

Drain Liner®

AN INTEGRATED DRAINAGE
SYSTEM FOR ALL
DRAINAGE APPLICATIONS





The Plastics Experts.

AGRU America uses state-of-the-art equipment and the flat-die calendar process to manufacture structured geomembranes with a consistent core thickness and greater physical properties than those made with other processes, such as blown film extrusion. AGRU uses only the highest-grade HDPE and LLDPE resins available in North America.

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

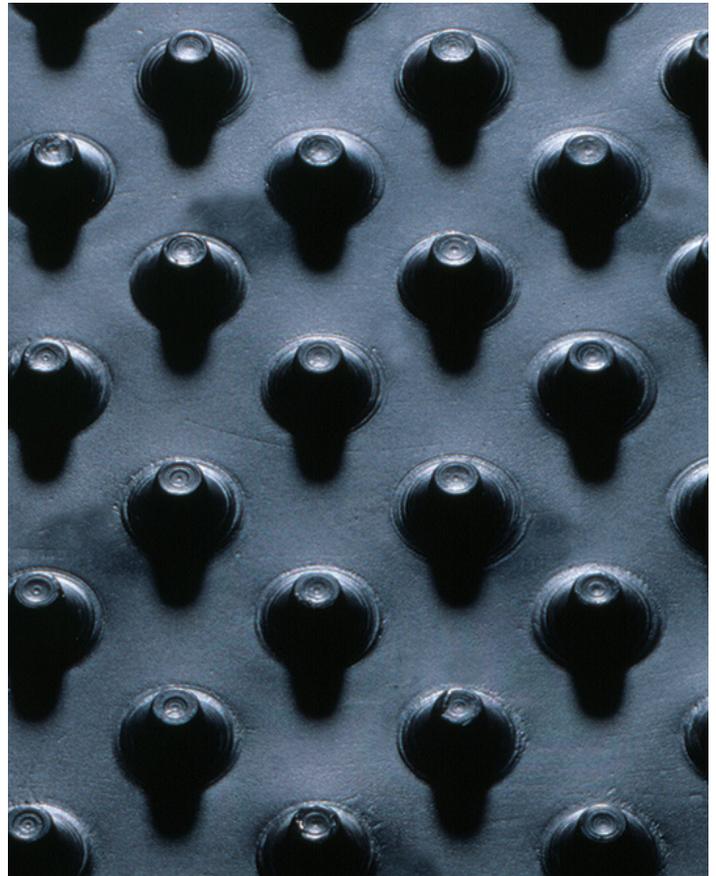
Customer satisfaction comes first at AGRU. For instance, technical consultations, training courses, and on-site assistance are among the services offered by AGRU to support customers. Additionally, AGRU procedures help ensure that products comply with international norms, as monitored and evaluated on an ongoing basis according to standards set by independent testing agencies. Our start-to-finish attention to quality ensures that our products meet and exceed the strictest technical specifications, providing safe operation within municipal solid waste, coal combustion residual (CCR), mining, oil & gas, water, and wastewater infrastructures.

Drain Liner[®]

AGRU America's Drain Liner geomembrane can be manufactured with either high-density polyethylene (HDPE) or linear low-density polyethylene (LLDPE). Drain Liner is best suited for single- or double-lined projects such as landfills, waste ponds, lagoons, mining heap leach pads, and process ponds where containment and leak detection is crucial. Drain Liner eliminates the need for a separate geonet drainage layer, providing cost savings in material usage and installation.

Manufactured using a flat-die cast extrusion process, as opposed to blown film extrusion, Drain Liner features consistent stud pattern and spacing, which gives the liner high flow rates and reliable drain capacity. The stud pattern also reduces the potential for chemical and biological clogging by allowing freer flow of liquids. Integration of the drainage layer with the liner sheet removes a typically problematic interface in veneer stability design. Finally, the product's smooth edges allow fusion welds between adjacent sheets, and a special cutting tool can remove studs from cross seams as needed prior to welding.

