Targeted Overlay Pavement Solutions (TOPS)

Targeted overlays match treatments to high-priority, high-need locations.

U.S. Department of Transportation
Federal Highway Administration

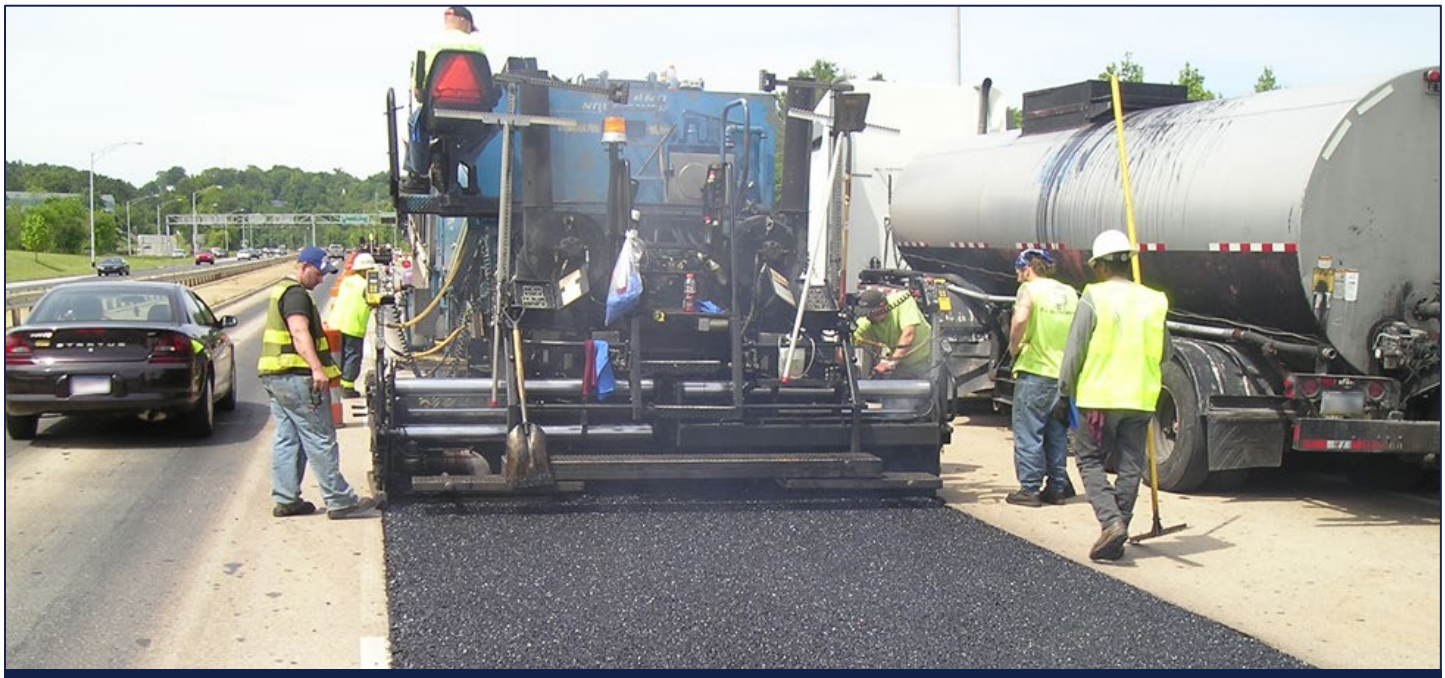
FHWA-HIF-21-006

Ultra-Thin Bonded Wearing Course

Ultra-thin bonded wearing course (UTBWC) is a thin (3/8 inch – 3/4-inch-thick) open-graded asphalt layer placed on a polymer-modified emulsified asphalt membrane. A specialized paver is used to place the emulsified asphalt membrane and then the polymer-modified asphalt mixture on the surface in a single pass. It is used as a treatment method on asphalt pavements to correct surface distresses such as raveling or minor cracking or restore surface characteristics such as friction and smoothness. The open surface texture can reduce noise as well as splash and spray. These mixes are suitable for all types of asphalt and concrete pavements and have demonstrated performance for preventive maintenance on major urban highways as well as residential streets.

UTBWC mixtures were first introduced in the U.S. in 1992, with successful projects constructed in Texas and Alabama. In 1993, additional projects were built in New Jersey and Pennsylvania, followed by other projects in the northeast. Since 1998, the use of UTBWC has spread throughout the U.S. and has been successfully used on projects from Florida to California, and as far north as Minnesota and Maine.

The Minnesota Department of Transportation (MnDOT) may have the most experience with UTBWC mixtures. MnDOT began using it in 1999, and has built more than 40 projects in metro areas, including I-35, I-394, I-494, U.S. 10 and U.S. 52; and approximately 20 projects in non-metro areas, including projects on I-94, and U.S. 10.



Crews place ultra-thin bonded wearing course. *Source: National Center for Asphalt Technology*

Visit our website for more information on Targeted Overlay Pavement Solutions.

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