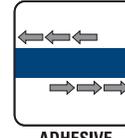




SEALING



STRESS RELIEF



ADHESIVE BONDING

Case Study

application | Pavement Restoration with Chip Seal
location | Jackson, MN
product | Mirafi® MPV500

job owner | Cottonwood County
contractor engineer | Cottonwood County Road Fabrics Inc., Cottonwood County

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

County Road 17 is a two lane road in the city of Jackson, Minnesota. The existing chip seal on the road was approaching the end of a five year life cycle, and with numerous cracks was in need of a new chip seal. Cottonwood County was looking for a way to extend their budget by increasing the life of their chip seals. They also wanted to reduce the maintenance cost of their chip seals by removing the cost of crack sealing.

THE DESIGN

Cottonwood County was very familiar with the use of chip seals for pavement restoration. They have a five-year maintenance program in which less than one fifth of the roads are rehabilitated each year. Because of the need to

extend their road improvement budget and reduce maintenance costs, they chose to use Mirafi® MPV500 paving fabric with their normal chip seal procedure.

Mirafi® MPV500 performs several functions that improve service life by 50% to 80%. First, Mirafi® MPV500 acts as a moisture barrier and prevents water from penetrating the roadway, which reduces subgrade deterioration caused by saturated conditions. Second, the use of Mirafi® MPV500 improves the bond of the chip seal to the existing roadway and reduces future maintenance needs for the surface.

THE CONSTRUCTION

Road Fabrics was hired by the county to install the tack coat and Mirafi® MPV500. First, the tack coat PG-64-22 asphalt cement (AC) was applied to the existing pavement surface at a rate of 1.0 l/m² (0.22 gal/yd²). AC placement was directly followed by the installation of the

Mirafi® MPV500 polypropylene paving fabric. Sand on top of the installed paving fabric was required to stop bleed through due to the high outside temperatures during installation. CRS-2 asphalt emulsion was then applied to the Mirafi® MPV500 surface at a rate of 1.32 l/m² (0.29 gal/yd²). The chip seal aggregate, which consisted of a FA-2 modified 100% crushed limestone, was then applied by the County of Cottonwood, using a spreader at a rate of 22 lb/yd². In certain areas, a second application of CRS-2 and crushed stone was applied. The final step was to compact the finished road surface with a rubber-tired (pneu-matic) roller compactor.



After the asphalt cement was applied to the existing pavement, Mirafi® MPV500 was installed.



Mirafi® MPV500 can increase the chip seal service life by 50% to 80%.

THE PERFORMANCE

The Mirafi® MPV500 installation went very well and County Road 17 was left open to traffic during the paving fabric and chip seal installation. The entire process took two days. The combination of Mirafi® MPV500 and the chip seal treatment will provide Cottonwood County with a road surface that will have many years of trouble free service. The road will continue to be monitored to document the increased performance.



Above: The chip seal aggregate was applied using a chip spreader.

Below: Installation of the Mirafi® MPV500 was easily completed in two days, and County Road 17 was left open to traffic the entire time.



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