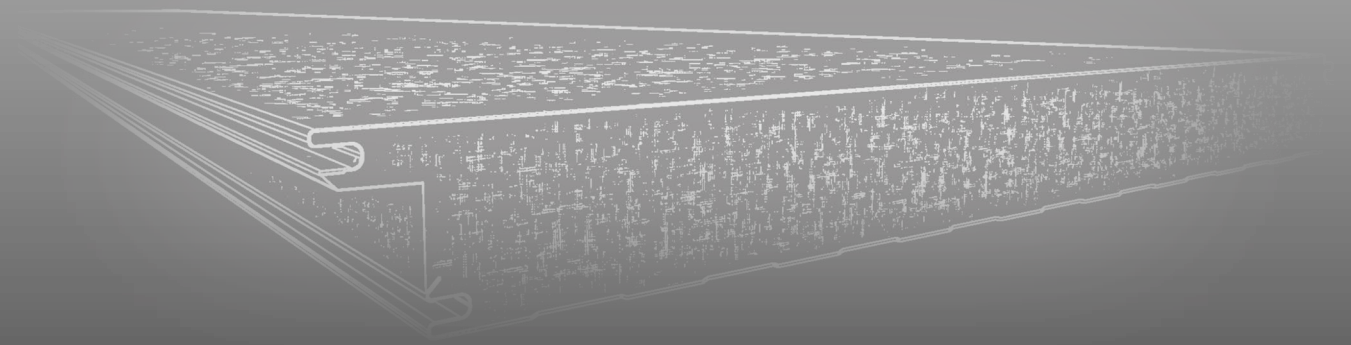
All Weather Insulated Panels

GENERAL INSTALLATION GUIDE

OneDek® Insulated Roof Deck



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DISCLAIMER

All Weather Insulated Panels (AWIP) shall not be responsible for any damage and injuries incurred while handling and/or installing the panels, trims and accessories. In-site personnel shall follow the appropriate safety protocols as determined by the relevant governing bodies.

Please refer to project-specific details as All Weather Insulated Panels has provided shop/erection drawings. Shop drawings prepared by AWIP show fastening details, panel layouts, wall elevations, roof plans and/or ceiling plans only and reflect the design criteria listed on the cover sheet. The shop drawings are intended to be a guide for minimum acceptable installation procedures and to indicate the quantity, size and material specifications of products furnished by AWIP for the referenced project. They do not replace or supplant specifications or notes on structural drawings. It is the customer's responsibility to verify and approve the design loads shown on the AWIP shop drawings and/or provide AWIP with any additional design loads that need to be taken into consideration. AWIP is only responsible for showing and providing materials that are included in the sales order acknowledgement. The materials furnished by AWIP have been approved for the purposes shown in the AWIP shop drawings. Materials not provided by AWIP may be shown in the AWIP shop drawings for informational or clarity purposes. The AWIP shop drawings are based off information provided to the AWIP detailing team. Details and dimensions must be verified by the customer. AWIP shall not be responsible or liable for incorrect dimensions or conditions after signed approved shop drawings are returned.

Unless noted otherwise, this project has been designed based on ambient building conditions and not as a cooler or freezer building. If this is not the case, please notify your AWIP project manager immediately and provide the interior temperature(s).

1. HANDLING INSTRUCTIONS

1.1 Arrival on site

All Weather Insulated Panels are carefully bundled and stretch-wrapped to prevent damage during shipping. The transportation company is responsible for delivering these components undamaged. Freight claims should be handled directly with the freight company.

When shipment is received, check each item against the bill of lading for quantity, length, transit damage, etc. If shortage or damage is found, make sure a notation of it is made on the bill of lading and signed by the driver. It is the customer's responsibility to make any damage claim(s).

Please notify All Weather Insulated Panels of any order discrepancies within 72 hours of delivery. Otherwise, All Weather Insulated Panels will conclude that the order was completed successfully.

A panel packing list is provided for each bundle and is located within a sleeve adhered to the side wrapping. Please use this document to check for bundle information.

All Weather Insulated Panels will generally arrive in large, stretch-wrapped bundles on flat bed trailers. Consequently, the bundles should be off-loaded by means of crane system or forklift.

1.2 Unloading with a forklift

All panel bundles are reinforced with bottom sheet(s) of OSB at lifting points to prevent damage during handling. Lift bundles one at a time with a forklift. See Figure 1A for recommended lifting point locations. Long-length bundles (36'-0" or longer) will have four or more lifting points (see Figure 1B).

Fork blades must be set to not less than 48" wide.

NOTE: Ensure that forks are between the 3" foam stickers at the bottom of each bundle.

Do not over-engage forks when lifting a bundle as doing so may damage the bundle(s) behind it.6" foam blocks may be placed on the back (upright) leg of the forks to soften the contact between the forks and the bundle.

Caution stickers are affixed to either side of each bundle as a quick on-site reference for off-loading.

NOTE: Extreme care should be taken to avoid bumping the panels when lifting and maneuvering.

1.3 Unloading with a crane

When moving bundle(s) with a crane, use an appropriate combination of spreader bars, slings, and anti-pinch boards to safely distribute the bundle's weight. When bundles are longer than 15'-0", it is suggested that a properly designed and fabricated lifting beam/spreader bar is used.

NOTE: Unloading with a crane is recommended for any bundles over 50'-0" long.

Anti-pinch boards should be long enough to swallow the entire width of the bundle and be placed at the top and bottom of the bundle. Use one set (top and bottom) of anti-pinch boards per sling.

The size and quantity of the spreader bar(s) may vary depending on the length and weight of the bundle(s). Long-length bundles (36’-0” or longer) will have four or more lifting points (see figure 2B). Only lift one bundle at a time.

Use one forklift to lift bundles at the lift point sections.

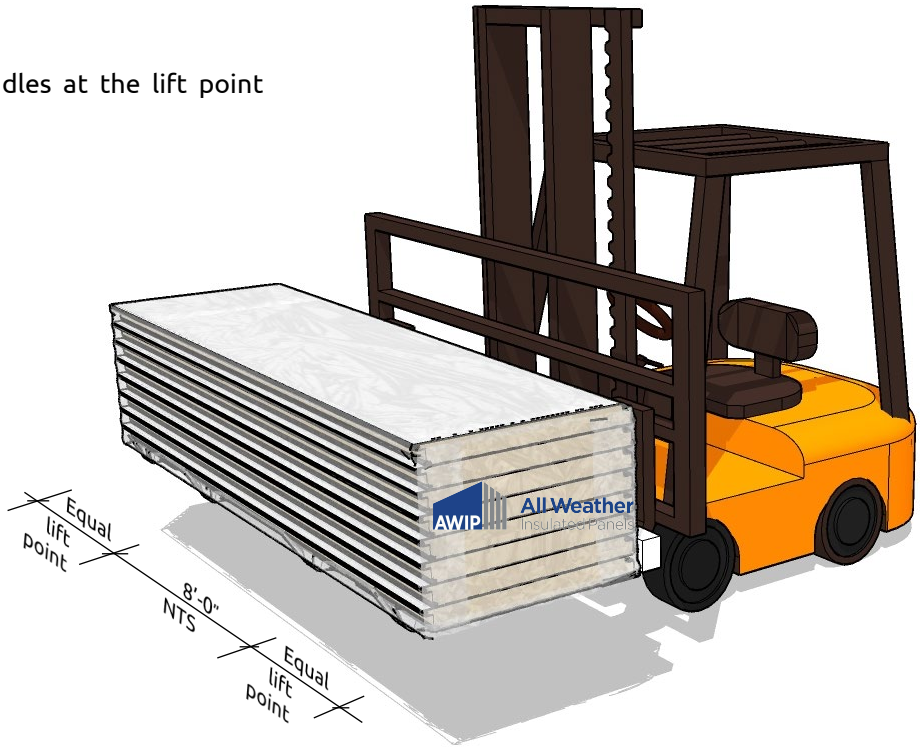
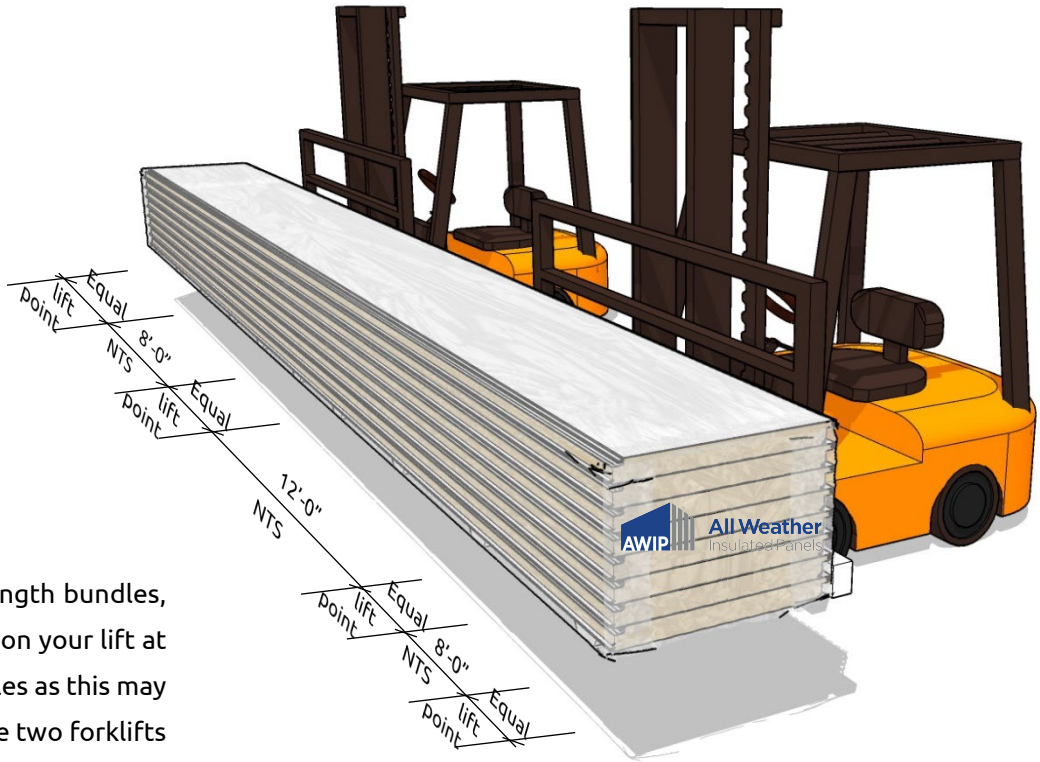


Figure 1A: "Standard-length" bundles (10'-0" or longer)



When handling long-length bundles, be careful not to position your lift at the center of the bundles as this may damage the panels. Use two forklifts (or crane straps) to lift the bundle at the lift point sections.

Figure 1B: "Long-length" bundles (36'-0" or longer)

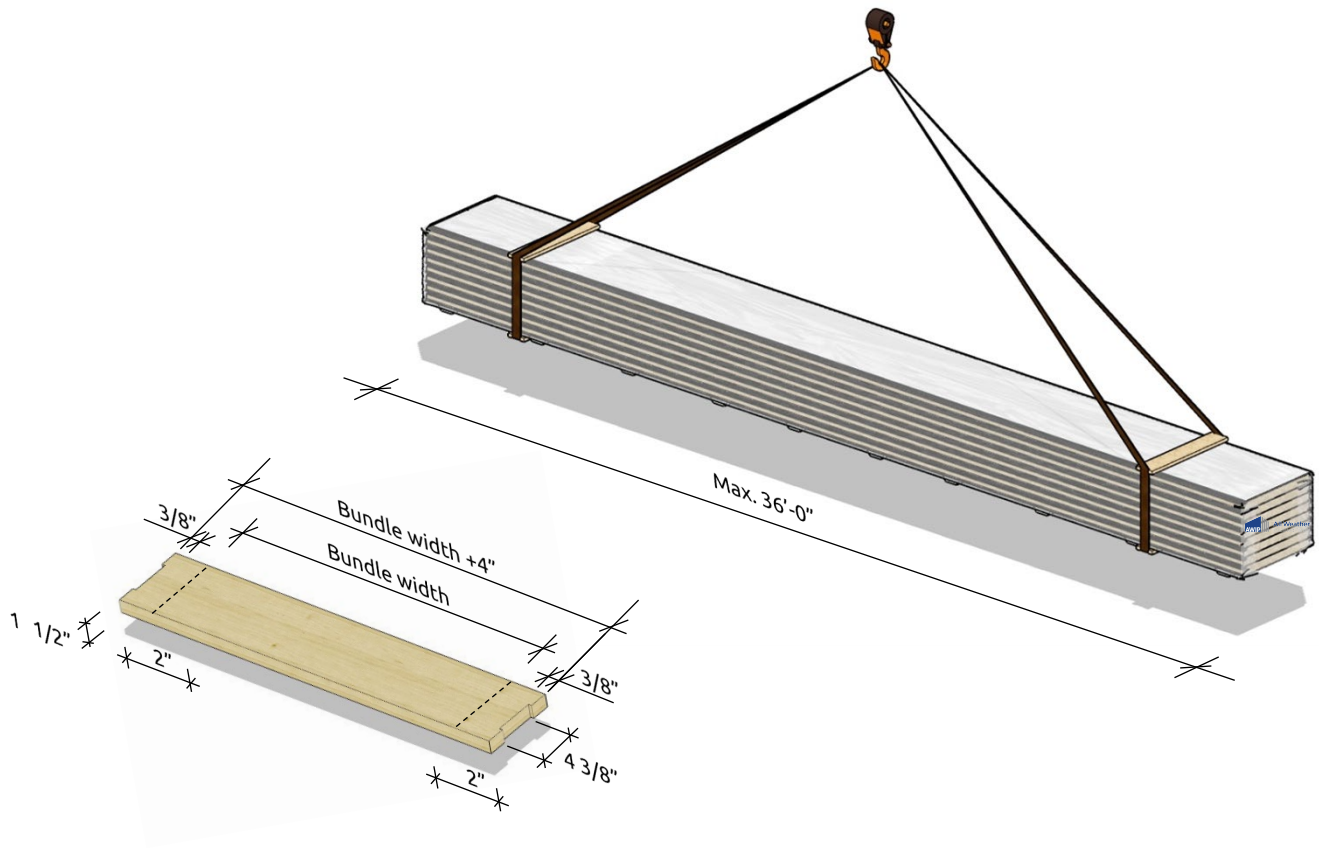


Figure 2A: "Long-length" bundles (max. 36'-0")

