



Marpole Spur Line Emergency Subgrade Replacement



Rapid design solution with Geogrid and Geotextile gets a spur line operational ahead of schedule.

LOCATION:

Vancouver, British Columbia

PRODUCTS:

*Tensar TX160 Triaxial Geogrid
Nilex 4512 Nonwoven Geotextile*

PROJECT PARTNERS:

*Owner and Contractor:
Canadian Pacific (CP) Railway*

*Consultant
CP Railway / Nilex*

*Completion Date
March 2017*

An outage on one of CP Railway’s spur lines required a rapid response, including both design and product supply. The poor quality of material in the subgrade below the railway tracks was noted as the primary cause of the failure. The solution to stabilize this location would require subgrade replacement and strengthening.

Challenge

The peat moss and silty clay in the subgrade had a very low strength — only 15-20 kPa. The client chose light rock (volcanic pumice) to replace the light soil, but further stabilization was required to meet ultimate performance requirements and avoid future settlement; carefully packing rock and ballast layers was not enough.

Solution and Results

Nilex 4512 nonwoven geotextile was placed after excavation to assist in robust separation and to provide proper drainage with a consistent base and side-layer for the pit. Two layers of pumice were added before the TX160 geogrid, which provided strength to the overall structure through its triangular geometry. This was a good match for pumice, creating a mechanically stabilized subgrade layer.

After placing the geogrid, another pumice layer was lightly packed with the excavator bucket before six inches of ballast were machine track-packed. The rail panels and more ballast were added via two track lifts to achieve the required 9 to 11 inch base. Through rapid delivery to site and choosing reliable solutions, the line was opened eight hours ahead of schedule.

Marpole Spur Track Emergency Subgrade Replacement

Installation Photos



The Nilex Advantage

Nilex is committed to unearthing better results. Whether it's for a civil, resource or environmental project, we offer the latest engineered and technically superior materials and techniques to save our customers time and money, minimize the need to move or remove earth, and reduce the need for granular materials.

With 40 years' experience, a long-standing commitment to the environment and highly qualified staff, Nilex delivers the products and technologies that give clients an economic advantage with environmental benefit.