot (which requires the other side's seams to be staggered).



APPENDIX 8 | INSTALL PROCESS

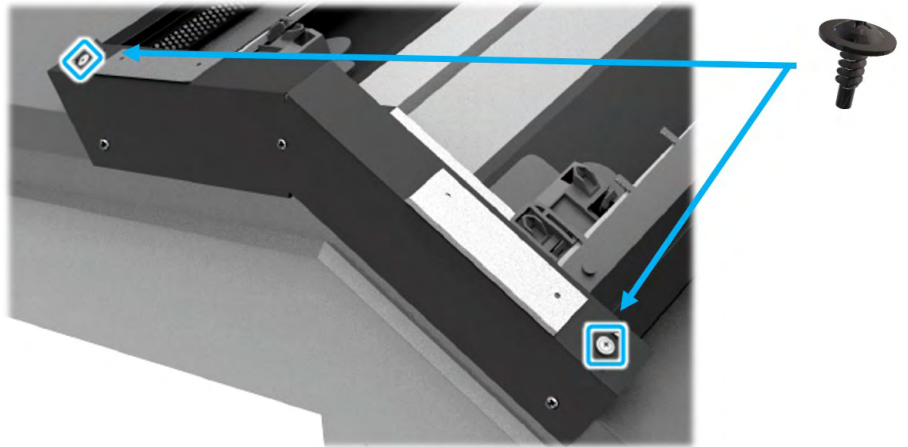
RIDGE

4. Modify the end cap flashing by cutting it to correct pitch of the ridge.

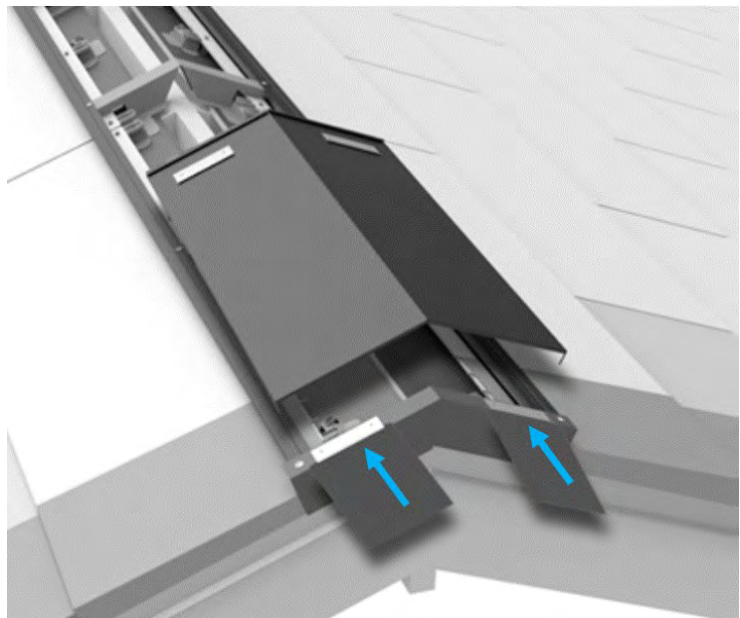


5. Position the end cap flashing to the ridge. Secure the end cap flashing to the ridge with one self-tapping screw on each side of the vented ridge flashing. Secure the face of the end cap flashing with black self-tapping screws.

NOTE: For high-wind situations, 2x self-tapping screws per side are required per vented ridge flashing.



6. Cut a 2-inch by 6-inch piece of sheet metal and wedge it in between the cleat and the end cap to prevent the metal pieces from scratching against each other.

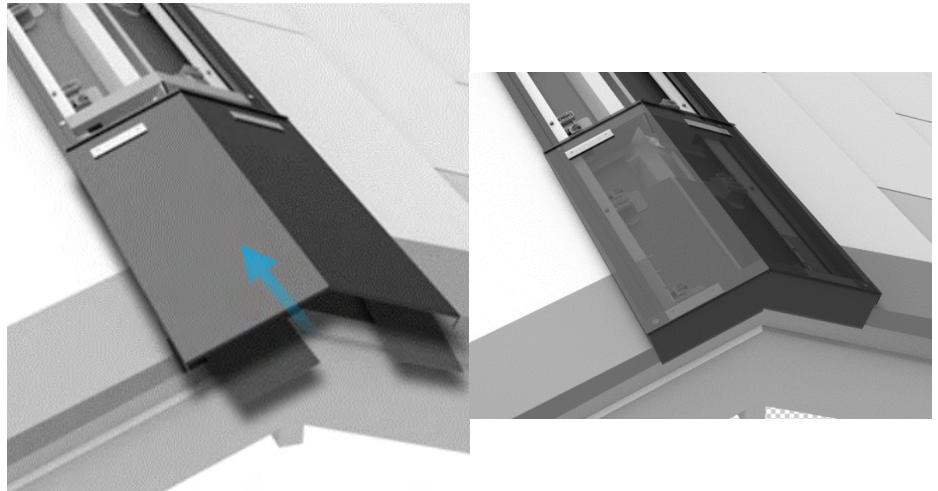


APPENDIX 8 | INSTALL PROCESS

RIDGE

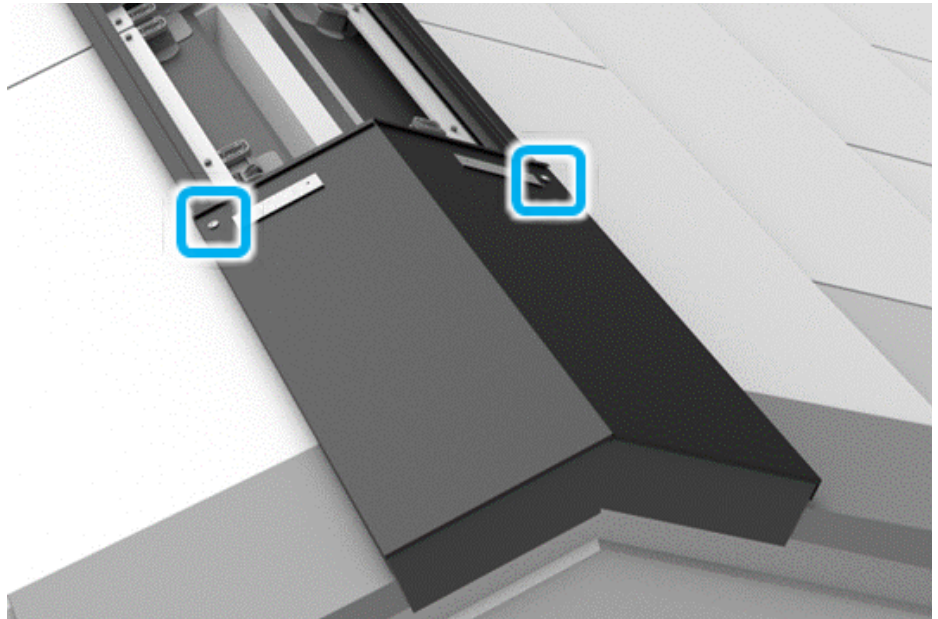
7. Position the ridge cap flashing over the ridge, ensuring that it engages with the top cleats. Position the next ridge cap flashing over the first one, ensuring that it engages with the top cleats.

NOTE: When dropping the first ridge cap, the overhang on the vented ridge flashing is equally gapped. Do it as you build up.



8. Secure the ridge cap flashing to the vented ridge flashing with one self-tapping screw per side. Repeat this process until the mid-point of the ridge is reached.

NOTE: For high wind areas, 2x self-tapping screws per side is required.

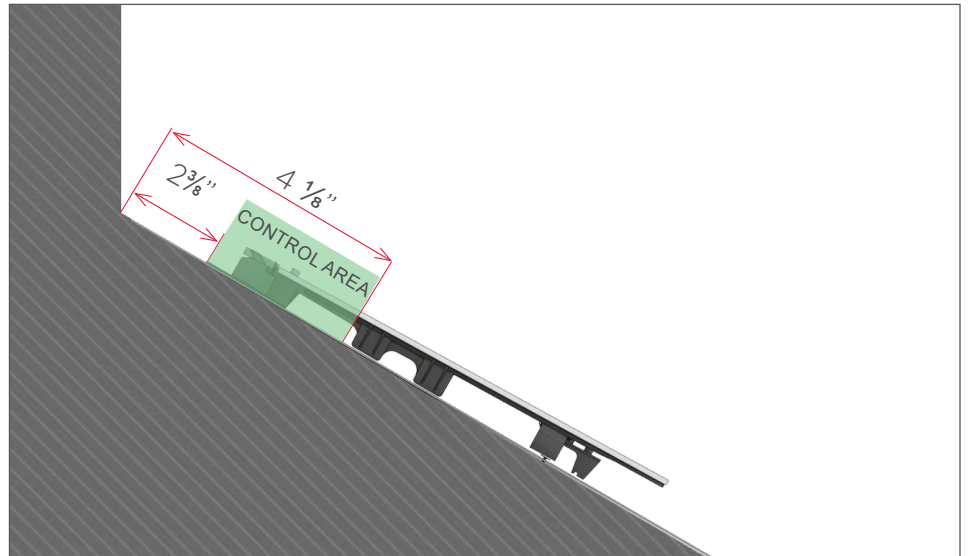
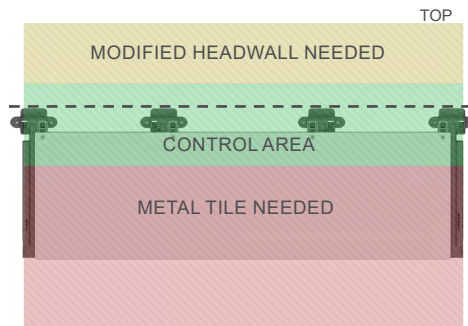


