

VersiWeld® QA TPO Reinforced Membrane



Overview

VersiWeld QA (Quick-Applied) TPO membrane is a heat-weldable single-ply thermoplastic polyolefin (TPO) sheet designed for fully adhered new roof construction and re-roofing applications. VersiWeld QA white TPO is a nominal 60- or 80-mil reinforced TPO membrane laminated to an elastomeric quick-applied adhesive. VersiWeld TPO membrane is based on advanced polymerization technology that combines the durability and weatherability of ethylene-propylene (EP) rubber with the heat weldability of polypropylene. The membrane is specifically formulated for long-term weather resistance without the use of either polymeric or liquid plasticizers.

Every roll of VersiWeld QA TPO membrane utilizes Versico's exclusive Lay-Flat Technology, a perfect combination of membrane, adhesive and manufacturing expertise that results in the easiest TPO installation.

The quick-applied adhesive is a 100%-solids, hot-melt adhesive that eliminates VOC and odor concerns typically associated with fully adhered systems. The adhesive is factory-applied to provide uniform thickness, yielding consistent field performance. An uncoated edge is maintained to allow for heat-welded field seams. The release liner is silicon-coated on both sides to provide consistent, easy release from the adhesive even if either side accidentally touches the adhesive again after removal.

VersiWeld QA TPO is available in white, gray and tan colors. All colors are available in 60-mil nominal thickness. White QA TPO is also available in 80-mil nominal thickness. The membrane is environmentally friendly and safe to install with its VOC-free quick-applied adhesive and heat-welded seams.

VersiWeld QA white and tan membranes can contribute toward LEED® (Leadership in Energy and Environmental Design) credits and is California Title 24-rated.



Labor Saving Features and Benefits

- Consistent adhesive application
- No waiting for flash-off
- No stirring
- Up to 80% labor saving compared to traditional bonding adhesive



Optional APEEL Protective Film

Versico's VersiWeld QA reinforced membrane is available with an optional APEEL Protective Film, saving time and labor by eliminating the need for roof cleaning upon project completion. Versico's innovative APEEL Protective Film can be left in place for up to 90 days without affecting the integrity of the film, guarding the TPO membrane's surface from scuffs and dirt accumulation during installation. Durable and easy to remove, APEEL™ Protective Film improves aesthetics and long-term reflectivity and is ideal for re-roofing, re-cover, and new construction projects.

Features and Benefits

- Title 24-compliant and can contribute toward LEED credits
- FM, UL and CRRC rated; UL-2218 Class 4 Rating
- Improved adhesive formulation for superior bonding to substrates
- No solvents, VOCs or odors
- Installs up to 80% faster than traditional fully adhered systems, saving time and labor.
- Smooth membrane reduces dirt buildup and stays cleaner longer
- Full line of Certified Fabricated Accessories (CFA)
- Exclusive Lay-Flat Technology
- Enhanced with the OctaGuard XT weathering package
- APEEL Protective Film application guards the membrane's surface from scuffs and dirt accumulation during installation, improving the roof system's appearance and long-term performance
- APEEL Protective Film can be left in place for up to 90 days without degrading due to its excellent heat- and UV-resistance



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Installation

VersiWeld TPO Roofing Systems are fast to install as minimal labor and few components are required.

VersiWeld QA TPO membrane is approved for application directly to the following substrates: Versico's VersiCore® Polyiso, SecurShield® Polyiso, SecurShield HD, SecurShield HD Plus, Insulfoam® SP, DensDeck® Prime, SECUROCK®, OSB, plywood, metal, clean concrete block. Contact Versico with any questions regarding additional acceptable substrates.

The VersiWeld QA TPO Fully Adhered Roofing System application begins with the insulation/underlayment being attached per the required attachment specification.

1. The VersiWeld QA TPO membrane may only be installed when the outdoor temperature is at least 50°F (10°C).
2. The surface to which the membrane is to be applied must be very clean. Prior to membrane placement, the surface of the insulation or underlayment board must be cleaned of dust and other foreign matter using a fine push broom or a blower.
Note: Priming of the insulation surface is not required
3. Remove the release liner on one half of the sheet starting from the split in the liner at the middle of the sheet. The liner should be removed at an angle to reduce splitting or tearing.
4. Roll the membrane onto the substrate while avoiding wrinkles. To achieve the best adhesion, the membrane should be rolled onto the substrate at an angle. When applying the VersiWeld QA TPO membrane it is recommended to maintain a large curve (radius) on the leading edge of the membrane. This will help eliminate creases and bubbles that cannot be removed after the sheet is in place.
5. Roll the VersiWeld QA TPO membrane with a segmented roller to ensure full contact with the substrate. Roller should weigh at least 50 lbs (22 kg) per linear foot.
6. Fold back the remaining half of the sheet and repeat the above process.

Heat Welding Procedures

1. Refer to the VersiWeld TPO Adhered Application specification for typical heat welding procedures.
2. The membrane has an uncoated edge on one side along the length of the sheet for membrane welding. Adjoining membrane sheets are overlapped lengthwise a minimum of 2" to provide for a minimum 1½"-wide heat weld. It is recommended that all splices be shingled to avoid bucking of water.
3. An uncoated edge is not provided at the ends of the rolls. Adjoining membrane sheets must be butted together and overlaid with 6"-wide VersiWeld TPO Reinforced Membrane, hot-air welded along all edges. Seal all membrane edges (where scrim reinforcement is exposed) with Cut-Edge Sealant.*

Wall Flashing

Walls may be flashed using standard TPO membrane in conjunction with Versico's TPO Bonding Adhesive or CAV-GRIP 3V Low-VOC Adhesive. VersiWeld QA TPO membrane can also be used as wall flashing.

