

**NL-BERGEN**  
**BERGEN, NORTH HOLLAND, NETHERLANDS**

Slope Protection

**Problem**

In the valley of the Maas in North Holland, the local authorities experienced some problems with erosion of the dikes.

In order to solve these problems next to the river Maas and protect the dikes against erosion, Waterschap Limburg was looking for a partner.

Texion Geosynthetics together with Maccaferri provided a very simple but adequate solution by installing a polypropylene anti-erosion mat.

To ensure safe and easy installation on the slopes of the dikes the product "MacMat R020" was selected.

**Client:** Texion Geosynthetics NV

**Designer / Consultant:** TAUW

**Contractor:** DIJKENCOMBI (VISSERS)  
 PLOEGMAKERS/VAN DE WETER

**Products used (Qty.)**

- MacMat R - Poly 3.600 sqm

**Date of construction:** 06/2019 - 07/2019

**Solution**

The anti-erosion mat MacMat R020 is reinforced by a polyester geogrid with a tensile strength of 20 kN/m.

The MacMat R020 was secured to the slope with metal pins that were installed in a diamond pattern.

To avoid wastages, the rolls could be connected to one another by 8 clips/meter = 2,5 kN/m x 8 = 20 kN/m.

After the installation phase, a layer of 5 - 7 cm of vegetative soil was placed upon the MacMat R020.

Already during the installation phase the first grass blades started to grow up.



During the installation: unrolling phase



During the installation: side view



First grass blades growing up



During the installation: metal pins positioning



End of installation



After installation: vegetative soil layer



Detail of the MacMat before the laying of the vegetative soil