

# TEXTURED HDPE GEOMEMBRANE

## ENGLISH UNITS

### Minimum Average Values

| Property   | Test Method                 | 40 mil     | 60 mil    | 80 mil    | 100 mil   |
|--|-----------------------------|------------|-----------|-----------|-----------|
| Thickness, mils  | ASTM D 5994                 |            |           |           |           |
| minimum average  |                             | 38         | 57        | 76        | 95        |
| lowest individual of 8 of 10 readings                      |                             | 36         | 54        | 72        | 90        |
| lowest individual of 10 readings                           |                             | 34         | 51        | 68        | 85        |
| Asperity Height <sup>1</sup> , mils                        | ASTM D 7466                 | 10         | 10        | 10        | 10        |
| Sheet Density, g/cc  | ASTM D 1505/D 792           | 0.940      | 0.940     | 0.940     | 0.940     |
| <b>Tensile Properties<sup>2</sup></b>                      | ASTM D 6693                 |            |           |           |           |
| 1. Yield Strength, lb/in                                   |                             | 84         | 126       | 168       | 210       |
| 2. Break Strength, lb/in                                   |                             | 60         | 90        | 120       | 150       |
| 3. Yield Elongation, %                                     |                             | 12         | 12        | 12        | 12        |
| 4. Break Elongation, %                                     |                             | 100        | 100       | 100       | 100       |
| Tear Resistance, lb  | ASTM D 1004                 | 28         | 42        | 56        | 70        |
| Puncture Resistance, lb                                    | ASTM D 4833                 | 60         | 90        | 120       | 150       |
| Stress Crack Resistance <sup>3</sup> , hrs                 | ASTM D 5397 (App.)          | 300        | 300       | 300       | 300       |
| Carbon Black Content <sup>4</sup> , %                      | ASTM D 1603                 | 2.0 - 3.0  | 2.0 - 3.0 | 2.0 - 3.0 | 2.0 - 3.0 |
| Carbon Black Dispersion                                    | ASTM D 5596                 | --Note 5-- |           |           |           |
| Oxidative Induction Time (OIT)                             |                             |            |           |           |           |
| Standard OIT, minutes                                      | ASTM D 3895                 | 100        | 100       | 100       | 100       |
| Oven Aging at 85°C   | ASTM D 5721                 |            |           |           |           |
| High Pressure OIT - % retained after 90 days               | ASTM D 5885                 | 80         | 80        | 80        | 80        |
| UV Resistance <sup>6</sup>                                 | GRI GM11                    |            |           |           |           |
| High Pressure OIT <sup>7</sup> - % retained after 1600 hrs | ASTM D 5885                 | 50         | 50        | 50        | 50        |
| <b>Seam Properties</b>                                     | ASTM D 6392<br>(@ 2 in/min) |            |           |           |           |
| 1. Shear Strength, lb/in                                   |                             | 80         | 120       | 160       | 200       |
| 2. Peel Strength, lb/in - Hot Wedge                        |                             | 60         | 91        | 121       | 151       |
| - Extrusion Fillet   |                             | 52         | 78        | 104       | 130       |
| <b>Roll Dimensions</b>                                     |                             |            |           |           |           |
| 1. Width (feet):   |                             | 23         | 23        | 23        | 23        |
| 2. Length (feet)   |                             | 750        | 500       | 375       | 300       |
| 3. Area (square feet):                                     |                             | 17,250     | 11,500    | 8,625     | 6,900     |
| 4. Gross weight (pounds, approx.)                          |                             | 3,500      | 3,500     | 3,470     | 3,470     |

1 Of 10 readings; 8 must be  $\geq 7$  mils and lowest individual reading must be  $\geq 5$  mils.

2 Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction. Yield elongation is calculated using a gauge length of 1.3 inches; Break elongation is calculated using a gauge length of 2.0 inches.

3 The yield stress used to calculate the applied load for the SP-NCTL test should be the mean value via MQC testing.

4 Other methods such as ASTM D 4218 or microwave methods are acceptable if an appropriate correlation can be established.

5 Carbon black dispersion for 10 different views: Nine in Categories 1 and 2 with one allowed in Category 3.

6 The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

7 UV resistance is based on percent retained value regardless of the original HP-OIT value.

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