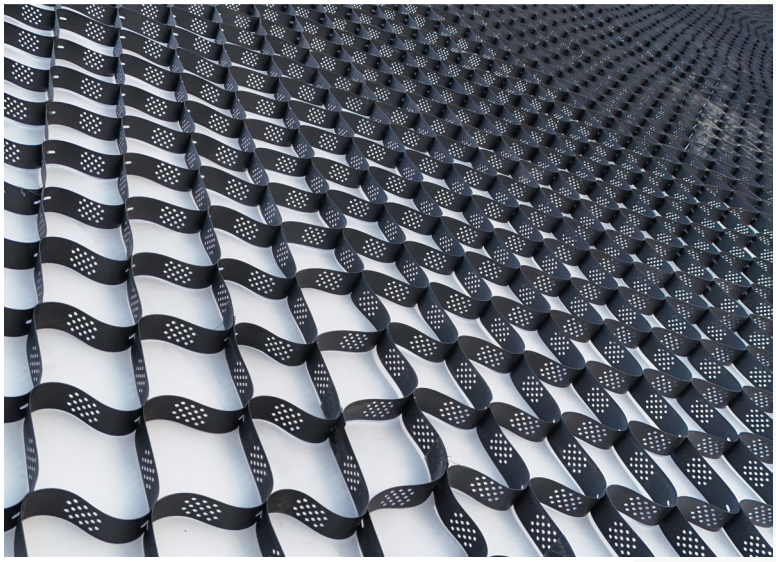
Case Studies

Ready to improve your construction

Yusufeli Irrigation Pond Project

A special irrigation pond is being constructed to meet the general water demand of the newly built district center, developed due to the completion of the Yusufeli Dam on the Çoruh River in Artvin. Unlike conventional irrigation ponds, this structure—built within the scope of the Yusufeli District and New Village Settlements Infrastructure Works—stores water on a highly inclined embankment approximately 90 meters in length.



Challenges:

The steepness of the embankment surface created significant difficulties in keeping the concrete in place during formwork operations. This caused the concrete to flow downward, prevented uniform distribution, and rendered traditional formwork systems nearly unusable. The region's topography also limited site accessibility, while the high water pressure the embankment would face after project completion, coupled with long-term durability requirements, made surface stability a critical issue.

Industry: Geosynthetic Applications
Application: Dam Reinforcement and Isolation
Location: Yusufeli, Artvin
Product:

GeoTeknik
Non-Woven Geotextiles

ForCell
Cellular Confinement System

GeoSeal X Rob
Geomembranes

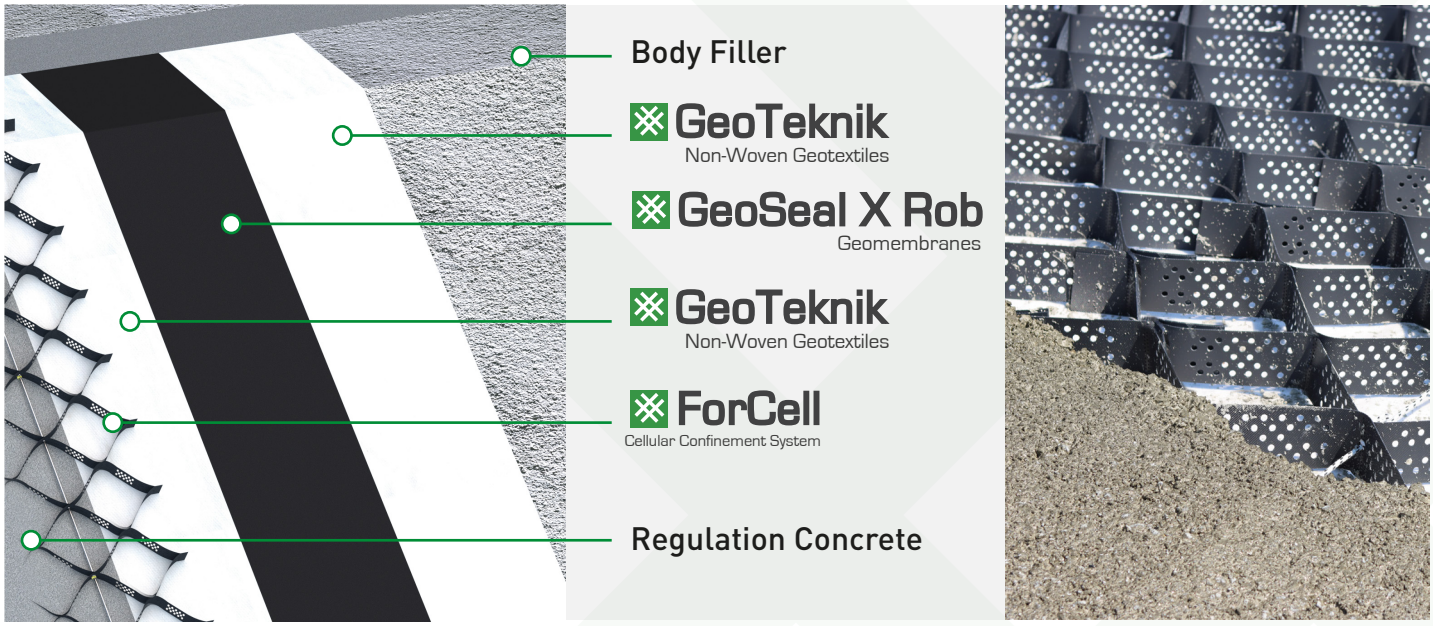
istanbulteknik

Solution

To ensure controlled and secure concrete covering on the embankment surface, the ForCell Cellular Confinement System was used together with GeoSeal X Rob high-density polyethylene (HDPE) geomembrane and Geoteknik nonwoven geotextile as the underlying waterproofing layer.

With advantages such as high tensile strength–elongation values, chemical resistance, UV durability, and secure weldability, GeoSeal X Rob created a reliable impermeable layer on the surface. Applied both beneath and above the membrane layer, Geoteknik PP 2500 formed a separating and protective interface on both sides of the membrane, ensuring its protection against mechanical stresses and potential damage.

Installed on top of these layers, the ForCell cellular confinement system enabled the concrete to remain fixed within the cells, preventing flow on the inclined surface and serving as an effective formwork substitute.
This integrated geosynthetic solution eliminated the need for conventional formwork, accelerated construction, reduced costs, and provided a durable, long-lasting, and uniform concrete protection layer on the embankment surface. Once completed, the project will sustainably ensure the long-term, uninterrupted, and safe water supply of the new Yusufeli district.



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