

DRAINING GROUND WITH GABBIODREN®

Gabbiodren® is a prefabricated drainage element consisting of a gabion basket of galvanised steel wire which guarantees high mechanical resistance and low deformation in working conditions. The cage is internally coated with nonwoven geotextile of high hydro-mechanical performance, which acts as a filter to avoid that the ground surrounding the panel should block the draining core made up of polystyrene-chips of selected size.

What is it used for?

It is used to provide a number of draining interventions as a substitute for natural inerts such as gravel or broken rocks. After installation, it acts as a real prefabricated draining trench with all the advantages offered by a material which is very lightweight (from 10 to 20 KG), resistant, quick to install and constructed according to strict quality standards.

How to use

Gabbiodren® exercises an action of attraction of leach waters in the soil and, at the same time, an action of "uptake" and "drainage", as it works as a traditional "French" trench.

In dimensioning trenches with Gabbiodren, it is important to verify the permeability of the trench base so as to avoid dispersions of intercepted groundwater.

Two situations may be encountered: the first for the use of a simple panel, the second for the use of a panel with the base coated in Gabbiodren® waterproof sheath.

Drainage at the back of retaining walls

Retaining walls are definitive structures and in most cases are built at the foot of a cliff or on a horizontal plane. With the Gabbiodren® panel it is possible to achieve an effective system for the drainage of rainwater and of infiltrations at the back of the retaining walls.

As can be seen in figure 1, two Gabbiodren® draining panels have been placed at the back of a retaining wall, one above the another, in order to form a sort of draining chimney where upstream water can be channelled and drained into the discharges.



THE R.E.C.S.™ SYSTEM

The R.E.C.S.™ system (Reinforced Erosion Control System) consists of a range of geocomposites paired up during the production phase to realise works of soil protection and soil preservation.

The geocomposites are made up of a double twisted metal mesh reinforced, during the production phase, with natural BioNets (agave or fire-retardant coconut) or with metallic or polymer geotextiles.

The R.E.C.S.™ system is completed with additional works such as rope or rod anchors, installation of steel wire ropes, hydrosowing, etc. in order to implement antiersive protection systems and cortical reinforcements.

The main applications concern cortical reinforcement, surface erosion control and re-planting of ground slopes with maximum inclination between 65° and 70°. Such interventions are carried out on gravel, soft rocks, walls in altered rocks or in rocks mixed with ground and subject to erosion and soil loss, (figure 2).

The interventions are done in order to prevent or limit the phenomena that lead to the deformation and the detachment of the surface layer, and to protect the cliffs from degradation due to exogenous origins (wind, rain, runoff, freezing and thawing).

The R.E.C.S.™ system is used to realise interventions of passive or active type (antiersive coatings and cortical coatings with rod and wire rope anchors, etc.) that act directly on the lithologies involved, carrying out a mitigation of the erosive effects of surface disintegration and degradation so as to obtain an improvement of the resistance characteristics of the ground.

The R.E.C.S.™ system is particularly flexible and, thanks to points which can be opened by hand, it always allows a perfect adherence to the land (surface irregularities, subsidencies, etc). This adaptability is fundamental on uneven surfaces and avoids any runoff below the nets. The bionet that retains the fine soil fraction provides support and protection to the hydro-sowing suitable for the development of the vegetative covering.