MACCAFERRI

CASE HISTORY

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SLOPE SURFACE EROSION PROTECTION WORKS

RANCHI, JHARKAND, INDIA

EROSION CONTROL WORKS
Product: MacMat

Problem

Jharkhand Urban Infrastructure Development Company Limited (JUIDC) has constructed an irrigation canal with Gabion wall. Above the wall there is a slope of 3m height with 1:2 inclination. The total length of canal is around 2.7km. During rainy season, the erosion of soil and scouring of the slope may occur and it is likely to cause damage to property, interruption of work, and possible danger to worker's lives at the project site of the irrigation canal. So the client wanted to protect the slope by adopting erosion control measures.



Photo 1 : During Construction (Anchoring the MacMat at Achor trench on top of the slope)

Solution

The client was looking for the solution from which they can ensure easy installation and quick growth of vegetation. The soil used to prepare slope was of frictional type with very low cohesion, which can be eroded easily due to wind and rain water. Due to this nature of soil, rain cuts can form easily if vegetation growth does not happen. Surficial erosion can be tacked in a variety of ways, all of which require attention to details and experience. So Maccaferri MacMat has been selected as the suitable solution & Macmat is designed to provide long-term erosion control for slopes that are of 1:1 or higher inclination.

Maccaferri MacMat is a reinforced geomat obtained by a polymer made three-dimensional matrix. As a system, it holds the soil in position on slopes and provides the root reinforcement during the early stages of plant growth which is necessary for natural vegetation to resist the extreme effects of wind and water erosion.

When installed, Macmat is filled up with top soil and provides excellent surficial protection. As the germination starts and vegetation becomes established, the roots become entwined within the structure of Macmat. This provides anchorage to the vegetation to resist against high shear stress situation.

The MacMat is an effective erosion control solution for wide range of applications like embankment protection and cuttings in highways & railways, irrigation channels, canal embankments and slopes, ponds and lakes banks, landfill embankments and covers, etc.



Photo 2 : During Construction



Photo 3 : After installation of MacMat

Client:

Jharkhand Urban Infrastructure Development Company Limited (JUIDC)

Main contractor:

Eagle Infra India Limited

System Provider and Material Supplier:

Maccaferri Environmental Solutions Pvt. Ltd.

Products used:

Macmat 18.1 : 35,685 Sqm.

Date of construction

March 2016

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Photo 4, 5 & 6 : Photographs of the completed structure (Good vegetation growth within months)

Present Status: The project is completed successfully and the solution is working as per requirement.

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