CONCRETE CANVAS™

Turkish Distributor

BETON KUMAŞ®

SLOPE PROTECTION

MTP Gold Medal Award
BUDMA 2011

Material ConneXion
MEDIUM AWARD
Material of the YEAR 2009

2009 Winner
Material Connexion Medium Award
Material of the Year

21.12.10 Case Study : Alcobendas Station, Madrid, Spain

In December 2010, ADIF, the Spanish authority responsible for railway infrastructure management, specified Concrete Cloth (CC) to be used as slope protection for a railway station in Madrid. CC was chosen to address years of erosion and instability issues affecting the entrance of Alcobendas tunnel station. Erosion of the steep railway slope trenches had caused silting at the drainage pumps in the tunnel entrance. Shotcrete has long been the traditional solution, but presents several problems with installation and durability.

CC8 was specified and 2500sqm of material was delivered on site in bulk rolls. The project's first phase of 800sqm was completed in under 3 days and was 70% quicker to install than if shotcrete had been used.

View of 40% completed project

Alcobendas tunnel station

CC applied with spreader beam

Hydration of the CC

Terminating CC into a drainage channel

03.08.10 Case Study : Fairlight Cove, East Sussex

In June 2008 Rother Council commissioned a major coastal protection project at Fairlight Cove on the south coast of England. The area has suffered from extreme landslide regression resulting in the loss of residential property and further threatening a large number of dwellings.

CC4 (4mm Concrete Cloth) was specified by Rother Council's geotechnical consultants to stabilise and protect a sub-vertical failure surface close to a key drainage facility. The steep nature of the slope prevented conventional slope stabilisation techniques such as vegetation growth. The Cloth was supplied as man-portable rolls allowing work to be completed in areas with restricted access and where conventional concreting would be impossible.

"Concrete Cloth allowed us to quickly and effectively provide protection to a slope which was experiencing ground movement. The site was particularly difficult as it was on an exposed coastal cliff top and steep slope. The Concrete Cloth was laid in less than a day and without the need for heavy plant machinery, and also allowed the provision of an access ramp and superficial drainage. We would recommend its use to anyone facing similar challenges with slope stabilisation."

Dr. Jacqueline Skipper, Senior Geologist,
Geotechnical Consulting Group

Concrete Cloth Slope Protection

CC Slope Protection demonstration, Jeddah, Saudi Arabia

Slope weather protection is important to control soil erosion down slope as a result of direct rainfall and surface runoff. Protection can be a permanent slope covering or a temporary measure until the excavation has been backfilled. Uncovered slopes undergo surface ravelling and gulleying, leading to instabilities and safety concerns. Soil erosion is normally prevented by applying a thin concrete skin. However, this is difficult to apply uniformly and often breaks apart. Plastic sheeting covers are disturbed by strong winds, water flows or site damage and meshes do not provide the same level of direct weather protection.

Concrete Cloth (CC) provides a quick means to directly apply a thin, uniform, protective concrete covering to the slope surface and can be applied in all weather conditions. CC is fixed by short nails and provides a strong, waterproof, surface stabilising covering enhanced by internal reinforcing fibres. CC can be used in conjunction with full length soil nails to increase the stability of slope surfaces by providing similar slope protection measures. CC can also be used to cover landslide scars or cut slopes. Holes can be cut to allow vegetation growth.

CC4 or CC8 in rolls of 200sqm or 125sqm respectively can be handled & positioned using site plant.

CC is rolled from the slope crest down the slope face, with 100mm overlaps between adjacent CC sheets.

CC is cut to length, depending on the slope size.

Short lengths of CC can be provided in man portable lengths for manual application.

CC is fixed using short nails hammered into the soil. Other fixing methods such as drilled bolts can also be used if rock is present.

CC is hydrated once fixed into position. Lined drains can be formed from CC at the slope crest and toe.