High Temperature Geomembranes

Applications with sustained temperatures in excess of 60°C (140°F) have posed a challenge to the durability of traditional geomembranes. At sustained temperatures above 60°C, the liner’s mechanical properties will more rapidly break down, causing acceleration in stress cracking and oxidation. There is a clear need for geomembranes that offer the strong performance and excellent chemical resistance of polyethylene, but have higher levels of thermal durability and retain more of their physical properties at elevated temperatures. GSE High Temperature Geomembranes achieve these goals.

GSE High Temperature Geomembrane is an innovative new HDPE product that has been engineered to withstand prolonged exposure to temperatures up to 100°C (212°F). GSE combined high temperature resins with its proprietary stabilization package to develop a liner that delivers the same durability and chemical resistance as standard liners, while retaining its mechanical and physical properties in sustained elevated temperatures.

PREMIUM RAW MATERIALS

High temperature resins have a different molecular structure and unique crystalline microstructure, which offer excellent long term strength and creep resistance at high temperatures. GSE selected the finest resins and combined them with premium antioxidants to prevent premature oxidation and induction that can occur when normal geomembranes are used at elevated temperatures. These high temperature resins meet the stringent requirements of US PPI TR 4 and European EN ISO 9080, and are approved by these same organizations for high temperature liquid conveying. The resins used in the development of GSE High Temperature Liner have been used successfully around the world for over 30 years.

CHEMICAL RESISTANCE

HDPE is the most universal polymer used for geomembranes because of its proven chemical resistance, durability, and low permeability. HDPE is resistant to a wide variety of chemicals including aromatic and halogenated hydrocarbons. The chemical resistance of HDPE is especially helpful in applications that require harsh chemicals such as mining operations, hazardous waste landfills, and in most containment facilities within chemical plants. Because of these factors and the broad and successful history of HDPE geomembranes, regulators are very familiar with these products and their usage.
SUPERIOR DURABILITY
Outstanding results in oven aging and UV aging tests demonstrate the durability of GSE High Temperature Geomembrane. In laboratory tests, when the liner is incubated in a standard oven temperature of 85°C for over 1 year, or exposed to standard UV radiation for more than 6000 hours, GSE High Temperature Geomembrane is able to meet or exceed the industry guidelines for traditional HDPE geomembranes.

QUALITY ASSURANCE
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 from the railcar, GSE verifies the raw material test results that are submitted by the suppliers by performing selected conformance tests. The second level of QA occurs during production. As each roll is produced, it is electronically monitored for pinholes. Finally, every roll of GSE product undergoes a rigorous Quality Assurance program after production to ensure the mechanical properties are intact and meet or exceed GSE quality standards. All GSE laboratories are certified to meet GAI-LAP standards.

ENGINEERING SUPPORT
The GSE engineering support staff is available to help solve any issues you have with your project. GSE engineers are a multidisciplinary group of professionals with knowledge across a wide range of products and their applications. This includes geomembranes, geosynthetic clay liners, geonets, geocomposites, and woven and nonwoven geotextiles.

CUSTOM FABRICATION
The GSE Custom Fabrication Group builds products to exact specifications to fulfill any of your project requirements. GSE has extensive experience in prefabricated polyethylene products and components. A few examples of GSE custom fabricated products are Aqua Tanks, Quick Containment, concrete protection liners, boots, sumps, pads, pipes, daily covers, temporary containment, and containment booms.

INSTALLER NETWORK
The GSE Installer Network leads the industry with the most experienced, the largest, and the most flexible crews available around the world to meet any installation requirements. Each installer is equipped with state-of-the-art welding and testing equipment to ensure a successful installation. Selecting a qualified installer with the right product knowledge is critical to a project’s success. Let GSE help find the right installer to handle any project from start to finish.

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.

North America 800.435.2008 | Europe & Africa 49.40.767420 | Asia Pacific 66.2.937.0091 | South America 56.2.595.4200 | Middle East 20.23828.8888

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