

Drainage Geonets & Geocomposites

GSE drainage products have been manufactured for over 30 years. Millions of square feet of drainage products are produced every year for multiple applications.

GSE starts with the highest quality resin blended with carbon black, UV stabilizers and antioxidants to ensure the product will have a long life. The material must pass stringent testing requirements and inspection prior to shipment.



[Application of GSE Drainage in Landfill Project]

SUPERIOR PRODUCT COMPOSITION

GSE geonets are manufactured to form a three-dimensional biplanar drainage structure that is used to replace a sand or gravel drainage system. GSE geocomposites include a geotextile which will be needed if the drainage structure is in contact with soil. This is accomplished by heat laminating a geotextile to either one or both sides to prevent soil particles from clogging the drainage core. Geotextiles also can be laminated to geonet cores when there is a need to increase frictional characteristics with another geosynthetic.

GSE standard bi-planar geonets and geocomposites consist of two sets of HDPE strands, intersecting at different angles and spacing. GSE tri-planar geonets and geocomposites consist of centralized middle HDPE strands that provide channelized flow, and diagonally placed top and bottom strands that minimize geotextile intrusion. GSE tri-axial geonets and geocomposites consist of vertical central HDPE strands with either horizontal top strands (T-shaped) or horizontal top and bottom strands (box-shaped) for improved performance. GSE specialty systems are premium, highly-engineered drainage systems were designed for specific applications that demand superior flow and filtering performance. GSE offers specialty drainage systems for coal ash containment, heap leach pad mining, landfills and more.



GSE Bi-Planar Geonet



GSE Tri-Planar Geonet



GSE Tri-Axial Geonet



GSE BioDrain Geocomposite



GSE CoalDrain Geocomposite



GSE MineDrain Geocomposite

GEONETS & GEOCOMPOSITES

- GSE Bi-Planar
- GSE Tri-Planar
- GSE Tri-Axial
- GSE Specialty Systems

LEACHATE COLLECTION AND REMOVAL SYSTEM

The leachate collection and removal system (LCRS) is a lateral drainage system that is used to remove leachate from the lining system to maintain less than or equal to 1 ft head of liquid as required by EPA Subtitle D regulations. Drainage geocomposites are used in this application in place of natural soils because natural soils require extra preparation of the sub-grade and consume valuable airspace (typically one or more feet of soil).

Geosynthetic drainage products are installed by simply unrolling product. Drainage geosynthetics require less sub-grade preparation and occupy far less airspace than natural drainage soils (0.20 in to 0.30 in). Drainage geocomposites provide excellent long-term hydraulic performance and creep resistance to ensure the leachate collection system will continue working over the life of the project.

LEAK DETECTION SYSTEM (LDS)

EPA Subtitle C hazardous waste landfills regulations require a double liner system consisting of two HDPE geomembrane liners with a geonet or geocomposite in the middle to comprise a leak detection system. This system is used to warn of any failures in the primary liner system.

The use of a drainage geonet provides high transmissivity which will continue to limit the head on the secondary liner to the thickness of the drainage geonet. Geonets will also move leachate quickly through the system to leak detection locations.

The use of a tri-axial drainage geonet helps to maintain the integrity of overlying GCL when a GM/GCL composite liner is used.

GAS REMOVAL SYSTEM

Gas pressure, due to the biodegradation of organic materials, can cause the subgrade to release gas that will build up underneath a geomembrane and potentially cause a failure in the geomembrane liner system. In a final cover system, gas pressure, due to the release of gas from the waste, can accumulate underneath the geomembrane causing slope instability or slope failure. In order to effectively reduce volumes of gas build-up, a drainage geocomposite can be installed to collect and discharge gas to a gas venting system or gas collection system.

EASE OF INSTALLATION AND PRODUCT SUCCESS

GSE drainage products have been used in the above applications for many years with great success.

Drainage geosynthetics require less excavation, allow for more airspace and are easy to handle. GSE drainage products are provided in roll form and can be installed with a limited amount of personnel and equipment.

THE GSE DRAINAGE DESIGN MANUAL

This comprehensive design manual provides the project engineer with the material properties and design procedures pertaining to drainage

geonets and geocomposites for a wide range of applications. For a free copy, please contact GSE or visit www.gseworld.com for our online version that provides designers with calculation equation sheets and interactive design examples.

ENGINEERING SUPPORT

The GSE Engineering Support Staff is comprised of multidisciplinary product professionals to support you across a range of project requirements. This includes knowledge in geomembrane, geosynthetic clay liners, geonet, geocomposite, nonwoven geotextile and concrete protection products and application solutions. Rely on our technical staff to help you solve your project issues.

CUSTOM FABRICATION

The GSE Custom Fabrication Group builds products to your exact specifications. We have extensive experience in prefabricated polyethylene products and components. A few examples of our custom fabricated products are Aqua Tanks, Quick Containment, concrete protection liners, boots, sumps, pads, pipes, daily covers, temporary containment, containment boom and other products to fulfill your fabrication needs.

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.

[DURABILITY RUNS DEEP] For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.