APPENDIX 8 | INSTALL PROCESS

HEADWALL

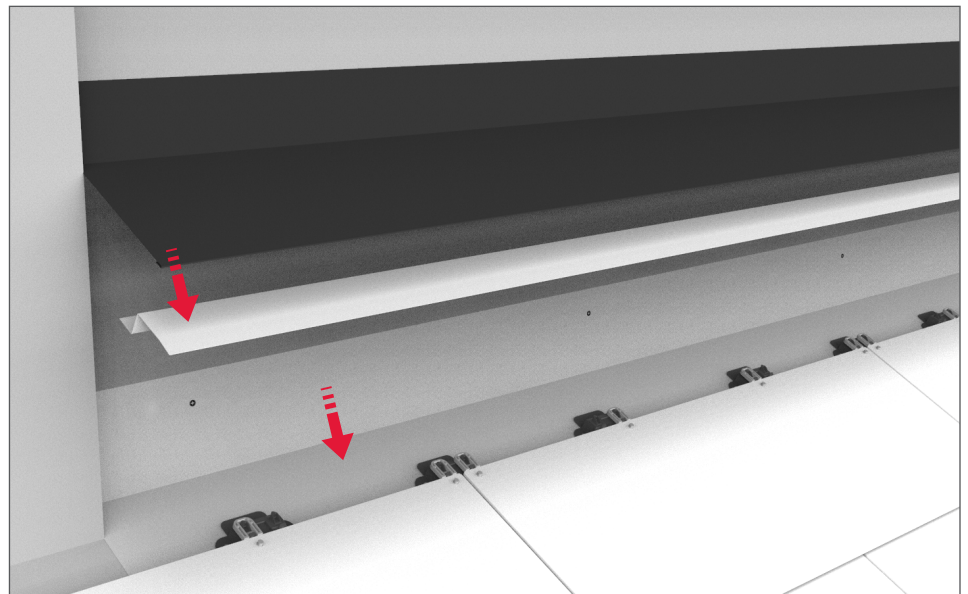
FOOT PLACEMENT

Install feet within 2-3/8" to 4-1/8" to reduce in field fabrication. This control range is shown in green.

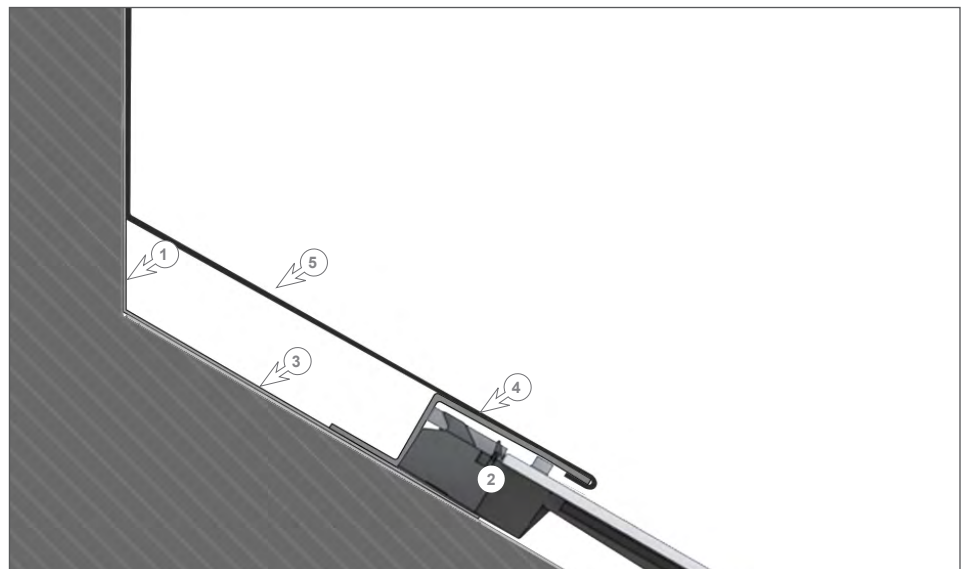


ZEE PITCH TRANSITION FLASHING

Install Zee Pitch Transition Flashing under the tile level Headwall Flashing.



1. Headwall Flashing, deck level
2. Tile with Feet
3. Underlayment
4. Zee Pitch Transition Flashing
5. Headwall Flashing, tile level

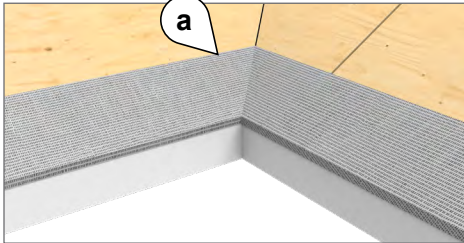


APPENDIX 8 | INSTALL PROCESS

VALLEY

Apply underlayment to valleys in this order:

1. Install Eave Drip Flashing.
2. Lay down a full roll of underlayment centered in the valley.



Note: In areas that see ice dams in their gutters, install a detail roll along the eave extending down onto the fascia board 1" before installing the drip edge along the eave.

3. Each row of underlayment shall overlap the valley underlayment and carefully cut back from the valley center by approximately 6".

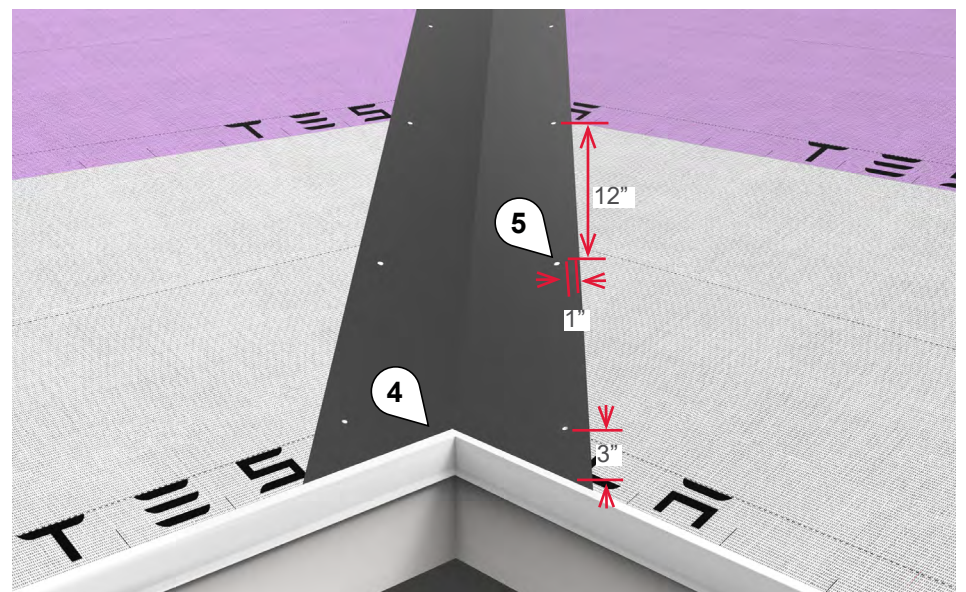
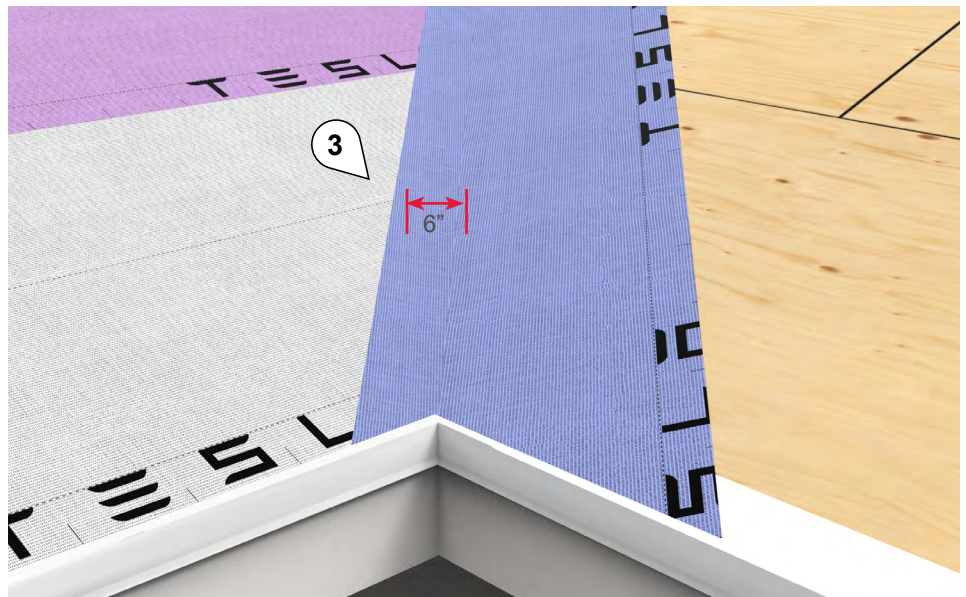
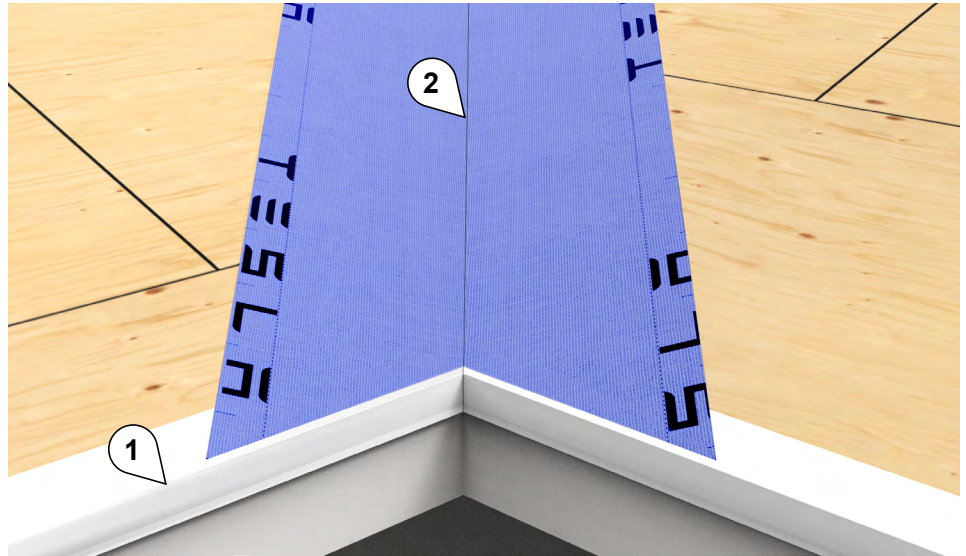
Do not cut through to the valley underlayment.

