agru

The Plastics Experts.

MicroDrain®

INTEGRATED DRAINAGE SYSTEM GEOMEMBRANE FOR HIGH FLOW RATES AND RELIABLE DRAINAGE

The Plastics Experts.

AGRU geosynthetic liners are manufactured with only the highest-grade polyethylene resins using the calendared flat-die extrusion process. This manufacturing technique allows for highly precise liners such as MicroDrain. This process produces liners with consistent stud height and thickness without compromising liner integrity.

The AGRU success story has been unfolding for seven decades. Founded in 1948 by Alois Gruber, who set the company on the course for plastic manufacturing, AGRU has become one of the world's most important single-source suppliers for piping systems, semi-finished products, concrete protection liners, and lining systems made from engineered plastics. We use only top-grade thermoplastic polymers as our raw materials. When it comes to application-technical consulting, we are your best partner in the field.

Quality

Customer satisfaction comes first at AGRU. Technical consultations are an essential part of our customer service. The AGRU quality assurance system is compliant with multiple international and U.S. standards and AGRU's procedures help ensure that products meet these standards. AGRU's start-to-finish attention to quality ensures that the products meet the strictest technical requirements.

Universally Deployable Lining Systems

MicroDrain is part of the AGRU Lining System, which offers the right solution for every application through an array of products.

Excellent Physical Properties

Chemically resistant polyethylene gives robust durability and chemical resistance:

- Plasticiser-free plastics guarantee long-term performance
- High tensile strength, elasticity, and flexibility
- Excellent static puncture resistance.

Economic Installation

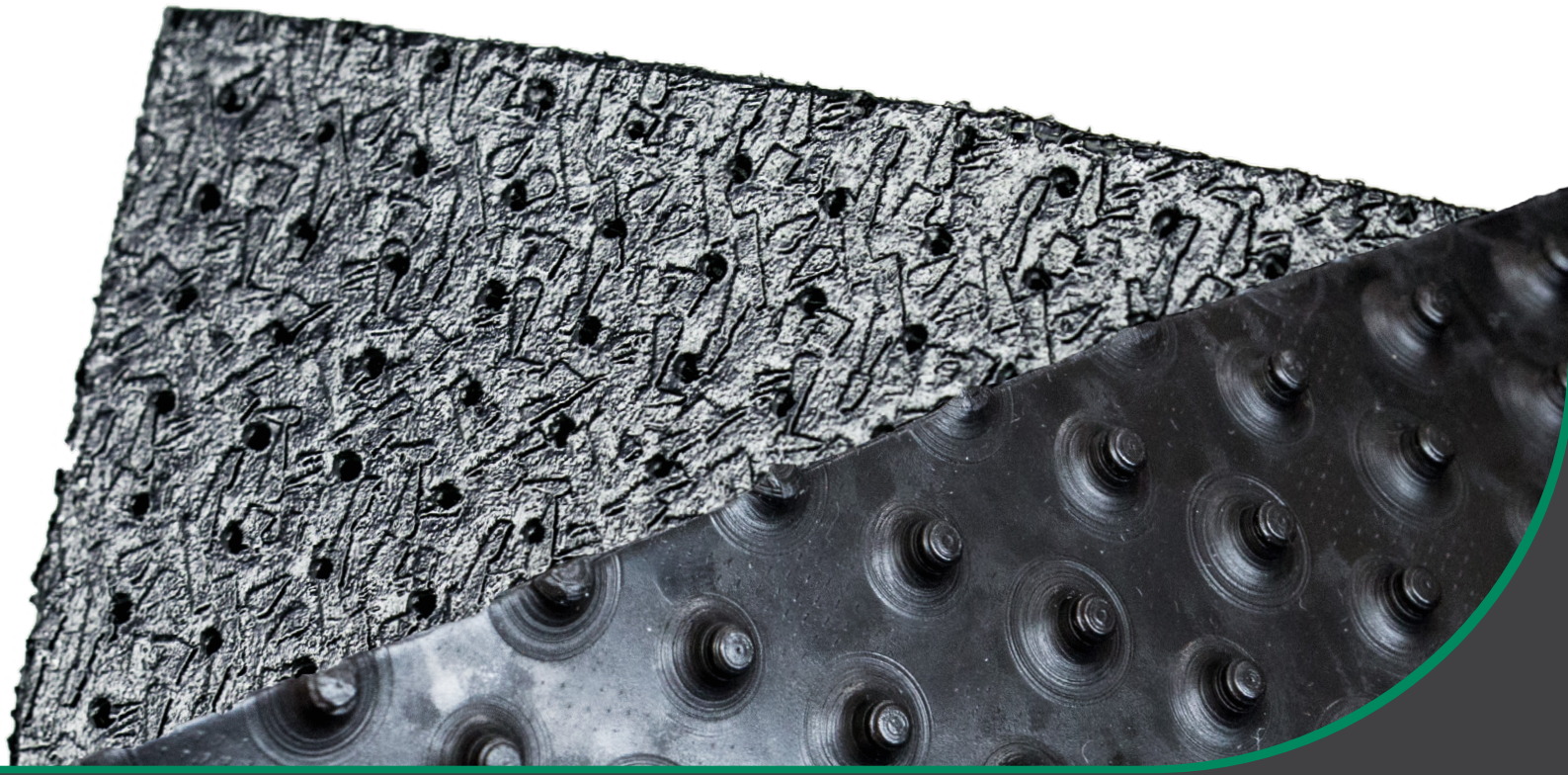
Compatible with simple and permanent welding technologies:

