## GPS HD Textured HDPE 30,40,60,80 mil

## **Product Description**

GPS HD Textured liners and covers are HDPE geomembrane sheets that are textured by a nitrogen injection. This surface texture gives the material high friction resistance, which keeps soil in place on slopes and improves traction on drilling pads for crew safety. Localized settlement of fill material on covered slopes is mitigated by increasing the coefficient of friction. Our textured membranes are manufactured with prime resins and have outstanding frictional resistance, chemical resistance, mechanical properties and UV resistance. Meets GRI GM13 Specifications.

## **Applications**

- ✓ Landfills
- √ Reserve Pits
- √ Frac Pits
- √ Under Rig Liners
- ✓ Retention Ponds
- √ Fresh Water Pits
- √ Flowback Pits
- √ Secondary Containment



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| PROPERTIES  | TEST METHOD                | MINIMUM AVERAGE VALUES |                    |                    |                    |
|---|----------------------------|------------------------|--------------------|--------------------|--------------------|
| THICKNESS (MM)  | ASTM D5199                 | 30                     | 40                 | 60                 | 80                 |
| LOWEST INDIVIDUAL READING   |                            | -10%                   | -10%               | -10%               | -10%               |
| LOWEST INDIVIDUAL FOR ANY OF THE 10 VALUES  |                            | -15%                   | -15%               | -15%               | -15%               |
| ASPERITY HEIGHT MILS (MIN. AVE.) (1)  | ASTM D7466                 | 16                     | 16                 | 16                 | 16                 |
| MINIMUM DENSITY, G/CM <sup>(3)</sup>  | ASTM D1505                 | .940                   | .940               | .940               | .940               |
| TENSILE PROPERTIES (2) (EACH DIRECTION)   | ASTM D6693,<br>TYPE IV     |                        |                    |                    |                    |
| STRENGTH AT BREAK (LBS.) (N/MM)   |                            | 45 (8)                 | 60 (10)            | 90 (16)            | 120 (213)          |
| STRENGTH AT YIELD (LBS.) (N/MM)   |                            | 63 (11)                | 84 (15)            | 126 (22)           | 168 (29)           |
| ELONGATION AT BREAK (%)   |                            | 100                    | 100                | 100                | 100                |
| ELONGATION AT YIELD (%)   |                            | 12                     | 12                 | 12                 | 12                 |
| TEAR RESISTANCE (LBS.) (N)  | ASTM D1004                 | 21 (93)                | 28 (125)           | 42 (187)           | 56 (249)           |
| PUNCTURE RESISTANCE (N)   | ASTM D4833                 | 45 (200)               | 60 (267)           | 90 (400)           | 120 (534)          |
| STRESS CRACK RESISTANCE   | D 5397                     | 500 HR.                | 500 HR.            | 500 HR.            | 500 HR.            |
| CARBON BLACK CONTENT (%) (RANGE)  | ASTM D1603<br>OR D 4218    | 2.0 - 3.0              | 2.0 – 3.0          | 2.0 - 3.0          | 2.0 - 3.0          |
| CARBON BLACK DISPERSION   | ASTM D5596                 | NOTE (3)               | NOTE (3)           | NOTE (3)           | NOTE (3)           |
| OXIDATIVE INDUCTION TIME (OIT) (MIN. AVE.) <sup>(4)</sup> (A) STANDARD OIT ———-OR———— (B) HIGH PRESSURE OIT   | D 3895<br>D 5885           | 100 MIN<br>400 MIN     | 100 MIN<br>400 MIN | 100 MIN<br>400 MIN | 100 MIN<br>400 MIN |
| OVEN AGING AT 85°C <sup>(4)</sup> (A) STANDARD OIT (MIN. AVE.) – % RETAINED AFTER 90 DAYS – – – - OR – – – – (B) HIGH PRESSURE OIT (MIN. AVE.) – % RETAINED AFTER 90 DAYS | D 5721<br>D 3895<br>D 5885 | 55%<br>80%             | 55%<br>80%         | 55%<br>80%         | 55%<br>80%         |
| UV RESISTANCE <sup>(5)</sup> (A) STANDARD OIT (MIN. AVE.)OR (B) HIGH PRESSURE OIT (MIN. AVE.) – RETAINED AFTER 1600 HRS <sup>(7)</sup>                                    | D 7238<br>D 3895<br>D 5885 | N.R. (6)<br>50%        | N.R. (6)<br>50%    | N.R. (6)<br>50%    | N.R. (6)<br>50%    |
| STANDARD ROLL DIMENSIONS  |                            |                        |                    |                    |                    |
| ROLL LENGTH <sup>(8)</sup> , FT.  |                            | 1,090                  | 815                | 540                | 400                |
| ROLL WIDTH <sup>(8)</sup> , FT.   |                            | 21.5                   | 21.5               | 21.5               | 21.5               |
| ROLL AREA, FT.  |                            | 23,435                 | 17,523             | 11,610             | 8,600              |

 $<sup>^{\</sup>mbox{\tiny (1)}}$  Of 10 readings; 8 of 10 must be 0.35 mm, and lowest individual reading must be 0.30 mm; also see Note 3

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<sup>(2)</sup> 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 gage length of 1.3 inches. Break elongation is calculated using a gage length of 2.0 in.

<sup>(3)</sup> Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in Categories 1 or 2 and 1 in Category 3.

<sup>(4)</sup> Either of the OIT methods listed can be used by the manufacturer to evaluate the antioxidant content in the geomembrane.

<sup>(5)</sup> The condition of the test should be 20 hr. UV cycle at 75C followed by 4 hr. condensation at 60C.

<sup>(9)</sup> Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

 $<sup>^{\</sup>tiny{(7)}}$  UV resistance is based on percent retained value regardless of the original HP-OIT value.

<sup>(8)</sup> Roll Lengths and widths will be +- 1% of the stated dimensions