ProTip: Place a sheet of coil stock under the section of underlayment that will be cut along the valley to prevent accidental cutting through to the valley underlayment.

4. Bend your metal valley flashing to the proper pitch, scribe the eave, and cut the lower edge.

ProTip: Add 1" to the scribe and hem the bottom edge for a cleaner look.

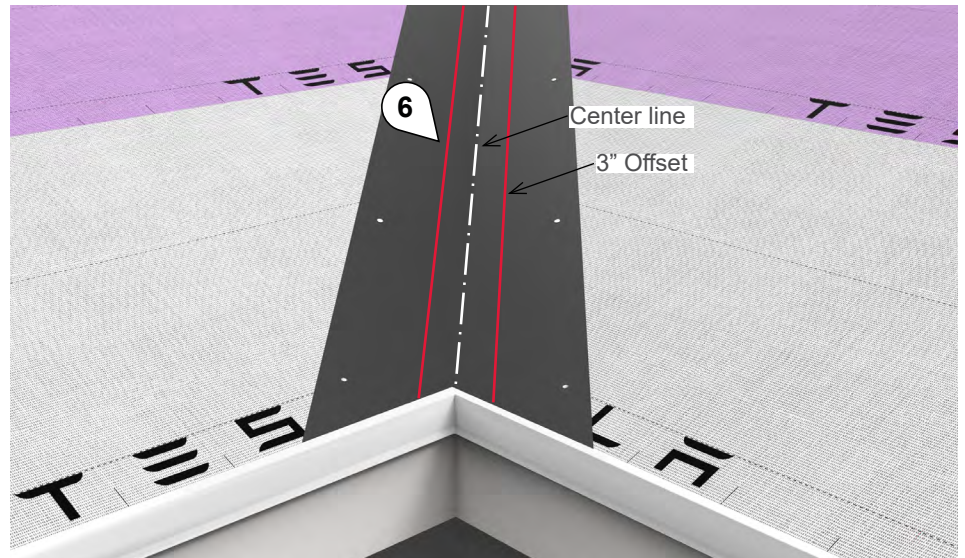
5. Fasten the valley pan 1" from the outer edge and 12" up the valley. The first fastener should start 3" up from the drip edge.



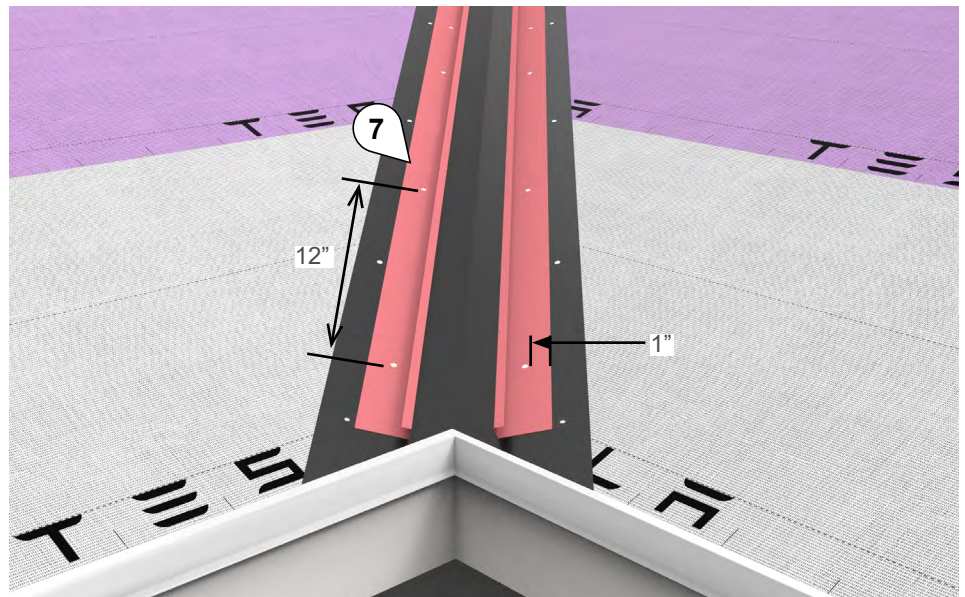
APPENDIX 8 | INSTALL PROCESS

VALLEY

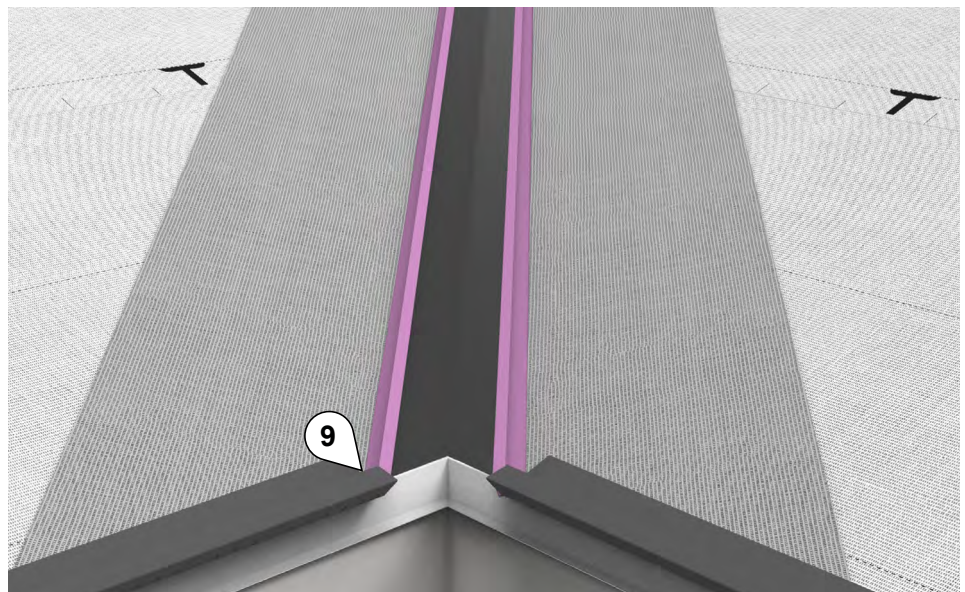
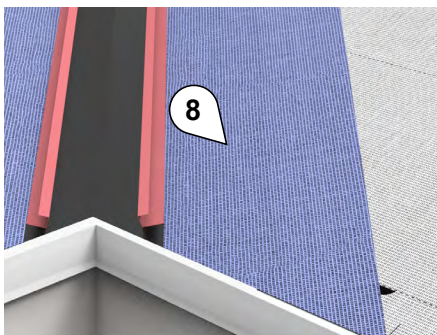
6. Snap a line 3" away from the valley center line and install the C-Channels on both sides, providing a 6" open valley.



7. The C-Channels shall be placed along the chalk line 3" away on each side. They are fastened 1" from the outer edge and 12" up the valley.



8. Strip-in the C-Channel and valley pan covering the fasteners and C-Channel.
9. Install the starter trim over the deck C-Channel, trim and bend over the extra at the corner.



APPENDIX 8 | INSTALL PROCESS

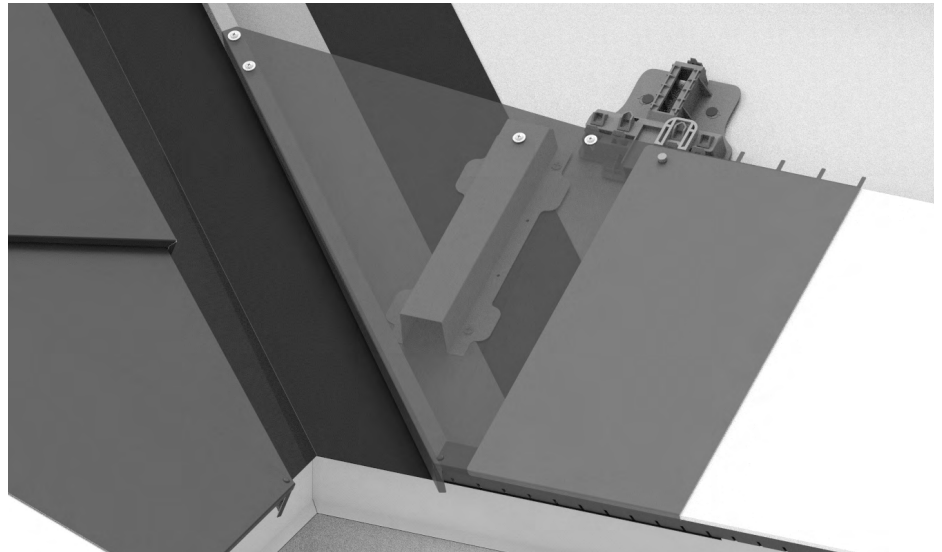
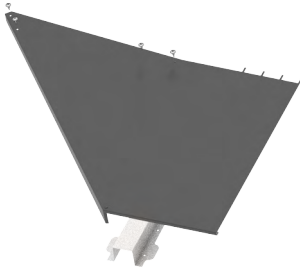
VALLEY

