

## **TECH GEOMATTRESS - TGM**

The TGM (Tech Geo-Mattress) which in generic terms are known as Geo-Mattress is one of the well-established Eco-Friendly Soft solutions for various flood control applications. This is a flexible & tubular shaped, erosion protection system used as a river bank revetment. Or for Protections of embankment slopes. The in-built system of Filter & Armour stops the migration of fines and soil particles either by erosion agents like strong current OR during reverse drawdown. The Tech Geo-Mattress forms a robust matrix all over the slope which provides stable mat system that is able to withstand high velocity currents and wave action. Its tubular shape is ideal for dissipating energy due to current velocity along the river banks, this results in sedimentation over the surface during flood. Even during drawdown conditions, complete mattress system comprising of Composite fabric, encapsulated sand and base filter fabric, function effectively to protect the embankments from failure.

TGM is made up from two-layers of geotextile fabric, upper layer is specially engineered composite fabric green in colour, made of UV stabilized woven high strength polypropylene fabric mechanically bonded with green staple fibre needle-punched nonwovens geotextile and cut fibres on top for extra UV and abrasion protection Lower layer is made of UV stabilized high strength engineered woven fabric.

Biggest USP of the TGM is maximization of local resources in its installation, it can be filled hydraulically or mechanically with RBM or Sand which generally is available nearby, the tools & equipment are also readily available and easy to mobilize.



TGM is installed over the surface of slope and filled in-situ on slope. Filling can be carried out pneumatically, mechanically or hydraulically. Commonly mattresses are filled hydraulically. As by hydraulic filling the highest degree of compaction and filling density can be achieved. With this method the fill pressure of the sand water mixture plays a role in achieving maximum filling density. During filling, the pressure in the mattress must be prevented from rising too high. especially if the geotextile slits up during the filling process.

It is considered as effective and economical for river bank and estuary bank erosion problems as it would replace the method of using large quantities of expensive or unsightly concrete faced system. These are sands filled tubular mattresses are used typically in Riverbank Protection, coastline erosion protection, Flood Mitigation works, Canals and waterways.