

GABION VERTICAL COVERING - GABIONS UMEÅ, SWEDEN

LANDSCAPE & ARCHITECTURE

Product: Gabions and RENO mattresses®

Problem:

Due to the increased needs to expand the railway link in the city of Umeå, a second track was designed between the existing one and the national road aside due to the space constraints (the river on the opposite side). This decision required the natural slope between road and railway to be vertical. Due to the requirement to keep the road open during construction, a sheet pile wall was made to provide support to the soil during the excavation as well. However, since the sheet pile wall was not deemed aesthetically pleasing by the landscape architects a solution with a more natural pleasing rock filled facing was considered.

Solution:

The solution consisted in special gabions manufactured with a longitudinal diaphragm with a preattached geotextile. The wall height varies from 1.5 up to 7 m.

This special unit was designed to allow two separate types of filling:

- 1) Leca expandable granular fill on the inner side,
- 2) conventional graded rock on the outer side.

The gabion lining was also designed to be connected at each layer to the sheet pile wall behind by means of anchors and cables. Units were manufactured to specifically meet the requirements to shape around the contours of sheet pile wall, including a concrete beam running longitudinal to the wall at constant elevations below the road. The construction required careful hand placing of the rockfill to provide a smooth face on the outer side. Particularly challenging was the construction of the sections around the concrete beam, since the filling required to work with the beam constantly variable elevations and the gabion layers set along horizontal planes.



During the construction



Jobsite Overview



After the Construction

Client:

Swedish Ministry of Public Works

Main contractor:

Botniabanan

Designer:

Botniabanan

Products used:

1450 m³ Gabions and 880 m² RENO Mattresses®

Date of construction

April 2006 - October 2006

Maccaferri Deutschland GmbH

Kurfürstendamm 226, 10719 Berlin—Deutschland
T: (+49) 30 88 00 79 79 F: (+49) 30 88 00 79 80
E: office@maccaferri.de
www.maccaferri.com/de