VALLEY TRIM

2 Self Tapping Screws fastened to C-Channel.

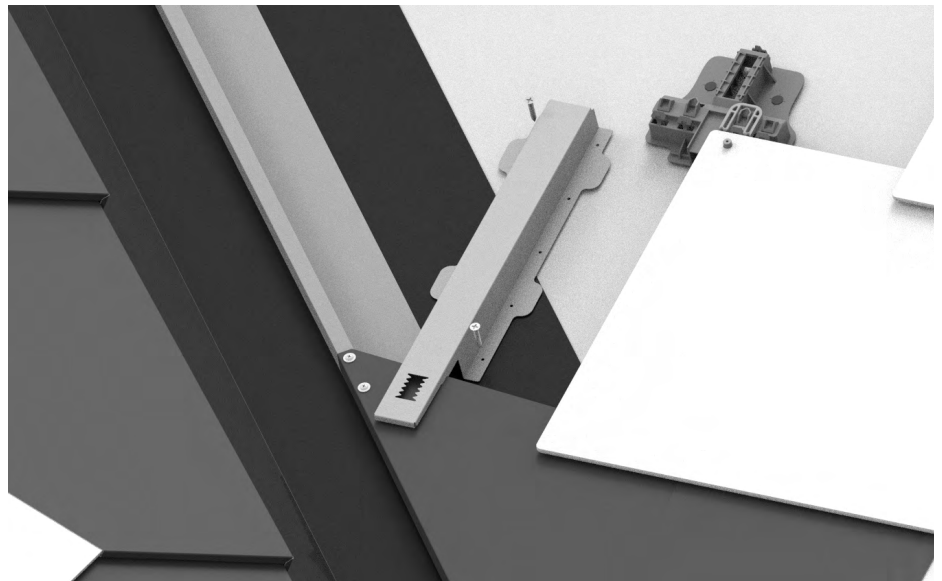
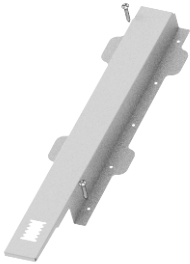
1 Self Tapping Screws fastened to Support Bracket.

1 Self Tapping Screw to lock Trim angle.



SUPPORT BRACKET

Install a minimum of 1 Support Bracket per Trim and every 7". Minimum of 2 Fasteners per Support Bracket.



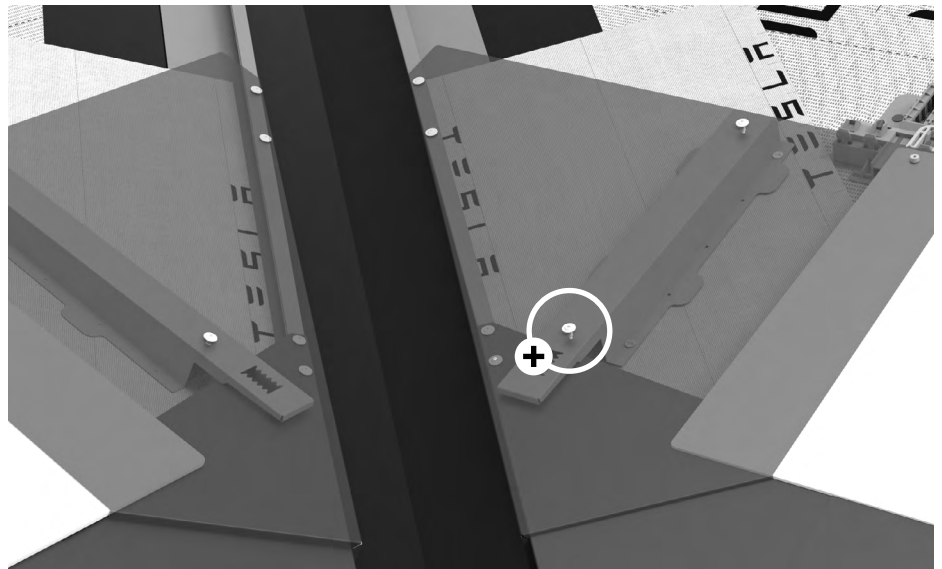
HIGH SNOW LOAD VALLEY

VALLEY TRIM

2 Self Tapping Screws fastened to C-Channel.

2 Self Tapping Screws fastened to Support Bracket (Refer to TESR-WI-0415-21 for additional information).

1 Self Tapping Screw to lock Trim angle.



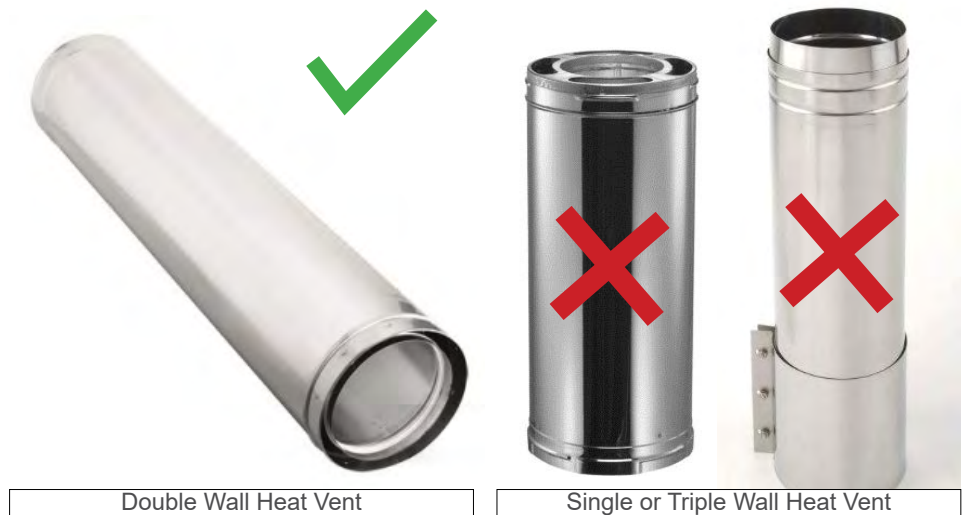
APPENDIX 8 | INSTALL PROCESS

DECK LEVEL PIPE FLASHINGS- TYPE B VENT

These steps begin after Phase 1 has been completed. Ensure that all vent pipes are Type B only. Chimney pipes or other high temperature vent pipes will not work with the rubber boot deck flashing. The rubber boot flashing may only be used when temperatures of the pipe do not reach above 212 degrees Fahrenheit.

Note: Pipe sizes and types that do not meet the adjustable rubber boot flashing parameters must be sourced from local roofing retailers.

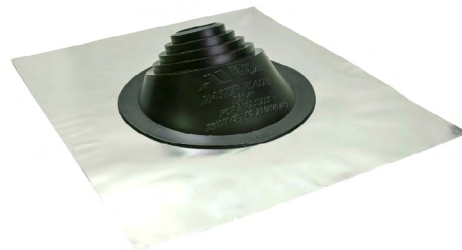
Note: Underlayment may be installed at a horizontal, diagonal, or vertical method. It is up to the installer to determine the fastest process for each scenario.



Start by measuring the outside diameter of the pipe.



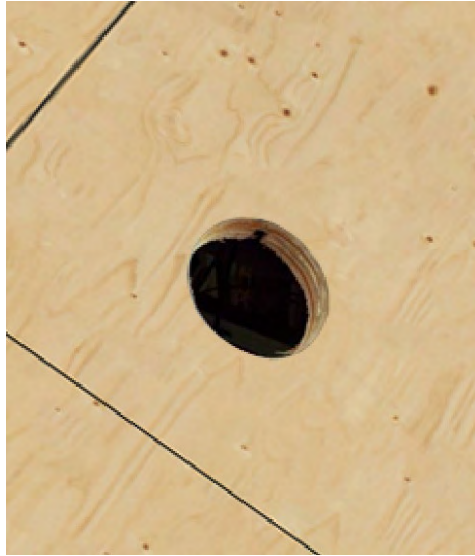
Cut the rubber boot on the flashing to the closest labeled diameter with a utility knife.



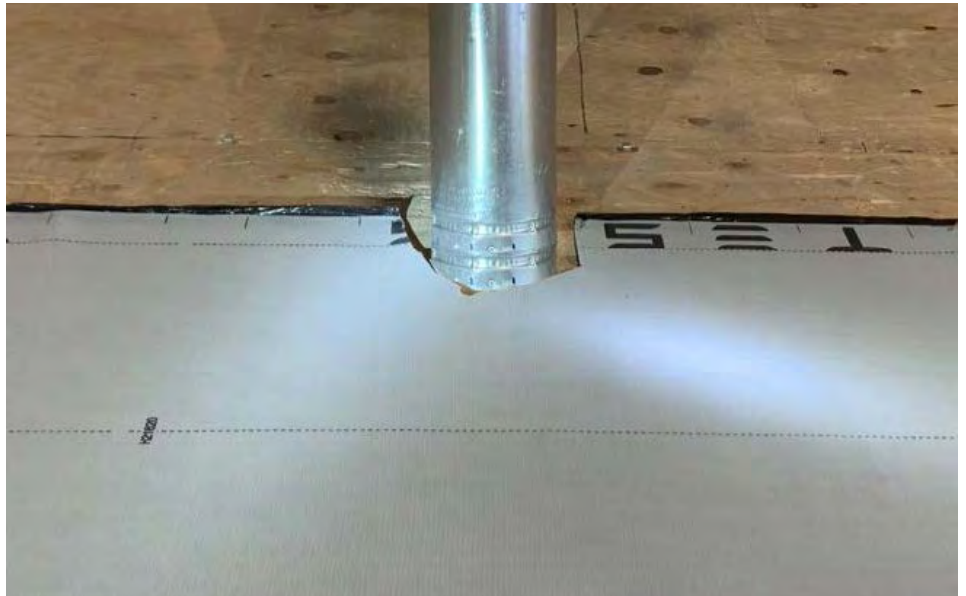
APPENDIX 8 | INSTALL PROCESS

DECK LEVEL PIPE FLASHINGS- TYPE B VENT

Optional: If working with a non-rigid vent, like a bathroom fan that uses a flexible duct. Cut the rubber boot to the max diameter of 8".



