RPP Geomembrane is a reinforced polypropylene geomembrane that is produced with a $9 \times 9$ polyester weft-inserted scrim reinforcement. This head weldable geomembrane is available in $0.91 \mathrm{~mm}(0.036 "), 1.14 \mathrm{~mm}\left(0.045^{\prime \prime}\right)$ and $1.52 \mathrm{~mm}\left(0.060^{\prime \prime}\right)$ thickness. It is available in black, white, patina, tan and grey all with black backing.

| PHYSICAL PROPERTY | TEST METHOD | PROPERTY OF UNAGED SHEET | PROPERY AFTER AGING |
| :---: | :---: | :---: | :---: |
|  |  |  | 672 hours (28 days) @ $116^{\circ} \mathrm{C}$ |
| Tolerance on Nominal Thickness | ASTM D 5199 | $\begin{aligned} & 0.91 \mathrm{~mm}\left(0.036^{\prime \prime}\right) \pm 10 \\ & 1.14 \mathrm{~mm}\left(0.045^{\prime \prime}\right) \pm 10 \\ & 1.52 \mathrm{~mm}(0.060 ") \pm 10 \end{aligned}$ |  |
| Thickness over scrim, mm (inches) 0.91 mm ( 0.036 ") <br> $1.14 \mathrm{~mm}\left(0.045^{\prime \prime}\right)$ <br> 1.52 mm ( 0.060 ") | ASTM D 4637 Optical Method | 0.254 ( 0.010 ) min. 0.330 (0.013) min. 0.762 (0.030) min. |  |
| Mass per unit area, $\mathrm{kg} / \mathrm{m}^{2}\left(\mathrm{~g} / \mathrm{ft}^{2}\right)\left(\mathrm{lb} / \mathrm{ft}^{2}\right)$ <br> 0.91 mm ( $0.036^{\prime \prime}$ ) <br> 1.14 mm ( $0.045^{\prime \prime}$ ) <br> 1.52 mm ( 0.060 ") | ASTM D 5261 | $\begin{aligned} & 0.83 \text { (77)(0.1 } \\ & 1.03 \text { (95)(0.2 } \\ & 1.22 \text { (177)(0.2 } \end{aligned}$ | 7) Typical <br> 1) Typical <br> ) Typical |
| Breaking Strength, kN (lbf) (grab tensile at strain rate of $12 \mathrm{in} / \mathrm{min}$ ) 0.91 mm ( 0.036 ") <br> 1.14 mm ( $0.045^{\prime \prime}$ ) <br> 1.52 mm ( 0.060 ") | ASTM D 7004 | $\begin{aligned} & 0.9(200) \mathrm{mir} \\ & 1.1(250) \mathrm{min} \end{aligned}$ | 260 typ. <br> 300 typ. |
| Elongation at break of Fabric, \% | ASTM D 7004 | 25 Ty | cal |
| ```Tearing Sterngth, N (lbf) (50.8 mm(2")/min. strain rate) 0.91mm (0.036") 1.14mm (0.045") 1.52mm (0.060")``` | ASTM D 5884 (max load) | 356 (80) min. 578 (130) typ. 445 (100) min. 712 (160) typ. |  |
| Low Temperature Flexibility ${ }^{\circ} \mathrm{C}^{\circ} \mathrm{F}$ | ASTM D 2136 $1 / 8$ in mandrel 4 hour @ temp | $\begin{aligned} & -40(-40) \text { Max. } \\ & -46(-50) \text { Typical } \end{aligned}$ |  |
| Linear Dimensional Change (shrinkage), \% $6 \mathrm{~h} @ 70^{\circ} \mathrm{C}\left(158^{\circ} \mathrm{F}\right)$ of 1 h @ $100^{\circ} \mathrm{C}\left(212^{\circ} \mathrm{F}\right)$ | 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 After 30 days immersion $50^{\circ} \mathrm{C}\left(122^{\circ} \mathrm{F}\right)$ Change in mass, \% | ASTM D 471 (coating compound only) | 1.0 Max 0.5 Typical |  |
| ```Hydrostatic resistance, MPa (lbf/in2 or psi) (Mullen Burst) 0.91 mm (0.036") \(1.14 \mathrm{~mm}\left(0.045^{\prime \prime}\right)\) 1.52 mm ( 0.060 ")``` | ASTM D 751 Procedure A | 2.4 (350) min. 2.8 (400) typical <br> 3.1 (450) typical 3.4 (500) typical | 2.4 (350) min. 2.8 (400) typical <br> 3.1 (450) typical 3.4 (500) typical |

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## Titan Environmental Containment

| PHYSICAL PROPERTY | TEST METHOD | PROPERTY OF UNAGED SHEET | PROPERY AFTER AGING |
| :---: | :---: | :---: | :---: |
|  |  |  | 672 hours (28 days) @ $116^{\circ} \mathrm{C}$ |
| Field Seam Strength, kN/m (lbf/in) Seam Tested in Peel after Weld | ASTM D 413 <br> 1 in . Wide | 3.9 (22) min 7.9 (45) typical peak load |  |
| Water vapor permeance, Perms | ASTM D E 96 | $\begin{gathered} 0.10 \text { Max } \\ 0.05 \text { Typical } \end{gathered}$ |  |
| Puncture resistance, N (lbf) 0.91 mm (0.036") <br> 1.14 mm (0.045") <br> 1.52 mm ( $0.060^{\prime \prime}$ ) | ASTM D 4833 (index puncture) | 378 (85) min 489 (110) typical 534 (120) typical 525 (118) typical |  |
| Resistance to xenon-arc weathering ${ }^{1}$ Xenon-arc, $15,120 \mathrm{~kJ} / \mathrm{m}^{2}$ total radiant exposure, visual condition at 10X | ASTM G 155 $0.70 \mathrm{~W} / \mathrm{m}^{2}$ $80^{\circ} \mathrm{C}$ B.P.T. | No cracks No loss of breaking or tearing strength |  |
| Potable Water Accepted | NSF - 61 | Passes |  |
| Chronic Toxicity Screening | $\begin{gathered} \text { EPA/600/4-89/001 } \\ \text { ASTM E-729 } \\ \text { Method 1000.0 } \end{gathered}$ | Passes |  |
| PACKAGING |  |  |  |
| THICKNESS | WEIGHT |  |  |
| $\begin{array}{\|l} \hline 0.91 \mathrm{~mm}\left(0.036^{\prime \prime}\right) \\ 1.14 \mathrm{~mm}\left(0.045^{\prime \prime}\right) \\ 1.52 \mathrm{~mm}(0.060 \text { " }) \end{array}$ | $0.83 \mathrm{~kg} / \mathrm{m} 2(0.17 \mathrm{lb} / \mathrm{ft2})$ $1.03 \mathrm{~kg} / \mathrm{m} 2(0.21 \mathrm{lb} / \mathrm{ft} 2)$ $1.22 \mathrm{~kg} / \mathrm{m} 2(0.25 \mathrm{lb} / \mathrm{ft} 2)$ |  |  | specific use or merchantability of the products referred to, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability from resulting loss or damage. This information is subject to change without notice, please check with Titan Environmental Containment Ltd. for current updates.

