

Tech News

A TECHNICAL ROOFING PUBLICATION BY VERSICO ROOFING SYSTEMS | SPRING 2015

In This Issue

Wood Nailers



Construction-Generated Moisture



A Daily Seal



Roof Walkways



Attaching Insulation with DASH
Adhesive Quick Tips



Featured Detail:
TPC-8.3 – Prefabricated Square Tube Wrap



Spring Roofing Tip



2015 Training Schedule



Q&A From the Field

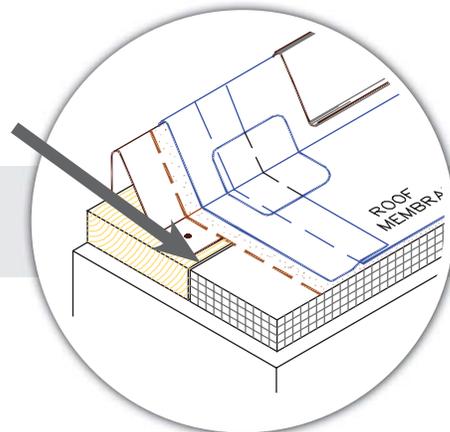
Trivia Question

How many points must you earn to
qualify for King's Court 2016?

Wood Nailers

Wood nailers are an important part of a roofing system, protecting the edge of the membrane underlayment and providing an effective substrate for some installation details and roof accessories. Therefore, it is critical that the nailers are installed and fastened properly. The following guidelines will help ensure a high-quality, high-performance wood nailer system.

1. The width of the nailer must exceed the width of any metal flanges of edgings, scuppers, etc., and the thickness must be such that the top of the nailer is flush with the top of the membrane underlayment. See example below:



2. When treated lumber is specified, it is recommended that only lumber that has been pressure treated with salt preservatives be utilized. Some lumber preservatives (such as Creosote, Pentachlorophenol, Copper Naphthenate, and Copper 8-quinolinolate) will adversely affect the membrane when in direct contact and are therefore unacceptable.

For more information regarding wood treatments and their possible effects on roofing systems, [click here](#) to see the "Wood Treatments & Wood Nailers" standard letter on www.versico.com.

3. If non-treated lumber is specified, it must be stored to protect it from moisture sources. A seal should be provided between non-treated lumber and a concrete or gypsum substrate (similar to a sill sealer).
4. Wood nailer fastening methods vary with building conditions; however, it is essential that secure attachment of durable stock be accomplished. The "Perimeter Flashing" section of FM Global Loss Prevention Data Bulletin 1-49 contains options for fastener size and spacing that are based on the wind zone in which the project is located.
5. Wood nailers that are anchored to steel, wood, or masonry decking should not be less than 2" x 6" nominal (minimum 1½" x 5½").
6. Wood nailers should be Douglas fir, southern yellow pine, or other wood that has similar decay-resistant properties.

Construction-Generated Moisture

The problem: If not mitigated properly, construction-generated moisture (CGM) can lead to a number of expensive problems in a roofing system, including loss of insulation R-value, corrosion of steel fastening components, and deck deterioration.

What causes CGM?

Many factors affect CGM levels, including construction practices, project scheduling, and the level of building ventilation and dehumidification. The drying processes of concrete, paint, plaster, drywall, and other water-based construction materials increase CGM levels, as do the oil- and propane-fired heaters often used inside buildings under construction. In addition, moisture from exterior sources can infiltrate the building, further increasing CGM.

How can CGM be controlled during the construction process?

In order to reduce CGM, buildings under construction should be adequately ventilated during concrete hydration and other high-moisture-related construction activities. Temporary, high-volume ventilation systems should be used during construction, as these high-volume air-handling systems are able to remove large amounts of moisture from the air. HVAC systems designed for temperature control of finished buildings are not sufficient to remove construction-generated moisture.

How can CGM negatively affect a roof?

CGM can contribute to high levels of relative humidity inside a structure. When indoor humidity is high and the outside temperature drops, condensation can begin to form on any surface whose temperature is at or below the dew point, including uninsulated portions of roof decks, roof insulation, or the underside of roofing membrane.

The consequences of any moisture migration into a roofing system can be severe. They include, but are not limited to drips (which are sometimes mistaken for leaks), diminishing of insulation R-value, decaying of insulation facers, possible board deformation (especially over concrete decks), deterioration of wood decks, and corrosion of steel decks and fastening components.



Construction-Generated Moisture: Does Roof Color Matter?

