

SECTION 2

PRODUCT SPECIFICATIONS

Table 1. Enviro Liner 6000x Specifications

| Index       | Performance Properties                                                      | ASTM                 | EL 6030x                                                           | EL 6040x             | EL 6050x             | EL 6060x             | EL 6080x           |
|-------------|-----------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------|----------------------|----------------------|----------------------|--------------------|
|             | Thickness                                                                   | D 5199               | 30 mils<br>0.75 mm                                                 | 40 mils<br>1.0 mm    | 50 mils<br>1.25 mm   | 60 mils<br>1.5 mm    | 80 mils<br>2.0 mm  |
|             | Tensile Strength at Break <sup>2</sup><br>(MARV)                            | D 638                | 141 ppi<br>25 N/mm                                                 | 180 ppi<br>31.5 N/mm | 220 ppi<br>38.5 N/mm | 255 ppi<br>44.5 N/mm | 304 ppi<br>53 N/mm |
|             | Elongation at Break <sup>3</sup><br>(MARV)                                  | D 638                | 1000%                                                              | 1000%                | 1000%                | 1000%                | 800%               |
|             | Trapezoidal Tear<br>(MARV)                                                  | D751                 | 63 lbs<br>280 N                                                    | 90 lbs<br>400 N      | 100 lbs<br>445 N     | 108 lbs<br>480 N     | 120 lbs<br>534 N   |
|             | Puncture Resistance<br>(MARV)                                               | D 4833               | 53 lbs<br>236 N                                                    | 67 lbs<br>298 N      | 75 lbs<br>333 N      | 90 lbs<br>400 N      | 112 lbs<br>500 N   |
| Performance | Hydrostatic Burst Strength                                                  | D 751                | 828 kPa<br>120 psi                                                 | 1148 kPa<br>166 psi  | 1482 kPa<br>215 psi  | 1863 kPa<br>270 psi  |                    |
|             | Axi-Symmetric Strain <sup>4</sup> (MARV)                                    | D 5617               | 50%                                                                | 80%                  | 80%                  | 80%                  |                    |
|             | Critical Cone Height <sup>5</sup><br>(Large Scale Puncture Test)            | D 5514               | 2.0 inches<br>50 mm                                                | 2.0 inches<br>50 mm  |                      | 2.0 inches<br>50 mm  |                    |
|             | Dynamic Puncture Test                                                       |                      |                                                                    | 306 psi<br>2117 kPa  |                      | 560 psi<br>3881 kPa  |                    |
|             | Ozone Resistance<br>100 pphm @ 40°C, 168 hrs.                               | D 1149               | No Cracks Observed                                                 |                      |                      |                      |                    |
|             | Flexibility<br>Cycles Without Cracking <sup>6</sup>                         | D 6182               | 8000                                                               |                      |                      |                      |                    |
|             | Stress Crack Under Constant Load                                            | D 5397               | > 1000 hrs                                                         |                      |                      |                      |                    |
|             | Solvent Vapour Permeability <sup>6</sup><br>• ASTM Fuel C<br>• ASTM IRM 902 | D 814                | ≤ 10 grams/m <sup>2</sup> .hr<br>≤ 10 grams/m <sup>2</sup> .hr     |                      |                      |                      |                    |
|             | Methane Permeability <sup>6</sup>                                           | D 1434               | 2.11 x 10 <sup>-4</sup> m <sup>3</sup> /m <sup>2</sup> .day        |                      |                      |                      |                    |
|             | Water Vapor Permeability <sup>6</sup>                                       | F 1249               | 3 x 10 <sup>-13</sup> cm/sec                                       |                      |                      |                      |                    |
| Endurance   | Oxidative Induction Time (OIT)                                              | D 3895               | 200 mins                                                           |                      |                      |                      |                    |
|             | High Pressure Oxidative Induction Time (HPOIT)                              | D 5885               | > 2000 mins                                                        |                      |                      |                      |                    |
|             | Oven Aging at 85°C<br>% retained after 90 days                              | D 5721<br>D 3895     | 35%                                                                |                      |                      |                      |                    |
|             | Brine Resistance @ 90°C<br>HPOIT retained                                   | D 1693<br>2400 hrs   | 1000 mins                                                          |                      |                      |                      |                    |
|             | UV Resistance <sup>6</sup><br>Strength Retained of Original Sample          | D 4329<br>30,000 hrs | 90%                                                                |                      |                      |                      |                    |
|             | Coefficient of Liner Thermal Expansion <sup>6</sup>                         | D 696                | 1.4 x 10 <sup>-4</sup> m/m/ °C<br>7.8 x 10 <sup>-5</sup> ft/ft/ °F |                      |                      |                      |                    |

Notes: <sup>1</sup>This product meets or exceeds GRI-GM 17 specifications | <sup>2</sup>Tested at 20 inches/min | <sup>3</sup> Measured with a gage length of 1.5 inches | <sup>4</sup> This test measures out of plane response of a material to a force that is applied perpendicular to the initial plane of geomembrane sample. | <sup>5</sup> This test simulates the relative puncture resistance of a geomembrane when subjected to gradually increasing loads. | <sup>6</sup>Measured on 30 mil thickness.

