



The Pioneer Of Geosynthetics  
S I N C E 1 9 7 2

## Linear Low Density Polyethylene Geomembranes

### AN INNOVATION IN FLEXIBLE LINERS

GSE UltraFlex geomembranes are high quality liner low density polyethylene (LLDPE) geomembranes that provide the following benefits:

- Superior flexibility
- Outstanding elongation
- Remarkable puncture resistance
- Proven reliability

GSE LLDPE geomembranes includes GSE UltraFlex in green, white, or black color, and is available in a smooth, textured or Conductive surface.



GSE UltraFlex smooth & textured geomembranes.

### PREMIUM RAW MATERIALS

GSE UltraFlex products are made from high quality linear low density polyethylene resins. The inherent structure of the resin is the reason this geomembrane possesses such enhanced flexibility. The absence of leachable additives in all GSE geomembranes allows them to maintain excellent resistance to brittleness that may occur over time when plasticizers and/or fillers are used.

### GSE QUALITY ASSURANCE SYSTEMS

All GSE geomembrane production involves three levels of quality assurance. First, raw material suppliers must comply with GSE specifications on incoming resin. Before the resin is unloaded, GSE verifies the raw material test results that are submitted by our raw material suppliers by performing selected conformance tests. The second level of QA begins during actual production. As each roll is produced it is electronically monitored continuously over the full area for pinholes. Finally, GSE UltraFlex products undergo a rigorous Quality Assurance program after production to ensure the mechanical properties are intact and meet GSE current quality standards. GSE conducts routine in-house testing of the physical properties of GSE UltraFlex on every roll as it is produced.

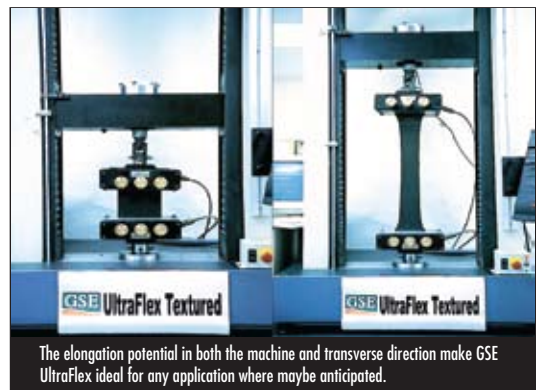
### ELONGATION PROPERTIES UNIQUE TO LLDPE GEOMEMBRANES

GSE UltraFlex geomembranes have higher tensile break elongation than do HDPE geomembranes. The excellent puncture resistance and ability to absorb multi-directional strain makes LLDPE perfect for applications such as landfill caps, closures, or any other situation where large differential settlement is expected such as bioreactors. Additional applications include mining projects, solid and liquid waste containment and aquaculture.



GSE UltraFlex smooth utilized in a landfill.

Special non-routine testing such as wide-width and multi-axial has been performed on GSE UltraFlex geomembranes to provide a more in-depth perspective of their unique and beneficial properties. In particular, the elongation tendencies of the GSE UltraFlex products have been thoroughly investigated. The wide-width tensile test is a measure for in-plane elongation properties. The multi-axial test simulates out-of-plane deformation, which is commonly expected to occur in many lining projects where the geomembrane is subjected to high localized stress. In both of these tests, the GSE UltraFlex products have dramatically high elongation properties.



The elongation potential in both the machine and transverse direction make GSE UltraFlex ideal for any application where maybe anticipated.

**BENEFITS OF A ROUGHENED SURFACE**

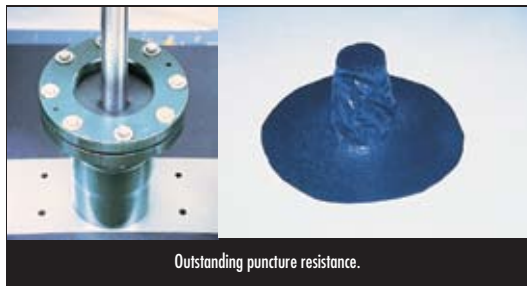
Perhaps the most important attribute textured geomembranes offer is the ability to improve geosynthetic profile stability which ultimately maximizes the available volume that can be contained by the geomembrane. The ability to line steeper slopes allows increases in design capacity providing cost savings. As mentioned previously, GSE UltraFlex textured is available with a white upper surface. The white surfaced geomembrane has the same physical properties as the black surfaced geomembrane with the added benefit of a light reflective layer. This light reflective layer reduces heat gain, thereby reducing wrinkling, subgrade desiccation and worker fatigue.

**IN-LINE TEXTURING DECREASES LEAD TIME**

GSE UltraFlex textured is manufactured using co-extrusion technology – the same technology used to produce GSE HD textured, GSE Conductive and GSE White geomembranes. GSE UltraFlex textured meets the increasing need for relatively thin LLDPE geomembranes because it is an in-line one-step texturing process. Availability to GSE customers is increased and lead times are minimized.

**PROVEN RELIABILITY**

GSE UltraFlex geomembranes have a long history of reliability. In fact, every GSE UltraFlex geomembrane used for containment purposes has proven to be successful. In addition to their exceptional performance, GSE UltraFlex products have excellent weldability under a variety of conditions. Extrusion and fusion welding can be performed with ease and confidence.



Outstanding puncture resistance.

**COMPLETE INSTALLATION SERVICES**

No other company offers more experience installing geosynthetic products than GSE. GSE Installation Services is your one-stop source that offers the experience, training, expertise and complete range of geosynthetic products, fabrication and technical support on any project.



GSE installation crew.

**ADDITIONAL INFORMATION**

If you have an upcoming project please give us a call. We will provide you with recommendations for material and installation.