

Product Information Bulletin

Slope Stabilization Using GeoSpec® Lightweight Fill Material

When side slope failure occurs in road applications, it is often the result of subsurface soil with low load-bearing capabilities. Often in this type of situation makeshift repairs are implemented by filling and resurfacing the failed road section.



Figure 1 - Road Section Before Repair

The Province of BC, Ministry of Transportation and Highways, Nanaimo Office, sought a performance solution to reconstruct a section of highway, which had been subject to reoccurring side slope failure (Figure 1). This section of highway had been repaired unsuccessfully a number of times previously by filling and resurfacing the failed road section. In this instance, the side slope had failed resulting in a portion of the road surface dropping by up to 305 mm (12").

close proximity of the lake was seen to increase the likelihood of the side slope failure reoccurring.

The section of road reconstructed is in close proximity to Dougan Lake and is part of Highway #1 near Duncan, BC on Vancouver Island. The

The Ministry sought a long-term performance solution to resolve the problem. The corrective measure taken was to excavate the section of road down to hardpan. GeoSpec lightweight fill material blocks were supplied to replace a portion of the failed soil embankment (Figure 2).



The blocks were delivered to the site on flat bed trailers, unloaded using a small bobcat, and then placed in their final position on the prepared roadbed by hand. The road construction crew backfilled over the GeoSpec blocks as they were placed.



GeoSpec lightweight fill material has a density of about 1 to 2% of soil or rock, yet it has sufficient strength to support typical loads encountered in highway construction applications. With construction complete, the load on the subsoil has been greatly reduced.

Figure 2 Installation of GeoSpec Lightweight fill Material