

## EROSION CONTROL AT PIDEKSO DAM WONOGIRI, CENTRAL JAVA, INDONESIA

### Slope Protection

#### Problem

The access road in Pidekso Dam area is surrounded by exposed slopes. These exposed slopes are prone to soil erosion due to their vulnerability to rainfall and lack of vegetation on the slope surface. The selection of the right solution was necessary in order to prevent surface erosion and failure in presence of water. Maccaferri introduces an innovative solution that is environmentally friendly using MacMat material. Considering MacMat ability to drain water and allow the growth of vegetation while costing less compared to the use of shotcrete or stone wall, MacMat HS is chosen as the slope protection in Pidekso Dam project. The total area that needs to be protected during this project in total is approximately 8174 m<sup>2</sup>.

#### Solution

In order to mitigate the risk of surface erosion, Erosion Control System was chosen due to its easy application, permeable material, and competitive price. In the Pidekso Dam case, an Erosion Control System made of a combination between HDPE geomat and double-twisted wire mesh panel with longitudinal high tensile strength steel cables called Macmat HS was installed on the slope. The HDPE geomat controls surface erosion and helps to propagate the vegetation, while the wire mesh provides the required tensile and punching strength to the system. The main application areas are slope protection and erosion control. Upon heavy rains and surface water flows, along with the vegetation, the polymeric geomat shall prevent erosion. Once vegetated, polymeric geomat reduces runoff velocities and increases infiltration. Steel pins are used to secure the MacMat® HS to the slope surface. The vegetation shall be applied using the manual mulching method (LCC - Legume Cover Crop).

Available in rolls, Macmat HS has an easy installation procedure with the support of T-shape deformed bar to hold the mesh onto the cut slope. Maccaferri Erosion Control System shall grant some advantages such as:

- Easy and Quick Installation ;
- Allows drainage on the surface of the slope ;
- Allows vegetation as rehabilitation ;
- Capable for combination with Soil Nailing ;
- Suitable for steep slopes

**Client:** PT. PP (Persero) Tbk.

**Designer / Consultant:** PT. PP (Persero) Tbk.

**Contractor:** PT. PP (Persero) Tbk.

**Products used (Qty.)**

- MacMat HS 8174 m<sup>2</sup>

**Date of construction:** 03/2019 - 09/2019



Typical Drawing of solution (cross section will be enough)



Installation



Maintenance Process - Watering



Lush grown Vegetation