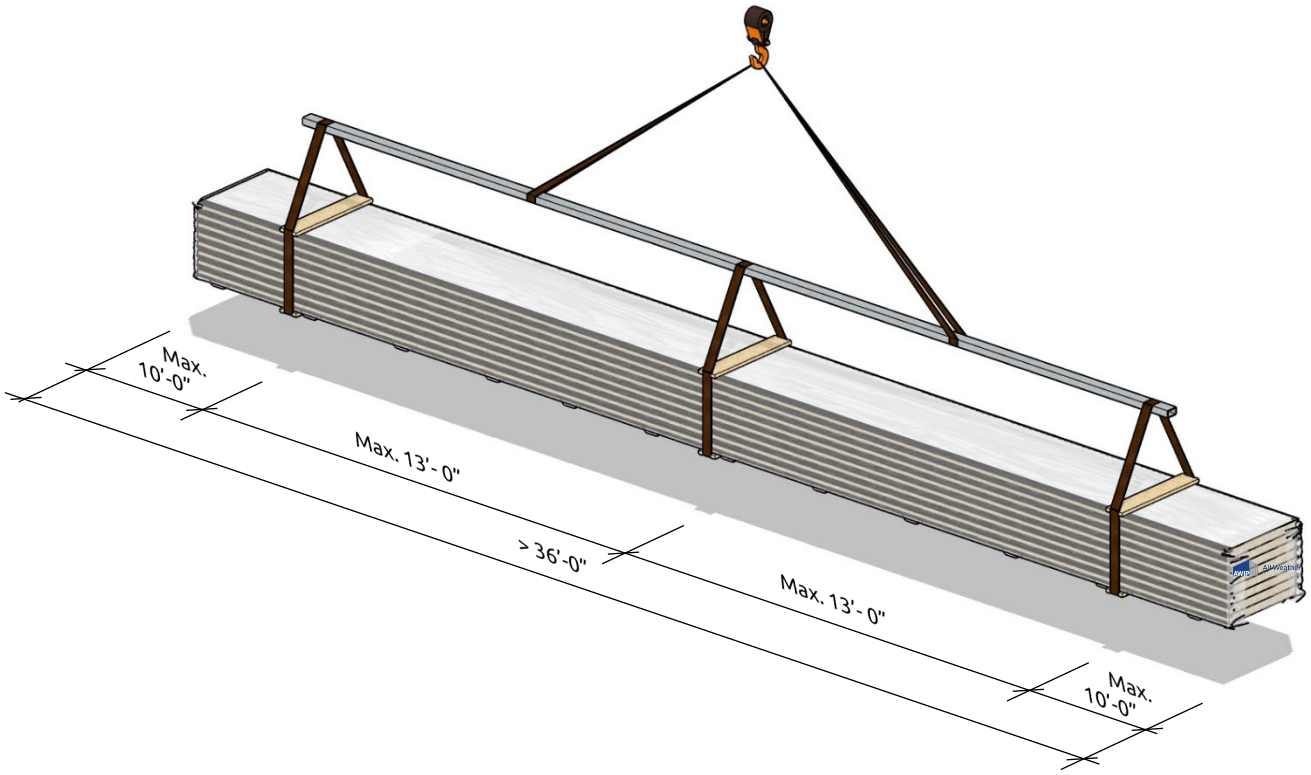


Figure 2B: "Long-length" bundles (over. 36'-0")

1.4 Manually unloading

On small projects, unloading of the panels may be done by hand.

> NOTE: Special care should be taken when handling panels. Always lift the panels when removing from a bundle, never drag them.

Avoid carrying the panel from flat orientation, especially long panels which are more prone to bending damage. If necessary, use more than two persons to evenly support the panel.

To prevent joint damage, never lift the panel from the flat position by the side joint or the overlapping rib. Doing so may cause the metal and foam to separate.

> NOTE: All personnel performing these tasks must wear proper clothing and protective equipment at all times.

2. STORAGE INSTRUCTIONS

2.1 Site storage

If the panels are to be used immediately, the bundles should be placed at the pre-planned locations around the perimeter or the building, as close as possible to the corresponding work areas. Place bundles as far practical from the site to avoid possible damage from later site maneuvering or undue handling.

Ideally, the bundles should be stored under a temporary shelter with the plastic removed from the top and sides of the bundle. Site storage time should be minimized.

If the bundles cannot be stored in a covered location, it is necessary to cut the outside plastic wrapping and arrange the bundles such that are inclined at a (minimum) 1:12 slope so that the water does not accumulate, and moisture build up between panels is avoided. The continuous cut should be made along the width of the bundle; cut 1'-0" slits 5'-0" o/c along the length of the bundle (see figure 3). Do not store for longer than 30 days. Moisture between panels can cause corrosion and oxidation of painted surfaces referred to as "wet stack".

> NOTE: If temporary shelter is not available, our panels are packaged with plastic stretch wrap and expanded polystyrene board. It is, however, a requirement that additional protection be provided to protect the panels from wet weather conditions during transit and at the jobsite. Standing water on stored a and/or bundled skids may cause damage to the panel finish and is not acceptable.

> NOTE: Do not stand panels on edge of joinery or saw-cut edge. Never store or handle panels in a horizontal position.

Bundles should be stacked no more than two high. The foam stickers on the upper bundle should be located in line with the foam stickers on the lower bundle (see Figure 3).

Bundles should be firmly tied or weighted down when broken open for use.

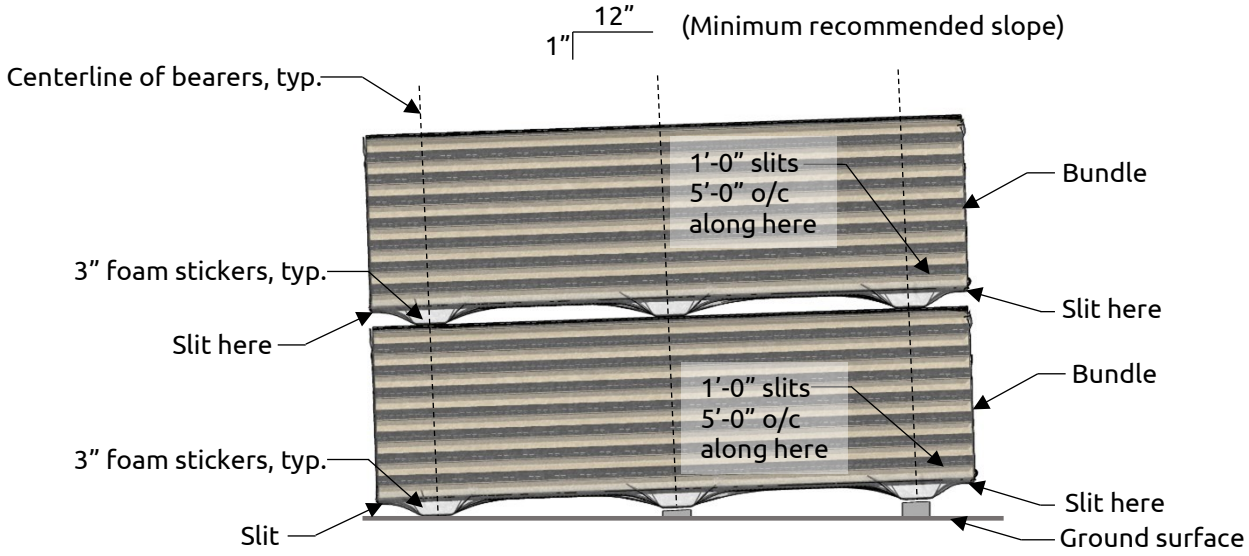


Figure 3: Proper bundle storage

2.2 Accessories and auxiliary items

Due care should be afforded to the handing and storage of small items (e.g. flashings, fasteners, sealants, etc.) that arrive on site for inclusion in the work.

Cover all pallet crates and/or boxes to protect materials from weather but allow for adequate ventilation to prevent collection of condensation.

3.1 Supporting steel

For quality panel installation, the panel contractor shall examine the alignment of the support steel before installation of the insulated roof deck. The steel shall be aligned to per the tolerances established in the AISC Code of Standard Practice, section 7, and The Supplement Modification Control Section 7.11.3, adjustable items. The maximum deviation of steel alignment should be limited to -0, + 3/16" from the control with and 1/8" maximum change in deviation for any member of any 10'-0" run of panel.

Any variance(s) from these tolerances can affect both performance and aesthetics and must be reported to the architect and general contractor and corrected by the general contractor or accepted, in writing, by the architect before panel installation proceeds.

The face(s) of all support members to which the panel is attached must be in the same plane, flat, and free of obstructions such as weld marks, bolts, or rivet heads. Installation of the panels should proceed only if the alignment of support members meets the tolerances established in the contract documents.

3.2 Protective plastic film

OneDek® insulated roof deck panels and metal trims have a temporary protective plastic film. This plastic film helps prevent damage during shipping and handling.

This protective plastic film is not to be removed until panels and metal trims are ready for erection.

Protective plastic film shall not be exposed to direct sun for more than 48 hours as this may cause the plastic film to bond to the metal panel face and may become more difficult to remove. Additionally, prolonged exposure to temperatures above 80° F is not recommended as this may cause the peel coat to leave an adhesive residue on the panel facing(s).

NOTE: See Section 2.0 for instructions on proper storage.

The best way to remove the protective plastic film is to start at a panel corner and peel off at a 45° an angle (see Figure 4).

The plastic film must be removed from both panel faces and metal trim (if applicable).

Any residue on the metal face(s) from the plastic film will weather off naturally. If desired, it can be removed using a soft cloth and water. It may be necessary to use a citrus-based cleaning solution added to the water in a sufficient dilution ratio to effect complete removal of the adhesive.

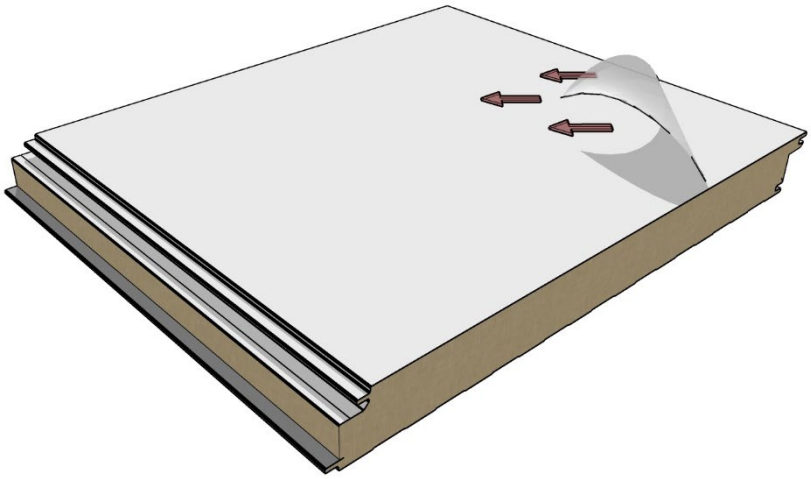


Figure 4: Plastic film removal

3.3 Accessories, trims, sealants, etc.

Extreme care should be taken when unloading and storing the fasteners, sealants, etc. It is important to guard against damage or misplacement of the accessories.

All accessories must be stored in a covered location on the jobsite and not exposed to the elements.

3.4 Panel cutting procedures

Panels may be cut prior to installation or cut-in-place. All Weather Insulated Panels recommends cutting the panels prior to installation to minimize panel damage and to ensure a good fit.

All Weather Insulated Panels recommends using a circular saw with an 8” diameter, 40 tooth carbide blade.

To perform a good cut, follow steps 1 through 4 shown below. If the panel thickness is greater than the saw’s blade radius, cutting should be done in two steps, cutting one side at a time; follow steps 1 through 6.

1. Measure the area to cut and mark a line on the panel surface.

2. Use adhesive tape on both sides of the cutting line to protect panel surface.

3. Recheck measurements and proceed with cutting operation.

4. Clean off any metal chips left on panel after cutting procedure. Any metal chips on the foam can be removed by hand.

5. If necessary, turn panel over and follow steps 1 through 4 for the other side of the panel.

6. File and sand off any burrs on the metal after cutting to prevent damage to the membrane. The panel is now ready for installation. The installer must consider the application of a continuous bead of sealant and, if necessary, the cutting of thermal bb breaks prior to installation; such tasks shall be done on the ground.

NOTE: Do not use a reciprocating saw as it may delaminate the panels by tearing the facings from the foam core, especially in colder climate conditions. Additionally, friction between the cutting blade and the panel creates heat and may damage the painted surface of the panel.

3.5 Roof panel installation sequence

Minimum roof slope of ¼: 12 required.

Reference project drawings for diaphragm or non- diaphragm fastening patterns and ensure correct fastening patterns is used during installation.

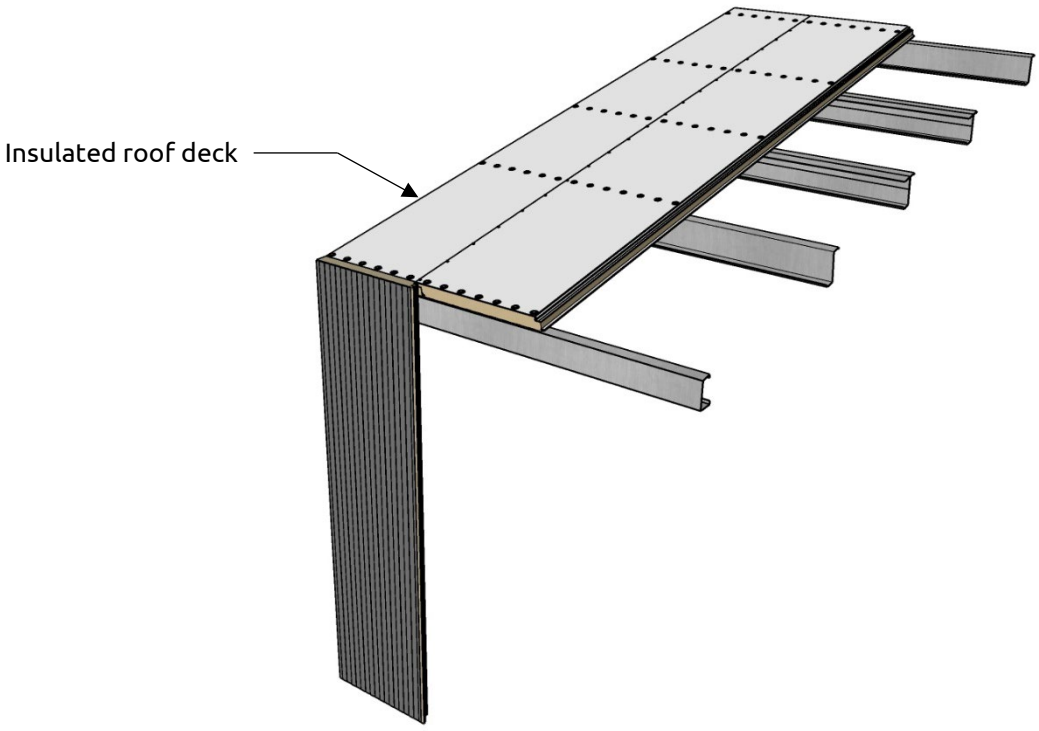


Figure 5

3.6 Installation procedure

As each panel is removed from the bundle, the male and female edges should be visually examined, and overspill of insulation should be carefully removed.

