

Modified Asphalt Toughens Up Bridge Decks



The protective asphalt overlay is going strong on Milwaukee's High-Rise Bridge. (Image courtesy of Chase Construction Products)

Two notable motorways in Milwaukee, the I-94/I-43 High-Rise Bridge and the Milwaukee Mile racetrack, share something in common (and no, it's not traffic speeds approaching 150 mph).

Both have enjoyed longer life and improved performance thanks to a modified asphalt overlay. Applied as a wearing course, the polymer-modified asphalt layer is both waterproof and provides resistance to rutting and shoving.

Butch Benish with Construction Resources Management provides the back story: "It started with the Milwaukee Mile. Our company had paved the new racetrack surface to specifications, but it just couldn't withstand the destructive forces of racing vehicles. We tried again using this extra tough polymer overlay back in 1996, and it did the trick."

The same material makes perfect sense for sealing bridge decks. "We were involved with the polymer asphalt overlay of Milwaukee's High-Rise Bridge just a few years later," Benish says. "At the time it was the largest undertaking of its kind in Wisconsin, and it was a huge success."

An [article](#) on PublicWorks.com provides details about the project and the paving material used—Rosphalt 50:

... ROSPHALT 50 SAVED THE STATE OF WISCONSIN THOUSANDS OF HOURS IN REPAIR TIME [AND] HUNDREDS OF THOUSANDS OF DOLLARS IN COSTS. [WISDOT] USED ROSPHALT 50 FOR WATER-PROOFING THE ENTIRE DECK OF I-94 AND I-43'S HEAVILY TRAVELED 8-LANE, MILE-LONG HIGH-RISE BRIDGE IN DOWNTOWN MILWAUKEE. THE WORK WAS COMPLETED IN JUST 48 HOURS AS OPPOSED TO A MORE CUSTOMARY 9-WEEK REPAIR SCHEDULE WITH OTHER ASPHALT PRODUCTS

These are just a couple of examples among many in the state, thanks to the efforts of WisDOT, which has used polymer asphalt deck overlays for years to help get maximum life out of its bridges. (It's good business sense, too—these overlays appear among [approved items](#) [PDF] for which federal funds may be used for preventive maintenance of structures, as listed in WisDOT's Facilities Development Manual.)

WisDOT Project Manager Jan Bennett talked about the agency's enthusiasm for this treatment. "We see polymer-modified asphaltic con-

crete overlays as a high-performance product," Bennett says. "Our Bureau of Structures expects these polymer overlays to last up to 20 years—and some people think they'll last even longer."

Results like those seen on the High-Rise Bridge led to several other WisDOT bridge overlay projects, including the I-94 Tomah Interchange Bridge, the I-41 bridge in Green Bay and the I-39 Saunders Creek bridge in Dane County. (The Saunders Creek bridge project involved milling out a concrete overlay and replacing it with asphalt.) In addition, the polymer asphalt overlay treatment has also been applied to many of the bridges and culverts along I-94 between Madison and Milwaukee as part of the recent Interstate highway reconstruction.

What's next? WisDOT's Bennett tells us that the state is considering using asphalt overlay as a possible preventive treatment for the bridges along Madison's Beltline Highway. "We are still in the planning stages," Bennett says, "and we're also considering an epoxy treatment. But the modified asphalt could go beyond sealing cracks and weatherproofing, and also help smooth out an uneven ride."

And that's not the only advantage of asphalt. "Anyone who has driven the Beltline knows that traffic and construction delays are a concern," Bennett says. "We have to fit in rehabilitation work around rush hour and downtown events, and asphalt doesn't have the same curing time requirements as epoxy overlays. It's another factor we're taking into consideration."

One thing is clear enough to WAPA: The story on modified asphalt overlays isn't over. In fact, based on how well they protect bridge decks and how long they last, the story is just beginning. ■