TENCATE Mirafi®

REINFORCEMENT

Case Study

application	Wastewater Pond Berm Reinforcement
location	Bogle Winery, Clarksberg CA
product	Miragrid® 8XT Geogrid(180,000 SY)
job owner	Bogle Winery
engineer	Bauer & Associates
contractor	GC - Rudolf and Sletten, Inc Site work – Teichert, Inc
date of installation	August-September 2010

TenCate® develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

The overall design for a new wine processing facility called for three football field sized wastewater detention ponds to be built to contain and treat the dregs of the wine processing at the facility. The berms needed reinforcement to comply with state water quality requirements for seismic protection of the ponds.

THE DESIGN

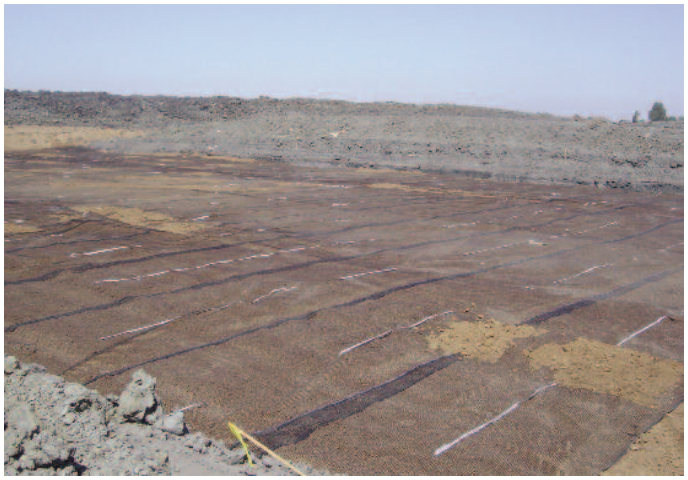
The original design called for 5 layers of HDPE extruded geogrid to be used for the berm reinforcement. The design called for all grid lengths to extend 27' outside the base of the berm and 10' into the pond area. The design called for significant overlap on all of the corners of the pond, significantly increasing the material requirement using the specified geogrid. Coordinating with local TenCate® Geosynthetics distributor Reed & Graham, Inc., TenCate® provided technical assistance to the contractor and engineer on the project. Based on the assistance with the design, the contractor submitted and received the engineer's approval for TenCate Miragrid® 8XT geogrid as a functional equivalent to the specified geogrid. The significant factor in the engineer's decision to approve the Miragrid® 8XT was the fact that it is manufactured from high tenacity polyester encapsulated in PVC coating, providing a high strength geogrid with low creep characteristics and high durability. The engineer decided that these characteristics of Miragrid® 8XT were ideally suited to provide high seismic resistance for the berms.

THE CONSTRUCTION

Teichert, Inc. determined that purchasing master rolls would save both time and money. The master rolls of Miragrid® 8XT were precut to embedment lengths while earthwork was in progress. The longer lengths of the master rolls reduced material waste to almost zero. The 12' roll widths also saved on overlaps at the corners, creating cost savings for both the contractor and owner of the project. Once the necessary elevations were attained, Miragrid® geogrid was easily hand rolled out without staples or pins to hold it in place. After placement, the work of placing fill and compacting over the geogrid with conventional scrapers was immediately resumed. This process was repeated for all five layers and all three ponds.

Providing master rolls of the Miragrid® 8XT saved the contractor time and eliminated nearly all material waste.

Due to the flexibility and ease of handling of the Miragrid® 8XT, the contractor was able to precut to embedment lengths prior to placement.



No pins or staples were needed to hold the geogrid in place, allowing installation to proceed smoothly and without problems.

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THE PERFORMANCE

The high strength at low strain characteristics of the TenCate Miragrid® geogrid made it the ideal choice for seismically stabilizing the berms. The wider and longer rolls helped keep waste to a minimum and saved money for both the owner and contractor. The performance of the geogrid exceeded the expectations of the design engineer and significantly shortened the construction time of the project.

Soil was placed and compacted over each layer of geogrid.


Finally, an impermeable liner was installed to complete the pond installation.

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