It can, depending on climate and geography. Reflective roofs are cool in the summer and become much colder during the winter. As a result, reflective roofing membranes fall below the dew point, and remain below, for much longer periods than darker-colored membranes. This can lead to problems with condensation forming on surfaces when their temperatures fall below the dew point, particularly in facilities with high relative humidity. Dark-colored roofs can reduce the likelihood of condensation-related issues, particularly in cold-climate regions.

How can CGM issues be avoided?

Versico recommends the following best practices:

- Evaluate the proposed construction practices to assess their possible impact on moisture levels.
- Implement building dehumidification during construction.
- Consider the use of air/vapor barriers to prevent humid air from reaching the roof assembly.
- Select a geographically appropriate roof membrane color.
- Seal gaps and joints in the deck, around penetrations, and junctions between the deck and parapet walls or curbs when an air/vapor barrier is not used.
- Use multiple layers of insulation that have been installed with the joints staggered. This helps obstruct humid air from gaining access to the cold underside of the membrane.

For more information about construction-generated moisture and its effect on roofing systems, please visit www.versico.com or www.spri.org.

A Daily Seal

On phased roofing, when the completion of flashings and terminations is not possible by the end of each workday, provisions must be taken to temporarily close the membrane to prevent water infiltration. Here are Versico's recommendations for creating a quick, simple, and effective daily seal.

1. Start with a clean, dry surface.
When tying in to existing built-up roofs, gravel must be removed prior to creating the daily seal.
2. Temporarily seal any loose membrane edge down slope using G400 PS-2 Two-Part Pourable Sealer (EPDM only), DASH™ Adhesive, hot asphalt, or a similar product so that the membrane edge will not buck water. Temporary seal locations should be in locations where drainage is not restricted by partially installed roof sections.
 - DASH – When applying DASH Adhesive or other sprayed urethane foam, prime the surface of the membrane with CAV-GRIP™ to ensure proper adhesion.
 - Two-Part Pourable Sealer – After mixing the two components, apply Pourable Sealer along the loose edge of the EPDM membrane. If necessary, use a trowel to achieve complete coverage.
3. After embedding the membrane in the daily seal material, CHECK FOR CONTINUOUS CONTACT. Provide continuous pressure and evenly distributed weight over the entire length of the temporary seal. Note: The use of rigid wood nailers is not recommended due to the risk of warping.
4. When work resumes, pull the embedded membrane free, then trim and remove the daily seal material from the membrane.

Roof Walkways

Walkways are an essential component of any roof system that is exposed to regular foot traffic, protecting the membrane from accidental damage and providing a defined, slip-resistant path for those servicing HVAC systems and other rooftop equipment. Regardless of what kind of walkway is being used, Versico has some tips for a smooth, simple installation.

EPDM Pressure-Sensitive Walkway Pads

1. Use Weathered Membrane Cleaner to remove dirt or other contaminants from the area.
2. Apply the appropriate Versico primer to areas where tape will contact the deck surface. Allow the primer to flash off.
3. Install the PS Molded Walkway Pads as soon as the primer flashes off to minimize potential dust contamination and promote adhesion in colder weather.
4. Allow a 1"-wide break between Walkway Pads. Discontinue walkways over field splices, allowing a minimum 1" space.

CAUTION: On ballasted systems, EPDM Walkway Pads are not recommended within 10 feet of the perimeter of the roof to avoid discontinuation of the primary membrane securement (ballast). In lieu of EPDM Walkway Pads, concrete pavers can be used when walkway is to be extended into the perimeter area.

TPO/PVC Walkway Rolls

1. If possible, allow the sun to warm the Walkway Rolls prior to welding; this will decrease the chances of expansion-related distortion.
2. Use Weathered Membrane Cleaner (TPO) or PVC Membrane Cleaner (PVC) to remove dirt or other contaminants from the area that will be welded to the walkway material.
3. When walkways are to be installed parallel to field splices, position the material and cut the Walkway Rolls into maximum 10' lengths. Remember to leave a minimum 1" gap between adjacent pieces to allow for water drainage.



4. When walkways are to be installed perpendicular to field splices, adjust walkway length to provide a 4"–6" minimum gap at field splices. Because the attachment of the walkway to the membrane is permanent, this will allow access to the field seams.
5. Using an Automatic Heat Welder, weld all four sides of the walkway material to the membrane. Typically, the same speed and temperature settings will be used for this procedure as for welding membrane to membrane; however, a test weld is always recommended prior to welding anything to the installed membrane. A hand held welder may be utilized, but, productivity will be decreased.

Pavers

1. Interlocking rubber pavers can be loose-laid directly over the roofing membrane.
2. Concrete pavers require the use of a slip-sheet of roofing membrane under all concrete pavers designated for use as a walkway to protect the deck membrane. The protective layer must extend a minimum of 2" on each side of the walkway.

