

TPO ROOFING SYSTEMS



VERSIWELD

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The VersiWeld® Roofing Systems incorporate 45-mil, 60-mil, 72-mil or 80-mil (TPO) Thermoplastic Polyolefin membrane.

Versico's VersiWeld membrane is comprised of three layers – a TPO polymer base; a strong, polyester-reinforced fabric center (scrim) and a tough thermoplastic polyolefin compounded top ply. Because top ply is the most vital membrane component for long-term weathering characteristics, Versico manufactures its membranes with an industry leading "thicker" and "smoother" top ply over scrim. The smooth surface resists dirt pick-up and biological growth compared to other thermoplastic membranes.

MEMBRANE BENEFITS



OCTAGUARD XT WEATHERING PACKAGE

Versico's VersiWeld membranes are enhanced with Versico's OctaGuard XT Weathering Package resulting in the most dependable, long-term performance characteristics in the industry.

VersiWeld TPO membranes carry the ENERGY STAR® rating having exceeded the stringent program guidelines based upon solar reflectance and heat emittance. Additionally, VersiWeld is listed as a CRRC (Cool Roof Rating Council) certified product meeting the Title 24 mandates for the state of California.

Versico's ENERGY STAR compliant VersiWeld membranes with their high reflectivity ratings help reduce the amount of energy required to maintain cool building environments. Less energy consumed results in less pollutants generated back into the atmosphere (lessening the Urban Heat Island Effect) and directly contributes to a cleaner, cooler environment.

ENVIRONMENT

VersiWeld membranes are ideally suited when environmental issues are of concern because the membrane is produced without the use of any chlorinated ingredients or plasticizers. VersiWeld membranes are 100% recyclable.

MEMBRANE FLEXIBILITY

Membrane formulation contains no plasticizers or chlorine so it will not dry out or become brittle with age. This sheeting easily accommodates the building's normal expansion and contraction.

CHEMICAL RESISTANCE

VersiWeld membrane is highly chemical and contaminant resistant. Most liquids and chemicals normally exhausted onto the roof have no effect on the membrane.

FIRE RESISTANCE

VersiWeld roofing meets UL 790 requirements for external fire Class A ratings and UL P assemblies for internal, hourly fire ratings. Consult the UL Building Material Directory for specific assemblies.

WIND RESISTANCE

VersiWeld roofing has surpassed Factory Mutual's I-90 wind resistance classification, one of the most stringent standards in the industry, as listed in the FM Approval Guide.

INSTALLATION

Heat-welded systems are easy to install since minimal labor and few components are required. VersiWeld membrane welds at fast speeds — 10- to 15-feet per minute at moderate temperature settings.

VERSICO TOTAL SYSTEM WARRANTIES

5-year to 30-year No Dollar Limit Total System Warranty coverage is available.



ACCESSORIES

The most critical and time consuming portion of VersiWeld roofing installation is made easier and faster with VersiWeld Certified Fabricated Accessories. VersiWeld accessories provide exceptional durability and weatherability with the added benefit of being heat weldable. VersiWeld TPO accessories greatly reduce job time, in turn, reducing labor time.

All VersiWeld TPO accessories carry the Certified Fabricated Accessory (CFA) seal of approval meaning they adhere to the most stringent quality tolerances required to be included in a Versico warranted roof system.