Test fit the deck level flashing over the vent and mark out the profile on the deck. Layout the first course of underlayment and ensure the flashing overlaps at a min of 4".



Secure the flashing down 1" away from the edges at the corners and every 6" from there with the appropriate fasteners. Ensure not you fasten on the bottom area 3" away from the edge.



Next, install the upper underlayment course, and make a slot with a $\frac{1}{2}$ " -1" gap around the collar of the pipe. In this example, a bib patch was used since the lower underlayment sat above the pipe.

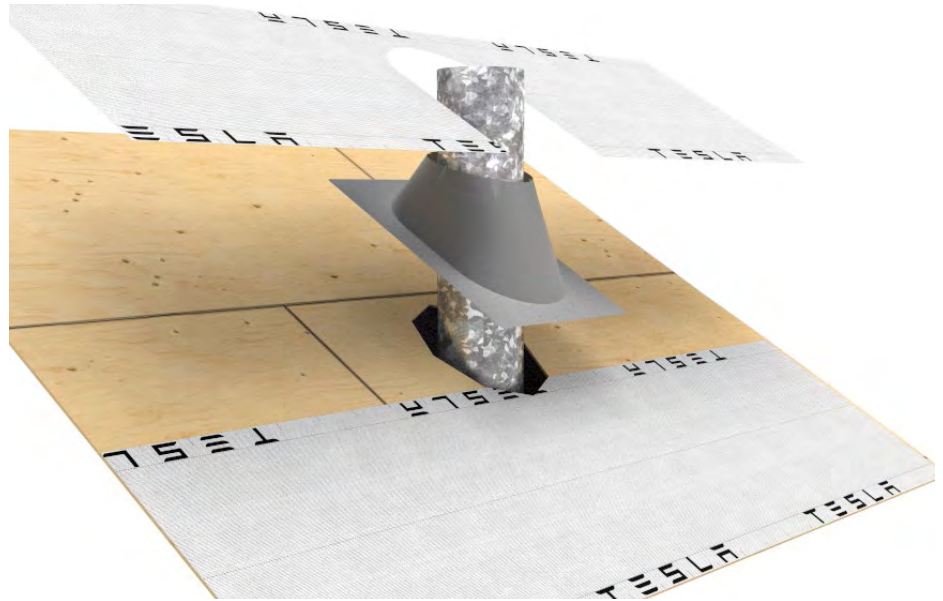


APPENDIX 8 | INSTALL PROCESS

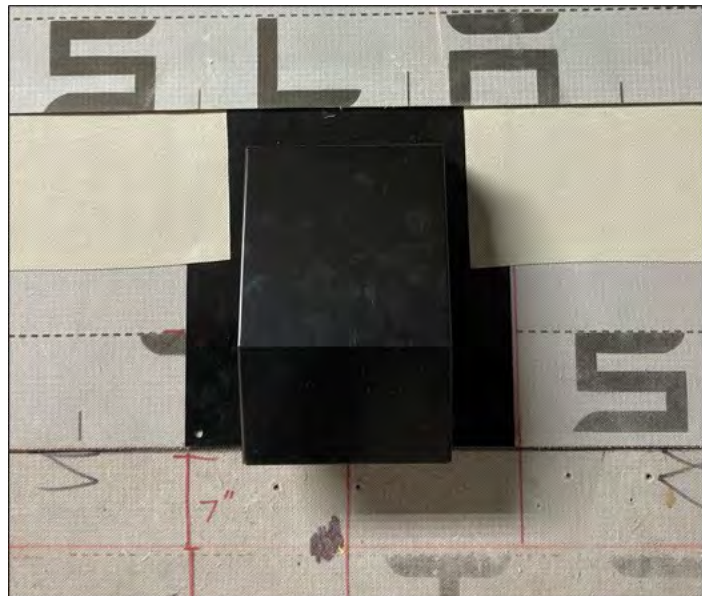
DECK LEVEL PIPE FLASHINGS- CHIMNEY PIPES, OVAL GAS VENT PIPES, AIR EXHAUST VENTS OVER 8" IN DIAMETER

INSTALLING CUSTOM OR METAL DECK FLASHING

Install a minimum of 1 Support Bracket per Trim and every 7". Minimum of 2 Fasteners per Support Bracket.



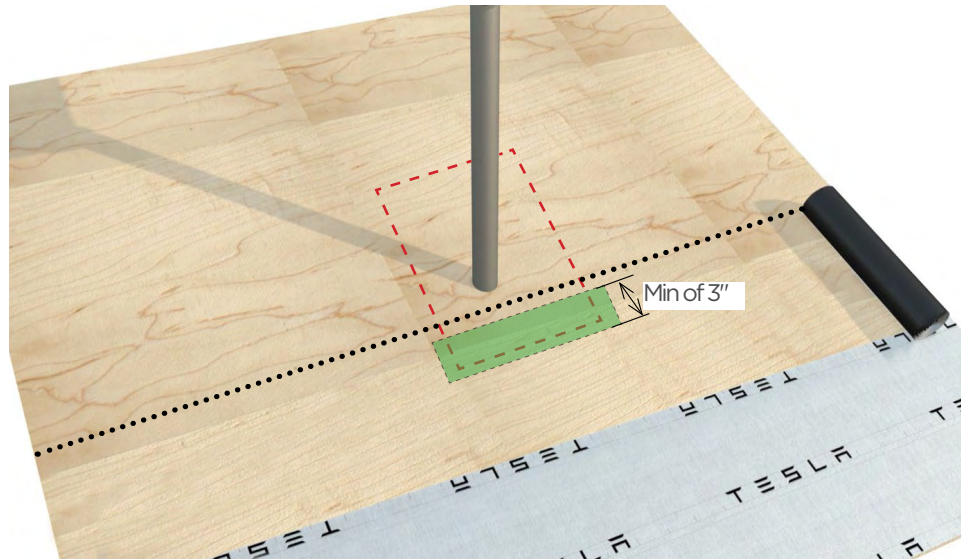
Optional: If the existing deck flashing is in good condition, integrate the deck level flashing into the tile level using gutters and/or flexible flashing. See Flexible Flashing work instructions for one possible process.



APPENDIX 8 | INSTALL PROCESS

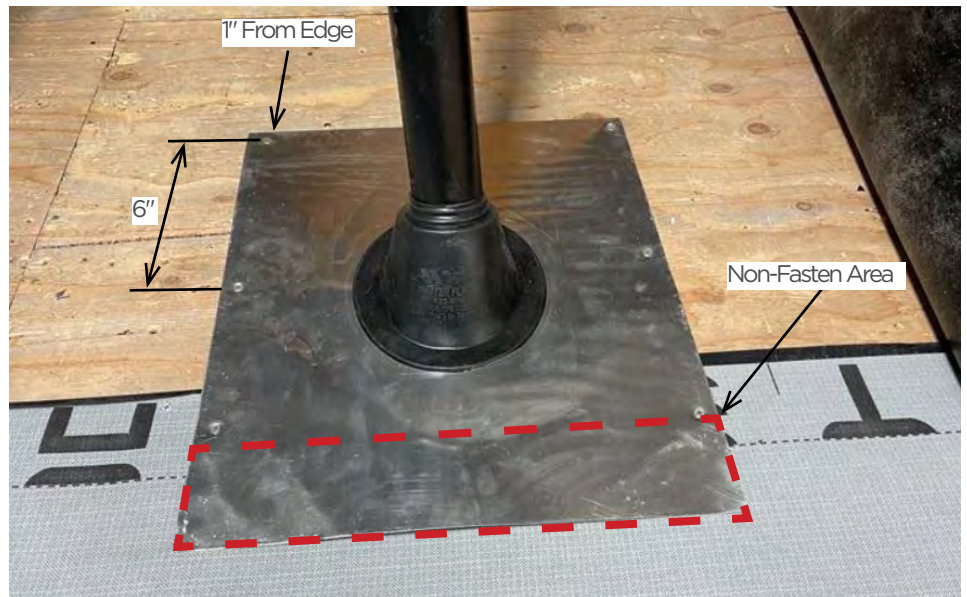
DECK LEVEL PIPE FLASHINGS- DWV

Start by ensuring all existing pipe flashing is removed. Next, test fit and mark out where the new deck level pipe flashing will sit. Finally, install your underlayment courses until your last course overlaps the pipe flashing outline by a min of 3".

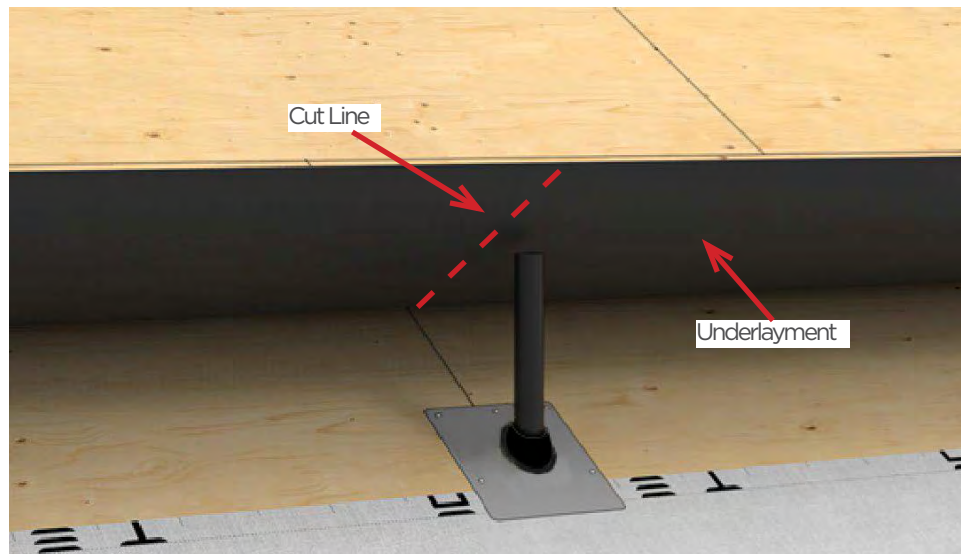


Secure down at the sides 1" away from the back edge of the pipe flashing and 6" in-between the edges with the appropriate fasteners.