- Suitable for any application
- Works with innovative installation methods (e.g., induction welding)
- MicroDrain is easy to install thanks to its light weight and flexibility.

One-Stop Shopping

Beyond MicroDrain, let AGRU source your drainage, pipes and fittings, geotextiles, and more:

- Complete drainage and closure systems in LLDPE and HDPE
- Multi-purpose products for industrial and civil applications
- Concrete protective liners, semi-finished products, and more.



Product Summary

AGRU MicroDrain is a combined barrier liner and drainage media unique to the industry and is the latest culmination of AGRU America's geomembrane R&D. MicroDrain is manufactured with either high-density polyethylene (HDPE) or linear low-density polyethylene (LLDPE).

The upward-facing studs in MicroDrain promotes high flow rates and reliable drainage, eliminating the need for a separate geonet or geocomposite drainage layer. This upward-facing part, or AGRU's Integrated Drainage System (IDS), yields cost savings in material usage and installation while removing what has been the weakest link (a separate material for drainage) for interface shear strength.

The bottom-facing part of the liner uses spiked asperities (leveraging AGRU's MicroSpike technology) for high slope stability against a steep subgrade. Finally, the product's smooth edges allow double-wedge welding between adjacent sheets. and a special cutting tool can remove studs or spikes from cross seams as needed prior to welding.

Manufactured using a flat-die cast extrusion process, MicroDrain features consistent stud pattern and spacing. The stud pattern also reduces the potential for chemical and biological clogging by allowing freer flow of liquids. This manufacturing process promotes full integration of surface features, removing the risk of separation during use. Furthermore, by combining separate features into one product, designers meet multiple project requirements during a single installation. MicroDrain can reduce overall installation time and lower material and CQA costs.

- MicroDrain is an effective geomembrane for use in closure and containment applications
- Available in HDPE and LLDPE
- Upward-facing studs available with heights of 130 mils (3.3 mm), for drainage
- Bottom-facing spikes available with heights of up to 18 mil for slope stability.

