

AGRU-ULTRA GRIP®

CONCRETE PROTECTIVE
LINER FOR HIGH
BACKPRESSURE CONDITIONS





The Plastics Experts.

AGRU-ULTRA GRIP® is part of the AGRUSAFE system of concrete protective liners, which are designed to protect structures against corrosion and moisture penetration and to prevent fluid leakages. Ultra Grip considerably extends the life of the concrete structure. Similar to AGRU's iconic Sure-Grip®, the patented AGRU Ultra Grip liner is extruded with the anchoring studs in a single step for unparalleled safe mechanical anchoring. Ultra Grip's innovative revised anchor design boasts the highest backpressure and pullout resistance in the industry.

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 protective liners, and lining systems made from engineered plastics. We use only top-grade thermoplastic resins as our raw materials. When it comes to application-technical consulting, we are your best partner in the field.



Quality

The AGRU quality assurance system is compliant with multiple international standards and AGRU's procedures help ensure that products meet or exceed these international standards, on an ongoing basis.

The start-to-finish attention to quality ensures that the products meet and beat the strictest technical specifications, giving safe operation within transportation, water, and wastewater infrastructures.

Corrosion Protection Through Chemical Resistant Plastics

Reinforced concrete is the most common construction material of the 20th and 21st centuries. But as robust as reinforced concrete may seem, water, gases, and chemicals often find a way to corrode and infiltrate the concrete, thus compromising the stability of structures. Ultra Grip, a part of the AGRUSAFE system, is a concrete protective liner made of chemically resistant plastics that prevents concrete corrosion and therefore significantly extends the life of structures. Ultra Grip is ideal for construction with high groundwater pressure, harsh environments, or strict environmental requirements.

Effective Protection Against Concrete Corrosion

Firmly sealed surfaces keep reinforced concrete in like-new condition for years.

- Completely sealed welded lining
- Unique patented anchoring system
- Optional signal layer for damage detection.

Solutions for Every Requirement

Available in a wide range of materials including PP, PE, PE-el, PVDF (Sure-Grip), and ECTFE (Sure-Grip).

- Suitable for both cast-in-situ application and precast concrete products
- Useable across a wide temperature and chemical range
- Effective in both renovated and new structures.

Unsurpassed Cost Efficiency

Easy installation and outstanding product quality leads to time and cost savings

- Innovative profiles speed installation time and improve installation quality
- Available in wide liner formats
- Once lined with Ultra-Grip, concrete surfaces become largely maintenance-free.



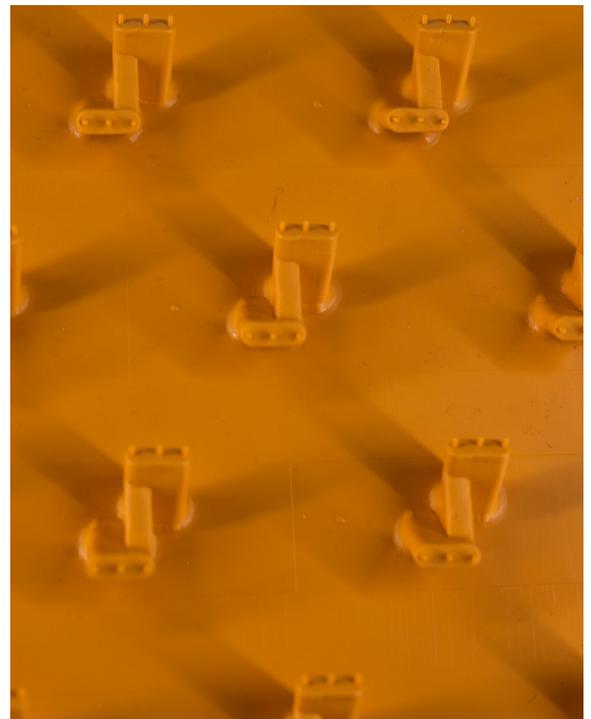


Why Ultra Grip?