Note: Pavers are not recommended for walkways when slopes exceed 2" per horizontal foot, as slippage could be encountered during colder seasons.

Attaching Insulation with DASH Adhesive

Quick Tips

- On roofs with a slope greater than $\frac{1}{2}$ " in 12", begin adhering insulation at the low point and work upward to avoid slippage.
 - Check to ensure the substrate is dry prior to application; DASH Adhesive cannot be applied to a wet or damp surface.
 - In bead applications, apply the adhesive bead so that its distance from the edge of the board does not exceed half the bead spacing. For example, if bead spacing is 12" o.c., the bead must be within 6" of the edge.
 - Position all edges of the boards on the top flutes of steel decks for adequate support.
 - One person should be designated to walk in all boards and roll using a 30"-wide, 100–150 lb weighted steel roller to ensure full embedment. Optimal set-up time is approximately 5–7 minutes.
 - Wait until the adhesive has started to set up before walking on the insulation boards to avoid any slippage or movement.
 - Relief cuts may be necessary to allow boards to lie flat, and constant weight may be necessary to achieve adequate adhesion.
 - Be sure to seal gaps around penetrations and between horizontal and vertical surfaces of the roof area. Sealing these gaps will prevent warm interior air from infiltrating the roofing assembly and causing condensation-related issues.
- ▶ **Allow the adhesive to rise approximately $\frac{1}{8}$ " and develop "strings" before setting insulation boards into adhesive.**
- DASH Adhesive's "string time" is generally $1\frac{1}{2}$ – 2 minutes after application at room temperature. String time is measured by touching the adhesive with a splice wipe and looking for the development of "strings" of adhesive as it is pulled away.



Featured Detail

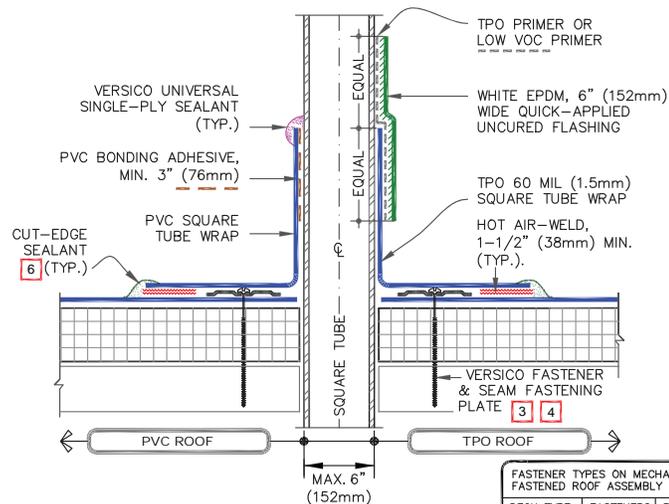
TPC-8.3 – Prefabricated Square Tube Wrap

To improve ease of installation for contractors, Versico recently revised the installation process for its VersiWeld® TPO Square Tubing Wrap. The new procedure is outlined below.

Installation (new)

1. Clean the penetration using a Splice Wipe saturated with Weathered Membrane Cleaner.
2. Open the TPO square tubing wrap by pulling apart the tack welds located on the vertical leg of the flashing.
3. Wrap the square tubing wrap around the penetration until the vertical leg is tight against the penetration.
4. Tack-weld the back edge of the square tubing wrap's vertical leg, maintaining good contact between the tubing wrap and the penetration. This process will hold the tubing wrap in place.
5. Heat-weld the entire width of the vertical overlap, and hand-roll against the outer surface of the penetration to create the pressure necessary to achieve an acceptable weld.
6. Heat-weld the base flange to the deck membrane and complete the horizontal overlap weld.
7. Once the flashing has completely cooled, check all splices for voids and cold-welds. Make any needed repairs.
8. Prime the area at the top of the square tubing wrap, including steel tubing.
9. Wrap a piece of 6"-wide Quick-Applied Uncured EPDM Flashing (included in the box) around the penetration; then center the flashing 3" on tubing wrap and 3" on steel tubing. The flashing should overlap approximately 1".
10. Roll the QA Uncured EPDM Flashing using a 2" roller, creating a good bond to all surfaces.
11. Apply a bead of Universal Single-Ply Sealant at the top of the tubing wrap so the QA Uncured EPDM Flashing and the top of the TPO Square Tubing Wrap are covered with sealant.
12. Apply TPO Cut-Edge Sealant to all edges of the square tubing wrap that are located on the deck. Do not apply Cut-Edge Sealant to vertical surfaces.

