

# Precision Dosing Wins.

Get reliable results and improved pavement performance with ACE XP.



Raw Aramid Fibers



Wax-coated ACE XP



To create ACE XP™, high-strength para-aramid fibers are packaged and coated with Sasobit® wax that dissipates at 170°F (77°C). In comparison, raw aramid fibers are almost impossible to measure and control.

ACE XP™ has advanced light years beyond the reinforcing fibers used in the past. These tenacious polymer fibers deliver 400,000 psi of tensile strength to resist cracking and rutting – making pavements more durable and longer lasting. In production, you can rely on our precision dosage equipment to deliver the exact amount of ACE XP™ needed to meet DOT/MOT specifications for any mix design.

**Stop guessing, start knowing.** Precision dosing and bound aramid deliver guaranteed performance. The 3.4oz (106g) package includes the wax binder. The wax melts with heat leaving the required DOT/MOT specification of 2.1oz aramid per ton (65g/MT).

**Don't assume, insure.** Precision dosing of bound aramid is the only way to know how much fiber goes into each and every ton of mix.

**Get what you pay for.** Precision dosing of bound aramid delivers all the fiber into the mix – no flyaway fibers. If performance, sustainability and value are the goals, ACE XP™ is your insurance for better performing pavements.

**Keep your plant team focused on production,** not on feeding fiber. ACE XP™ delivers on-spec performance with only 3.4oz (106g) of product – each 45lb (20kg) box goes a long way – over 200 tons of production per box!

**Reports you can trust.** With ACE XP™ and our precision dosing, fiber into the plant equals fiber into the mix. Why bother with flyaway fibers when you can get guaranteed dosing and the full fiber impact with ACE XP™?

**Loose fiber, loose results.** Tighten up performance with precision dosing delivering guaranteed spec compliance and maximum fiber impact with bound aramid.

Easy-to-adopt ACE XP™ Polymer Fibers  
— as vital as rocks and oil.

Specifications for Aramid Fiber Reinforced Asphalt often include a dosing requirement of 1 pound per ton of hot mix asphalt materials. This is based on manufacturer's recommendations for one proprietary blend of Aramid fiber and polyolefin. Surface Tech's ACE XP utilizes an alternative carrying method of temporarily binding the aramid fibers with Sasobit wax resulting in equivalent aramid fiber content and performance at a lower total dose rate.

The study was commissioned by the Florida Department of Transportation and included the evaluation of two Alternative Asphalt Mixtures (AAM), including FORTA-FI and ACE XP aramid fibers. Dose rates for the two aramid fibers were based on manufacturer's recommendations. The ACE XP fibers were added at a rate of 2.1 ounces of aramid fibers per 1.0 ton of asphalt mixture. The FORTA-FI fibers, a combination of polyolefin and aramid fibers, were added at a rate of 1.0 pound per 1.0 ton of asphalt mixture.

### RUTTING PERFORMANCE TEST RESULTS

Results of the Asphalt Pavement Analyzer and IDEAL-RT rutting performance tests yielded equivalent performance from both the ACE XP and FORTA-FI aramid fibers. Figures 3-15 and 3-20 from the report provide graphical representation of the two test results as compared to the traditional polymer modified asphalt mix (PMA) used as a control.

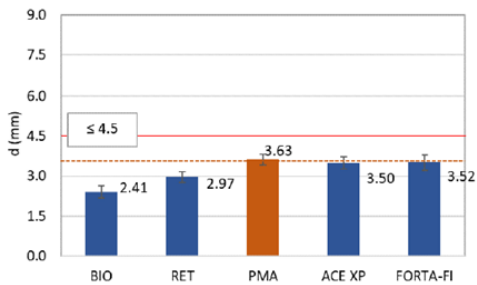
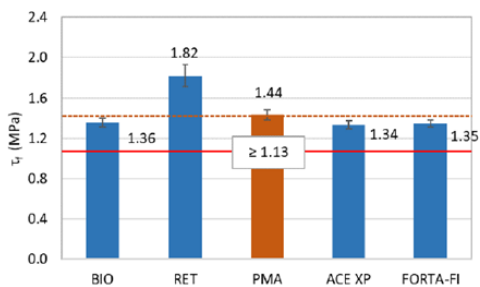
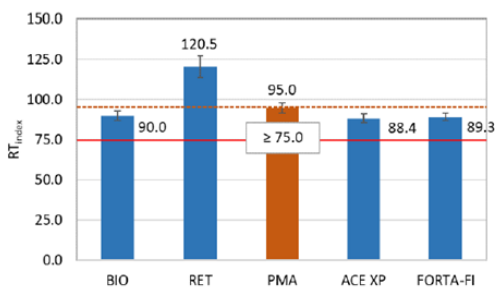


Figure 3-15. APA Tests:  $d$  at 8,000 cycles and 64.0°C



(a)



(b)

Figure 3-20. IDEAL-RT Tests: (a)  $\tau$  at 50.0°C; (b)  $RT_{Index}$  at 50.0°C

### CRACKING PERFORMANCE TEST RESULTS

Results of the IDEAL-CT and SCB-FI cracking performance tests yielded an increased performance by the ACE XP fiber compared to the FORTA-FI aramid fiber. Figures 3-23 and 3-26 from the report provide graphical representation of the two test results as compared to the traditional polymer modified asphalt mix (PMA) used as a control.

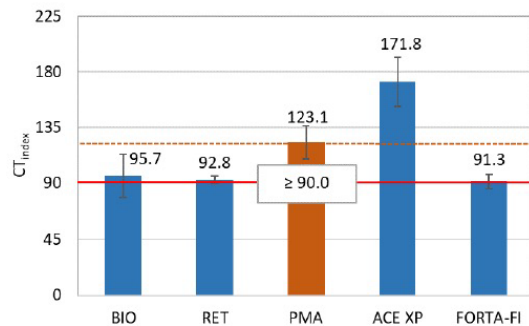


Figure 3-23. IDEAL-CT Tests:  $CT_{Index}$  at 25.0°C

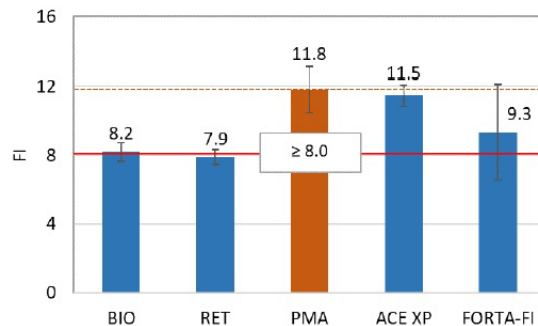


Figure 3-26. SCB-FI Tests:  $FI$  at 25.0°C

FINAL REPORT BE719 DEVELOPMENT OF A LABORATORY TESTING PROTOCOL TO EVALUATE ALTERNATIVE MATERIALS FOR USE IN MODIFYING ASPHALT BINDERS AND ALTERNATIVE MATERIALS FOR USE IN MODIFYING ASPHALT MIXTURES, DATED AUGUST 2021, BY TEXAS A&M TRANSPORTATION INSTITUTE