Cut the first RD1/RD5 panel to be installed (rake edge) along the length to remove panel joint.

The insulated roof deck should be laid flush with the face of the wall panel as shown on the AWIP shop drawings. It is important that the first tier of panels is laid true to line, properly lined with a string to ensure a true and neat run.

The starter panel should be fastened along the rake supporting member in the required spacing as shown in the AWIP shop drawings.

Adequate caulking and sealing of the panels and trims is the sole responsibility of the installing contractor (customer). All Weather Insulated Panels highly advises pre-installation quality control testing to be completed on-site prior to commencing with installation to ensure a complete sealant bridge from metal to metal.

Once caulking has been placed and inspected, the next panel should be placed as soon as possible. Ensure panels are installed as tight as possible to allow tongue and groove joint to fully engage.

Square each panel before installing fasteners. Prior to installation, panels may need to be placed in a shaded area to prevent excessive thermal bow which may hinder panel engagement.

Panels are to be fastened per the roof panel fastening schedule and calculations noted on the AWIP shop drawings.

3.7 Concealed Clip Fastening

Insert fastener through clip and tighten down until clip and fastener assembly are snug. Continue to install concealed clip assembly at each steel roof support along the length of the panel. Fastener requirements are based on given design loads. Concealed clip only fastening does not provide any diaphragm resistance.

3.8 Diaphragm Fastening

If diaphragm fastening requires the use of concealed clips, see Concealed Clip Fastening above. The entire roof may be installed using the concealed clip fastening method to close in the building and create a walkable surface prior to installing the through fasteners and stitch fasteners. Ensure the gap between the topside panel joint is no greater than 3.5mm during installation.

> OPTION: Even if the project specific diaphragm fastening pattern doesn't required concealed clips, concealed clip fastening may be used to close in the building quicker to allow other trades to operate inside the building. The through fastener and stitch fastener steps may be performed afterwards.

Use a chalk line to appropriately position fastening locations. Set the RP-01 roof deck plate in place and insert the fastener through the RP-01. Install RP-01 and fastener assembly across the width of the panels in the project specified spacing. Continue to install RP-01 and fastener assemblies at each steel roof support.

Ensure the gap between topside panel joint is no greater than 3.5mm. Inspect engagement at panel end and use a chalk line to set fastening location 11.5 mm from edge of panel joint. See Figure 6.

Install stitch fasteners along the panel seams in the project specified spacing.

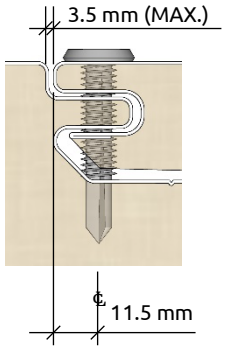


Figure 6 – Standard RD1 joint detail for diaphragm

Insulated roof deck panels are to be fastened per shop drawing details and calculated fastening schedule provided on All Weather Insulated Panels shop drawings. Use a standard 0 to 800 RPM variable speed screw gun with 4 to 5 AMPS and a positive clutch or depth locating nose to drive fasteners. Do not use impact type guns. Do not over-tighten.

The fastening pattern will depend on the panel thickness, span, substrate, and design loads. Consult your All Weather Insulated Panels representative or the factory for allowable panel and fastener design loads.

After drilling or cutting panels, always remove metal chips and foam dust that has fallen on panels or trims.

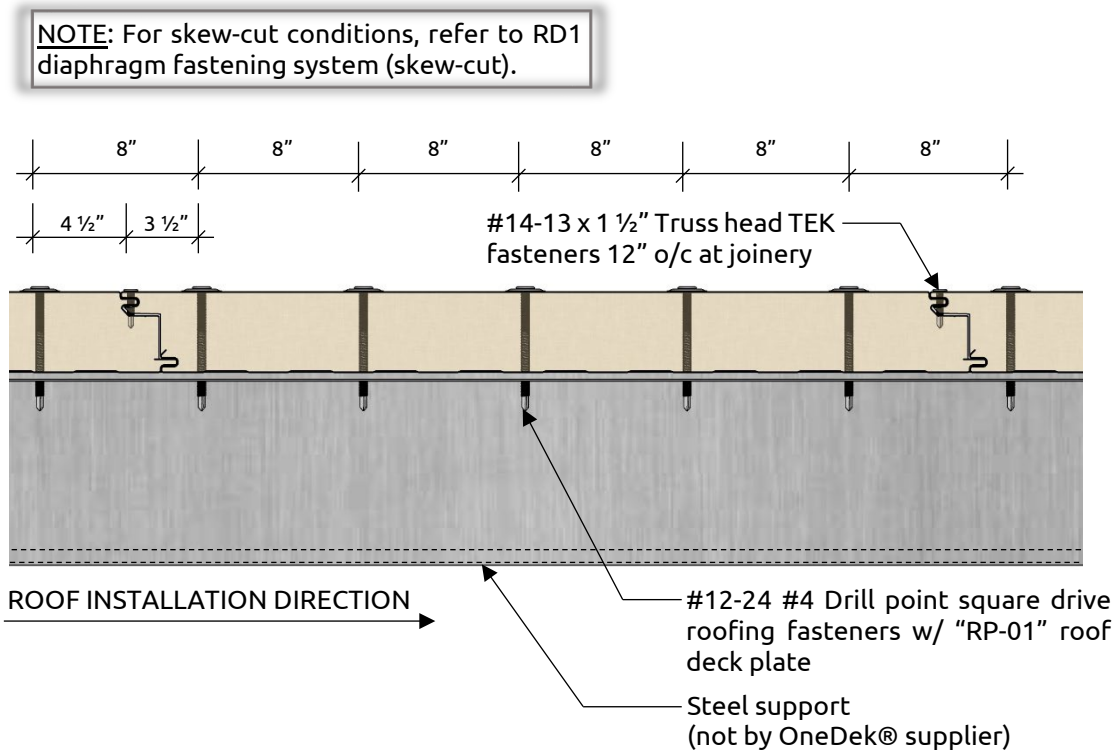


Figure 7: RD1 Diaphragm fastening system (40/5-12)
(Section view)

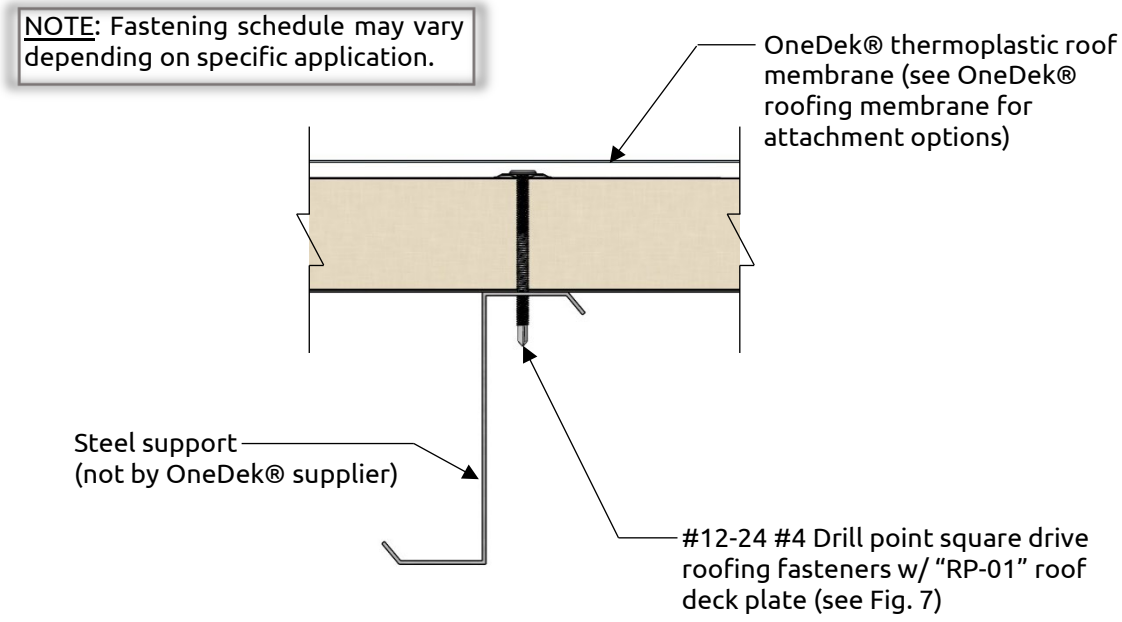


Figure 8: Intermediate RD1 roof fastening
(Section view)

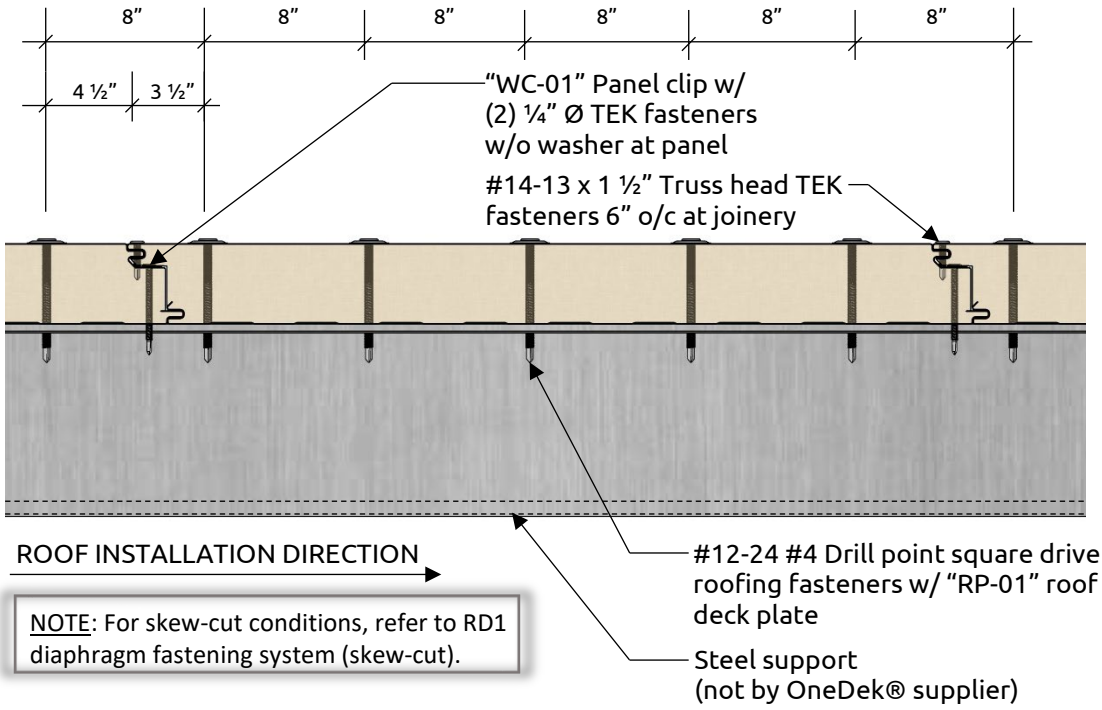


Figure 9: RD1 Diaphragm fastening system (40/7-6)
(Section view)

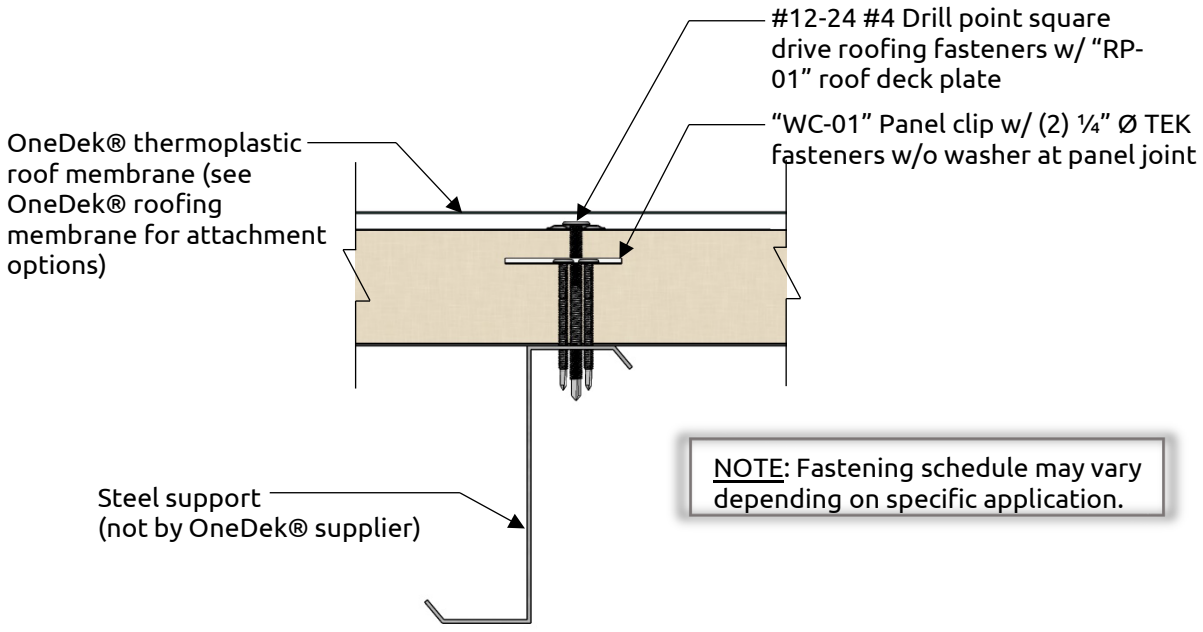


Figure 10: Intermediate RD1 roof fastening
(Section view)

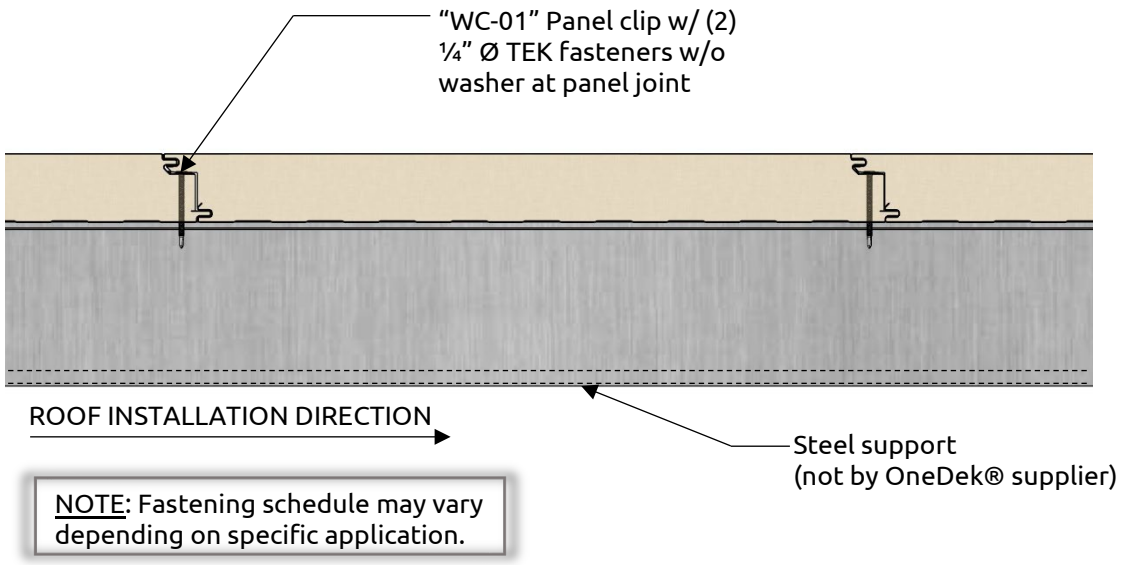


Figure 11: RD1 Non-diaphragm clip fastening system
(Section view)

