

EROSION CONTROL MEASURES TRIAL AT KANNUR INTERNATIONAL AIRPORT MATTANNUR, KANNUR, KERALA, INDIA

Slope Protection

Problem

The Kannur International Airport is a greenfield airport and is Kerala's fourth international airport. Various slopes in the airport site have been needing erosion control measures.

The trial location identified is the runway end safety area (RESA): RESA-25 site. The slopes surrounding the airport have loose soil, low organic content, high iron content and is acidic in nature (low pH). During the rainfall, rain cuts are observed which could lead to further erosion of slopes. The slopes are of approx. 1.5 H: 1V (approx. 34 deg).

Solution

To protect the slope, Maccaferri suggested Hydraulically Applied Erosion Control products (HECPs)- MacFlex, MacGanics and other agronomic amendments such as AquapHix, Jumpstart and Bioprime. As part of the trial, project area of 400 sqm was selected and the above mentioned products along with seeds are applied on the slope. Agronomic soil tests had been conducted to determine the soil nutrients condition to measure soil's ability to supply essential elements to seeds, to recommend the amendment to improve soil and to ensure appropriate plant species selection. The solution has been decided according to these tests.

It has been observed that the hydraulically applied erosion control measures have significantly influenced the vegetation growth, which shall act as an erosion control measure and will function exceptionally good.

The seed species have been selected based on the soil type present at site, pH, climate, type of planting, availability of local seeds and discussion with horticulturist. The quantities of hydraulically applied erosion control materials, soil amendments were finalized before mixing in hydro-seeder along with seeds and water in a two step process. The slurry obtained after mixing had been sprayed over the slope surface and maintenance was done by spraying water over the same to avoid drying of the material.

Soon after the application of erosion control measures at site, the applied systems started showing the performance with respect to erosion control of the embankment slope (i.e, vegetation coverage). Germination started within few weeks and grasses were visible on the treated slope.

Client: Kannur International Airport Limited (KIAL)

Designer / Consultant: Maccaferri Environmental Solutions Pvt. Ltd.

Contractor: L&T Construction

Products used (Qty.)

- Other Biomaterials	400 sqm (MacFlex, MacGanics)
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Date of construction: 05/2016 - 06/2016



Photo 1: Initial site condition



Photo 2: Site preparation



Photo 3: Hydroseeding



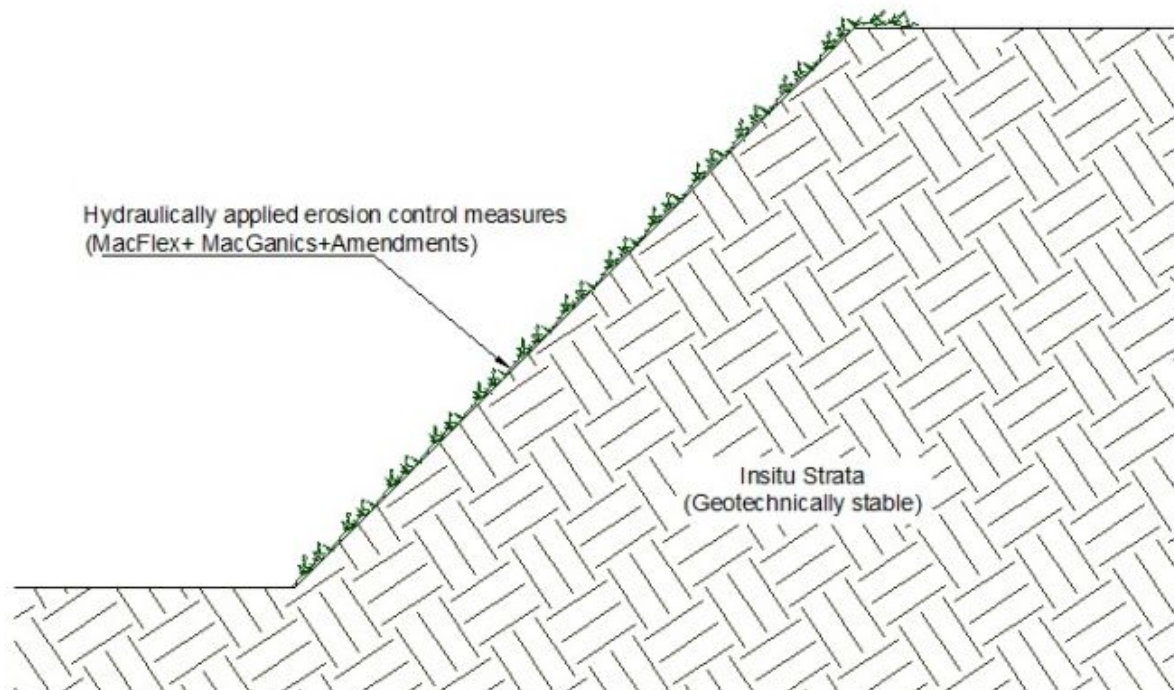
Photo 4: Application of MacFlex



Photo 5: Germination observed after 5 days of application of HECs



Photo 6: Vegetation establishment



Cross-sectional drawing