TPO PS RUSS



TPO T-Joint Covers



TPO Non-Reinforced Flashing



PS Coverstrip



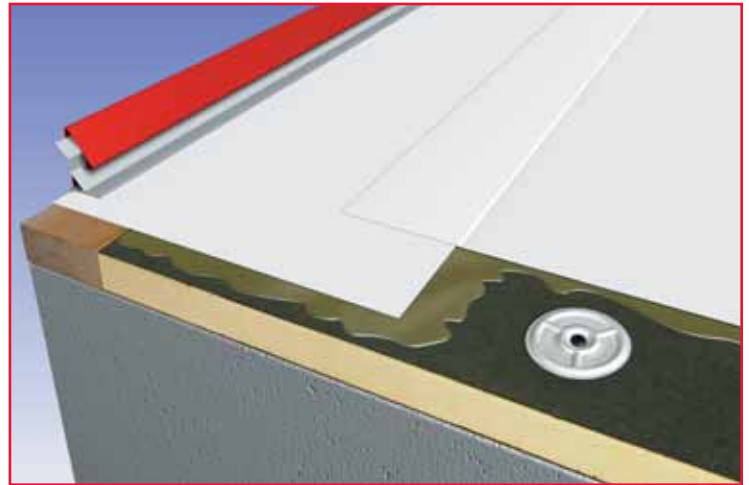
TPO Molded Sealant Pockets



TPO Split Pipe Seals

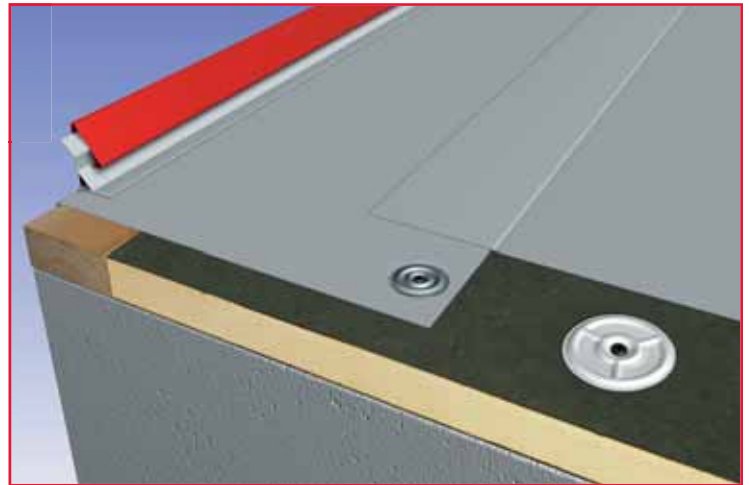
* Please see VersiWeld accessories literature for a more complete listing of accessories.

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VersiWeld Fully Adhered Roofing System

begins with insulation mechanically attached to the roof deck. The membrane and substrate are then coated with VersiWeld bonding adhesive. The membrane is rolled into place and seams are then hot air welded.



VersiWeld Mechanically Attached Roofing System

starts with insulation fastened to the substrate. VersiWeld membrane is then fastened through the insulation with fasteners and plates. (Consult the Versico Fastener Sell Sheet) Adjoining membrane sheets are overlapped and joined together by hot air welding.



VERSIWELD 45- & 60-MIL THICK REINFORCED TPO Basic Properties and Characteristics (Standard and HS)

Physical Property	Test Method	Property of Unaged Sheet	Property after ASTM D 573 Aging ¹ 28 days @ 240°F
Tolerance on Nominal Thickness, %	ASTM D 751	±10	
Thickness over scrim, in. (mm)	ASTM D 6878		
45-mil	Optical Method	0.018 (0.457) ±10%	
60-mil	(avg of 3 areas)	0.024 (0.610) ±10%	
Breaking strength, lbf (kN)	ASTM D 751 Grab Method	225 (1.0) min. 45-mil 320 (1.4) typical 45-mil 250 (1.1) min. 60-mil 360 (1.6) typical 60-mil	225 (1.0) min. 45-mil 320 (1.4) typical 45-mil 250 (1.1) min. 60-mil 360 (1.6) typical 60-mil
Elongation at break of fabric, %	ASTM D 751	25 typical	25 typical
Tearing strength, lbf (N) 8 by 8 in. specimen	ASTM D 751 B Tongue Tear	55 (245) min. 130 (578) typical	55 (245) min. 130(578) typical
Brittleness point, °F (°C)	ASTM D 2137	-40 (-40) max. -50 (-46) typical	
Linear Dimensional Change (shrinkage),% After 6 hours at 158°F (70°C)	ASTM D 1204	+/- 1 max -0.2 typical	
Ozone resistance, 100 pphm, 168 hours (No cracks 7x)	ASTM D 1149	No cracks	No cracks
Resistance to Water Absorption After 166 hours immersion @ 158°F (70°C) Change in mass, max, %	ASTM D 471 (top surface only)	3.0 max. 2.0 typical	
Field seam strength, lbf/in. (kN/m) Seam tested in peel	ASTM D 1876	25 (4.4 min.) 50 (8.8) typical 45-mil 60 (10.5) typical 60-mil	
Water vapor permeance, Perms	ASTM E 96	0.10 max 0.05 typical	
Puncture resistance, lbf (kN) (see supplemental section for additional puncture data)	FTM 101 C Method 2031	250 (1.1) min. 45-mil 325 (1.4) typical 45-mil 300 (1.3) min. 60-mil 350 (1.6) typical 60-mil	

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



Radiative Properties for ENERGY STAR® Cool Roof Rating Council (CRRC) & LEED®

Test Method	White TPO	Tan TPO	Gray TPO	
Energy Star initial solar reflectance	Solar Spectrum Reflectometer	0.87	0.68	n/a
Energy Star solar reflectance after 3 years	Solar Spectrum Reflectometer (after cleaning)	0.83	0.64	n/a
CCRC initial solar reflectance	ASTM C 1549	0.79	0.71	0.46
CCRC solar reflectance after 3 years	ASTM C 1549 (uncleaned)	0.70	pending	0.43
CCRC initial thermal emittance	ASTM C 1371	0.90	0.86	0.90
CCRC thermal emittance after 3 years	ASTM C 1371 (uncleaned)	0.86	pending	0.88
LEED thermal emittance	ASTM E 408	0.95	0.95	0.95
SRI (Solar Reflectance Index)	ASTM E 1980	110	88	55