Applications

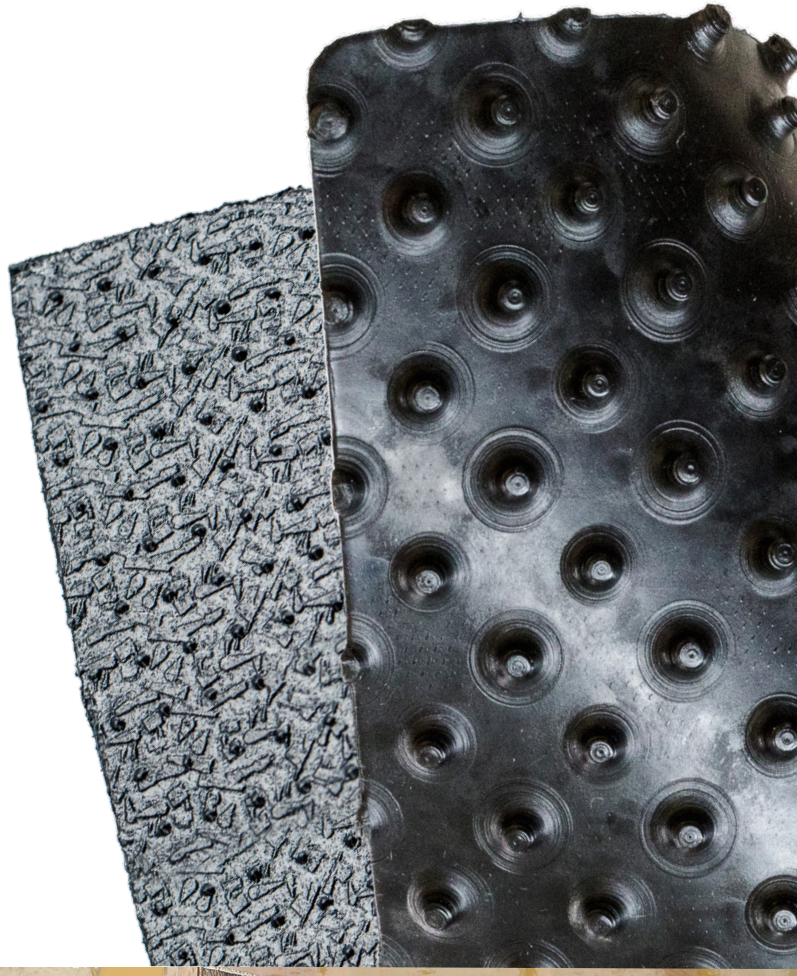
The consistent textured pattern and spacing in MicroDrain makes it an ideal liner solution in high-precision applications.

