



## Case Study

**application** Paving Fabric under Chip Seal  
**location** German Town Hills, IL  
**product** Mirafi® MPV500CS

**job owner**  
**engineer**  
**contractor**

**Village of German Town Hills**  
**Shive-Haggerty, Bloomington, IL**  
**Geodynamics, Inc.**

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 Village of German Town Hills has been chip sealing some of their roads once every five years, but cracking was still evident along the edges of the road with alligator cracking in the main wheel paths. In some of the cracked areas, the base was soft below the pavement. There was, however, no evidence of rutting or excessive repairs on the roads. The Village of German Town Hills wanted to extend the time between chip seal applications, enhance the appearance of the roadways and slow down or reverse the effects of the soft base on the pavement. Their engineer, Shive-Haggerty, decided to test a concept presented to them by Geodynamics: using a paving fabric interlayer under the chip seal.

### THE DESIGN

Chip seals provide an inexpensive short-term seal coat for pavements in good condition. Once a pavement starts to crack, however, the chip seal opens up with the cracks and water is still able to get into and under the pavement. This causes the subgrade to soften and the cracking to worsen. It also means that crack sealing must be performed prior to each new chip seal application. The Village of German Town Hills wanted to extend the time between chip seal applications, enhance the appearance of their chip sealed roadways and slow down or reverse the effects of water in the subgrade. Adding a paving fabric interlayer, Mirafi® MPV500CS in a liquid asphalt tack coat, under their chip seals solves all three problems. An interlayer installed under a chip seal provides a seat for the chips and an already saturated sur-

face for the chip emulsion (even over cracks). This increases short and long term chip retention, which increases the time needed between applications and enhances the chip seal's appearance throughout the life of the project. The interlayer provides a continuous moisture barrier on the top of the pavement that prevents surface water from entering the pavement and softening the subgrade, which decreases cracking and lets the subgrade dry out and regain some of the strength lost to water damage. In addition, installing an interlayer under a chip seal eliminates most or all crack filling prior to the initial installation, and all that is typically needed at that end of the chip seal life is a reapplication of the chip seal over the interlayer.

### THE CONSTRUCTION

Geodynamics, Inc. installed 14,500 sy of Mirafi® MPV500CS with a PG64-22 tack coat on various roads in the Village of German Hills. This was only a portion of the regular chip seal program so Shive-Haggerty and the Village of German Town Hills could monitor and compare the performance of the projects. Mirafi® MPV500CS is

a heat bonded, non-woven geotextile engineered for optimum asphalt retention when used under chip seals and endurance throughout construction. The PG64-22 tack coat, the appropriate performance grade asphalt for the climate, was sprayed on the existing pavement at a rate determined by the asphalt retention of the fabric and the condition of the road. The emulsion was sprayed at 0.41 gal/sy on top of the interlayer, followed by 3/8" preferred chips.



Spraying chip seal emulsion over fabric.



Installing Mirafi® MPV500CS directly into PG64-22.

## THE PERFORMANCE

Months after the installation, the chip retention, Village of German Town Hills largest concern, in the sections with paving fabric is better than the conventional chip seals. Geodynamics, TenCate™, Shive-Haggerty and the Village of German Town Hills expect that this excellent performance will continue as they monitor the projects throughout the winter and into the spring. Incorporating Mirafi® MPV500CS into their chip seal program would save the Village of German Town Hills thousands of dollars each year, freeing up crews and money for other projects. It will also increase the satisfaction of homeowners and drivers.



Geodynamics crew carefully starts a new roll.



German Town Hills final chip seal over paving fabric.

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365 South Holland Drive Tel 800 685 9990 Fax 706 693 4400  
Pendergrass, GA 30567 Tel 706 693 2226 [www.mirafi.com](http://www.mirafi.com)



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