

**Did you know?****Did You Know... geosynthetics protect land and water resources by preventing soil erosion and supporting vegetation**

Soil erosion can have a significantly negative impact on our water resources, biodiversity and the soil's ability to support vegetation growth.

Leaching can impair water used for drinking, navigation, recreation and irrigation, plus around 60% of all the soil that is washed away ends up as sediment in our rivers, streams, and lakes. This directly impacts aquatic wildlife habitat, encourages excess algae growth, and makes all these bodies of water more prone to flooding, particularly during today's high-intensity storm events. Eroded soil also often carries excess fertilizers, herbicides, pesticides and other toxic chemicals into our surface waters.



In addition, erosion disturbs the soil's natural structure and its ability to store water and support vegetation growth. This can lead to a reduction in biodiversity, groundwater recharge, essential nutrients, and soil biota. In turn, this harms rangeland, forests, and other natural ecosystems.



Did you know?

Therefore, soil stabilization is vital in preventing erosion, re-establishing vegetation, and curbing all the negative effects associated with soil degradation.

Geosynthetics can successfully prevent erosion, either indefinitely or until vegetation can establish itself, in a variety of applications.



Unprotected Slope after 150 mm/hour rain test event



Geosynthetic (unvegetated) erosion control protection installed over test slope



Protected slope (geosynthetic removed) after 150 mm/hour rain test event



The Geosynthetic reinforces the vegetation root structure...



...to assist in establishing a strong stand of vegetation...



...and withstanding aggressive shear stress in channel flow

Just some of the reasons geosynthetics are ideal include:

- Geosynthetic products can resist the impact of raindrops, control the amount of water infiltration, and protect vegetation seeds from being dislodged, making it the preferred product in green engineering erosion control design.
- A geosynthetic-reinforced vegetative root structure is able to keep soil in place at higher hydraulic shear stresses than would be protected otherwise.



Did you know?

- Geosynthetics almost always lower the carbon footprint associated with an erosion control project, as several product rolls may be delivered to a project site with minimal transportation requirements. They often replace mined riprap and concrete erosion control features associated with much higher levels of carbon cost.



Lower embodied energy / meter² of material with a geosynthetic solution



Significantly higher embodied energy / meter² of material with hard armor

- Also, geosynthetics have safety benefits, particularly when used in urban and suburban areas. Rock riprap, when placed along roadways or walking paths, can pose an accident risk for vehicles and pedestrians. Vegetation is not only a safer alternative but a more aesthetically pleasing one.
- Geosynthetics are ready for immediate installation, or as part of a composite structure with vegetation or reinforcement elements serving the designed product function.

Geosynthetics make a cost-effective, eco-friendly, one-stop-shop solution for erosion and sediment control while making a positive impact on the environment.

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Geosynthetic solutions should be fully investigated on every infrastructure project to ensure they meet the needs of the present without compromising the ability of future generations to meet their own needs.

Find out more about how geosynthetics are making a difference by downloading the IGS Sustainability eBook [here](#) or visiting our Sustainability [page](#).