**BGM liner provides a rugged, chemically-resistant and long-lasting containment solution for the steep slopes around a diesel storage tank.**

**Summary**

Petroleum storage tanks require steep banks around them to prevent spills from leaving site. A rugged lining material can prevent erosion of these earthen secondary containment berms, but it needs to be cost-effective and can often be tricky to install on such steep slopes.

**Challenge**

Shell expanded their Sherwood Terminal by adding a diesel storage tank and the accompanying berms around it. The walls of the berm were built at a 1:1 slope, which requires liner installation workers to use restraint harnesses 100% of the time. Even with harness protection, welding sections of liner on a 1:1 slope is challenging. The liner itself has to resist damage from puncture, UV rays and temperature fluctuation, while also being chemically-resistant in case of tank releases.

**Solution**

Coletanche’s Bituminous Geomembrane (BGM) liners combine puncture and UV-resistance and are rugged enough to last for decades of freeze/thaw cycles and withstand chemical exposure.

BGM liners are easy to haul to site in standard roll sizes and can be unloaded with a small crew from a spreader bar. Once trenched and cut to size, overlapping panels of BGM are easily bonded and seamed using a torch, trowel and roller. The sanded finish of the material improves site safety by offering a gritty surface for workers to stand on. Due to overlapping panel welds and trench-anchoring, BGM doesn’t require any on-slope supporting earth-anchors. It was chosen over LLDPE and another fire-rated material, as they lacked warranty, didn’t weather well, and couldn’t handle site traffic.
Installation
The aggressive 1:1 slope, up to 12 meters (39 feet) long in places, required workers to wear fall-protection harnesses and complete the seam welds between BGM panels while suspended this way. Nilex hired specialists to train crews in this work, and to complete much of the welding while doing so. The product was unrolled using clamped ropes that crews pulled down the slope from where the BGM roll was suspended on a spreader bar. Once the outside slope was trenched, workers on the top of the berm worked with the excavator operator to unroll and anchor it for the inside slope. It took a crew of six roughly three weeks to install 6,540 m² of BGM.

Results
The secondary containment installation for Shell’s new Sherwood Terminal diesel tank was completed quickly and economically and will now provide decades of safe, reliable service. The lack of maintenance required for puncture and chemically-resistant lining will significantly reduce operational costs for the life of the storage site.

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.