

Polyfelt® PEC slope reinforcement

Crosswind Quadrille Slope Protection, South Luzon, Philippines

Project Data

Project	: Crosswind Quadrille Wall, Tagaytay City, South Luzon
Constructor	: Halelani Builders Inc
Products Used	: Polyfelt® PEC 75, 100, 150 & Polyfelt® TS 50
Height	: 18 meters

Overview

The Crosswind Quadrille Slope Protection Project located at Tagaytay City, Batangas was constructed on a 50 hectare land development by Vista Land Inc. This high-end land development project of Brittany Corporation is one of the prime properties in Tagaytay city. The length of the reinforced soil structure was 160 meters with a variable height of 6m to 18m high. The soil structure was reinforced by high strength composite geotextiles using onsite poor drainage soil.

Design

The reinforced soil structure comprised of an 18m high slope with an inclination of 1H: 2V with vegetation facing to blend with the surrounding greenery. The nature of the residual clayey silt and heavy tropical rain prevalent in Philippines necessitated that the geosynthetic used to reinforce the soil be capable of undertaking both a drainage and reinforcement function and have a high soil-fabric interface friction. The reinforcement geotextile used comprised a composite of nonwoven geotextile and high tenacity polyester reinforcing yarns. The nonwoven geotextile component permits the use of poor draining material as a backfill material. Its in-plane drainage properties allow dissipation of pore water pressure during the lifetime of the structure and increased the structure stability.

Polyfelt Envirofelt CO was used as erosion control mat in front of Polyfelt® PEC reinforcement geotextile to enhance vegetation. Vegetation is easy to apply on Polyfelt®

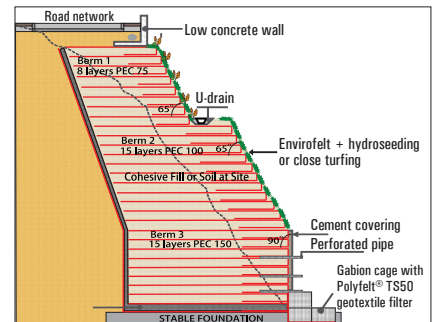
PEC wrap around system, which make the system environmental friendly and blend with the nature compare to conventional concrete and steel bar.

Construction Methodology

A wrap around system using removable formwork was used for construction of the geosynthetic reinforcement layers. The formwork consists of L shaped steel frames to support continuous wooden brace board. The thickness of the wooden board was about 30mm and distance along the face of wall between steel frames ranges between 1 – 1.5m. Plate compactor was used to compact soil within 1m from edge of the formwork and 10 tons roller was used for compaction of soil beyond that 1m. Each lift thickness was compacted to achieve a Proctor compaction of 90 – 95%.



TenCate reinforcement ensures stability of slopes in housing estates.



Typical cross section of Polyfelt® PEC reinforced slope



Slope repair works in progress

The project was successfully completed before Super-typhoon "Yoyong" pounding and it still remain intact till today even after the severe typhoon attack.

Polyfelt® is a registered trademark of TenCate.

Further details of this application and products can be obtained by contacting your nearest TenCate Technical Support Office.

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