GSE UltraFlex Textured Geomembrane

GSE UltraFlex Textured is a co-extruded textured linear low density polyethylene (LLDPE) geomembrane available on one or both sides. It is manufactured from the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require increased frictional resistance, flexibility and elongation properties where differential or localized subgrade settlements may occur such as in a landfill closure application.

Product Specifications

<table>
<thead>
<tr>
<th>Tested Property</th>
<th>Test Method</th>
<th>Frequency</th>
<th>Minimum Average Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness, mil</td>
<td>ASTM D 5994</td>
<td>every roll</td>
<td>40 36</td>
</tr>
<tr>
<td>Lowest individual reading</td>
<td></td>
<td></td>
<td>60 54</td>
</tr>
<tr>
<td>Density, g/cm² (max.)</td>
<td>ASTM D 1505</td>
<td>200,000 lb</td>
<td>0.939</td>
</tr>
<tr>
<td>Tensile Properties (each direction)</td>
<td>ASTM D 6693, Type IV</td>
<td>20,000 lb</td>
<td>60 250</td>
</tr>
<tr>
<td>Strength at Break, lb/in-width</td>
<td>Dumbbell, 2 ipm G.L. 2.0 in</td>
<td></td>
<td>90 250</td>
</tr>
<tr>
<td>Elongation at Break, %</td>
<td></td>
<td></td>
<td>120 250</td>
</tr>
<tr>
<td>Tear Resistance, lb</td>
<td>ASTM D 1004</td>
<td>45,000 lb</td>
<td>22 33</td>
</tr>
<tr>
<td>Puncture Resistance, lb</td>
<td>ASTM D 4833</td>
<td>45,000 lb</td>
<td>44 66</td>
</tr>
<tr>
<td>Carbon Black Content, % (Range)</td>
<td>ASTM D 1603*/4218</td>
<td>20,000 lb</td>
<td>2.0 - 3.0</td>
</tr>
<tr>
<td>Carbon Black Dispersion</td>
<td>ASTM D 5596</td>
<td>45,000 lb</td>
<td>Note(1)</td>
</tr>
<tr>
<td>Asperity Height, mil</td>
<td>ASTM D 7466</td>
<td>second roll</td>
<td>18</td>
</tr>
<tr>
<td>Oxidative Induction Time, mins</td>
<td>ASTM D 3989, 200ºC, O₂, 1 atm</td>
<td>200,000 lb</td>
<td>&gt; 100</td>
</tr>
</tbody>
</table>

TYPICAL ROLL DIMENSIONS

| Roll Length(2), ft               | Double-Sided Textured       | 700 800    |
| Roll Width(2), ft                | Single-Sided Textured       | 520 540    |
| Roll Area, ft²                   | Double-Sided Textured       | 15,750     |
|                                 | Single-Sided Textured       | 18,000     |
|                                 |                              | 11,700     |
|                                 |                              | 12,150     |
|                                 |                              | 9,000      |
|                                 |                              | 9,225      |

NOTES:
- (1)Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- (2)Roll lengths and widths have a tolerance of ±1%.
- *GSE UltraFlex Textured is available in rolls weighing approximately 4,000 lb.
- All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of < -77°C when tested according to ASTM D 746.
- *Modified.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We’ve built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.
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<tr>
<th>Tested Property</th>
<th>Test Method</th>
<th>Frequency</th>
<th>Minimum Average Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness, (minimum average mm</td>
<td>ASTM D 5994</td>
<td>every roll</td>
<td>1.00 0.98 1.50 1.35 2.00 1.80 2.50 2.25</td>
</tr>
<tr>
<td>Lowest individual reading (&lt;10%))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density, g/cm³ (max.)</td>
<td>ASTM D 1505</td>
<td></td>
<td>90,000 kg 0.939 0.939 0.939 0.939</td>
</tr>
<tr>
<td>Tensile Properties (each direction)</td>
<td>ASTM D 6693, Type IV Dumbell, 50mm/min G.L. 51 mm</td>
<td></td>
<td>9,000 kg 11 250 16 250 21 250 26 250</td>
</tr>
<tr>
<td>Strength at Break, N/mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elongation at Break, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tear Resistance, N</td>
<td>ASTM D 1004</td>
<td></td>
<td>20,000 kg 100 150 200 250</td>
</tr>
<tr>
<td>Puncture Resistance, N</td>
<td>ASTM D 4833</td>
<td></td>
<td>20,000 kg 200 300 400 500</td>
</tr>
<tr>
<td>Carbon Black Content, % (Range)</td>
<td>ASTM D 1603*/4218</td>
<td></td>
<td>9,000 kg 2.0-3.0 2.0-3.0 2.0-3.0 2.0-3.0</td>
</tr>
<tr>
<td>Carbon Black Dispersion</td>
<td>ASTM D 5596</td>
<td></td>
<td>20,000 kg Note (1) Note (1) Note (1) Note (1)</td>
</tr>
<tr>
<td>Asperity Height, mm</td>
<td>ASTM D 7466</td>
<td></td>
<td>90,000 kg 0.45 0.45 0.45 0.45</td>
</tr>
<tr>
<td>Oxidative Induction Time, min</td>
<td>ASTM D 3895, 200º C, O₂, 1 atm</td>
<td></td>
<td>200,000 lb &gt;100 &gt;100 &gt;100 &gt;100</td>
</tr>
</tbody>
</table>

TYPICAL ROLL DIMENSIONS

<table>
<thead>
<tr>
<th>Roll Length(2), ft</th>
<th>Double-Sided Textured</th>
<th>Single-Sided Textured</th>
</tr>
</thead>
<tbody>
<tr>
<td>213</td>
<td>198</td>
<td>158</td>
</tr>
<tr>
<td>Roll Width(2), ft</td>
<td>6.86</td>
<td>6.86</td>
</tr>
<tr>
<td>Roll Area, ft²</td>
<td>Double-Sided Textured</td>
<td>Single-Sided Textured</td>
</tr>
<tr>
<td>1,463</td>
<td>1,359</td>
<td>1,087</td>
</tr>
</tbody>
</table>

NOTES:

• (1)Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
• (2)Roll lengths and widths have a tolerance of ±1%.
• GSE UltraFlex Textured Double-Sided is available in rolls weighing approximately 1,800 kg and Single-Sided weighing approximately 1,360 kg.
• All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of <-77°C when tested according to ASTM D 746.
• *Modified.

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