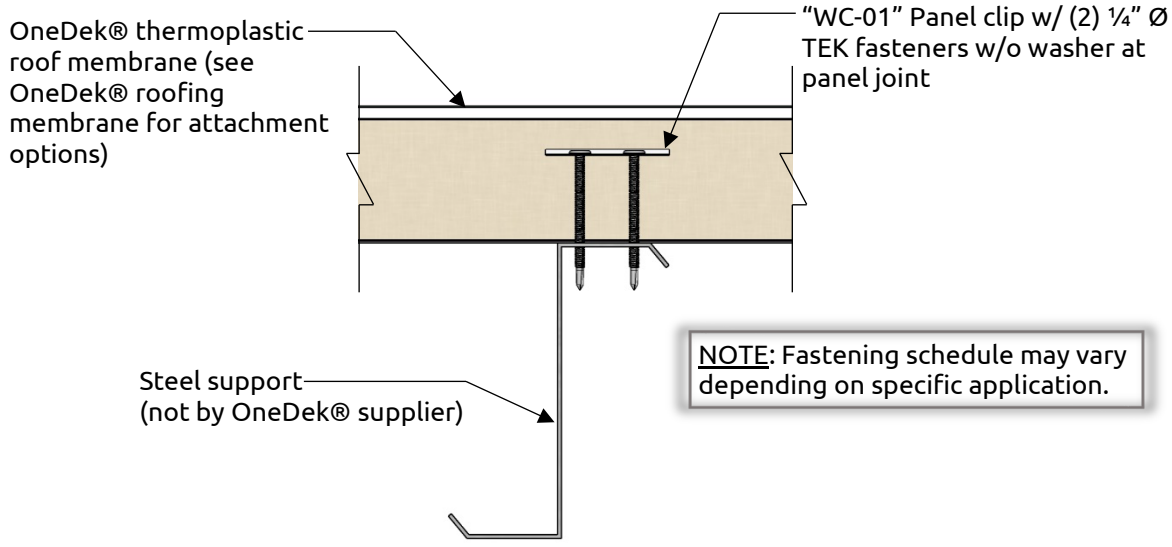


Figure 12: Intermediate RD1 roof fastening
(Section view)

3.9 Roof panel end/butt joint fastening

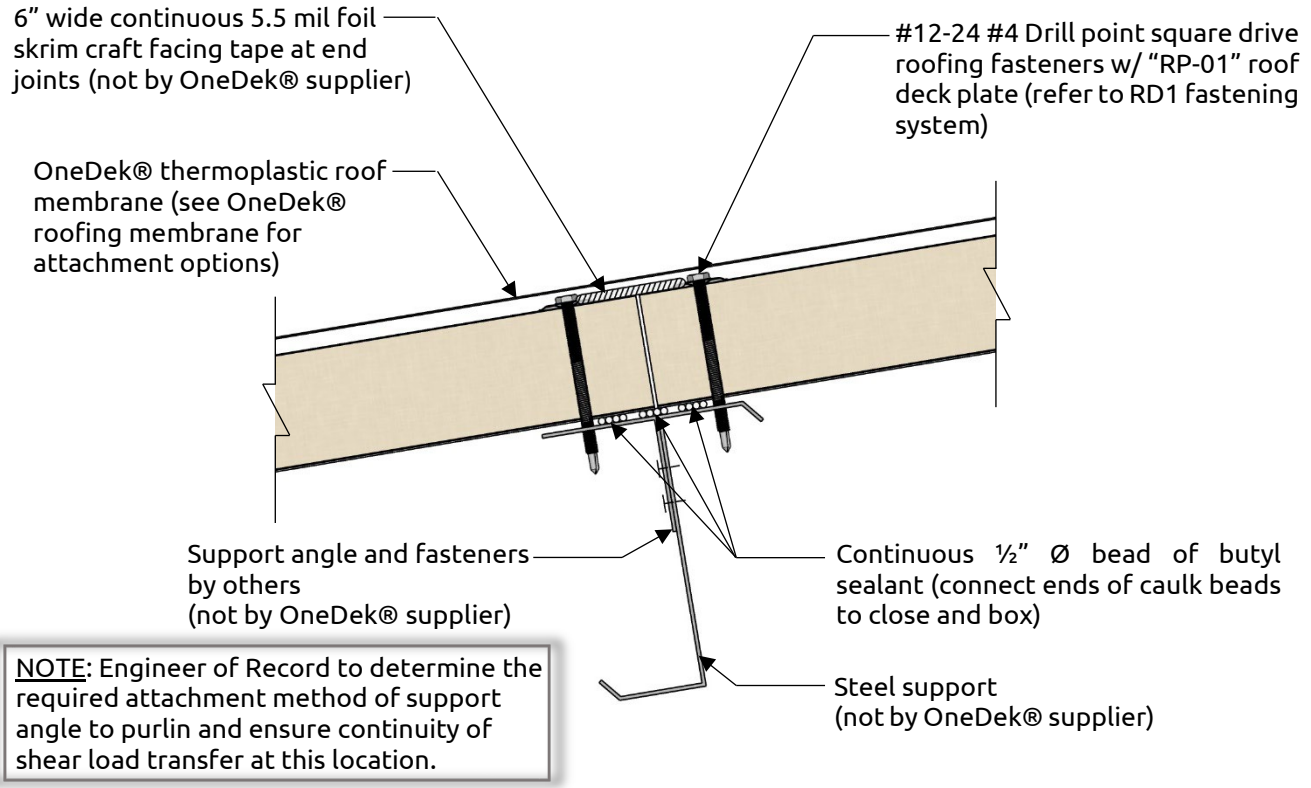
When the roof system contains more than one course/row of panels the following steps should be observed for the fastening of the panel end/butt joint.

Place continuous beads of butyl sealant on the steel supports prior to setting the insulated roof deck panels as shown in Figure 13 for Z- or C- Purlins or Figure 14 for joists.

Following the installation sequence as outlined in "3.6 Installation procedure", the lower course panels should be installed first. Install the panel fasteners as described in the subsection mentioned above.

NOTES: All surfaces to be caulked must be clean and dry.

Apply 6" wide continuous 5.5 mil foil skrim craft facing tape and top of end joints.



NOTE: Engineer of Record to determine the required attachment method of support angle to purlin and ensure continuity of shear load transfer at this location.

Figure 13: Butt joint detail
(Section view)

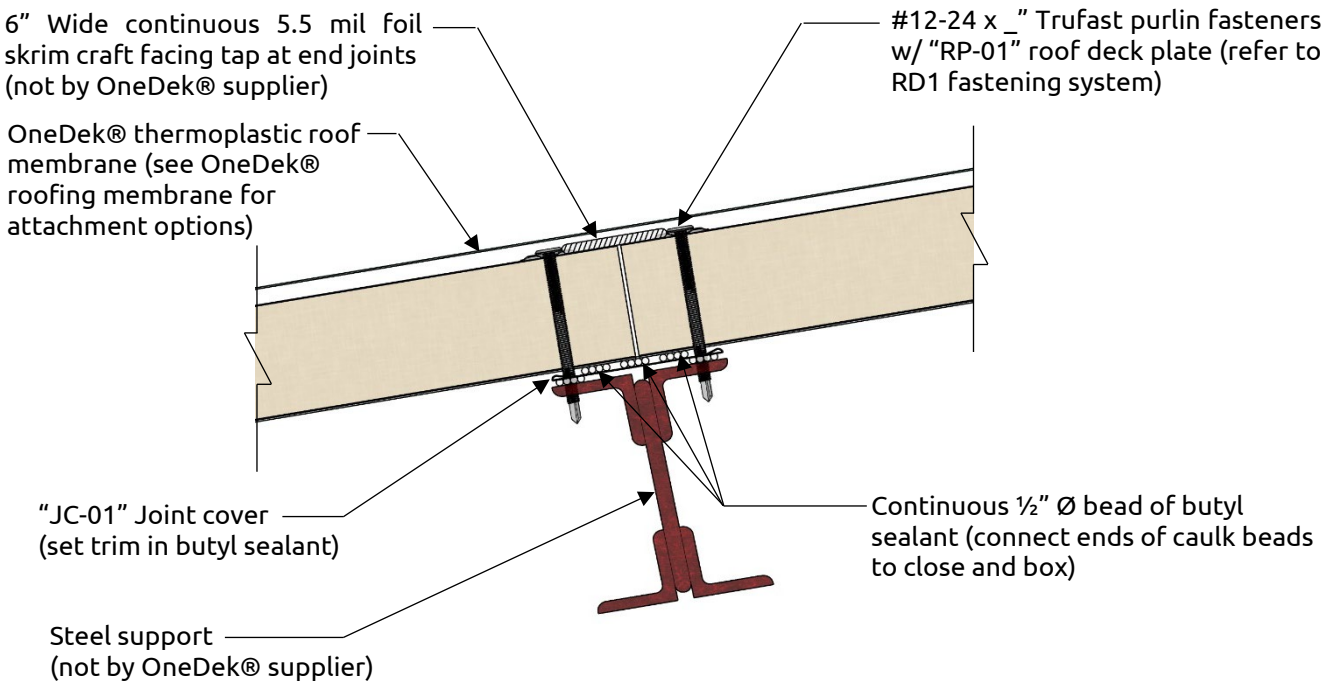


Figure 14: Joist detail with joint cover
(Section view)

On gabled buildings, install the inside ridge cap after upper course panels on both sides of the ridge are installed.

Spray the ridge cavity continuously with two-part foamed-in-place urethane. Allow foam urethane to expand and cut off any excess protruding above the roof line.

Install outside ridge cap over the top of the insulated roof deck to cover cavity.

Remove all the metal chips and fillings from the drilling of pilot holes and fastening of the panels immediately after installation. These fillings will rust and corrode the panel surface and may damage the roofing membrane.

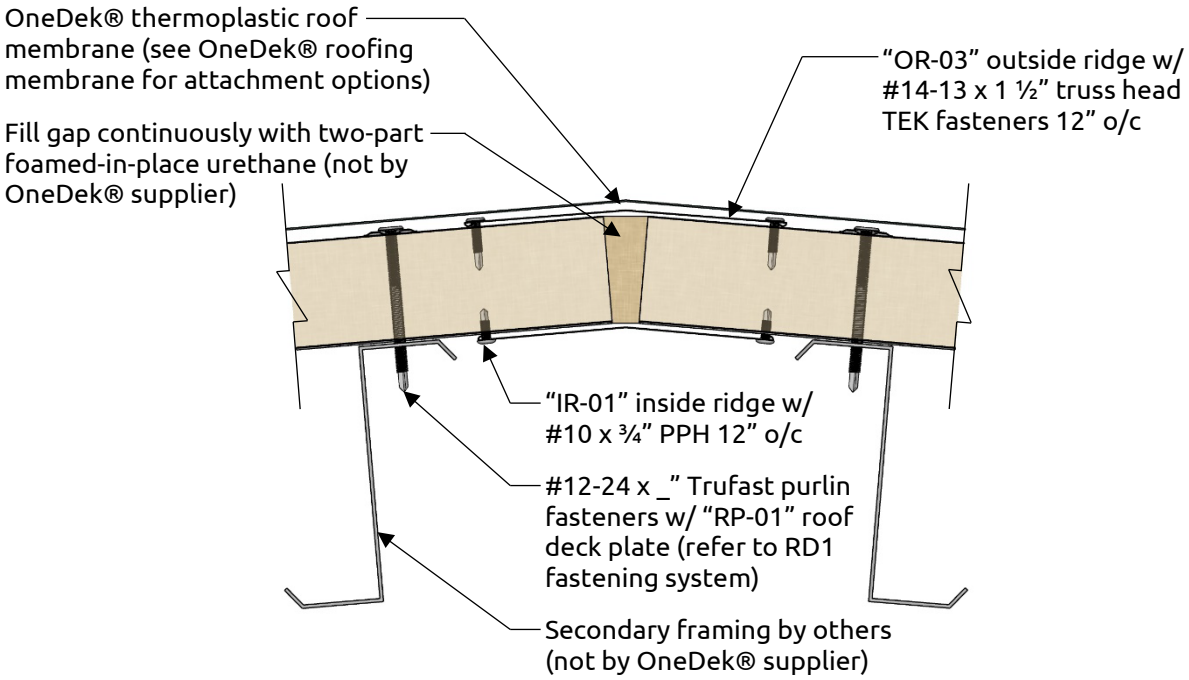


Figure 15: Ridge apex
(Section view)

4.1 Miscellaneous information

To prevent galvanic action, isolate any aluminum trim surface(s) from surface of panel support steel using one of the following methods:

a) an approved sealant or sealant tape;

b) a non-absorbent gasket;

c) duct tape or equivalent type tape;

d) paint the incompatible metal with a coating of heavy bodied bituminous paint.

Flatness: oil canning or "scolloping" is an inherent condition of light gauge cold-formed metal products, particularly those with broad, flat areas, oil canning may be an aesthetic issue, particularly in conditions of angled light and does not affect the structural integrity or thermal performance of the panels. AWIP has adopted flatness tolerance parameters based on industry standards and provided by their coil steel suppliers, therefore, oil canning and perceived waviness that are within AWIP QC tolerances are not grounds for panel or trim rejection.

4.2 Exposure to heat or flame

Although All Weather Insulated Panels urethane core panels are acceptable for use in non-combustible building assemblies in accordance with the International Building Code (IBC) and have been exhaustively tested for fire resistivity based on their end use, they are not non-combustible in and of themselves. They are not "fire rated" per ASTM E119. Therefore, they shall not be exposed to extremely high temperatures or direct flame at any time. Simply stated, do not use a welding torch on or near insulated panels any more than you would on a wooden building assembly. Refer to panel test data information under "fire" for detailed information on ignition, heat of combustion, and surface burning.

