TriAx geogrid was incorporated into the aggregate used for the wind farm access roads and working platforms.

Access all areas

TriAx geogrids enabled unpaved access roads and working platforms for a Swedish wind farm to be built over weak silty moraine deposits with a CBR of 1.5%, accelerating construction, reducing costs and delivering carbon savings for the project.

CLIENT'S CHALLENGE

Construction of the Svartnäs Wind Power Park included rehabilitating 55km of unpaved forest access roads and constructing working platforms to enable the 32 wind turbines to be erected and to provide permanent access for maintenance vehicles. The wind farm was built on weak silty moraine deposits and the roads and platforms needed to provide sufficient bearing capacity to support lorries bringing materials and turbine sections to site.

TENSAR SOLUTION

The design of the access roads and working platforms employed Tensar's TriAx geogrid incorporated into aggregate to create mechanically stabilised layers. This enabled the roads and platforms to be 35% thinner than without the use of TriAx, while meeting loading requirements, minimising the aggregate, as well as reducing construction time and costs.

Wind Power Park Svartnäs

Subgrade stabilisation

Sweden

BENEFITS

35%
reduction in access road and working platform thickness

55km
of forest roads rehabilitated quickly and economically

Reduced
construction time and cost

REF TEN384

The roads and platforms were capable of supporting the anticipated traffic loads from construction traffic.

PROJECT BACKGROUND

When it comes on line in 2019, the Svartnäs Wind Power Park, in central Sweden, will deliver 115MW of power through its 32 turbines.

NCC Construction AB began construction of the wind farm in August 2017. This included rehabilitating 55km of 5.5m wide unpaved forest roads to allow access to site and constructing 32 working platforms at the turbine locations, plus lay down areas.

As well as allowing construction traffic (including turbine deliveries) to reach the site over the weak ground, the roads had to provide permanent access for maintenance vehicles.

The design for the roads and platforms comprised well-graded 0-60mm crushed stone aggregate incorporating Tensar TriAx geogrid, to form mechanically stabilised layers. The roads and platforms are capable of supporting the heavy construction traffic and will also continue to perform throughout the wind farm's operational life.

TriAx's stabilisation effect meant roads and platforms could be much thinner than non-stabilised structures, without a loss in performance, saving time and money, as less material was needed and construction was faster.

The TriAx was laid on a geotextile separation layer, which prevented upward migration of clay particles.

Contractor:
NCC Sverige AB

Client:
Arise Windpower

Consultant:
WSP

"Our solution reduced the thickness of the roads and platforms, while maintaining performance. This reduced the amount of aggregate needed, saving time and money for the project, as well as minimising its environmental impact."

Per Ken Åberg, Manager
Tensar Northern Europe

Tensar International Limited
Units 2-4 Cunningham Court Shadsworth Business Park
Blackburn. United Kingdom BB1 2QX

T. +44(0)1254 262431 | Visit: tensarinternational.com

Tensar