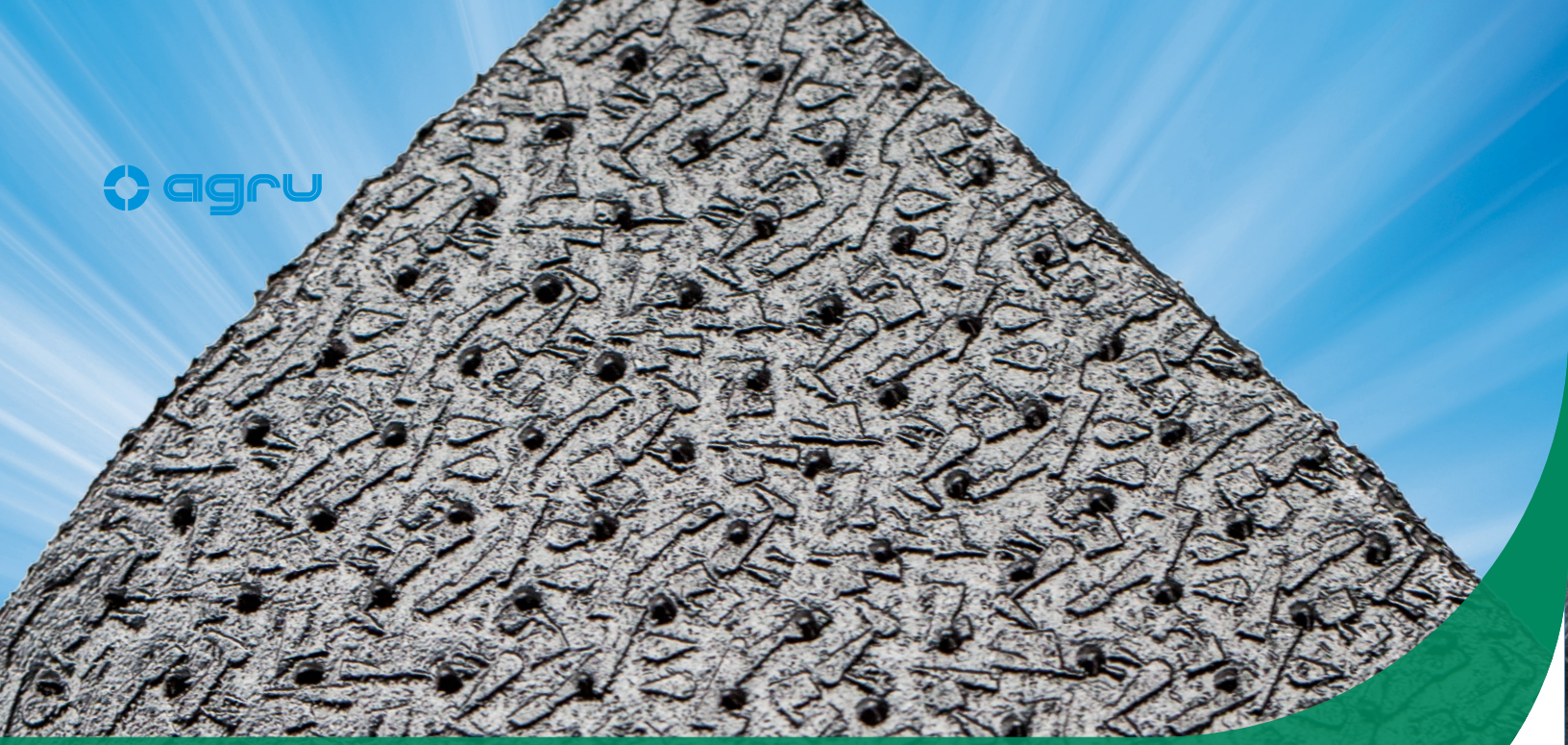
Closure

MicroDrain is a dual-purpose geomembrane landfill closure solution that works with the ClosureTurf® Final Cover System or with a more traditional soil-based cover system with soil and geotextile. The typical configuration for soil-based landfill closures includes a filter layer in the form of AGRUTEX, an 8 oz/sy nonwoven geotextile.

Containment

For containment applications, MicroDrain offers excellent performance and a cost-savings containment solution for double-lined ponds, reservoirs, pits, and containment cells. In this situation, MicroDrain works as the secondary geomembrane in applications with slopes of up to 3H:1V.

