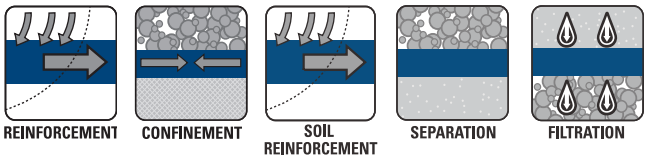
TENCATE Mirafi®



Case Study

application	Subgrade Stabilization
location	Toledo, OH
product	Mirafi® RS580*i*
job owner	Toledo-Lucas Port Authority
engineer	RS&H Ohio, Inc.
contractor	Miller Brothers Construction
date of installation	October 2011

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 challenge of this project entailed relocating the centerline of an existing taxiway to comply with updated FAA regulations. A section of the existing taxiway was demolished along the east side and subsequently a new section was added along the west side of the taxiway. The subgrade was comprised of sand and silty sand with the water table approximately 1.5 feet below the bottom of the pavement. In situ subgrade CBR of 2.5% - 3.0% would not pass proof roll. The initial solution was to undercut and replace it with aggregate. The contractor contacted TenCate Geosynthetics for possible alternatives for avoiding undercut and additional dewatering.

THE DESIGN

Based on test boring data provided by the engineer andreview and analysis performed by a TenCate representative, it was determined that TenCate Mirafi® RS580i* woven geosynthetic with six (6) inches of well graded aggregate would provide a proof roll-passing stabilization solution that would not require additional undercutting.

Taxiway area prior to subgrade treatment.

One of several dewatering sumps installed through out the site.

Bulldozer spreading the aggregate.

Protective & Outdoor Fabrics
Aerospace Composites
Armour Composites
Geosynthetics
Industrial Fabrics
Synthetic Grass

TENCATE™
materials that make a difference

Crushed limestone aggregate meeting Ohio DOT Item 304 gradation was the recommended aggregate. However, the contractor and engineer wanted to utilize recycled asphalt pavement, graded to Item 304 specifications, as it was readily available on site.

THE CONSTRUCTION

The subgrade was leveled and previously installed sumps continued to maintain the groundwater table at approximately 1.5 feet below the exposed subgrade surface. Mirafi® RS580i was deployed with an overlap of one (1) foot. The recycled asphalt aggregate was end-dumped by triaxle dump trucks and spread with a bulldozer, using GPS technology to place the material. The aggregate was then compacted with a smooth drum roller with the vibrator turned off, resulting in a six-inch compacted section. Subsequently, the section was proof-rolled with a loaded triaxle dump truck.

THE PERFORMANCE

The proof roll indicated a firm, non-yielding subgrade that did not deflect, pump, roll or rut. The contractor was able to proceed and place the specified P-209 aggregate base and subsequently pave the section. Additional undercut was eliminated and time was saved on the project schedule.

Section after placement of aggregate.

Section during compaction.

*Patent pending

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