With over 30 years of experience in the production of concrete protective liners (CPL) AGRU first developed its iconic V-Shaped Sure-Grip anchor over 25 years ago. This innovative design with 13 mm tall anchors has set the standard for the industry. However, AGRU has continued to lead the industry with subsequent innovations including Sure-Grip Type 571 with 19 mm anchors and Ultra Grip with a revolutionary redesign of the 13 mm Sure-Grip anchor.

Ultra Grip, produced from high-density polyethylene (HDPE) and polypropylene (PP) is available in thicknesses ranging from 2 mm (80 mil) to 5 mm (200 mil). Ultra Grip is available in a variety of colors and configurations for both rolls and sheets and is among the widest CPL produced in the United States at 10 feet. But Ultra Grip's impressive backpressure resistance is what sets it apart from its competitors. If a corrosion protection system cannot sustain the required backpressure long-term then its failure is imminent. Failure leads to concrete corrosion with high costs associated with replacement, traffic control measures, and bypass pumping systems.

Groundwater backpressure also presents a significant concern for wastewater professionals due to its contribution to inflow and infiltration into sewer systems. Allowing other fluids to enter a wastewater treatment system is an unnecessary and costly expense. Therefore, wastewater professionals are compelled to design systems that are limited to only treating wastewater. Ultra Grip's tensile strength and high elongation allow it to bridge cracks in concrete structures and prevent groundwater from entering the wastewater system.



Innovative Design for Leak-Proof Constructions

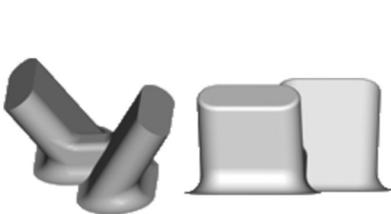
Depending on the specific project requirements, a variety of anchor designs, resins, and liner thicknesses and colors are available. Concrete protective liners are joined by welding, which provides permanent and reliable joints. Different welding technologies, depending on the project requirements, are available for a secure and leak-proof joint including the following:

- Butt welding
- Extrusion welding
- Hot wedge welding
- Hot gas welding



Ultra Grip Summary

- Applicable for a wide variety of concrete structures
- Secure mechanical anchoring to the concrete structure
- High elasticity to bridge cracks in the concrete
- High abrasion resistance
- Excellent shear resistance
- Suitable for aggressive media (corrosion resistant)
- Applicable within a wide temperature range
- Long life expectancy
- Low maintenance and easily cleanable
- Easy and safe installation
- Suitable under high backpressures
- Available in UV resistant materials.



AGRU Sure-Grip® Type 560
(Anchor height 13 mm)



AGRU Sure-Grip® Type 571
(Anchor height 19 mm)



AGRU-ULTRA GRIP®
(Anchor height 13 mm)