5. PANEL MAINTENANCE

5.1 Cleaning panels

After installation, surfaces must be cleaned to remove an metal chips to prevent any possible oxidation. A wet, soft cloth is recommended.

5.2 Maintenance

Proper installation and maintenance are extremely important to obtain the best performance and appearance from the insulated panels.

Dirt, oil, grease, fingerprints or any other kind of contaminant must be completely removed when the installation is finished to maximize coating(s) performance.

The building will require periodic maintenance according to site conditions (U.V. exposure, dirt, smoke, corrosive atmosphere, etc.). If further assistance is required, please consult All Weather Insulated Panels' technical department.

To remove superficial oxidation and tough stains, it is recommended to use a regular household cleaner followed by a thorough rinsing. Wire brushes and/or abrasive material will damage the painted coating.

If "touch-up" paint is required, contact All Weather Insulated Panels to obtain a paint chip for color-matching.

Since metal-faced insulated panels are a modular system, they require joint and intersecting caulking to minimize potential leaks in the building envelope.

6.1 Membrane preparation

All membrane installation instructions provided by All Weather Insulated Panels are to be used with OneDek® TPO, PVC or Fleeceback membranes only. If the membrane used for your project is not provided by All Weather Insulated Panels, please contact your membrane manufacturer for installation instructions.

OneDek® membranes are manufactured to meet wide range of roof construction requirements. They can either be used on mechanically fastened systems or fully adhered systems.

Ensure area is clean and dry prior to welding process. Use low sudsing soap and water followed by a membrane cleaner to remove dirt, contaminations, grease, oil, etc. Cut affected section of the membrane sheet and replace with a new section if no other options are left and membrane cannot be properly cleaned.

To avoid problems in cold weather with temperature below 50°F using hot air welding, follow listed suggestions below:

1. Store OneDek® membranes away from sparks/flame sources to keep good weld quality.

2. Condensation can also affect the weld quality on OneDek® membranes. To avoid this, store all membranes in warm, dry areas.

3. Use scrap material to test peel resistance to ensure there are no inferior welds. Take at least twice the usual number of seam samples.

4. Dry all membrane weld areas prior to welding process.

5. Membranes may be extremely slippery on dew, frost, ice or snow-covered roofs. Exercise caution.

6.2 Membrane welds and seams

Typical hot-air welding of membranes is done by applying hot air on the surfaces, softening them and fusing them together — creating a permanently fused, bonded sheet.

NOTE: Welding speeds will be slower in high humidity conditions or at low temperatures.

Seams must be loaded in shear, not in peel. A shear load is applied in the horizontal plane of the OneDek® membrane. A peel load is applied by lifting the seams perpendicular to the roof. Membrane can experience mechanical stresses due to expansion and contraction of the roof. It is important to avoid welding that causes the seams to peel.

Automatic hot-air welders provide fast and efficient methods to weld membrane seams. They are required on all areas the automatic welder can access. Follow the steps below and always consult the hot air welder manufacturer for specific instructions and recommendations for your project.

1. Use the variable speed control to adjust the machine’s travel speed along the seam.

2. Movement of the welder along the seam is determined by heat setting based on air temperature.

3. To start welding, insert the nozzle 2" into the weld area. Dial in desired temperature and speed.

4. Raise the back wheel of the machine to allow it to ride on its wheels.

Hand-held hot-air welding can be used on difficult to reach membrane sections such as corners, penetrations, and vertical surfaces.

With either the machine or the hand-held hot air welding, perform 4' or 5' test welds at the beginning of each day or every time the weld tool is turned off. This is to ensure the peel strength, consistency, weld width and allows for welder adjustment. Weld testing procedures are listed below:

1. Adjust the temperature of the weld tool to produce a shiny membrane surface without burning the membrane.

2. Insert the nozzle tip of the hot air weld into the seam and moving it slowly backwards.

3. Press the membrane surfaces together with a silicone rubber roller as the membrane softens from the inside edge to the outside edge of the seam.

4. Ensure no air is captured during the welding process.

A good weld cannot be achieved with a burned membrane surface. The burned or discolored membrane must be patched. To repair a burned section, follow the listed procedures below:

1. Cut away the damaged material at least 1" beyond the burned edges.

2. Cut patches so it extends at least 3" beyond all damaged edges to allow for a minimum 1 ½" weld width at all sides.

3. Place the patch at the center of the cut area. apply a 1 ½" weld to fuse the patch to the membrane.

4. For a neat and finished roof appearance, cut all patches in square or rectangular shapes with round corners.

Apply t-joints where three or more layers of membranes intersect. Voids may occur on these locations. To install

t-joints, follow procedures below:

1. Ensure that the splice intersection and the t-joint cover is clean and dry.

2. Center t-joint cover over splice intersection.

3. Begin welding from the center point of the t-joint and work towards the outside.

4. Check all welds once completely cooled with a seam probe (see below specific instructions).

After welding and once the seams cool down, test if there are any voids in the weld by probing seams following the procedures listed below:

1. Along the seam edges, run a blunted scratch awl, cotter key puller or other round-tipped, blunted tool while applying firm and steady pressure.

2. Blunt the tip of the tool regularly to keep the tool from sharpening. Continuous probing tends to sharpen the probe tool.

3. Any penetration of the probe into the seam indicates a void in the weld.

6.3 Membrane adhesives

Fully adhered membrane systems require special adhesives to bond the membranes to the primer surface of the insulated roof deck panels. It is important the appropriate bonding adhesive is selected for the type of membrane to be installed.

For PVC smooth back membranes, use LA432M solvent-based bonding adhesive.

For TPO smooth back membranes, use LA505 solvent-based bonding adhesive.

For PVC/TPO fleeceback membranes, use LA505 solvent-based bonding adhesive.

6.4 Membrane flashing

Do not use temporary flashings. Install the membrane and membrane flashings simultaneously. When water penetration occurs, be sure to immediately replace all affected materials.

Extend all flashings a minimum of 8” above the roof level. Terminate all flashings per applicable details.

6.5 Membrane installation

Without stretching the membrane, roll out the OneDek® membrane over the panels and let it relax prior to installation. It must relax for 15 minutes when the temperature is above 60°F or 30 minutes when the temperature is below 60°F. Longer times may be necessary on very cold weather condition. Inspect for any damaged membranes. remove damaged or creased sections of the membrane.

The membrane sheets must be installed perpendicular to the roof slope starting at the eave and working up to the peak. The next membrane must overlap the previous membrane at the sidelap by 6”.

OneDek® membranes must be properly secured onto the insulated roof deck to prevent wind uplift. Project specific membrane plates and fasteners are used for mechanically fastened systems and LA505 or LA432M bonding adhesives are used for fully adhered systems.

Refer to project specifications and shop drawings when determining fastener systems and configurations.

On mechanically fastened systems, refer to project specifications, shop drawings and ASCE roof diagrams for the determination of infield, perimeter and corner zones.

7. MECHANICALLY FASTENED SYSTEMS

7.1 Infield zone installation

Install wide full width membrane sheets at the edge with #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center along the upper edge of the membrane. The fasteners only penetrate the top facing of the OneDek® panels.

7.2 Perimeter Zone Installation

Option: Half Sheet Installation

1. Install half width membrane sheets at the edge with #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center along the upper long edge of the membrane.

Option: Full Sheet Installation

1. Install full width membrane sheets at the edge with #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center along the upper long edge of the membrane.

2. Install #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center in rows halfway and equidistant between center points of membrane sidelaps.

3. Heat weld 8" wide cover strips to cover exposed fasteners. Ensure minimum 1 ½'' weld on each side of fastener.

7.3 Corner Zone Installation

Option: Half Sheet Installation

1. Install half width membrane sheets at the edge with #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center along the upper long edge of the membrane. (Step 1 of Perimeter Half Sheet Installation)

2. Install additional row of #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center in rows halfway and equidistant between center points of membrane sidelaps.

3. Heat weld 8" wide cover strips to cover exposed fasteners. Ensure minimum 1 ½'' weld on each side of fastener.

Option: Full Sheet Installation

1. Install full width membrane sheets at the edge with #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center along the upper long edge of the membrane. (Step 1 of Perimeter Full Sheet Installation)

2. Install two rows of #15-13 x 1 ¼" truss head fasteners with RP-02 barbed membrane plates at 6" on center in rows one-third and two-thirds distant between center points of membrane sidelaps.

3. Heat weld 8" wide cover strips to cover exposed fasteners. Ensure minimum 1 ½'' weld on each side of fastener.

On membrane endlaps and sidelaps, maintain at least ½" distance from the edge of the RP-02 plates to the edge of the membrane. Fastener spacing is per job specifications.

Without overdriving the fasteners, tightly screw them down with the plates using an appropriate screw gun with adjustable torque clutch. Fasteners must be installed perpendicular to the OneDek® panel surface. They must also fully penetrate the exterior facing of the panel.

Weld endlap and sidelap seams.

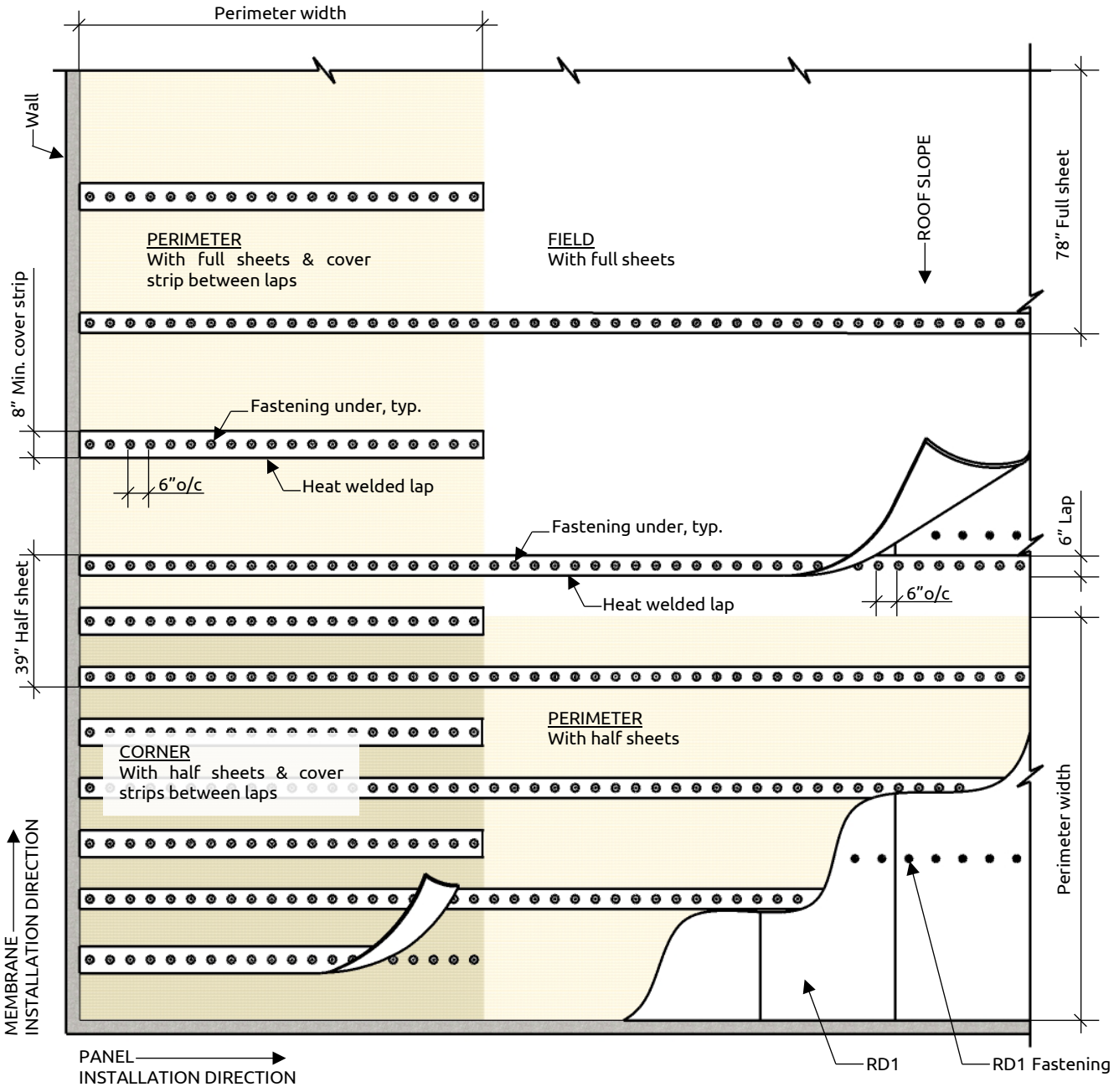


Figure 16: OneDek® MA-6-105 mechanically attached TPO/PVC membrane- 6" o/c (using perimeter half sheets)
(Plan view)

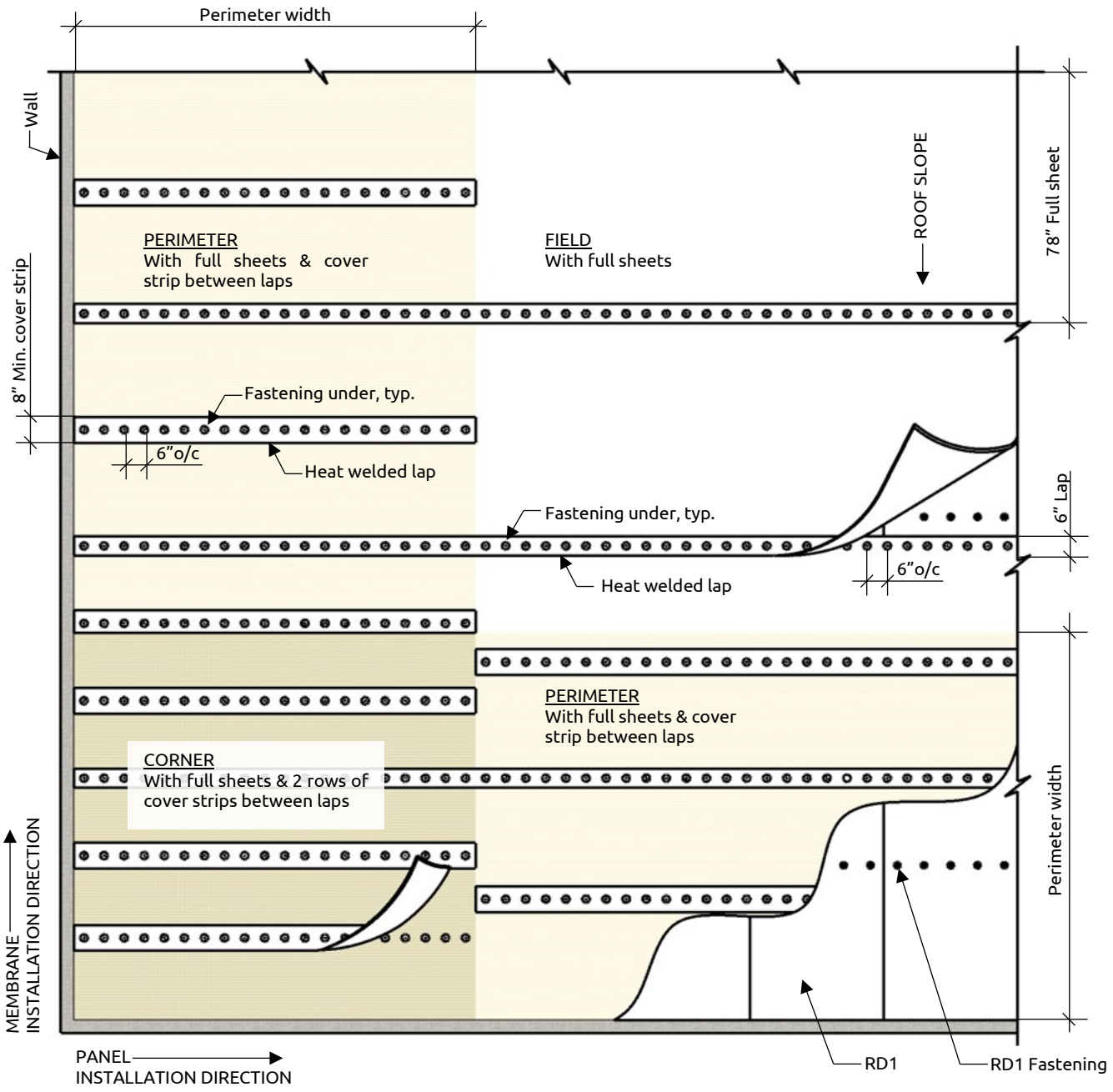


Figure 17: OneDek® MA-6-105 Mechanically attached TPO/PVC membrane- 6" o/c (using cover strips)
(Plan view)

8. FULLY ADHERED SYSTEMS

OneDek® membranes to be applied with adhesives must be approved by AWIP and adhered to a primer surface. Both surfaces must be clean, dry, compatible and free of contaminants and grease/oil.