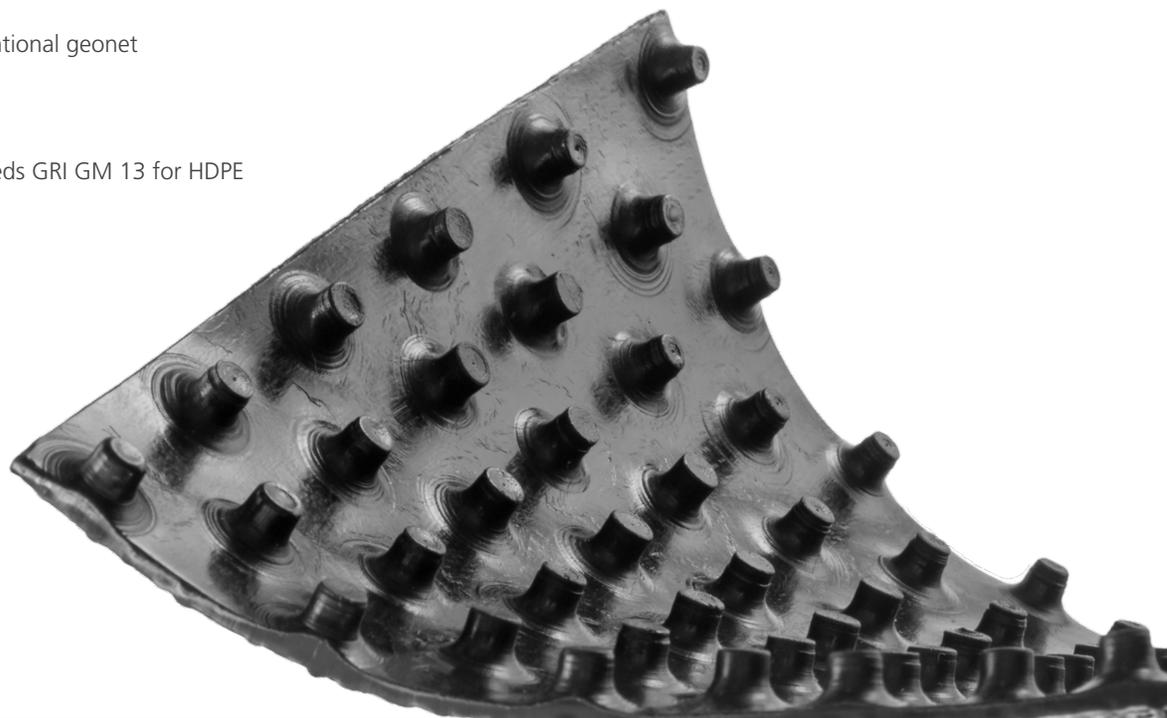
AGRU fully integrates Drain Liner's studs into the liner in one production step, eliminating the risk of separation during use. By combining separate components into a single product, designers are able to meet multiple needs during a single installation, reducing overall installation time and lowering material and CQA costs.





