

GEOGRID SLOPE REPAIR ASHHURST, NORTH ISLAND

ENVIRONMENTAL SLOPE PROTECTION

Product: Polyester geogrids

Problem

Geogrids have been used Internationally since the early 80's to reinforce soil in over steep slopes. They were introduced into New Zealand in the early 90's as a cost effective solution to the repair of slips along State Highways. The advantage of using in situ soil and at the same time providing an environmentally friendly appearance has benefited the development of geogrids in New Zealand.

International regulatory authorities require the manufacturers of geogrids to carry out extensive tests to confirm the long term performance of these reinforcing materials in a wide range of soil conditions. Vegetating of the slope front face is a further consideration to provide protection to the geogrid reinforcement from the effect of UV light.

Solution

To achieve long term facing protection for wrap around slope construction it is commonly recommended to use a 0.3m to 0.5m zone of a loam type soil in the front face, that is able to hold moisture and nutrients for sustained plant growth. This can be created using a false formwork system with a bio-degradable mat or Hessian bags filled with topsoil. The topsoil can be pre-seeded or the face can be hydro-seeded as shown in the middle picture. Additional plantings are recommended to ensure a recovery of the eco system. Over time a range of plant species will develop as shown in the bottom picture.

The series of photo's provide a good example of the geogrid performance and vegetal development over a period of approximately 10 years under New Zealand's climatic conditions.



After construction

Date: August 1993



Planting and hydroseeding

Date: Summer 1994



After 10 years

Date: March 2004

Client name:

PALMERSTON NORTH CC

Main contractor name:

BROWNELL CONTRACTING

Consultant:

PALMERSTON NORTH CC

Product used:

POYESTER GEOGRID, BIOMAC

Construction date:

JUNE 1993

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Quality System AS/NZS ISO 9001:2000

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