If required, fasteners must seat properly and plates flush on the membrane leaving an acceptable surface to receive adhesive.

Position membranes with 2" overlap between sheets. Fold membrane in half along its length exposing its bottom side.

Make sure adhesive container is sealed. To make sure adhesive is uniform in color and all solids are dispersed with no swirls, turn container upside down and wait for a minimum of 5 minutes. Turn container right side up and carefully open it and stir vigorously.

Dip roller into can to saturate it. For smooth-backed membranes, roll adhesive onto substrate and membrane. For fleeceback membranes, roll adhesive onto substrate only.

Apply adhesive using the following procedures:

1. Only apply adhesive when ambient temperature is at least 40 °F.

2. The presence of the spider web effect can occur with stringers off the roller when the roller needs to be redipped into the adhesive. It will also be hard to push the roller.

3. Using a 3/8" nap solvent resistant roller, apply adhesive in a smooth, even, thin coat to both membrane and substrate at the rates listed below.

4. Seam areas must remain clean and dry. No adhesive must be applied on the seams.

5. Avoid over-coating adhesives. More is not necessarily better.

6. Allow adhesive to partially dry (approximately 5 – 10 minutes) to a tacky feel when touched.

7. When the adhesive is applied and ready, roll the membrane into the substrate carefully to avoid wrinkles or air entrapment. Use lawn or linoleum heavy roller to ensure good contact between substrate and membrane. Make sure to apply even pressure when using a lawn or linoleum heavy roller.

8. Do not allow adhesive to dry completely. If no longer tacky, it cannot be used. TPO/PVC systems require adhesive to become tacky to touch on both surfaces without stringers.

9. Coverage, open time and dry time rate can vary depending on particular substrate and environmental conditions.

8.1 Adhesive application rate

OneDek® PVC Membrane - LA432M

Apply adhesive to the membrane and substrate which are clean, dry and free of debris. Apply at the rate of approximately 120 square feet per gallon per surface, sufficient to bond 60 square feet of membrane in place.

OneDek® TPO Membrane – LA505

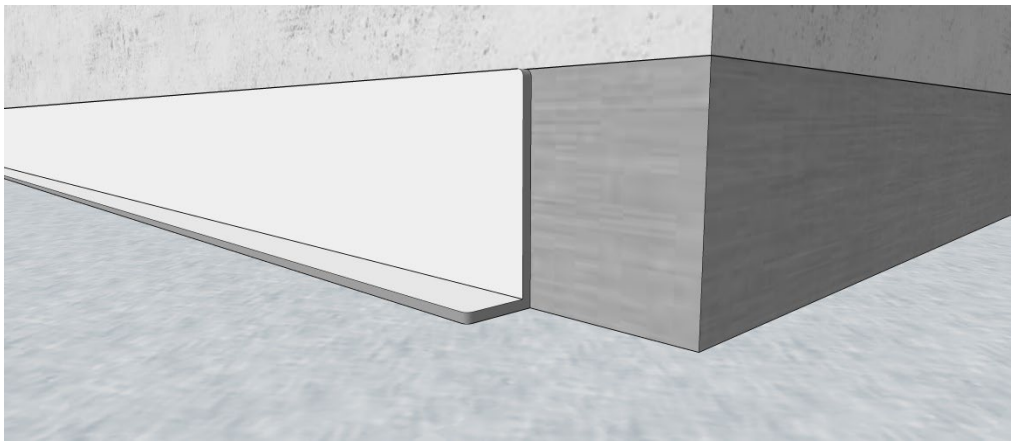
Apply adhesive to the membrane and substrate which are clean, dry and free of debris. Apply at the rate of approximately 200 - 240 square feet per gallon per surface, sufficient to bond 100 - 120 square feet of membrane in place.

OneDek® TPO and PVC Fleece-backed Membrane – LA505

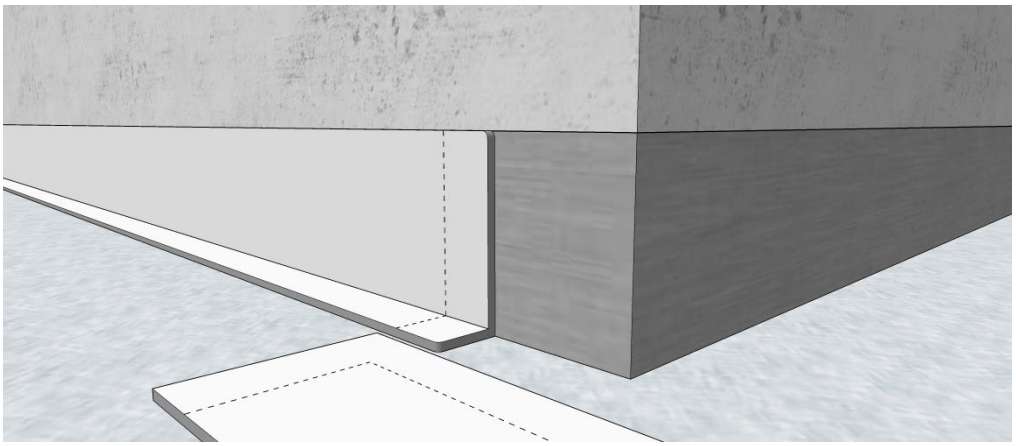
Apply adhesive to the SUBSTRATE ONLY at the rate of approximately 100-120 square feet per gallon.

To protect the OneDek® membrane, use additional layer of OneDek® membrane or a layer of polyester material under paver blocks if pavers are needed to be used as permanent walkways for rooftop equipment maintenance.

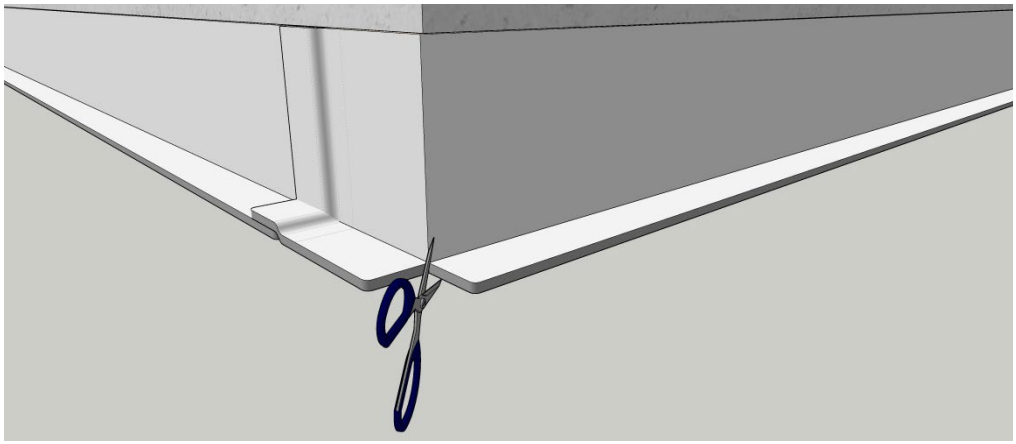
9.1 Outside corner installation



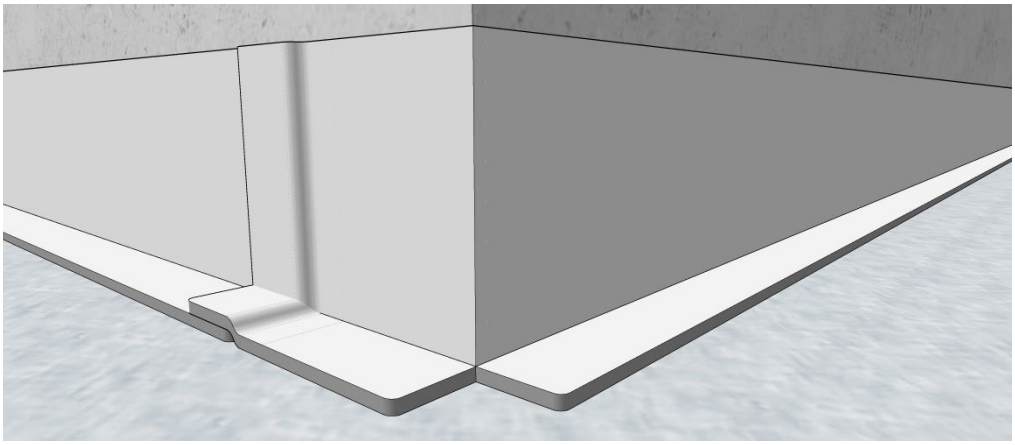
Cut the membrane flashing and extend minimum of 8” vertically. Alternatively, an 18” curb flashing can be used. Make sure it leaves enough section at the base flashing with the membrane overlapping the fasteners and leaving a 1 ½” minimum weld area.



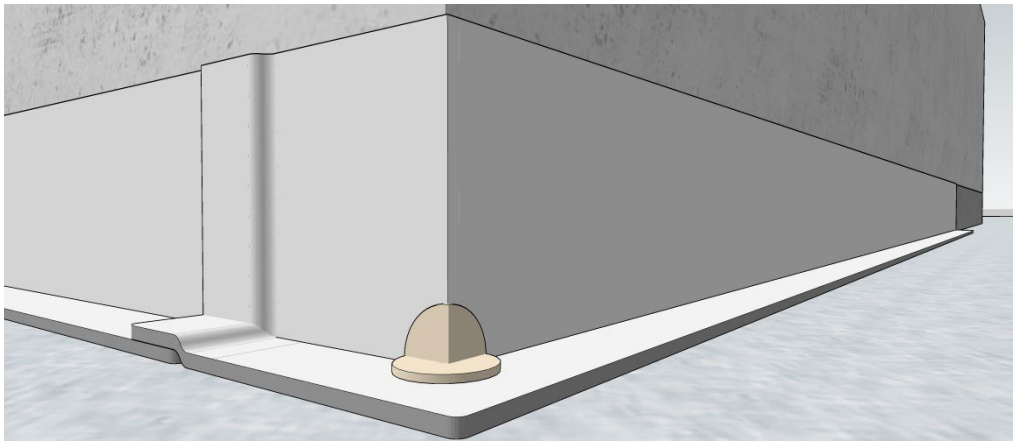
Install the next membrane flashing with 2” lap over the previously installed sheet.



Form membrane to wall as required. Membrane flashings must extend 12” horizontally at each direction from the curb corner point. Cut membrane base to allow flashing to turn at corners. install fasteners or apply adhesives as necessary.

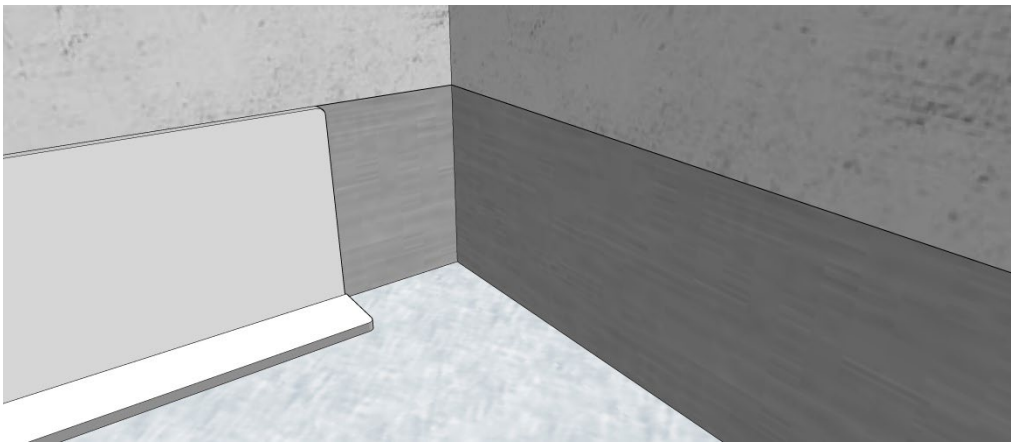


Round the corners of the membrane base overlap (on each side of the corners) and the flashing base overlap (at all ends).