Drain Liner Properties

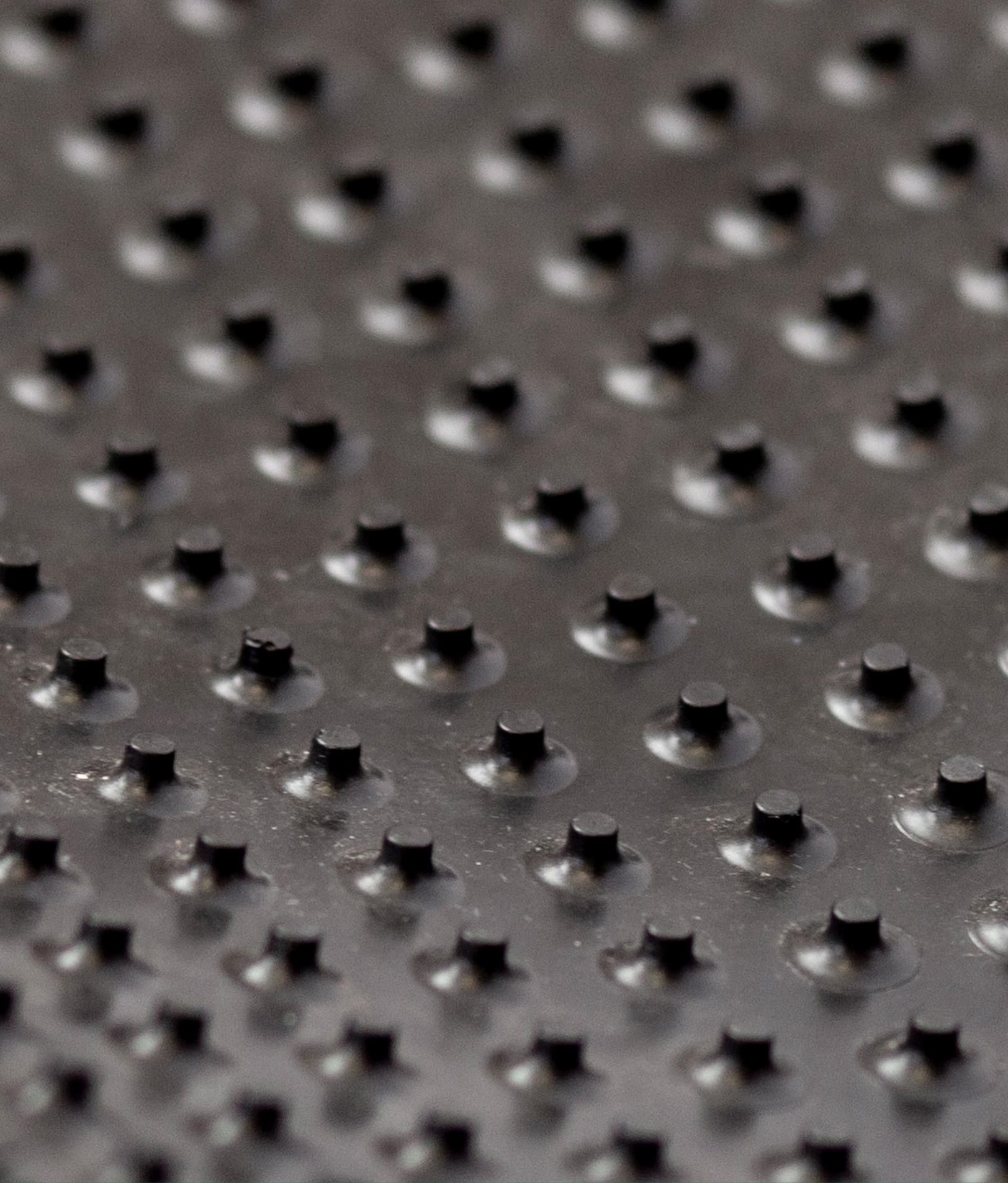
- Certified to pass Low Temperature Brittleness via ASTM D746 (-80°C)
- Dimensional Stability via ASTM D1204 ($\pm 2\%$ @ 100°C)
- Reduced installation time and cost by eliminating the need of a geonet drainage layer
- Higher flow rates than a conventional geonet
- Resistant to long-term creep
- Agru Drain Liner meets or exceeds GRI GM 13 for HDPE and GRI GM 17 for LLDPE