Note: Do not nail the front of the pipe flashing.



Add your next course of underlayment and from the backside, cut up vertically, center at the pipe flashing to the end of the underlayment. If the lower underlayment course sits past the pipe flashing, proceed to the optional steps of fabricating an underlayment bib or using the underlayment detail roll.



APPENDIX 8 | INSTALL PROCESS

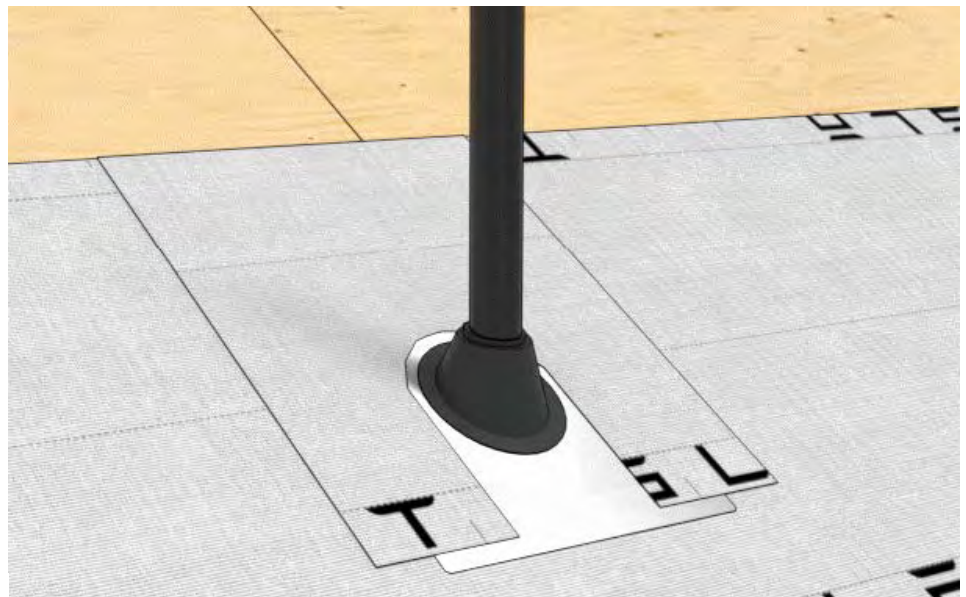
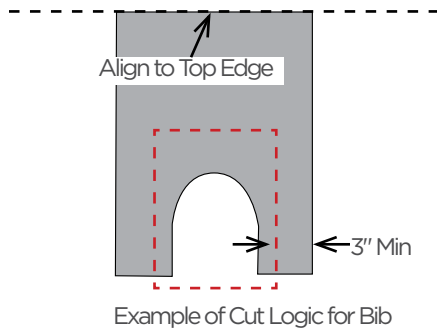
DECK LEVEL PIPE FLASHINGS- DWV

Condition A: Starting at the top of the cone where the cut stopped, continue cutting up ½" to 1" and around the cone to make half of an upside-down U shape. Mirror this shape on the other side. Ensure the underlayment covers the fasteners on the sides of the pipe flashing; if any are showing, remove the upper underlayment course and proceed to the optional steps below.

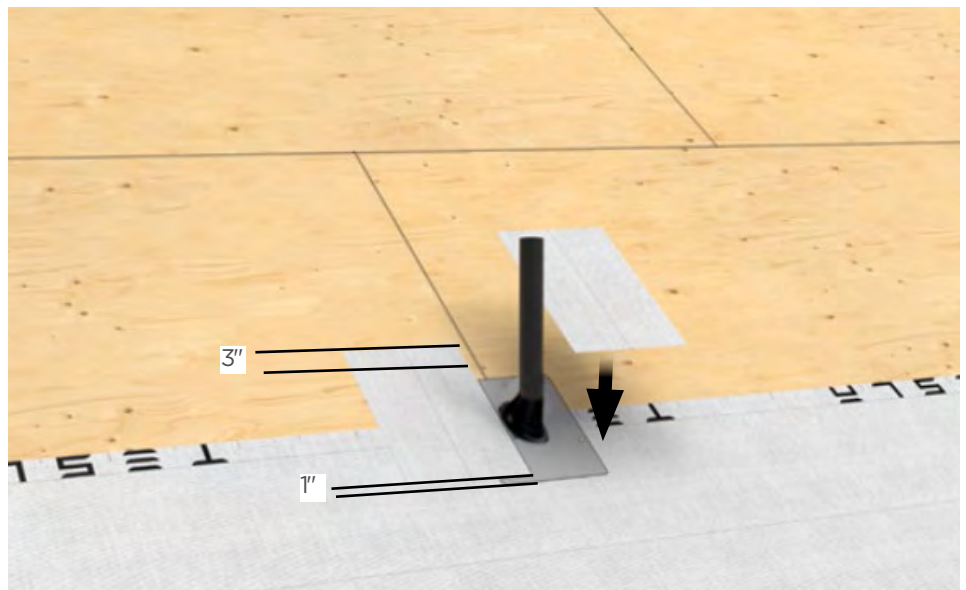
Note: A min of 1" of the drip edge on the pipe flashing should be showing past the top underlayment.



Condition B: Only do this step if your upper course of underlayment sits past the pipe flashing and does not cover the flashing fasteners adequately. Start by making a bib shape out of a full roll of underlayment, ensure each side of the bib has at least 3" min of underlayment sides and the top edge aligns to the top of the underlayment below.



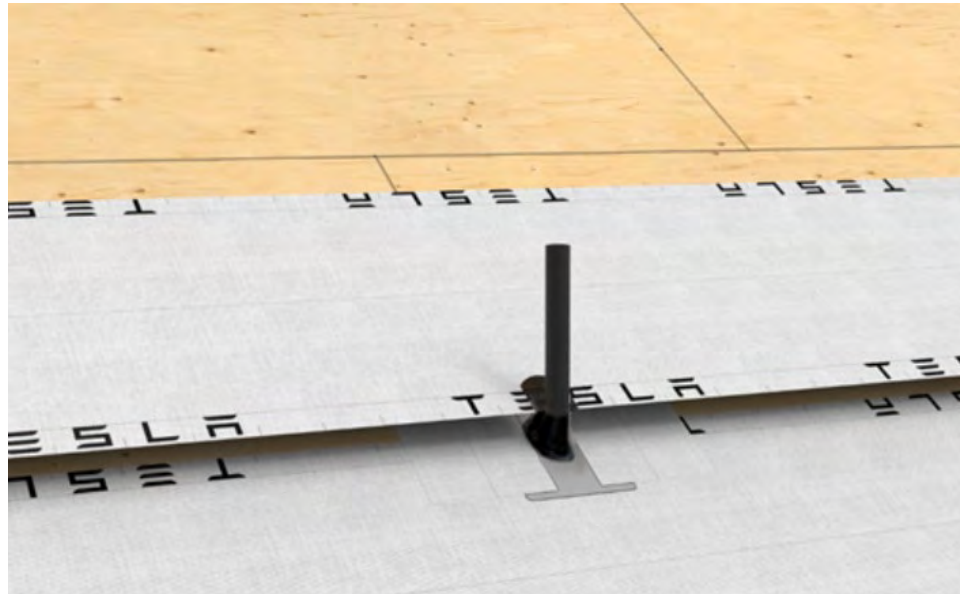
Condition C: Only do this step if your upper course of underlayment covers only half or a little of the flashing and does not adequately cover the flashing fasteners. Strip in the sides starting 1" away from the flashings bottom edge and 3" min past the top.



APPENDIX 8 | INSTALL PROCESS

DECK LEVEL PIPE FLASHINGS- DWV

Condition C: Next, install the upper course of underlayment, and cut around the ½" - 1" around the base of the cone.



APPENDIX 8 | INSTALL PROCESS

DECK LEVEL PIPE FLASHINGS- OVERHEAD SERVICE DROP

These steps begin after Phase 1 has been completed and an Electrical Competent Person has completed a safety inspection of the work area.

Note: Underlayment may be installed at a horizontal, diagonal, or vertical method. It is up to the installer to determine the fastest process for each scenario.

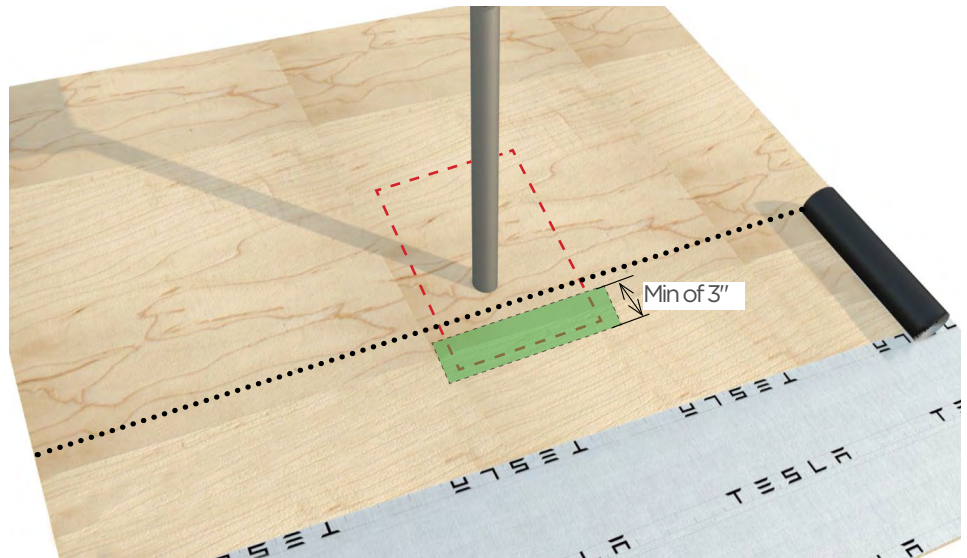
Disclaimers:

- The Electrical Competent Person (EQP) must evaluate the area for all hazards.
- The Electrical Competent Person (EQP) is the only authorized to perform the inspection and install the guarding.
- Service wires and splices are undamaged, and no exposed parts exist. The service drop and service wires can be covered with an appropriately rated insulating blanket to prevent accidental contact or damage from workers and parts.
- Damaged or missing insulation on service wires must be identified.
- Where damage exists to the service wires and/or splices, the Electrical Competent Person (EQP) must evaluate the hazard and determine if guarding with an insulating blanket will increase the risk of an event or mitigate it.
- Should the Electrical Competent Person (EQP) determine that guarding with a blanket will increase the risk of arc-flash and/or short, then a blanket must not be used, and a utility shut down must be coordinated.