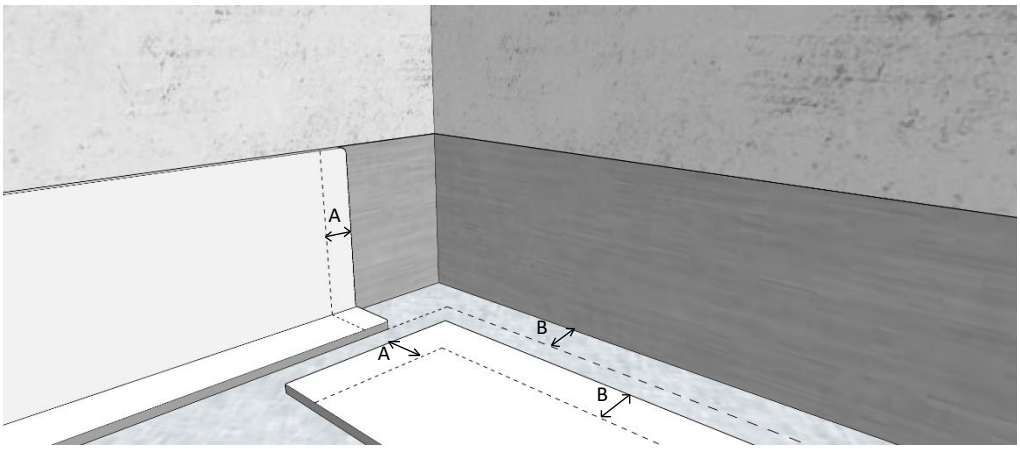


Weld a universal corner to the membrane flashings with a continuous 1” heat weld. Leave an unwelded area at the center of the corner to allow for movement. Probe all welded seams.

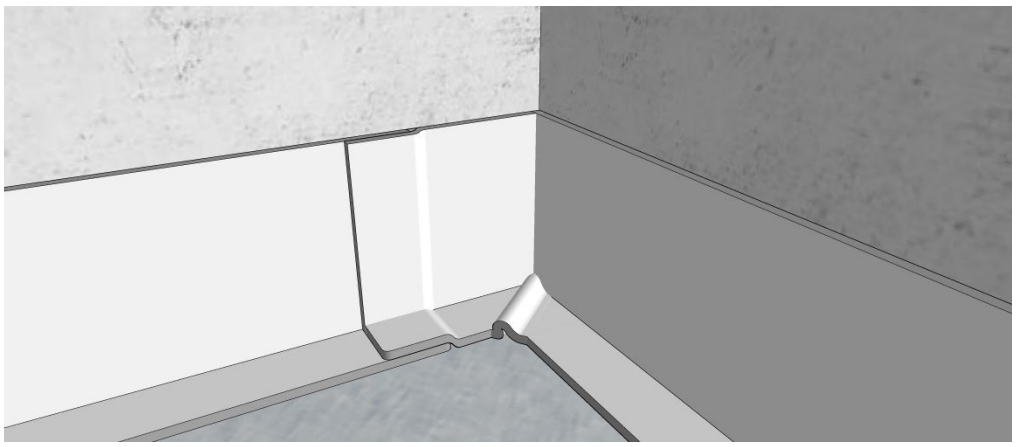
9.2 Inside corner installation



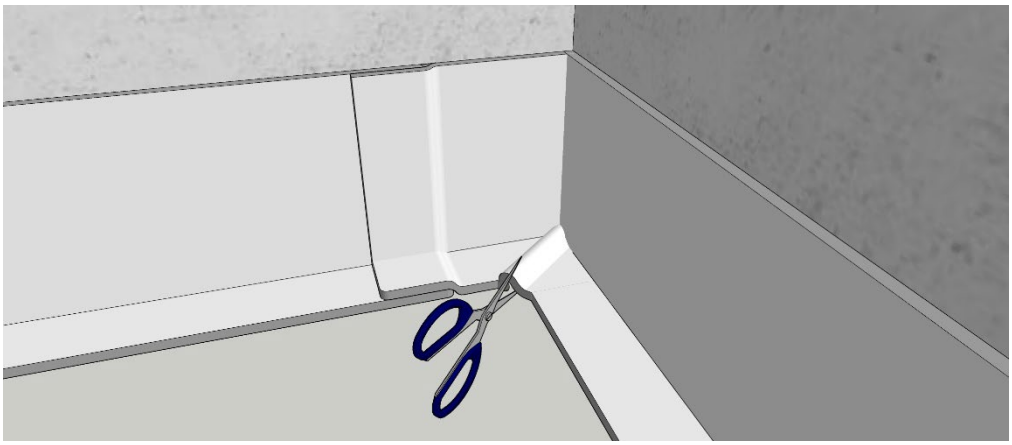
Cut the membrane flashing and extend minimum of 8” vertically. alternatively, an 18” curb flashing can be used. Make sure it leaves enough section at the base flashing with the membrane overlapping the fasteners and leaving an 1 ½” minimum weld area.



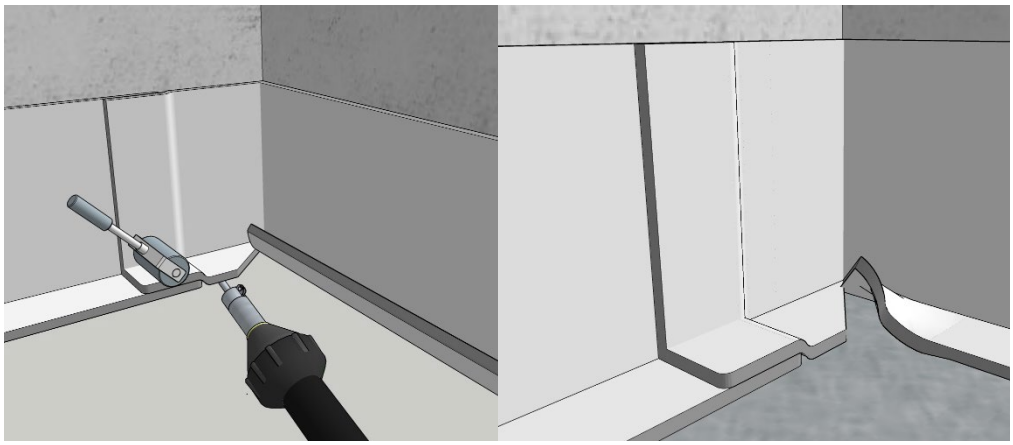
Install the next membrane flashing with 2” lap over the previously installed sheet



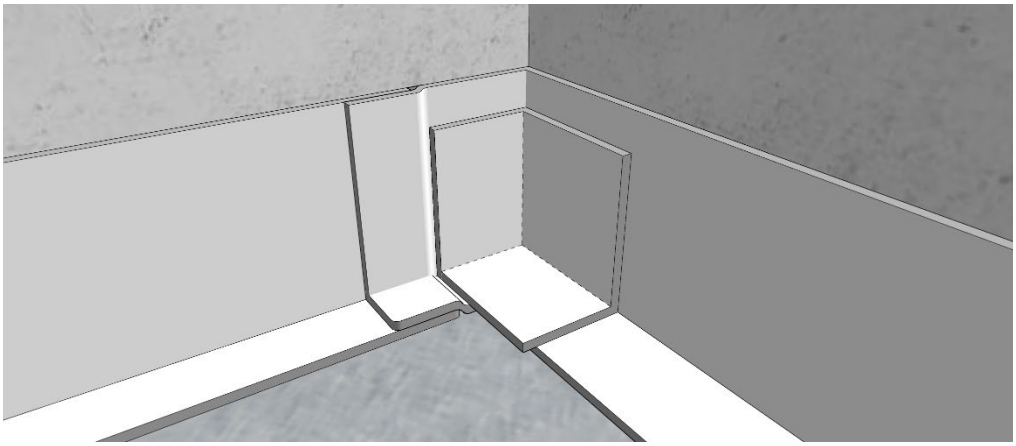
Form membrane to wall as required. membrane flashings must extend 12” horizontally at each direction from the curb corner point. Fold over the membrane flashing base lap (forming a “pig’s ear”) to allow the membrane flashing to turn the corner.



To form an overlap, make a diagonal cut at the “pig’s ear”. Round the corners of the membrane base overlap (on each side of the corners) and the flashing base overlap (at all ends).

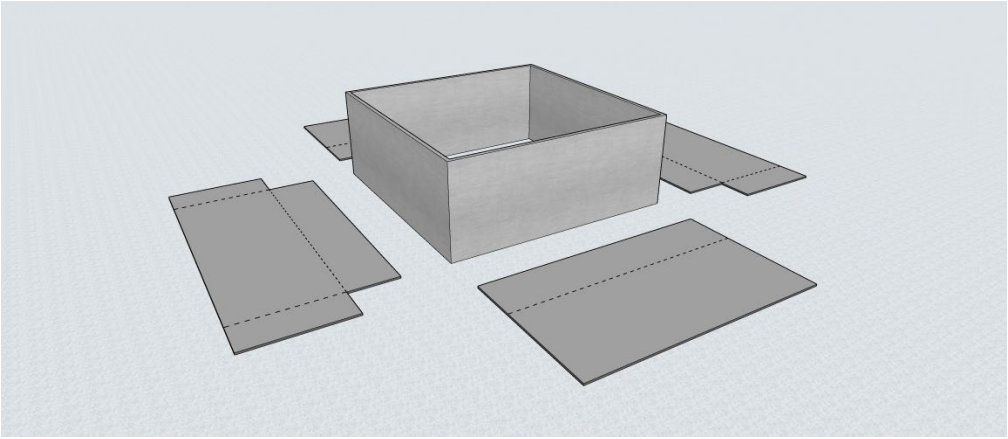


Using a hand-held welder and roller, weld the bottom flap to the membrane and the top flap over the bottom flap

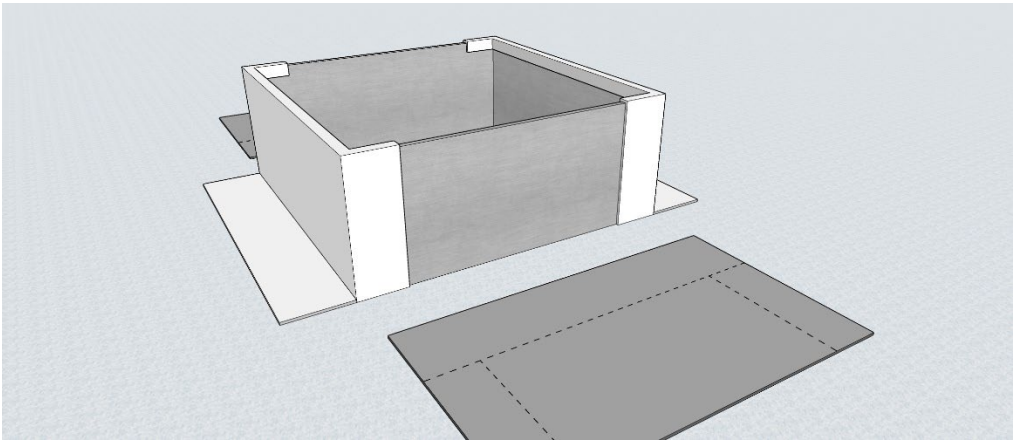


Weld a universal corner to the membrane flashings with a continuous 1” heat weld. Leave an unwelded area at the center of the corner to allow for movement. Probe all welded seams.

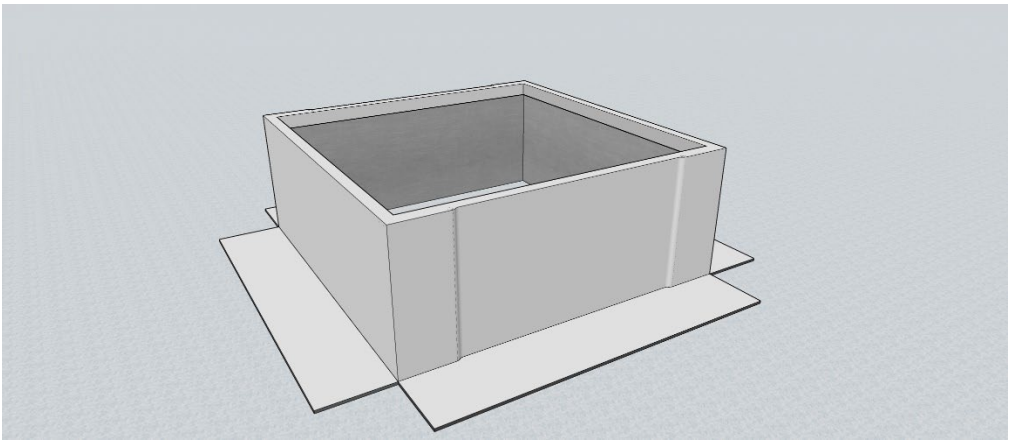
9.3 Membrane curb flashing



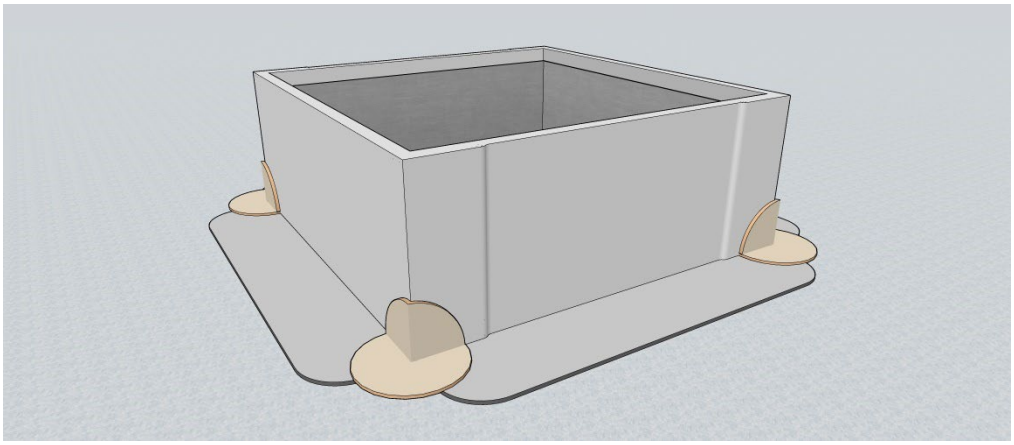
Cut the membrane flashing and extend minimum of 8” vertically. Alternatively, an 18” curb flashing can be used. Make sure it leaves enough section at the base flashing with the membrane overlapping the fasteners and leaving an 1 ½” minimum weld area.



Install the next membrane flashing with 2” lap over the previously installed sheet. The membrane flashing should overlap 2” minimum from the corner as shown.

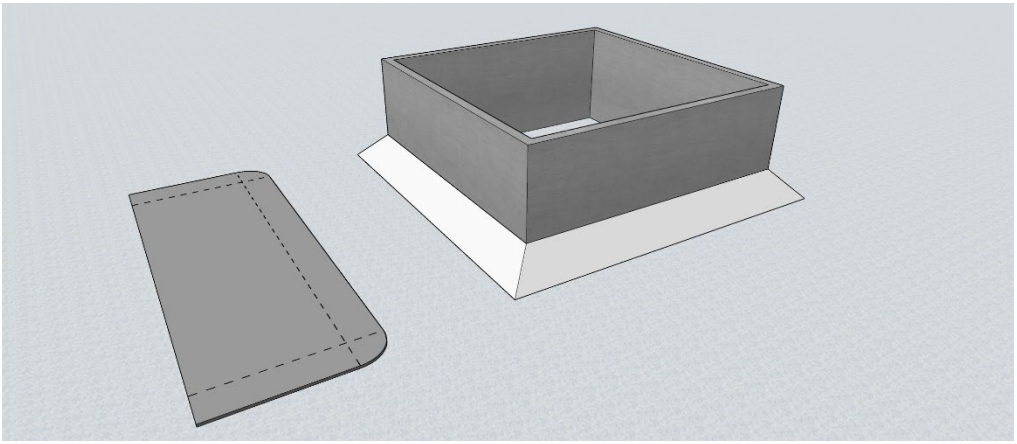


Form membrane to curb as required.

