GSE Leak Location Geomembranes

A REVOLUTION IN LEAK DETECTION

No matter how carefully manufactured and how stringent the manufacturing and installation quality control systems are, there is always a possibility for post-installation damage to occur. This damage can compromise the containment system supplied by the geomembrane.

GSE Leak Location is a high density polyethylene geomembrane with a fully integrated smooth conductive bottom surface to enable liner integrity surveys to be performed per ASTM D 7240 following the installation of the liner. Spark testing technology was first developed to inspect coatings on steel pipes and is now being utilized in geomembrane systems using GSE Leak Location to enable liner integrity surveys over the entire geomembrane surface; including seams and side slopes.

When compared to other leak location technologies, GSE Leak Location offers a safer, faster, more comprehensive, and more cost efficient solution.

QUICK, COMPREHENSIVE, AND SAFE TESTING

In order to electrically test the geomembrane for damage, the conductive layer is charged using a light weight contact pad. A brass brush (or conductive wand) is guided over the top of the liner. When an electrical connection is made between the brass brush and the conductive bottom layer, a visible spark is observed and an audible alarm is sounded clearly identifying a damaged area. This allows even the smallest pinholes to be accurately located and repaired.

ELECTRICALLY LEAK LOCATION GEOMEMBRanes

A geomembrane with a smooth and fully integrated electrically conductive bottom surface to enable spark testing for leak location per ASTM D 7240.

GSE LEAK LOCATION FEATURES:
- Safe Testing
- Quick Survey Method
- Cost Efficient
- Comprehensive Testing
- Can Test Around Complex Configurations
- No Flooding is Required

COMMON APPLICATIONS:
- Solid and Liquid Waste Containment
- Secondary Containment
- Mining
- Hazardous Waste Containment
- Pond Lining
Testing can be performed around complex configurations and damage can be quickly repaired and retested. No expensive training is required to perform spark testing for leak location because of its simple operation. The conductivity of GSE Leak Location is maintained over time so that leak location surveys can be done year after year if desired.

The voltage of the spark testing equipment is high to improve the test reliability; however, the current flow is very low to ensure safety.

OTHER POST-INSTALLATION LEAK LOCATION

GSE Leak Location does not require water flooding or any other costly and time-consuming delays before a leak survey can be conducted. Immediately following installation, spark testing can begin. Wrinkles, bridging, and complex configurations present no problems to spark testing.

Electric Leak Location techniques that utilize water flooding cannot check the side slopes of a reservoir because of the added complexity of maintaining a high water level. The depth of water also decreases the accuracy of this type of leak location.

Smoke and gas leak location systems are more costly, cumbersome, and unreliable. The accuracy and reliability of this method and the water flooding method is heavily dependent on the skill and diligence of the survey personnel.

Leak locations using GSE Leak Location products are simple and dependable.

PROVEN PERFORMANCE

The excellent performance of GSE Leak Location geomembrane was demonstrated at a large mining operation, which required lined containment of runoff to prevent groundwater pollution.

The project totaled 1.7 million square feet (160,000 square meters) of geomembrane. Not only was the conductive bottom layer used to perform a liner integrity survey, but the patented, coextruded light reflective upper surface was included. This added further benefits such as less wrinkling, a lower liner surface temperature, improved damage detection, and improved protection of the underlying layers.

Mine personnel purposely made small holes in the liner without the knowledge of GSE personnel while a third party inspector recorded the locations. As expected, GSE’s innovative system detected every hole regardless of size.

The end result was that with the GSE Leak Location liner system, all leaks were detected and repaired in a very cost-effective, reliable, and safe manner. The facility design helped allay local community concerns and can be retested as needed to provide complete containment assurance.

ENGINEERING SUPPORT

The GSE engineering support staff is available to help solve any issues you have with your project. It is comprised of 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.