



Case Study

application Roadway Drainage & Subgrade Stabilization
location Corona, CA
product Mirafi® H₂Ri

job owner
engineer
distributor
date of installation

The Retreat at Corona County of Riverside
Geosoils, Inc.
Triumph Geosynthetics
February 2012

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 Retreat in Corona, CA had a large section of roadway, including a culdesac, that was experiencing an excessive amount of natural water run-off. The saturated street section was built into a hillside area. Unfortunately, natural groundwater continually percolated through the hillside into and on top of the road section. This caused the roadway section to become very saturated and ultimately fail. The objective was to provide a product that would help drain away the excess water while providing enhanced stabilization. Geosoils, Inc. recommended to the County of Riverside that they use the new TenCate Mirafi® H₂Ri* geosynthetic. Mirafi® H₂Ri, an innovative geosynthetic, has double weave technology and patented wicking fiber weaved in the cross machine direction. This combination offers superb subgrade enhancement and wicking capabilities that aid in draining the excess water away from the road section.

THE DESIGN

Geosoils, Inc. recommended that the road section be excavated as deep as possible without disturbing the utilities. This enabled them to design the road section using a combination of the Mirafi® H₂Ri geotextile and a geogrid. After the completion of the excavation, Geosoils design was to put a layer of Mirafi® H₂Ri wicking geotextile directly on the native subgrade. A 6" layer of base material (combination of class 2 & CMB) was placed on top of the geotextile. Then, a layer of geogrid was placed on top followed by another 6" of base material. A 4" layer of AC was the final element of design to complete the road section.



The excavated roadway section at the project.



Placement of Mirafi® H₂Ri wicking geotextile.

THE CONSTRUCTION

TenCate Mirafi® H₂Ri was placed directly on the subgrade throughout the roadway section. The width of the road section was roughly 38' wide, requiring three 15' wide rolls to be installed side by side to completely cover the roadway. In addition, some portions of the roadway section had several bends. Installation around the bends required cuts to the geotextile in the cross machine direction (to remove any large folds) so the fabric could better adhere to the road. A 1' overlap of the geotextile (in both directions) was used to insure that Mirafi® H₂Ri would perform as intended – as a continuous piece of geotextile wicking fabric. The contractor followed the design parameters above incorporating the geogrid to complete the project.

THE PERFORMANCE

With the use of Mirafi® H₂Ri, Geosols Inc was able to design the roadway section allowing for sufficient drainage and subgrade enhancement. Mirafi® H₂Ri performed as intended and this roadway section of the Retreat at Corona has continued to hold up to the natural elements and vehicular traffic loadings.

Mirafi® H₂Ri Provides:

- Superior tensile strength at low strain for subgrade support
- Separation of the natural subgrade soils from the aggregate base
- Wicking & drainage of the excess water in the Cross Machine Direction
- Lateral confinement of the base section

The result is a stable roadway section where the natural water runoff is able to drain away from the road section.

*US Patent #7,874,767



Overlapping of Mirafi® H₂Ri wicking geotextile.



Placement of base material on Mirafi® H₂Ri.

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