

application

# Pavement Restoration

location

## Martin Street, Newton, IL

products

## Mirapave® 500 with Chip Seal

### THE CHALLENGE

Martin Street is a heavily traveled two lane road in the City of Newton. This road is exposed to heavy truck traffic and is used as a main detour route during seasonal road construction. The existing seven-year-old asphalt pavement surface was in relatively good condition but was heavily oxidized and was starting to show signs of fatigue cracking. The city chose from two rehabilitation options for the aging pavement. They could either place an asphalt overlay on the existing pavement or use a chip seal treatment. Due to the higher cost of an asphalt overlay, the city chose to use a chip seal for the new pavement surface.

### THE DESIGN

The City of Newton was very familiar with the use of chip seals for pavement restoration. They have a three-

year maintenance program in which one third of the roads are rehabilitated each year. However, because of the high volume of traffic on Martin Street they chose to use a Mirapave® 500 paving fabric in addition to their normal chip seal procedure. The inclusion of Mirapave® 500 has several benefits to improve the performance of the road and can also increase the chip seal service life by 60%. First, Mirapave® 500 acts as a moisture barrier within the pavement and prevents water from penetrating the roadway, which reduces the deterioration of the subgrade due to saturated conditions. Second, the use of Mirapave® 500 improves the bond of the chip seal to the existing roadway and reduces future maintenance needs for the surface.

### CONSTRUCTION

Road Fabrics was hired by the city to

install the paving fabric. PG6042 asphalt cement (AC) was applied to the existing pavement surface at a rate of 0.79 l/m<sup>2</sup> (0.25 gal/yd<sup>2</sup>). AC placement was directly followed by the installation of the Mirapave® 500 polypropylene paving fabric. AC-25 asphalt cement was applied to the Mirapave® 500 surface at a rate of 0.79 l/m<sup>2</sup> (0.25 gal/yd<sup>2</sup>). The chip seal aggregate, which consisted of a CA-16 graded crushed stone material, was then applied by the County of Jasper using a variable width spreader at a rate of 20 lb/yd<sup>2</sup>. After the chip seal was placed, a second application of AC-25 and crushed stone was applied. The final step was

JOB OWNER:

**City of Newton**

ENGINEER:

**Conor & Conor Engineering**

CONTRACTOR:

**Road Fabrics****Jasper Co Hwy Dept**

After the asphalt cement was applied to the existing pavement, Mirapave® 500 was installed.



Mirapave® 500 can increase the chip seal service life by 60%.

to compact the finished road surface with a rubber-tired (pneumatic) roller compactor.

## PERFORMANCE

Mirapave® 500 installation went very well and Martin Street was re-opened to traffic immediately after chip seal construction was completed. The entire process took less than a day. The combination of Mirapave® 500 and the chip seal treatment will provide the City of Newton 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.



The chip seal aggregate was applied using a variable width spreader.



Installation of the Mirapave® 500 was easily completed in less than one day, and Martin Street was reopened to traffic.

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