Triton® Geotextile Tubes
Get Down and Dirty

Lush and mush and dirty water no more! Tensar International Corporation introduces Triton® Geotextile Tubes into the marketplace. An increasingly more popular dewatering method, this geotextile tube system offers an economical and environmentally friendly alternative to conventional methods for sediment dewatering, containment of mining/industrial waste, sewage sludge and contaminated waste.

FABRICATION MAKES THE DIFFERENCE
Triton Geotextile Tubes are manufactured from high-tenacity polyester yarn using a weft insertion knitting (WIK) process, creating a high-strength, durable product. Geotextile tubes produced from this WIK process differ from conventional woven fabrics. The load-bearing yarns are inlaid into the structure parallel to each other across the width of the fabric. These parallel yarns are held in position by a grid-like structure of stitches so that they remain straight.

In this structural configuration, the yarns are not crimped, as in a woven structure. As a result, when subjected to load, the yarns achieve their full tensile strength, without the deformations associated with straightening of the crimped yarns in woven products. In short, this means Triton Geotextile Tubes can typically be pumped longer than conventional geotextile tubes.

DIRTY WATER IN, CLEAN WATER OUT
Because Tensar’s WIK fabrics incorporate a lightweight, non-woven geotextile backing, Triton Geotextile Tubes have the ability to contain even fine-grained, highly organic materials. It is not uncommon for the effluent from Triton Geotextile Tubes to contain less than 50 ppm total suspended solids (TSS). That means the runoff from Triton Geotextile Tubes can generally comply with National Pollutant Discharge Elimination System (NPDES) regulations.

PROVEN IN RESEARCH AND IN THE FIELD
From the beginning, Triton Geotextile Tubes have been subjected to rigorous laboratory and field testing. Hanging bag tests (HBTs) have been conducted using various types of organic and inorganic sludge. Results have shown that Triton Geotextile Tube fabrics are effective at dewatering all types of fine-grained sludge.

In addition to laboratory testing, Tensar’s new system has been proven in field applications as well. UK Coal, Britain’s largest producer of coal, conducted a hanging bag test at its Welbeck Colliery facility in Mansfield, Nottinghamshire, U.K. between Triton Geotextile Tubes and a competitive, woven, polypropylene bag to determine which fabric had the best capacity to dewater fine coal wash sediments found at a typical project site.

Based on the HBT results, Triton® TT712 Geotextile Tubes were used to dewater sediments on-site. Once filling had commenced, the tube was observed to begin sweating and dewatering immediately. Within a few minutes of the “initial flush,” which generally contains a higher percentage of solids, the discharge water was visibly clean. A sample of the water was taken to a local lab for testing. The TSS was measured at 50 mg/l. The initial percent of solids in the slurry was 7.19%. After three days, the percent of solids was measured at 56%, meaning that half of the water contained in the bag had been expelled as a clearer, cleaner liquid, free from the remaining sediment inside the bag.

The UK Coal project concluded that the Triton® TT712 fabric dewatered quicker than the competitive fabrics and that the decant water was cleaner (less than 50 ppm TSS) – just as Tensar had previously proven in laboratory testing.

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