Case Study

Tenax HM3L & Ekotex®

Double Arches Quarry

Location:

Double Arches Quarry
Nr Leighton Buzzard
Bedfordshire

Project Description:

Construction of an access track to facilitate heavy construction traffic and heavy materials for a wind farm development

Technical Requirements:

- Cohesive clay site won material with 3.9% CBR
- Heavy plant traffic
- Offer significant cost savings

Client:

AWE Renewables Ltd

Contractor:

Fox (Owmby) Limited

Consultant:

Stuart Michael Associates

The Double Arches Wind Turbine has been constructed to provide power to accompany a development of 1250 homes in Leighton Buzzard. The wind turbine is a Vensys 87 1.5MW turbine which will generate around 5,500,000kWh per annum. To facilitate installation of the wind farm, our client required an unpaved access road to be installed capable of enduring construction traffic, combined with the delivery of heavy materials.

The existing soils were made up of a cohesive clay material with a typical CBR of 3.9%. Because of this, it would have been necessary to compact layers of aggregate to ensure the access road remained fit for purpose throughout the life of the project. The associated costs indicated that an alternative solution should also be considered and as a result, the specialists at Geosynthetics were consulted.

Geosynthetics undertook a preliminary calculation to establish that a single layer of Tenax geogrid along with a 350mm granular material was sufficient to meet the client's requirements which entailed a 400 HGV vehicle usage and a maximum surface deformation of 50mm.

To minimise costs even further, the contractor opted to use a 6F2 material, with the maximum particle size 125mm. The use of this material indicated that the larger aperture HM3L geogrid should being used for this application rather than the Tenax.

The surface running width of the road was 4m and Geosynthetics were able to produce the HM3L on a 5.3m wide roll meaning the contractor was able to lay the geogrid without any requirement to overlap it across the width of the construction. The traditional 4m wide roll would have required a further 30% material to allow for overlaps and wastage.

Geosynthetics were able to provide an environmentally conscious solution to the contractor with significant savings in terms of time and material costs.

Access route prior to installation

Finished access route

Geosynthetics
Engineered Solutions
Fleming Road
Harrowbrook Industrial Estate
Hinckley
LE10 3DU
Tel. 01455 617 139
sales@geosyn.co.uk
www.geosyn.co.uk

"The solution provided by Geosynthetics allowed us to minimise our material requirements for aggregates and geogrid, which ensured the quickest possible construction programme."

Lee Sutton - Project Manager

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