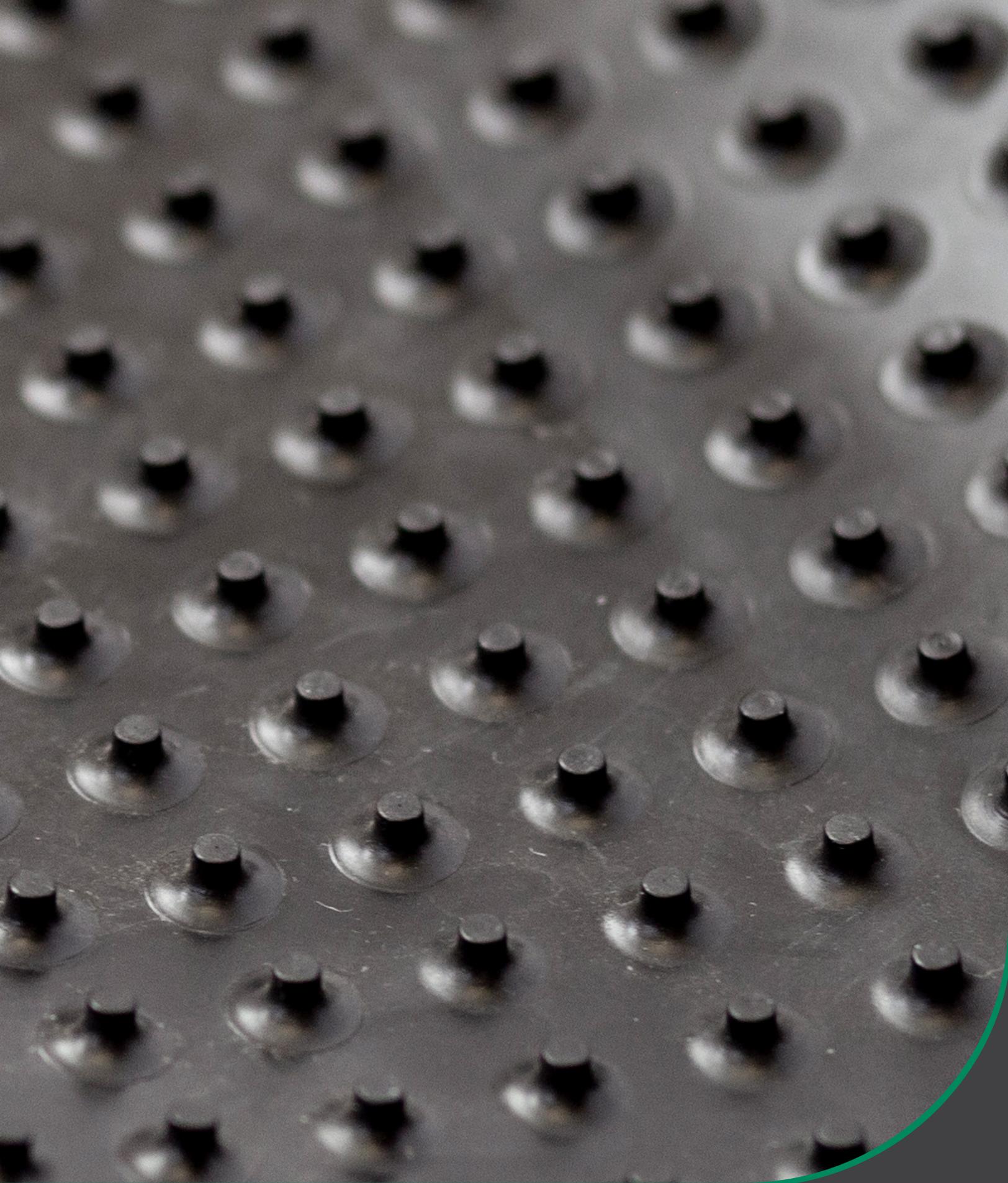


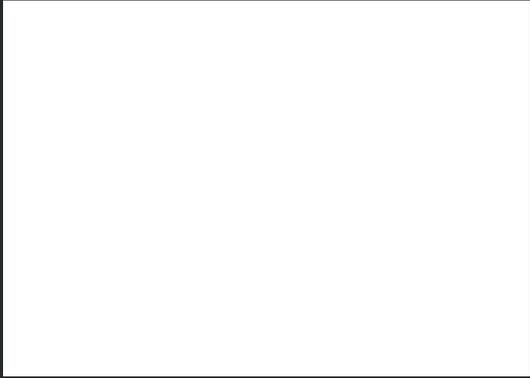
Integrated Drainage System

Drain Liner is an essential component to AGRU America's Integrated Drainage System (IDS), a Subtitle D-compliant closure and containment solution. IDS is provided in the Super Gripnet product line where greater veneer stability is required than can be provided by the MicroDrain version of the Drain Liner product line. By combining a geomembrane sheet and a drainage layer equivalent to geonet into one product, AGRU provides a powerful closure and containment solution that also delivers significant cost savings. IDS offers increased shear strength performance, reliable long-term drainage performance, a reduction in required 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.









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Illustrations are generic and for reference only.

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