



For the Babcock Road project in Brevard County, V.A. Paving Inc., Cocoa, Florida, produced an SP 12.5 mix with FORTA-FI reinforcement fibers for the structural lift and an FC 12.5 mix with FORTA-FI reinforcement fibers for the surface layer. *All photos courtesy of Forta Corp.*

SAVE A ROAD WITH FIBERS, FOR

If you find a roadway caught in a constant maintenance cycle, possibly plagued with base issues that lead to repairs failing too soon, costs associated with the pavement will climb. Recycling has long been a stronghold of American asphalt, with 94 percent of asphalt reused in new pavements during 2019, as reported in the National Asphalt Pavement Association's sustainability resources.

As discussed in *AsphaltPro* magazine before, full-depth reclamation (FDR) offers transportation officials a way to reconstruct the roadway by grinding up the existing pavement and base in-place, allowing the materials to be recycled and reconditioned into a new

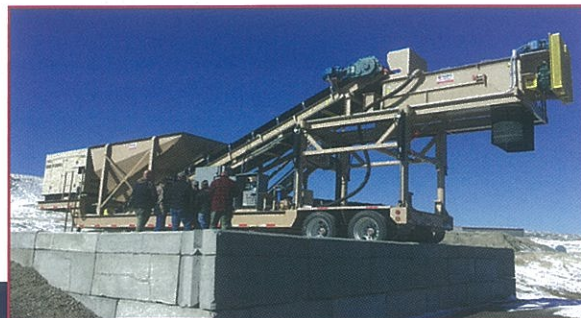
stabilized base layer. Then a new, thin layer of asphalt on top creates a brand new roadway.

One concern when choosing FDR to reconstruct roadways is the popular use of Portland cement to stabilize the in-place materials. This ingredient tends to promote cracking just like concrete does. Florida Department of Transportation (DOT) officials knew that they had to find a way to extend the life of recycled pavement beyond the capabilities of FDR alone. The use of fiber reinforcement has shown to create a stronger top layer of asphalt; if the underlying materials were to crack, the fiber could help to ensure the durability of the roadway.

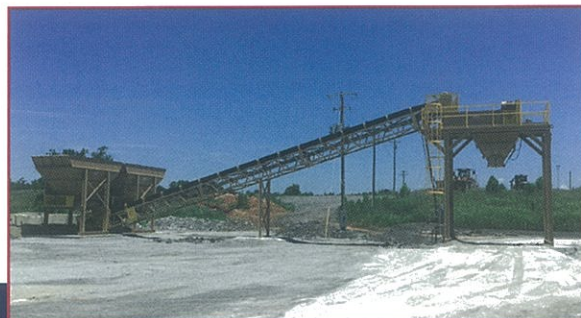


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VA Paving Inc. performed the full-depth reclamation (FDR) on Babcock Road at 12 inches depth. Then they placed a 2-inch structural layer and a 1.5-inch surface layer, both of which incorporated fiber-reinforced mix.

The use of fiber reinforcement dates back thousands of years. Today, when added to an asphalt mix, synthetic fiber reinforcement offers a cost-effective way to improve durability and longevity. The use of certain fibers, like FORTA-FI, in the top layer of the reconstructed roadway is designed to allow less cracking to reflect through—allowing for longer life of the roadway.

Babcock Road in Brevard County, Florida, required FDR. Having used reinforcement fibers on several projects in the past, Construction Manager for Brevard County Bruce Black knew how add life. He stated: "We're trying to get it put in the rest of our asphalt."

This 3.3-mile-long project was 24 inches wide and used 9,230 pounds of fiber-reinforced asphalt. V.A. Paving Inc., Cocoa, Florida, performed a 12-inch deep FDR and placed a 2-inch thick structural asphalt mix (SP 12.5) using FORTA-FI reinforcement fibers. They also placed a 1.5-inch thick surface asphalt mix (FC 12.5), reinforced with FORTA-FI reinforcement fibers. Al Mallard, a vice president at V.A. Paving, uses reinforcement fibers over other methods due to the ease of use and visual results of test strips performed over past years.



Bruce Black, the construction manager for Brevard County, Florida, promotes the use of fiber reinforcement in asphalt mixes, saying officials are waiting for testing to catch up to the performance people are seeing in the field.

This method will save Brevard County future repair dollars down the road. Scott Nazar, engineering services manager for Forta Corp., Grove City, Pennsylvania, stated: "In lab testing, the use of FORTA-FI has increased the crack resistance of mix by four times, relating to Ideal CT index."

That means the fiber-reinforced roadway will see a three to six-year pavement lifecycle extension. Compounded over several miles of FDR applications completed every year in Brevard County, extending the life of these recycled roadways will allow them to use future reconstruction dollars more effectively.

With transportation budgets tightening across the country, it's more important than ever to use current resources effectively. This innovative practice of combining FDR with fortified asphalt can help transportation professionals stretch transportation dollars and save resources. **AP**

— BY KRISTIN CRAWFORD



Kristin Crawford, the campaign coordinator for FORTA, has been with the organization since 2019.



Scott Nazar, engineering services manager for Forta Corp., Grove City, Pennsylvania, shared that lab tests show the use of FORTA-FI increases cracking resistance.

QUICK FDR REMINDERS

- Benefits of FDR include low traffic disturbance, allowing drivers back on the roadway in a few hours
- FDR application uses minimal amounts of virgin materials
- With FDR, the roadway is milled anywhere from 6-18 inches deep depending on existing conditions and traffic loading
- The in-place materials are pulverized, mixed with an additive, and compacted to produce a base layer.