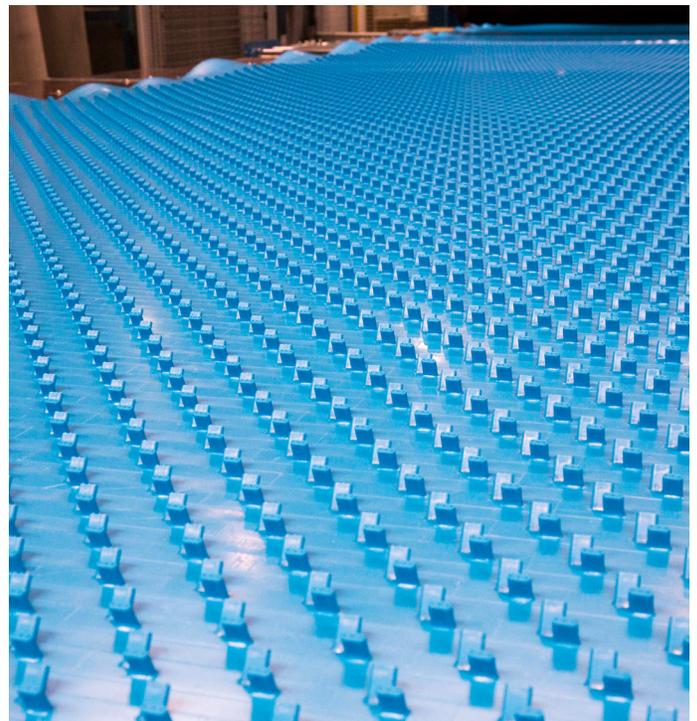


Product Overview

Ultra Grip concrete protective liners made of HDPE, HDPE-el, PP, PVDF (Sure-Grip), and ECTFE (Sure-Grip) are produced with state-of-the-art manufacturing technology. This system has been successfully applied worldwide for more than 25 years and serves as a long-term alternative to spray-applied concrete protection products.

Ultra Grip has an innovative anchor design, utilizing a V shape to offer superior anchoring properties and backpressure/pullout resistance in concrete structures. Ultra Grip is especially useful for structures installed in groundwater and resists sustained pressures up to 1.75 bar (at 20°C or 68°F) in long-term testing and applications. Ultra Grip shines in larger installations, as it is available in rolls and sheets up to 10' (3.05 m) in width and up to 5 mm (200 mils) in thickness, saving up to 60% of installation time from reduced