REVIEW CURRENT VERSICO SPECIFICATIONS AND DETAILS FOR SPECIFIC INSTALLATION REQUIREMENTS.

Precautions

- A static electric charge may develop when removing the poly release liner from the elastomeric quick-applied adhesive on the back of the membrane sheet. To avoid the possibility of ignition, lids must be closed on any flammable products and a fire extinguisher should be readily available.
- Sunglasses that filter out ultraviolet light are strongly recommended since tan and white surfaces are highly reflective. Roofing technicians should dress appropriately and wear sunscreen to protect skin from the sun.
- Surfaces may become slippery due to frost and ice buildup. Exercise caution during cold conditions to prevent falls.
- Care must be exercised when working close to a roof edge when surrounding area is snow-covered as the roof edge may not be clearly visible.

- Use proper stacking procedures to ensure sufficient stability of the rolls.
- Exercise caution when walking on wet membrane. Membranes may be slippery when wet.
- Store VersiWeld QA TPO membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. VersiWeld membrane that has been exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

Codes and Approvals

1. VersiWeld TPO meets or exceeds the requirements of ASTM D6878 Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
2. VersiWeld TPO Reinforced Membrane was tested for dynamic puncture resistance per ASTM D5635 using the most recently modified impact head. It was watertight after an impact energy of 22.5 J (16.6 ft-lbf).
3. VersiWeld TPO membranes conform to requirements of the U.S.E.P.A. Toxic Leachate Test (40 CFR part 136) performed by an independent analytical laboratory.

Radiative Properties for ENERGY STAR and Cool Roof Rating Council (CRRC)

| Property | Test Method | White QA TPO | Tan QA TPO | Gray QA TPO |
|--------------------------------------|------------------------|--------------|------------|-------------|
| CRRC initial solar reflectance | ASTM D1549 | 0.79 | 0.71 | 0.46 |
| CRRC solar reflectance after 3 years | ASTM D1549 (uncleaned) | 0.70 | 0.64 | 0.43 |
| CRRC initial thermal emittance | ASTM C1371 | 0.90 | 0.86 | 0.89 |
| CRRC thermal emittance after 3 years | ASTM C1371 (uncleaned) | 0.86 | 0.87 | 0.88 |
| Solar Reflectance Index (SRI) | | 99 | 86 | N/A |

LEED Information

| | |
|--------------------------------|------------|
| Pre-consumer Recycled Content | 8% |
| Post-consumer Recycled Content | 0 |
| Manufacturing Location(s) | Tooele, UT |



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Typical Properties and Characteristics

| Property | Test Method | 60-mil | 80-mil |
|---|---|---|---|
| Nominal thickness with adhesive, in. (mm) (adhesive nominal thickness is 0.010) | ASTM D751 | 0.070 (1.78) | 0.090 (2.286) |
| Thickness over scrim, in. (mm) | ASTM D6878 (avg. of 3 areas) | 0.024 typical (0.610) | 0.034 typical (0.864) |
| Breaking strength, lbf (kN) | ASTM D751 Grab Method | 250 (1.1) min. 360 (1.6) typical | 350 (1.6) min 425 (1.9) typical |
| Elongation at break of fabric, % | ASTM D751 | 25 typical | 25 typical |
| Tearing strength, lbf (N) 8 x 8 in. Specimen | ASTM D751 B Tongue Tear | 55 (245) min. 130 (578) typical | 55 (245) min 130 (578) typical |
| Brittleness point, °F (°C) | ASTM D2137 | -40 (-40) max. -50 (-46) typical | -40 (-40) max -50 (-46) typical |
| Linear Dimensional Change (shrinkage), % After 6 hours at 158°F (70°C) | ASTM D1204 | ± 0.5 max. -0.2 typical | ± 1 max -0.2 typical |
| Ozone resistance, 100 pphm, 168 hours | ASTM D1149 | No cracks | No cracks |
| Resistance to water absorption After 7 days immersion 158°F (70°C) Change in mass, % | ASTM D471 (top surface only) | 3.0 max. 2.0 typical | 3.0 max 2.0 typical |
| Resistance to microbial surface growth, rating (1 is very poor, 10 is no growth) | ASTM D3274 2 yr S. Florida | 9–10 typical | 9–10 typical |
| Field seam strength, lbf/in. (kN/m) Seam tested in peel | ASTM D1876 | 25 (4.4) min. 60 (10.5) typical | 40 (7.0) min 70 (12.3) typical |
| Water vapor permeance, Perms | ASTM E96 | 0.10 max. 0.05 typical | 0.10 max 0.05 typical |
| Puncture resistance, lbf (kN) | FTM 101C Method 2031 | 300 (1.3) min. 350 (1.6) typical | 400 (1.8) min 450 (2.0) typical |
| Resistance to xenon-arc weathering ² Xenon-Arc, 17,640 kJ/m ² total radiant exposure, visual condition at 10x | ASTM G155 0.70 W/m ² 80°C B.P.T. | No cracks No loss of breaking or tearing strength | No cracks No loss of breaking or tearing strength |
| Properties After Heat Aging | ASTM D573, 32 weeks @ 240°F or 8 weeks @ 275°F No cracking when bent around 3" diameter mandrel | PASS No cracking | PASS No cracking |

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

¹Aging conditions are 28 days at 240°F (116°C) equivalent to 400 days at 176°F (80°C) for breaking strength, elongations, tearing strength, ozone and puncture resistance.

²Approximately equivalent to 14,000 hours exposure at 0.35 W/m² irradiance. B.P.T. is black panel temperature.



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