# TE-PPR

## POLYPROPYLENE REINFORCED GEOMEMBRANE

| Tested Property | Test Method | Property of Unaged Sheet | Property After Aging 672 hrs (28 days) @ 116°C (240°F ) |
|---|---|---|---|
| Tolerance on nominal thickness, % | ASTM D 5199 | 0.91 mm (0.036") ± 10<br>1.14 mm (0.045") ± 10<br>1.52 mm (0.060") ± 10 | |
| Thickness over scrim, mm (inches)<br>0.91 mm (0.036")<br>1.14 mm (0.045")<br>1.52 mm (0.060") | ASTM D 4637<br>Optical Method | 0.254 (0.010) min.<br>0.330 (0.013) min.<br>0.762 (0.030) min. | |
| Mass per unit area, kg/m$^2$ (g/ft$^2$) (lb/ft$^2$)<br>0.91 mm (0.036")<br>1.14 mm (0.045")<br>1.52 mm (0.060") | ASTM D 5261 | 0.83 (77) (0.17) typical<br>1.03 (95) (0.21) typical<br>1.22 (117) (0.25) typical | |
| Breaking strength, kN (lbf)<br>(grab tensile at strain rate of 12 in./min.)<br>0.91 mm (0.036"), 1.14 mm (0.045") & 1.52 mm (0.060") | ASTM D 7004 | 0.9 (200) min. 260 typ.<br>1.1 (250) min. 300 typ. | 0.9 (200) min. 260 typ.<br>1.1 (250) min. 300 typ. |
| Elongation at break of fabric, % | ASTM D 7004 | 25 typical | 25 typical |
| Tearing strength, N (lbf)<br>(50.8 mm (2") / min. strain rate)<br>0.91 mm (0.036"), 1.14 mm (0.045") & 1.52 mm (0.060") | ASTM D 5884<br>(max. load) | 356 (80) min. 578 (130) typ.<br>445 (100) min. 712 (160) typ. | |
| Low temperature flexibility, °C (°F) | ASTM D 2136<br>1/8 in. mandrel<br>4 hour @ temp. | - 40 (- 40) max.<br>- 46 (- 50) typical | |
| Linear Dimensional Change (shrinkage), %<br>6 h @ 70°C (158°F) or 1 h @ 100°C (212°F) | ASTM D 1204 | +/- 1.0 max.<br>- 0.5 typical | |
| Ozone resistance, 100 pphm, 168 hours | ASTM D 1149 | No cracks | |
| Resistance to water (distilled) absorption<br>After 30 days immersion 50 °C (122 °F)<br>Change in mass, % | ASTM D 471<br>(coating compound only) | 1.0 max.<br>0.5 typical | |
| Hydrostatic resistance, MPa (lbf/in.$^2$ or psi)<br>(Mullen burst)<br>0.91 mm (0.036")<br>1.14 mm (0.045")<br>1.52 mm (0.060") | ASTM D 751<br>Procedure A | 2.4 (350) min.<br>2.8 (400) typical<br>3.1 (450) typical<br>3.4 (500) typical | 2.4 (350) min.<br>2.8 (400) typical<br>3.1 (450) typical<br>3.1 (500) typical |
| Field seam strength, kN/m (lbf/in.)<br>Seam tested in peel after weld | ASTM D 413<br>1 in. wide | 3.9 (22) min.<br>7.9 (45) typical peak load | |
| Water vapor permeance, Perms | ASTM E 96 | 0.10 max.<br>0.05 typical | |
| Puncture resistance, N (lbf)<br>0.91 mm (0.036")<br>1.14 mm (0.045")<br>1.52 mm (0.060") | ASTM D 4833<br>(index puncture) | 378 (85) min.<br>489 (110) typical<br>534 (120) typical<br>525 (118) typical | |
| Resistance to xenon-arc weathering[1]<br>Xenon-Arc, 15,120 kJ/m$^2$ total radiant exposure, visual condition at 10X | ASTM G 155<br>0.70 W/m$^2$<br>80°C B.P.T. | No cracks<br>No loss of breaking or shear strength | |
| Potable Water Accepted | NSF-61 | Passes | |
| Chronic Toxicity Screening | EPA/600/4-89/ 001<br>ASTM E-729<br>Method 1000.0 | Passes | Passes |

[1]Equivalent to 12,000 hours exposure at 0.35 W/m2 irradiance B.P.T. is black panel temperature.
Note: Factory Seams are not a normal condition of the supplied sheet described in this chart.



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(Rev. March, 2018)

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