welding requirements. Ultra Grip offers unparalleled corrosion resistance, for an extra-long service life when compared with spray-on concrete protective liners or other alternatives, which must be reapplied regularly due to cracking or delamination.

Concrete protective liners combine the advantages of thermoplastics (flexible, ductile, corrosion resistant) with those of concrete (high strength, high stiffness). Thus, the concrete is protected effectively, and the durability and life expectancy increased.



Applications

AGRU's concrete protective liners can be configured to meet a wide variety of project requirements.

Lining of Precast Concrete Structures

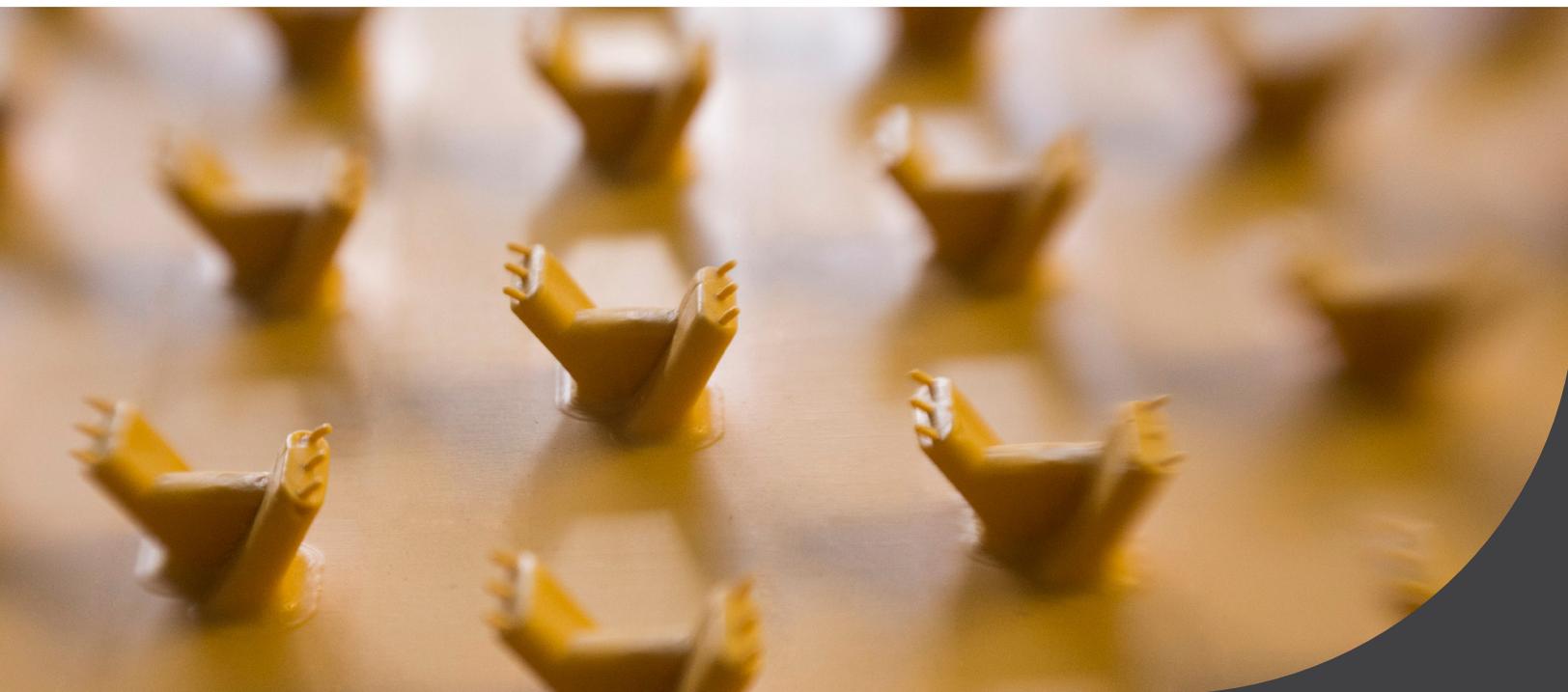
AGRU's concrete protective liners offer many benefits for the lining of precast concrete structures, including prefabricated concrete elements, concrete pipes and manholes, tank constructions, and oil/water separators.