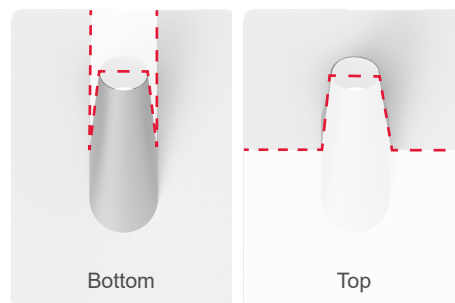
INSTALLING DECK LEVEL PIPE FLASHING

SPLICE

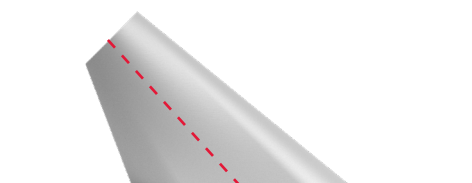
Start by ensuring all existing pipe flashing is removed. Next, test fit and mark out where the new deck level pipe flashing will sit. Finally, install your underlayment courses until your last course overlaps the pipe flashing outline by a min of 3".



Start by taking two-deck level pipe flashings and cut out the back of the cone in half and a slot at the top of the flange.



Flashing Cut Lines

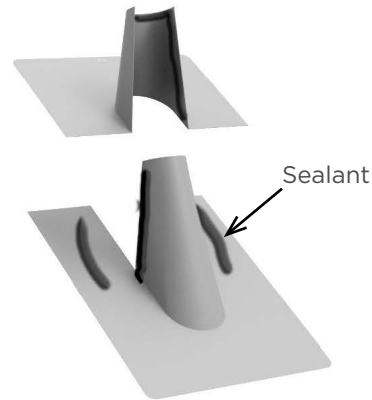


Flashing Cut Lines Side Profile

APPENDIX 8 | INSTALL PROCESS

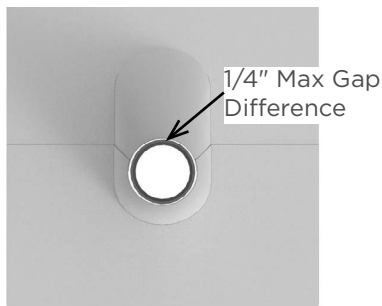
DECK LEVEL PIPE FLASHINGS- OVERHEAD SERVICE DROP

Place sealant $\frac{1}{2}$ " away from the cone edge for the bottom piece and place the top piece over it. Ensure that at least $\frac{1}{2}$ " of material from the top section overlaps the cone of the bottom sections.

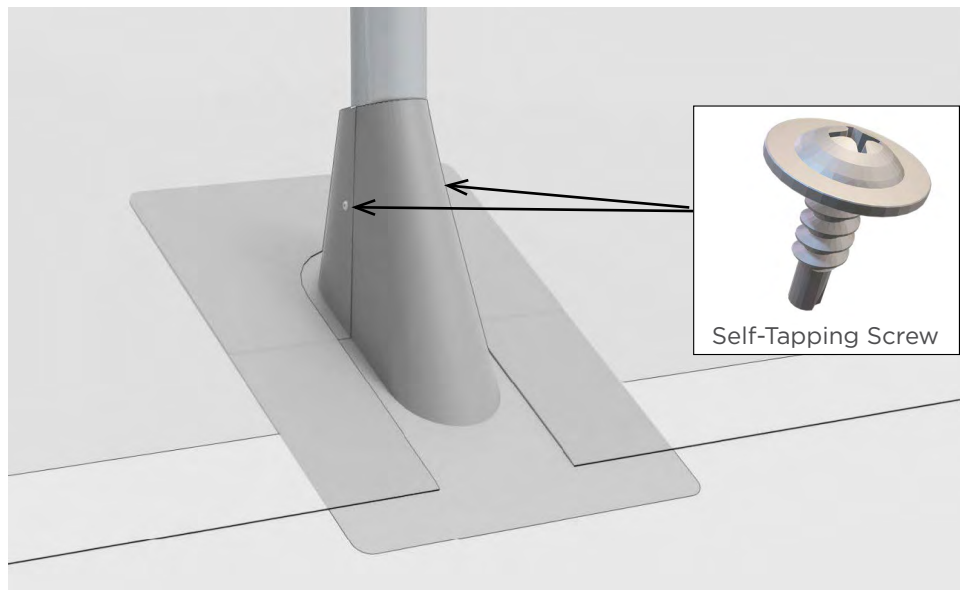


Ensure that the flashing around the diameter has no more than a max gap difference of $\frac{1}{4}$ " around the collar. Meaning the measurement should be the same all around the pipe plus or minus $\frac{1}{4}$ " difference.

Note: The measurement all around the pipe must be $\pm 1/8$ " since the extreme range would produce a $1/4$ " gap difference.



Fasten the two flashings together with one self-tapping screw at each side.

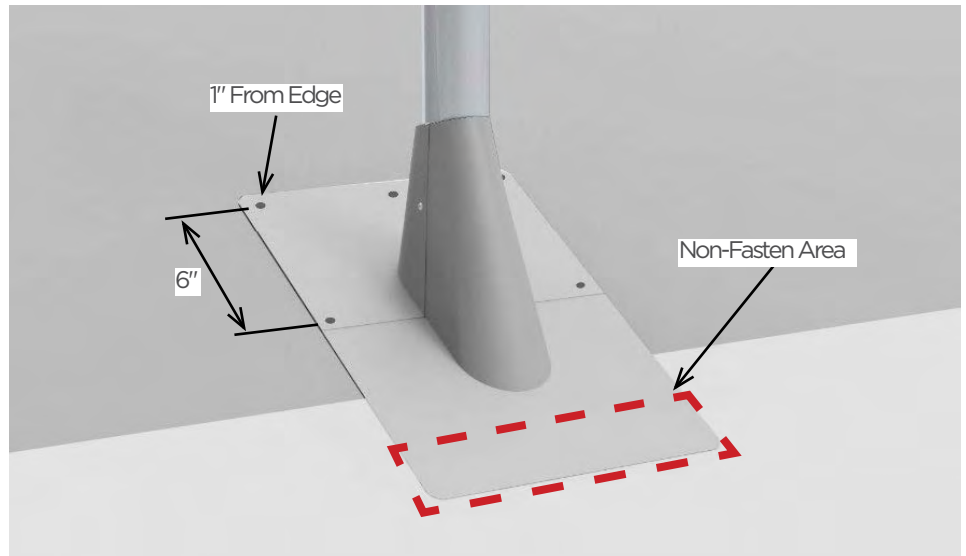


APPENDIX 8 | INSTALL PROCESS

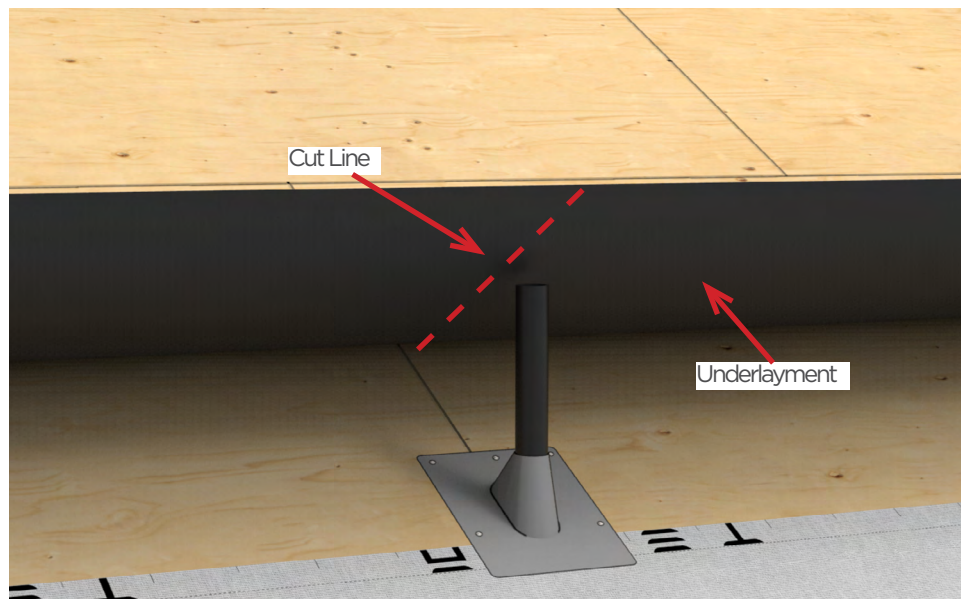
DECK LEVEL PIPE FLASHINGS- OVERHEAD SERVICE DROP

Secure down at the sides 1" away from the back edge of the pipe flashing and 6" in-between the edges with the appropriate fasteners.

Note: Do not nail the front of the pipe flashing.

