



Case Study

application | Asphalt Pavement Overlay
location | Palo Pinto, TX
product | Mirafi® MPV500

job owner | TXDOT
Installer | Vance Brothers

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

Highway 281 and Highway 337 are two major thoroughfares into and out of Mineral Wells, Palo Pinto County, Texas. Years of growth have increased traffic in this small community, resulting in an increased pavement fatigue on these thoroughfares. Local average high temperatures of 97.0° F and average low temperatures of 32.0° F combined with annual precipitation of 29.3" create a harsh environment for flexible pavements.

TXDOT has a long successful history of utilizing paving fabrics in conjunction with a tack coat as an interlayer for overlay applications.

THE DESIGN

Approximately 12.6 miles of two lane Highway 281 and 11.3 miles of two lane Highway 337 were determined to be the limits of this project. The design engineer selected Mirafi® MPV500 in conjunction with a tack coat for this project primarily for the ability to create a waterproof membrane and to assist in the reduction of reflective cracking within the pavement system. The creation of the waterproof membrane and the reduction of reflective cracking prevents water from infiltrating the pavement system and undermining (softening) the foundation of the pavement. An increased resistance of fatigue cracking was a secondary design function of the Mirafi® MPV500 that was taken into consideration by the design engineer.

Mirafi® MPV500 is a heat-set, nonwoven polypropylene geotextile with a high asphalt absorption capability, specifically designed for asphalt overlay applications.

THE CONSTRUCTION

The condition of both highways, prior to construction, varied from slight pavement distress to severe pavement distress. Construction began with the removal and replacement of the severe pavement distressed areas and a leveling course was applied to areas of irregular pavement surfaces. Next an asphalt tack coat PG 64 -22 was applied at a rate of 0.20 gal/yd² utilizing a distributor truck. Temperatures of the

tack coat remained above 325o F. The Mirafi® MPV500 was then immediately applied utilizing a bar rig on the front of a tractor. The fabric was aligned and smoothed with push broom brushes. A 2" TXDOT Type D hot mix asphalt overlay was then placed on the paving fabric.



Roadway condition prior to installation of Mirafi® MPV500.



Distribution of tack coat.

THE PERFORMANCE

The fabric installation and overlay was completed in a timely fashion. We expect that this system will perform up to our expectations as others have in Texas. This section will be monitored for performance for future applications of the system.



Finished construction of Mirafi® MPV500 and asphalt overlay.



Installation of Mirafi® MPV500.



Finished installation of Mirafi® MPV500.

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