

'Green Walls', reinforced with Fortrac® Geogrid, for the National Highway N° 1 in Spain



Client: Gipuzkoa Provincial Council
Project Management: Eurosetek JV [Joint Venture]
Construction Contractor: Etxegarate JV
Product: Fortrac® geogrid

Green walls, reinforced with Fortrac® geogrid, ensure natural integration of the newly aligned National Highway N° 1 into the landscape at the Etxegarate Pass, between the provinces of Gipuzkoa and Navarra.

A Joint Venture formed by Ferrovial, Gedi, Amenabar, Suquia and Campezo carried out the construction work, while a joint venture between Eurostudios and Saitek was responsible for managing the project. The Provincial Council of Gipuzkoa was the project developer.

Two of the most extensive walls in the project, with an external surface area of almost 6,000 m² and a maximum height of 24 m, were subcontracted to HUESKER.

The vegetated walls comprise blasted, ungraded gravel layers, reinforced with Fortrac®. This geogrid is made from high tenacity polyester yarn with strength from 110 to 150 kN/m² and a special mesh size of 50 x 50 mm. This generously-sized mesh facilitates better interlocking between this type of backfill and the geogrid.

Calculations were carried out following the DIN 4084 guidelines for slope stability. Positive drainage of the reinforced mass was one of the key factors in carrying out the calculations and determining the choice of backfill

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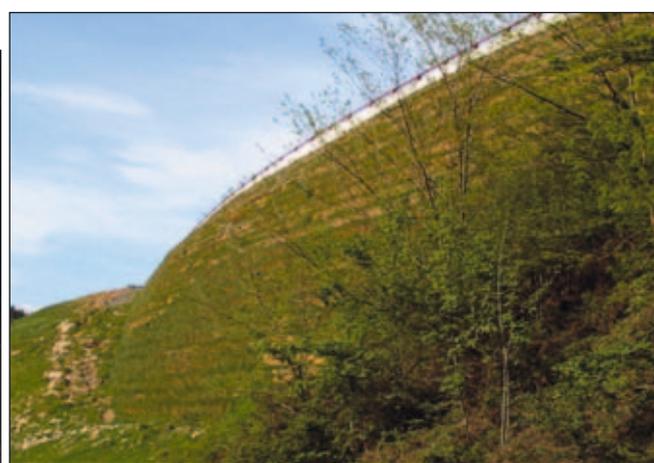
WALL PK 412



WALL PK 411

On the outer face of the wall, corrugated steel welded rebar mesh with a diameter of 10 mm and a mesh size of 150 x 150 mm was used as the external shuttering. This welded mesh protects the outer face of the wall from potential external physical damage arising, for example, from vehicle impact or acts of vandalism.

In addition to the metal rebar mesh, a very tight - mesh geogrid prevents the erosion of topsoil fines and still allows the hydroseeding to germinate and grow in the topsoil.



WALL PK 411

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