

Combigrid®

Road construction over peat

Project name
Highway 62, South of Bancroft, Ontario

Client
Ontario Ministry of Transportation

Design engineering firm
Golder Associates

Product
Combigrid® 30/30 Q1 151 GRK 3





Ontario's Highway 62 runs through numerous swampy areas. Significant stretches of the road, like the province itself, overlie peaty soils. Properly maintaining roads in these areas has historically been difficult due to settlement issues. This has led to subgrade breakdowns, roadway cracking and failures.

A separation, reinforcement and drainage/ filtration solution was needed that would address and counter the typical problems of road construction over the area's peat.

Project engineers selected Combigrig® geogrid/nonwoven composites for roadway reinforcement. This unique Naue product is composed of the high-strength geogrid Secugrid® and the needle-punched nonwoven geotextile Secutex® - all in one single material.

This is the only composite product of its type in the market. Rather than installing an individual geotextile and a geogrid layer, the site crews only needed to install Combigrig®, which consists of the nonwoven geotextile firmly welded between the Secugrid®'s reinforcement bars. In one layer, soil stabilisation, separation and filtration/drainage is provided. For weak soils such as those with a CBR value less than 3%, the solution is ideal. This held true along Highway 62. The selection of the multifunctional Combigrig® saved the project team time and money on installation while ensuring the long-term strength and performance desired in the project.

Combigrig® allowed for a shallow excavation (to the peat depth) and easy reconstruction. The reinforcing element reduced the need for excessive aggregate and the geotextile component ensured no mixing of disparate subgrade material.

Ultimately, the pavement structure was able to be constructed as thin, lightweight and economically as possible without sacrificing roadway liability. The risk of differential settlement was dramatically reduced.

Also of note: the 4.75m wide Combigrig® rolls helped reduce waste on site and expedite construction. Only two rolls of product were needed to cover the entire roadway width as well as provide a 300mm overlap for maximum assurance of coverage and long-term strength.

During construction, one lane was reinforced at a time while the other was left open to traffic. The geogrid/nonwoven composite rolls were unrolled in place and covered quickly to reopen the lane as soon as possible.

Roughly 10,000sqm of Combigrig® were installed. For commuters on Highway 62 the journey will now be somewhat quieter for a long time.

