

Geotextiles: A Versatile Material for Civil Engineering Projects In Industry Global Market

Geotextiles

are permeable fabrics which, when used in association with soil, have the ability to separate, filter, reinforce, protect or drain. They can be made from natural fibers like jute or synthetic polymers like polypropylene, polyethylene or polyamide. Geosynthetic have increasingly become invaluable for a wide variety of civil engineering applications.

Soil Separation and Stabilization

One of the primary functions of [Geotextiles](#) is to prevent mixing of dissimilar soils. They are often used as a separator between a coarse aggregate base and clayey subgrade. This separation prevents fine soil particles from working their way into the base material and clogging it. Geosynthetic are also used for soil stabilization applications like protecting soft subsoils from intrusion by road construction aggregates. Their reinforcement ability improves the engineering properties of weak in-situ soils.

Pavement Systems

In paved road systems, geosynthetic play an important role in separating and strengthening pavement layers. As a separator, they prevent intermixing of base/sub-base with subgrade. As a reinforcement material, they increase the bearing capacity of Unbound Granular Bases. This reinforcing function of geosynthetic helps to control reflective cracking from joints or cracks in underlying layers. They are highly effective in flexible and rigid pavement systems.

Slope Stabilization

Erosion and slope failure pose major problems, especially on embankments and cut slopes. Geosynthetic perform exceptionally well as reinforcement materials in stabilizing slopes. Their ability to confine and strengthen soil mass contributes to increased shear strength. Some geosynthetic have high tensile strength and provide extra reinforcement where needed. This prevents erosion and translational failure from occurring. They have been very successful in stabilizing railway ballast, road embankments and retaining walls.

Drainage Applications

Geotextiles work very effectively as filtration and drainage materials. Used below road bases or around foundation walls, they prevent fine particles from clogging drains while allowing water to pass through. Some have very high permittivity and transmissivity, performing like filters and French drains.

