



Geosynthetics in Erosion Control

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Erosion is a natural process caused by the forces of water and wind. It is influenced by a number of factors, such as soil type, vegetation and landscape, and it can be accelerated by various activities that occur on a specific field installation. Uncontrolled erosion processes can cause major damages to existing structures and to the environment.



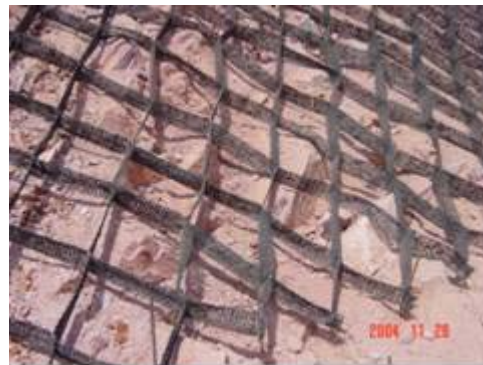
Damages caused by erosion



Large gully

Geosynthetics can be used for erosion control in works such as :

- Slope Protection
- Channels
- Drainage Ditches
- Waterways
- Shoreline Protection
- Reclamation
- Re-vegetation
- Scour Protection
- Rockfall Netting
- Breakwaters
- Weirs
- Embankments



Depending on project and site characteristics, an erosion control work may involve the use of one or more geosynthetic products such as geotextiles, geomats, geonets, geogrids, etc.

Some examples of geosynthetics applications in erosion control works are presented as follows.

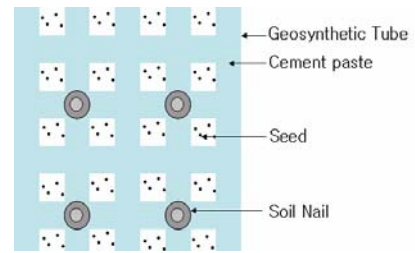
Slope erosion control



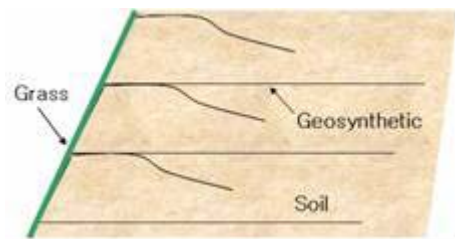
Seeding



Completion of slope



A slope protection work may need the use of geosynthetics, soil nailing, rock bolt or anchor to guarantee its stability. In some cases surface stability may be achieved by partially covering the slope face with a geotextile bag filled with cement paste. Complementary vegetation of the slope protects it from soil losses due to the actions of water or wind. Vegetation and geosynthetic mats can also be combined to protect the face of geosynthetic reinforced steep slopes against erosion.



Wrap-around facing



Completion of slope

Channel erosion control

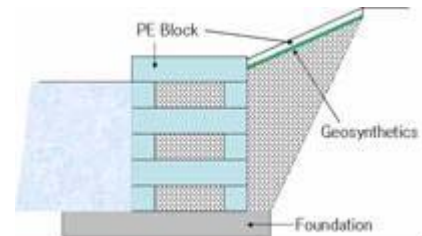
Polymer or concrete blocks or panels and geosynthetics can be employed for the protection of channels, river banks and shore line slopes.



Construction of PE Block



Completion of channel



Photographs in the 1st page courtesy of Prof. J. Camapum-de-Carvalho and Prof. E.M. Palmeira (University of Brasilia, Brazil).

About the IGS

The **International Geosynthetics Society (IGS)** is a non-profit organization dedicated to the scientific and engineering development of geotextiles, geomembranes, related products and associated technologies. The IGS promotes the dissemination of technical information on geosynthetics through a newsletter (IGS News) and through its two official journals (Geosynthetics International - www.geosynthetics-international.com and Geotextiles and Geomembranes - www.elsevier.com/locate/geotextmem). Additional information on the IGS and its activities can be obtained at www.geosyntheticsociety.org or contacting the IGS Secretariat at IGSsec@aol.com

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