

TENDER SPECIFICATION **Virmat**

Gripping, three-dimensional, pre-sown geo-mat designed for erosion control, slopes protection and vegetation settlement on sites more exposed to surface erosion events such as slopes even steep and embankments of waterways and water basins.

It is composed by three layers of geomats of polypropylene (PP) with a high index of voids, extruded and subsequently bioriented, overlapped and sewn together, assembled in the lower part with the biotextile of biodegradable cellulose fibers **VIRESCO**, pre-sown with high quality seeds of herbaceous species, grasses and legumes, customized according to the project indications and those of the Works Management, and granular fertilizers for new sowing. The assembling is carried out without the use of any glue, nets, synthetic fibres or films.

The geomats are composed of a solid, compact and flat structure, with a regular distribution of quadrangular mesh openings with dimensions of about 12 x 16 mm, with longitudinal and transversal threads that guarantee limited elongation while maintaining high strength.

The two outer layers are laminar while the central one is mechanically pleated into a serpentine to give strength and consistency to the geomat. The layers of the geomat are connected to each other by seaming or melting of the polypropylene filaments.

The material guarantees incorruptibility to all the natural chemical or biological substances present in the soil, imputrescibility, resistance to rodents and microorganisms, insensitivity to atmospheric agents and brackish water, stability to ultraviolet rays.

The minimum duration is 25 years in natural soils with $4 < \text{pH} < 9$ and temperatures up to 25 °C on the basis of the relative results obtained in laboratory tests. It is recommended to cover the product from sun exposure covering it with topsoil.

The application must be carried out in compliance with the instructions provided.

Applications:

Road and rail ditches, slopes protection, embankments of waterways, water basins, irrigation and drainage canals, capping of landfills and rehabilitation of quarries.

VIRMAT is CE marked and delivered to the building site in rolls, together with the manufacturer's identification labels, production lot, type of material and will correspond in every aspect to the technical data sheet.

REFERENCE STANDARDS

EN ISO 9863:	Determination of the thickness
EN ISO 9864:	Determination of the mass per unit area
EN ISO 10319:	Tensile test at broadband
EN ISO 10320:	Determination of dimensional data

CE marking in compliance with standards:

EN 13253:	Erosion control works
EN 13254:	Construction of reservoirs and dams
EN 13255:	Construction of canals
EN 13257:	Landfill for solid waste
EN 13265:	Liquid waste containment projects

MATERIALS

The geomats must be made of polypropylene (PP) UV stabilized by using carbon black + biotextile made from 100% cellulosic fibers and seeds certified for identity, purity, germinability and health conditions.