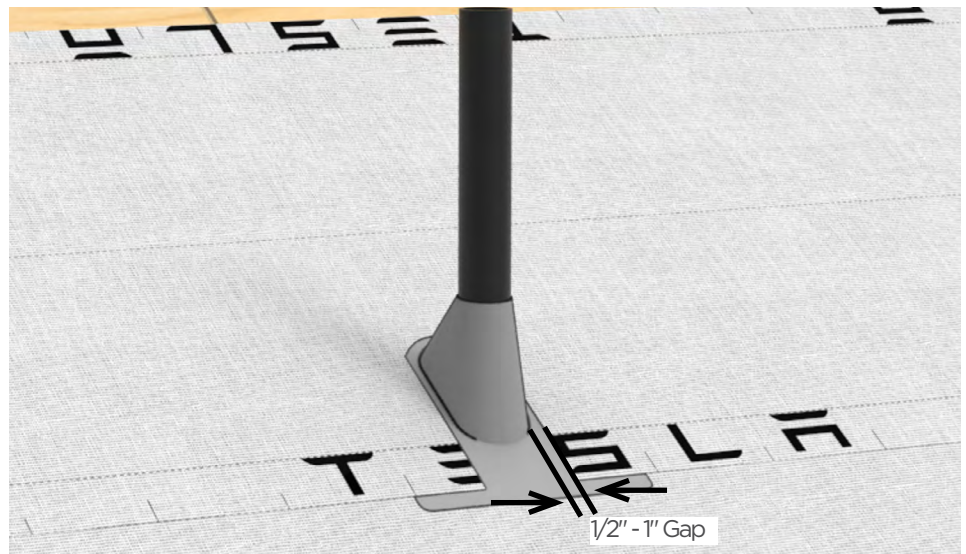


Add your next course of underlayment and from the backside, cut up vertically, center at the pipe flashing to the end of the underlayment. If the lower underlayment course sits past the pipe flashing, proceed to the optional steps of fabricating an underlayment bib or using the underlayment detail roll.



Condition A: Starting at the top of the cone where the cut stopped, continue cutting up $\frac{1}{2}$ " to 1" and around the cone to make half of an upside-down U shape. Mirror this shape on the other side. Ensure the underlayment covers the fasteners on the sides of the pipe flashing; if any are showing, remove the upper underlayment course and proceed to the optional steps below.

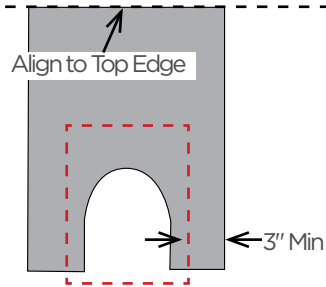
Note: A min of 1" of the drip edge on the pipe flashing should be showing past the top underlayment.



APPENDIX 8 | INSTALL PROCESS

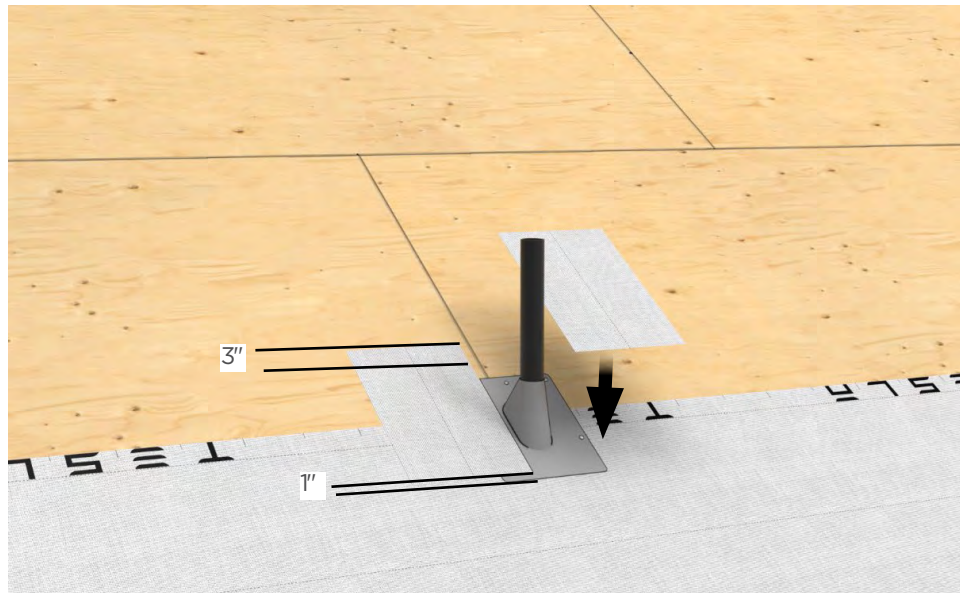
DECK LEVEL PIPE FLASHINGS- OVERHEAD SERVICE DROP

Condition B: Only do this step if your upper course of underlayment sits past the pipe flashing and does not cover the flashing fasteners adequately. Start by making a bib shape out of a full roll of underlayment, ensure each side of the bib has at least 3" min of underlayment sides and the top edge aligns to the top of the underlayment below.

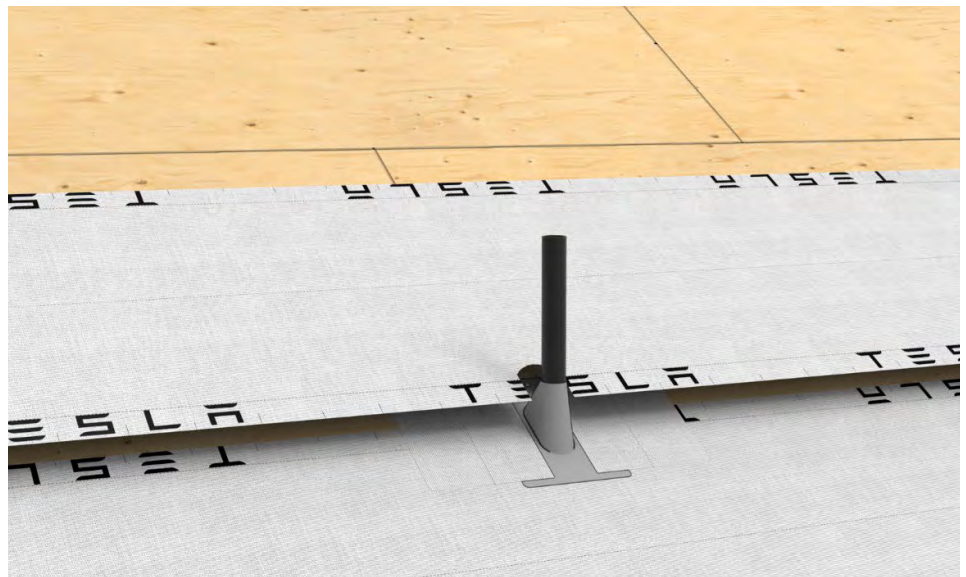


Example of Cut Logic for Bib

Condition C: Only do this step if your upper course of underlayment covers only half or a little of the flashing and does not adequately cover the flashing fasteners. Strip in the sides starting 1" away from the flashings bottom edge and 3" min past the top.



Condition C: Next, install the upper course of underlayment, and cut around the 1/2" - 1" around the base of the cone.



APPENDIX 8 | INSTALL PROCESS

DECK LEVEL PIPE FLASHINGS- CONCENTRIC VENTS

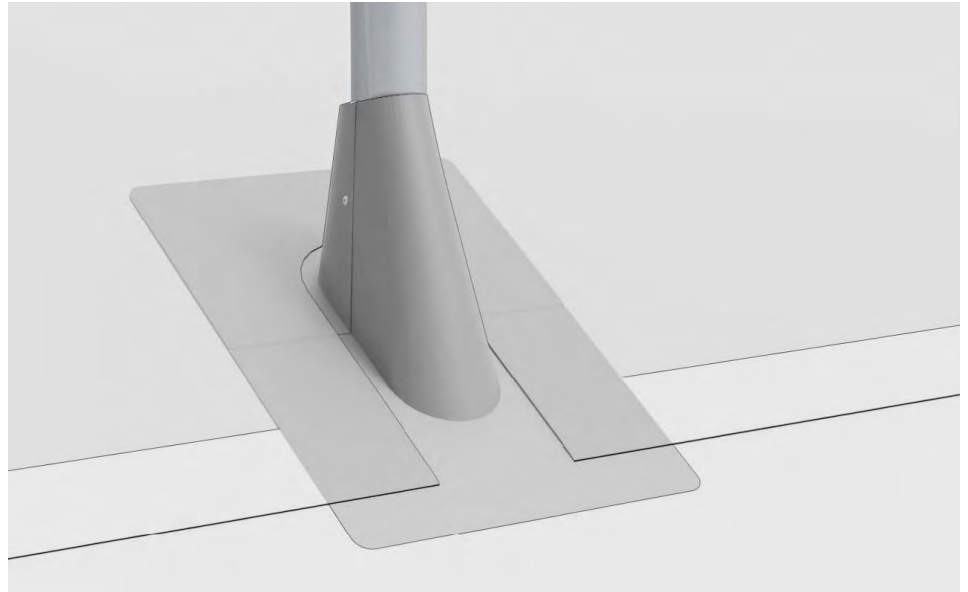
There are two different methods for drying in a concentric vent. If the vent cap is glued down, flash in with the 2-piece pipe flashing. If the vent cap can come off, use a typical 1-piece pipe flashing.

Note: Order correct pipe size through Bolt (2", 3", 4"), if not available source through local roofing supply store.

Note: Underlayment may be installed at a horizontal, diagonal, or vertical method. It is up to the installer to determine the fastest process for each scenario.

DECK LEVEL PIPE FLASHING SPLICE

2-piece flashing cut the flashing in half as the same process for the OSD (Overhead Service Drop).



DECK LEVEL RUBBER BOOT FLASHING

1-piece flashing, remove the rain collar, and install a 1 piece deck level pipe flashing installed the same way as the heat vent 1 piece flashing.