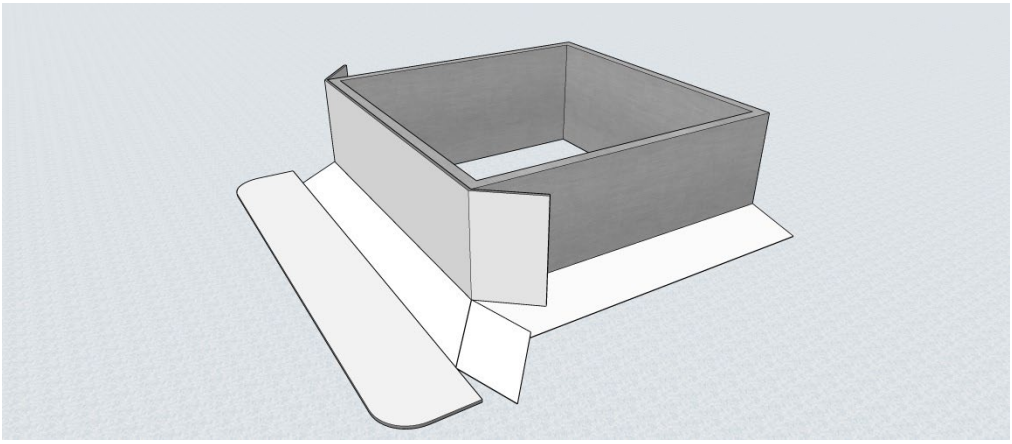


Round the corners of the membrane base overlap (on each side of the corners) and the flashing base overlap (at all ends). At each corner, weld a universal corner to the membrane flashings with a continuous 1” heat weld. Leave an unwelded area at the center of the corner to allow for movement. Probe all welded seams.

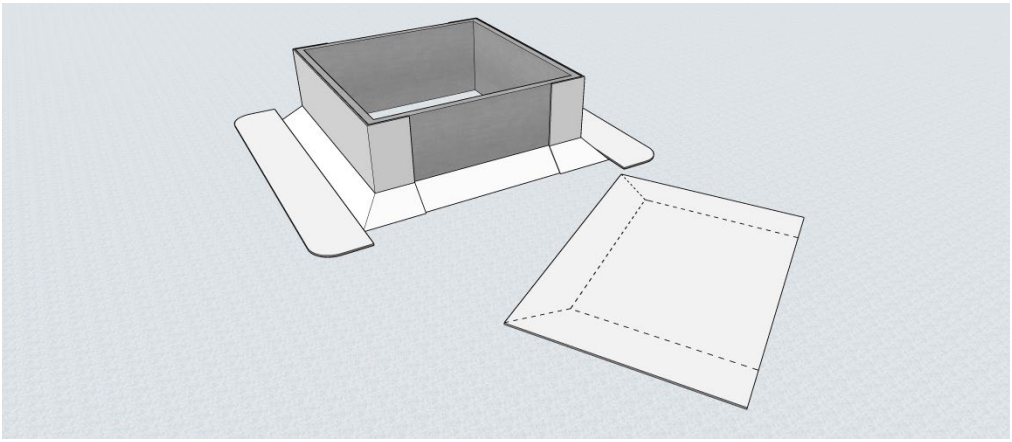
9.4 Canted base curb flashing



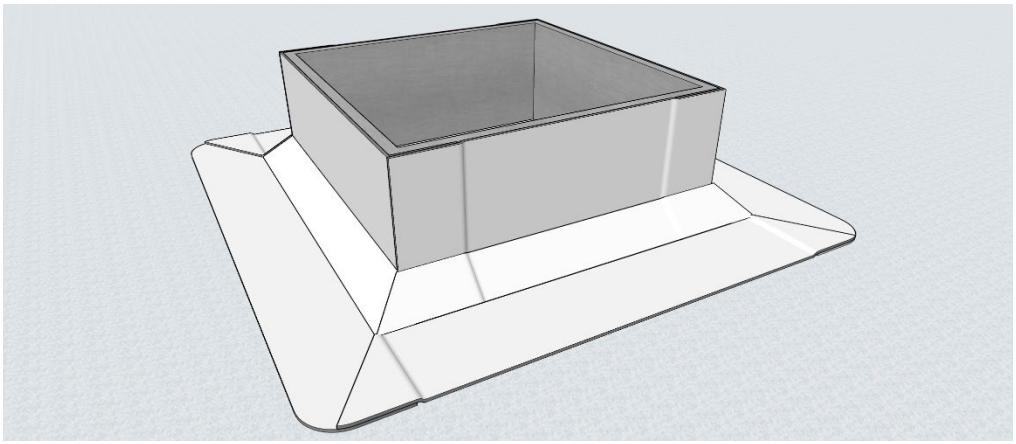
On two opposite sides of the curb cut the membrane flashing and extend minimum of 8” vertically. Make sure it leaves enough section at the base flashing with the membrane overlapping the fasteners and leaving a 1 ½” minimum weld area. Cut membrane flashing to conform the canted curb base.



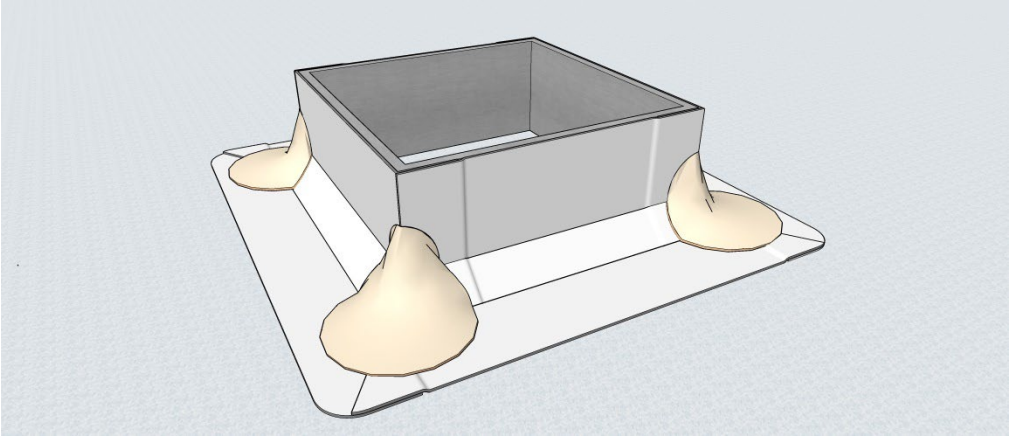
Install the next membrane flashing with 2” lap over the previously installed sheet



Form membrane to curb as required. The membrane flashing should overlap 2” minimum from the corner. On the remaining two sides, membrane base flashing must be cut to conform to the canted curb base. Miter the corners of the membrane base overlap.

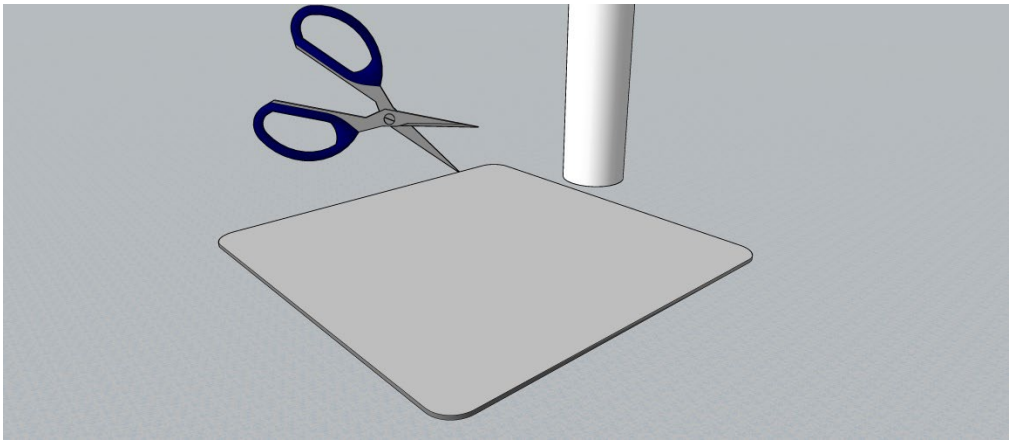


Round the corners of the membrane base overlap (on each side of the corners) and the flashing base overlap (at all ends).

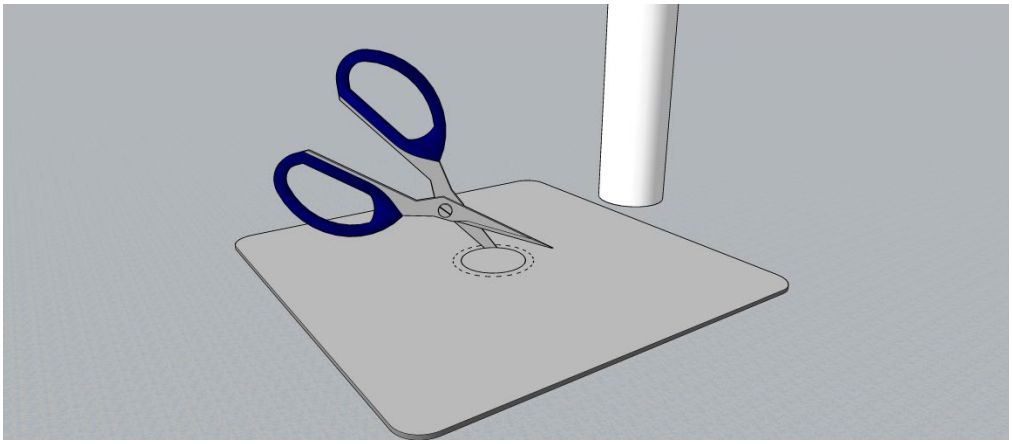


At each corner, weld a universal corner to the membrane flashings with a continuous 1” heat weld. Leave an unwelded area at the center of the corner to allow for movement. Probe all welded seams.

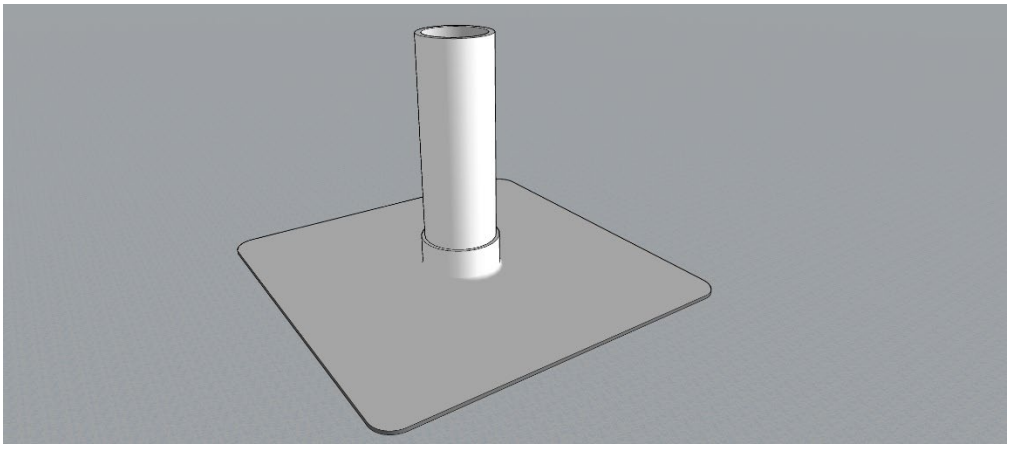
9.5 Vent pipe flashing



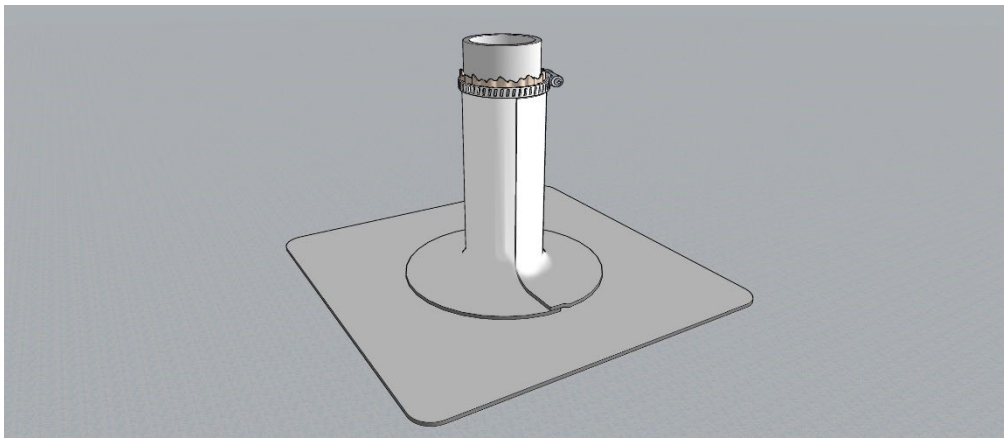
OneDek® stretch collar with rounded corners must be used for vent pipe flashing. It should extend a minimum of 4” beyond the fasteners and plates when used.



Mark the pipe diameter at the center of the membrane collar. Cut a hole approximately two-thirds of the marked diameter.



Heat around the stretch collar hole area and stretch fit membrane over the pipe to create a 1” turn-up with the collar seated flush on the field membrane. Use a hand-held hot air welder. Weld the collar continuously to the field sheet.



Extend a minimum of 1” weld area at the bottom of the membrane wrap. Adhere the wrap to the pipe. Weld and fuse the bottom of Cut OneDek® membrane and wrap it around the pipe. Make sure there is enough weld area at the bottom of the membrane wrap. the wrap with the stretch collar. Overlap and weld the vertical edge of the membrane wrap. Apply sealants behind and around the top of the membrane wrap. Install a draw band at the top of the membrane wrap to avoid water intrusion.

9.6 Membrane repair

Cut a rectangular piece of membrane extending 3” or larger in all directions of the repair area. use the same type of membrane as the field membrane. Make sure that there is at least 1 ½” weld area around all edges.

Round all corners of the patching membrane.

Ensure area is clean and dry prior to welding process. Use low sudsing soap and water followed by a membrane cleaner to remove dirt, contaminations, grease, oil, etc.

Place the patch at the center of the repair area. apply a 1 ½” continuous weld around the edges of the patch to fuse it to the membrane.

Probe all welded seams.

Scan for the most current product information