Lining of Cast in Situ Structures

AGRU's concrete protective liners are easily fabricated to the shape of the construction thanks to the quick and safe mounting to existing formworks by means of end profiles and tear off profiles. After the concrete sets, the concrete protective liner system is extrusion welded to provide a leak-proof solution.

This installation method enables the installation of both the concrete protective liner and the formwork at the same time. In situ structures include underground construction; foundations and bridges; areas where chemical media are used, transported, or stored; and any type of basin.





Applications

Structure Relining/Rehabilitation

AGRU's concrete protective liners can be used to reline and rehabilitate many existing concrete structures. This is accomplished through the use of a formwork system and the introduction of grout or concrete into the interstitial space. The concrete protective liners can be prefabricated and preassembled in sections to significantly speed up the on-site installation efforts, reducing production downtime and project costs.



Trenchless Relining of Underground Pipes

AGRU offers system solutions for trenchless relining which enable the rehabilitation of various cross sections and dimensions, independent of the degree of corrosion. Applications include both segment and hose relining.



Ultra Grip Customizations

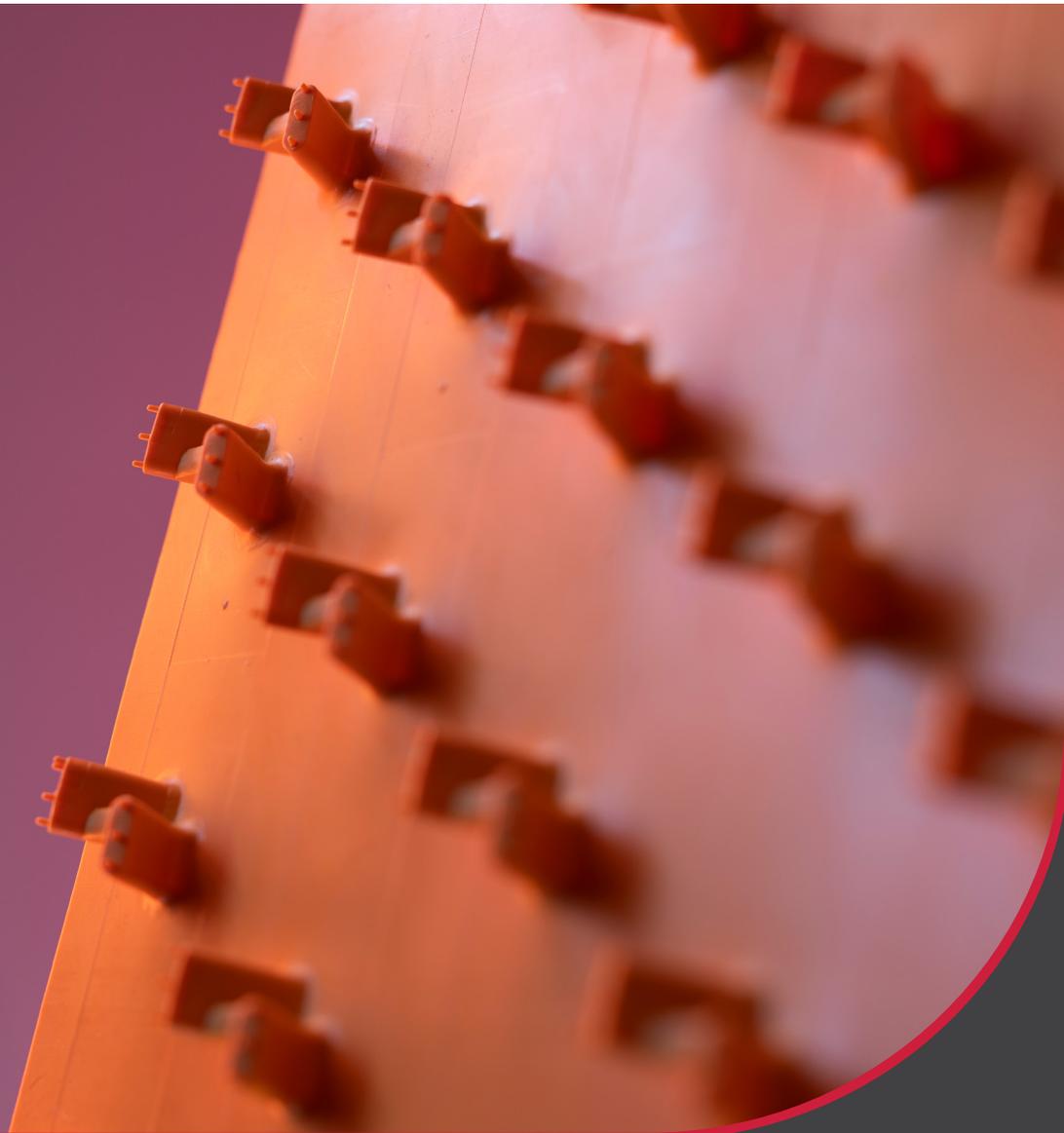
AGRU also manufactures Ultra Grip with customizations tailored to meet specific project needs. In addition to project specific colors, widths, and thicknesses AGRU also offers several unique surface designs as follow:

Ultra Grip with Signal Layer adds a light-colored layer that offers visual detection of damages, improving the quality control process.