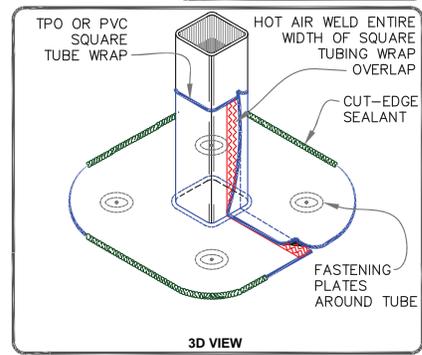
THERMOPLASTIC MEMBRANE TPO/PVC



NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING PRE-FABRICATED SQUARE TUBE WRAP.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO FLASHING.
3. INSTALL A MINIMUM OF 4 SEAM FASTENING PLATES FOR TUBE SIDE DIMENSIONS UP TO 6" (152mm).
4. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEM. SEE TABLE FOR MF SYSTEM.
5. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF SURE-FLEX PVC MEMBRANE.
6. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, THERMOPLASTIC "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SQUARE TUBE WRAP.

FASTENER TYPES ON MECHANICALLY FASTENED ROOF ASSEMBLY		
DECK TYPE	FASTENERS	PLATES
STEEL & WOOD DECK	HPVX FASTENER	HPVX PLATE
	HPV-XL FASTENER	HPV-XL PLATE
CONCRETE DECK	CD-10 OR MP 14-10	HPVX PLATE



Please note; the installation procedure for Versico's VersiFlex PVC Square Tubing Wrap has not changed.

Spring Roofing Tip

After the snow is off a roof, a maintenance inspection should be conducted by a Versico authorized contractor or someone specially trained in single-ply roofing installations. Maintenance items include drains, gutters, and rooftop equipment, and inspectors should be on the lookout for membrane damage (cuts and/or tears), as well as oil or Freon leaks.

2015 Versico Roofing Systems

Authorized Contractor Training Schedule

CARLISLE, PA

June 17 – 18, 2015

July 22 – 23, 2015

August 19 – 20, 2015

September 16 – 17, 2015

October 21 – 22, 2015

November 4 – 5, 2015

December 9 – 10, 2015

TOOELE, UT

May 13 – 14, 2015

September 16 – 17, 2015

November 11 – 12, 2015

December 9 – 10, 2015

KENNESAW, GA

August 12 – 13, 2015

October 14 – 15, 2015

TERRELL, TX

August 12 – 13, 2015

October 14 – 15, 2015

Q & A From the Field

Can EPDM QA Pipe Seals be used in lieu of a metal pan for a Pourable Sealer Pocket?

No. The mold release substance on the pipe seal will not permit a proper seal with Pourable Sealer.

When installing fleece backed systems, when is additional membrane securement required at angle changes?

Additional securement is required for warranties greater than 20 years, warranty wind speeds greater than 90 miles per hour, and at control or expansion joints.

Why am I having problems with Pourable Sealer peeling away from TPO Sealant Pockets?

TPO Sealant Pockets must be primed with the appropriate Versico primer. Prior to adding Pourable Sealer, the primer must be allowed to flash off as specified.

Regarding detail VGC-18.1 (Scupper at Deck), does the Quick-Applied Uncured EPDM Flashing have to turn into the scupper?

No. Flash the wall and cut out the opening. The metal flange must be continuous with rounded corners. Solder all scupper seams until watertight, then set in a continuous bead of Water Cut-Off Mastic and fasten to maintain constant compression. The scupper flange must be totally covered by QA Uncured EPDM Flashing with a minimum 2" of coverage past the nail heads. Scrub the flange with Weathered Membrane Cleaner to remove finishing oils; then apply primer to the metal flange and membrane surface prior to installing QA Uncured EPDM Flashing.



Are walkway rolls or pads required on all Versico roof systems?

Walkways must be installed at all traffic concentration points (e.g. roof hatches, access doors, rooftop ladders, etc.) regardless of traffic frequency. Walkways must also be installed if regular maintenance (once a month or more) is necessary to service rooftop equipment.

Can Versico's Yellow TPO Pressure-Sensitive Coverstrip be used on EPDM roofs?

Yes. Yellow TPO Pressure-Sensitive Coverstrip can be used on TPO, EPDM, or Hypalon® systems to provide a visual warning of rooftop hazards such as roof edges, deep drain sumps, and skylights.

Can any Versico VGC-13 detail be used for a tie-in between new EPDM and existing PVC?

No. A total isolation between the two systems must be provided in the form of a vertical curb or an expansion joint.