

# BIORESTOR® Asphalt Rejuvenator

Soy-Biobased Rejuvenator Applied to Hundreds of Miles of Tennessee Highways' 'Longitudinal Seam'



Mark E. Woods, TDOT pavement engineer, says that in recent years, the importance of the integrity of the longitudinal joint of asphalt has become apparent, and the treatment with a rejuvenator in certain cases has proven beneficial. (Photo credit: Jon Hargett)

Whether it's a two-lane country road or a superhighway, the first area to fail in an asphalt highway is often the longitudinal joint (or seam). No matter what original construction method is used, this central seam allows water and debris to penetrate the road and deterioration to begin, according to Tennessee Department of Transportation (TDOT) Pavement Engineer Mark E. Woods

Woods cites years of practical experience and studies by the University of Tennessee (UT). "In recent years, it has become evident how critical longitudinal joint construction is to the life of the pavement structure. Many pavements have been or are in the process of being resurfaced as a direct or indirect result of longitudinal joint deterioration," he says.

According to Woods, rejuvenators have the potential to both seal and restore asphalt, while a sealer simply coats the surface.

A rejuvenator is usually applied two or three years after the mat is first installed, depending on road conditions. “If the road has not deteriorated too much, we also apply the product again at year six to extend the life of the road even more,” Woods says.

The UT demonstrated the effectiveness of a rejuvenating product in a 2009 study. UT’s research has since contributed to various asphalt management recommendations from both the Federal Highway Administration and the Asphalt Institute, which is the international trade association of asphalt producers, manufacturers and affiliated businesses.

Water penetrating the seam/joint is the main culprit to construction joint failure. The UT study showed that a rejuvenator treatment reduces water content of longitudinal joints by 80% compared to non-treated pavements.

Jon Hargett, president of Pavement Restorations, Inc, Milan, TN, says, “My crew really liked working with BIORESTOR. It didn’t gum up the equipment, went on smoothly and evenly and had no obnoxious odor for the crew, and most important, the traveling public. And,” he emphasized, “its kind to the environment, made from a renewable resource and it helps our many Tennessee soybean farmers.”

To help longitudinal seam deterioration, the TDOT uses asphalt rejuvenating products, including one made with soy, BIORESTOR®. TDOT applied a 24-inch wide strip of the soy-biobased rejuvenator to more than 600 miles of existing asphalt in 2016. The BIORESTOR rejuvenator worked in a wide variety of settings from Memphis to suburban area streets to country roads.

TDOT lists the soy-biobased rejuvenator for approved use. According to Woods, TDOT will conduct ongoing evaluations for longer-term results.



The Pavement Restorations crew and equipment applying BIORESTOR to Celena Highway near Allons in north central Tennessee. (Photo credit: Jon Hargett)

The U.S. Department of Agriculture also designated BIORESTOR for the federal BioPreferred program. Federal law, the Federal Acquisition Regulation, and Presidential Executive Orders direct that all federal agencies purchase biobased products in categories identified by USDA. To date, USDA has identified 97 categories, including asphalt restorers. <https://www.biopreferred.gov>

TDOT used BIORESTOR Asphalt Rejuvenator, made by BioBased Spray Systems, LLC, in its 2016 applications. “Our price applied averaged about 25% less than petroleum-based products,” said BioBased Spray Systems President Michael Freisthler.

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