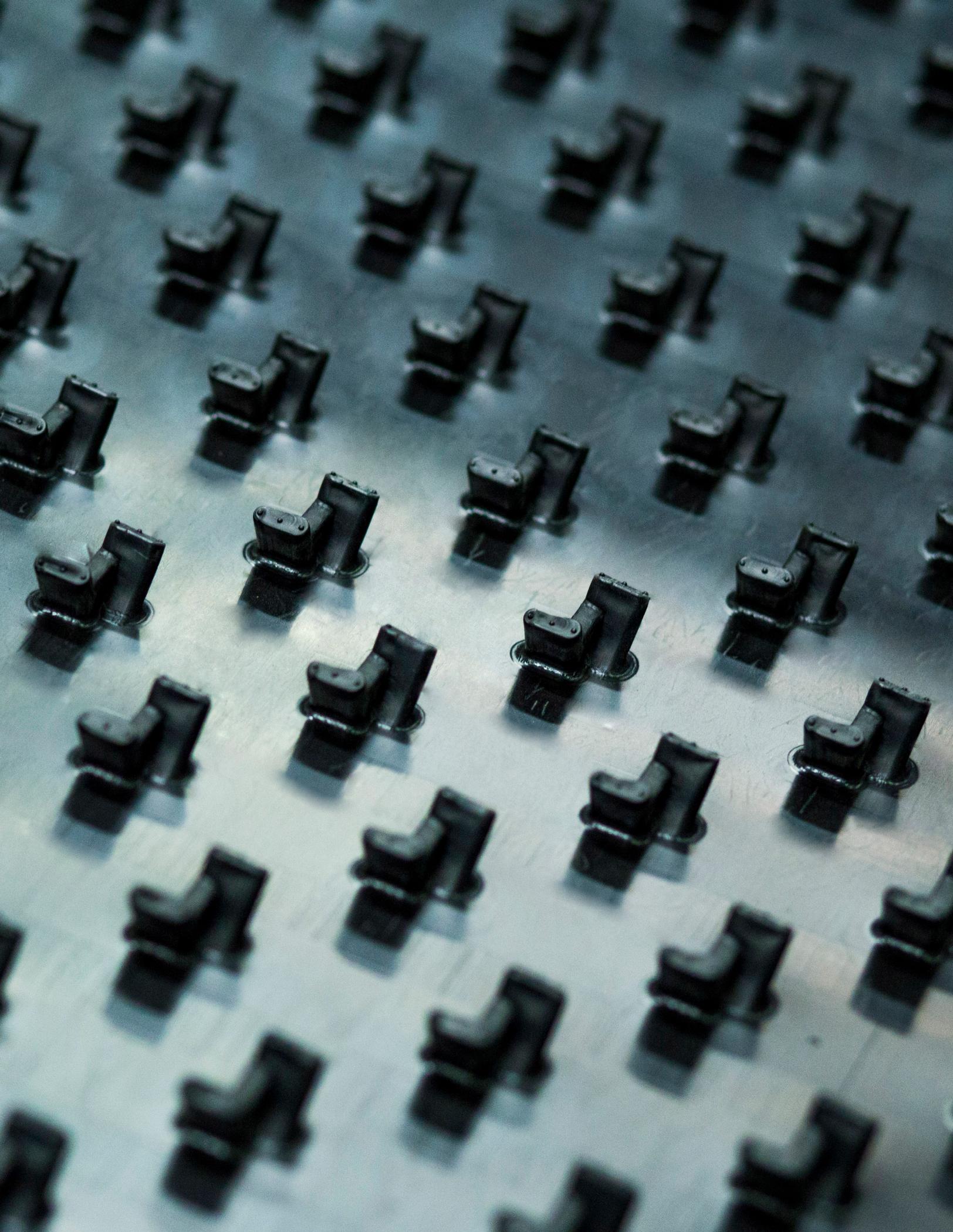
Fabric-Backed concrete protective liners offer a suitable option for dual-laminate applications and areas of transition to dissimilar materials.

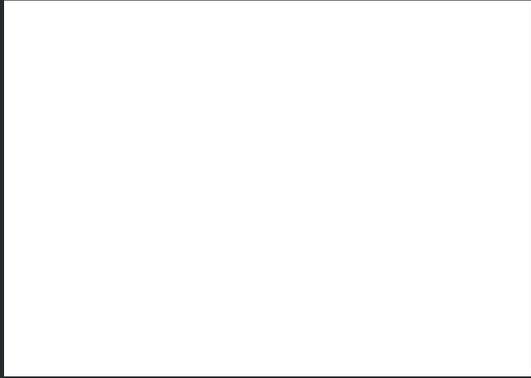
AGRU's Self Cleaning System provides a unique and innovative pipe lining invert, which greatly reduces sediment deposits in piping systems that are designed with flat grades or predominantly low-flow situations.

AGRU's Step Security System affords an anti-skid surface that can be used for traction and safety in lined floors.









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

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