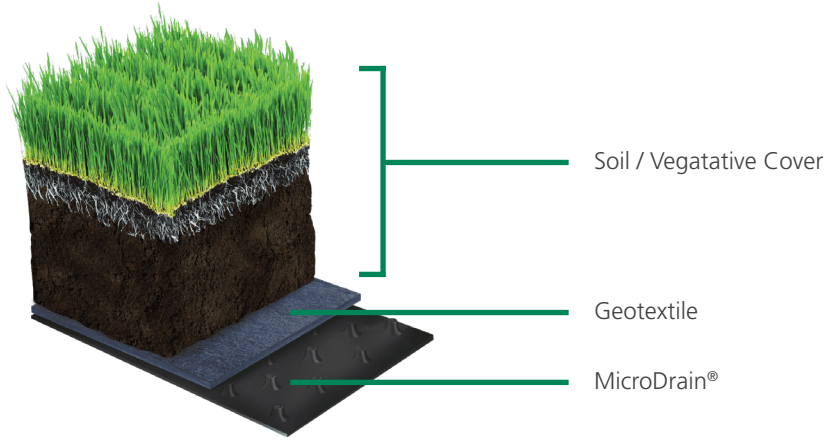


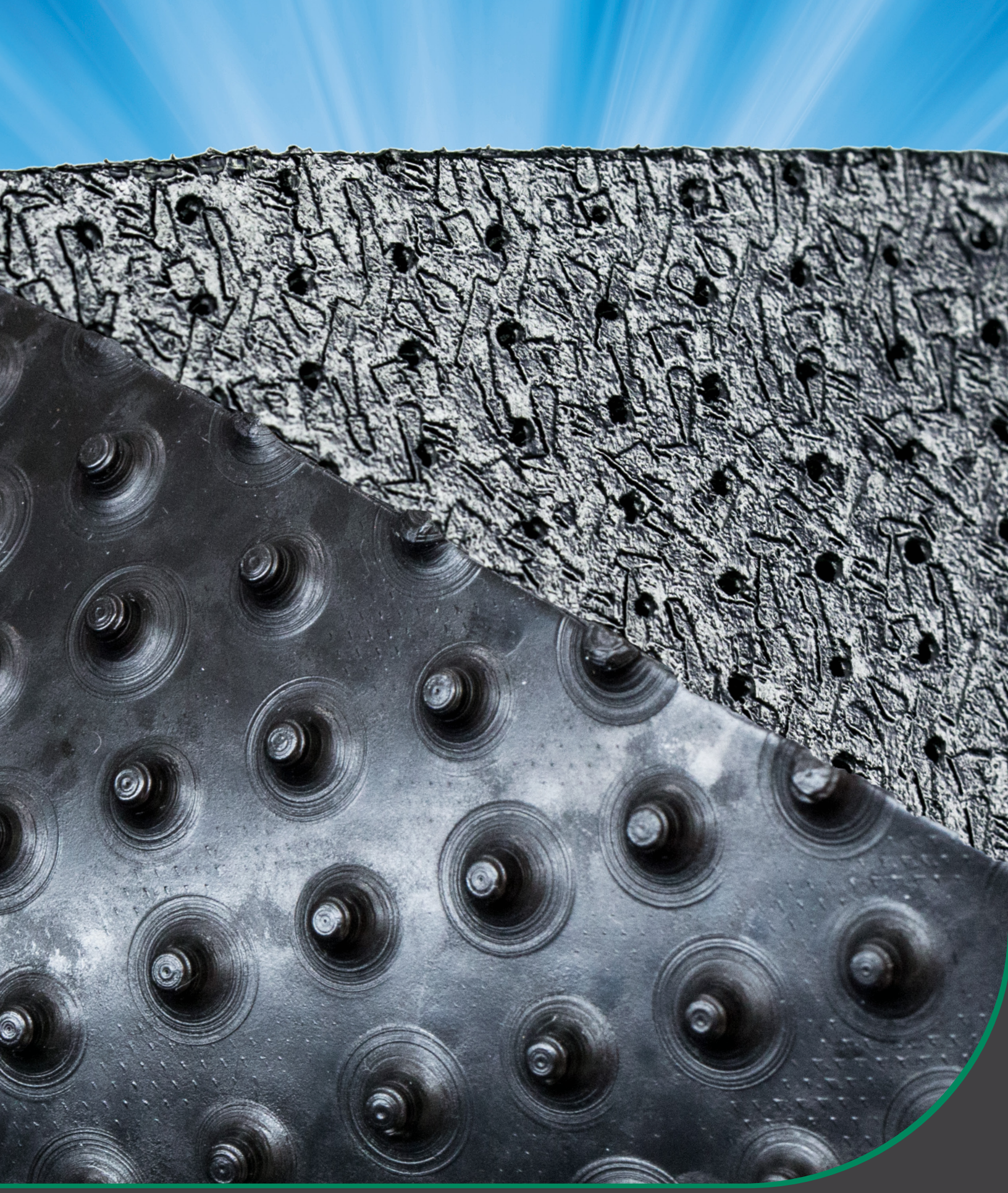


Essential Component to the AGRU Integrated Drainage System

Integrated Drainage System

The essential ingredient in MicroDrain is AGRU America's IDS, a Subtitle D-compliant closure and containment solution. IDS incorporates an advanced drainage structure within the geomembrane. By combining drainage media and geomembrane—each with its unique benefits—into one product, AGRU gives a powerful closure and containment solution that also delivers significant cost savings. IDS has increased shear strength performance, reliable long-term drainage performance, a reduction in needed geosynthetic material, and reduced installation time and cost. As of 2018, over 140 million square feet of IDS has been installed and in use for closure and containment applications.





The Plastics Experts.

Subject to errors of typesetting, misprints and modifications.
Illustrations are generic and for reference only.

AGRU America
500 Garrison Road
Georgetown, SC 29440
USA

T. +1 800 373 2478
F. +1 843 546 0516
info@agruamerica.com
Revision Date: October 8, 2018