



PARA-ARAMID & POLYOLEFIN

## Description

FORTA-FI is a high tensile strength synthetic fiber blend formulated to reinforce asphalt mixes. FORTA-FI helps to control and reduce fatigue cracking, thermal cracking, reflective cracking, rutting, and raveling. In new construction or rehab projects, FORTA-FI provides initial cost savings through reduced pavement layer thickness which gives the same durability as conventional mixes, or a life cycle cost reduction when placed at conventional asphalt pavement thickness which extends the pavement life.

## Reinforcement Objective

To three-dimensionally reinforce pavements by controlling thermal, reflective, and fatigue cracking as well as reduce rutting and raveling.

## Physical Properties

Fiber	Para-Aramid	Polyolefin
Specific Gravity	1.44	0.91
Density	2,427 lb/cu yd (1,440 kg/cu m)	1,534 lb/cu yd (910 kg/cu m)
Tensile Strength	400 ksi (2,758 MPa)	N/A <sup>1</sup>
Operating Temperature	-100 – 800°F (-73 – 427°C)	N/A <sup>1</sup>
Length	0.75 in (19 mm)	0.75 in (19 mm)
Form	Monofilament <sup>2</sup>	Serrated
Color	Yellow	Yellow
Acid/Alkali Resistance	Inert	Inert

1. Fibers will melt or become plastically deformed during asphalt mix production.
2. Strands become fibrillated during asphalt mix production.

## Compliance & Certification

- ASTM D8395-23, Standard Specification for Aramid Fiber for Asphalt Mixtures

## Addition & Mixing

FORTA-FI mixes well in batch and drum plants without compromising production. The fibers are added at a rate of one (1) pound of fibers per one (1) ton of asphalt mix. Add fiber during the production process after the flame but before introduction of the liquid AC. For batch plants, the fibers are added either manually using pre-measured bags or with a FORTA<sup>®</sup> Delivery System. For drum plants, bags can be placed on the RAP conveyor manually or directly into the drum with a FORTA Delivery System. Ensure minimum mix production temperatures as follows: 220°F minimum for bulk fiber use; or 275°F minimum for pre-measured bags (bags may not fully dissolve below 275°F). FORTA offers several types of fiber delivery systems such as the Voyager, The Big Shot and The Little Shot. Some feeders automatically track and record the amount of fiber fed into the plant for quality assurance.

## Applications

FORTA-FI fiber blend is added directly to the asphalt mix during production creating a three-dimensional material reinforcement throughout the entire pavement layer. This reinforcement helps control thermal, reflective, and fatigue cracking, as well as reduce rutting and raveling. FORTA-FI is a cost effective way to improve the durability and longevity of a variety of transportation applications such as airports, streets, highways, interstates, and industrial parking lots, etc. FORTA-FI is an innovative way to help transportation agencies achieve sustainability objectives by lowering Life Cycle Costs.

## Performance Benefits

- Extreme durability
- Life cycle cost reduction
- No change to construction process or JMF
- Extend pavement life
- Provide 3-dimensional reinforcement against pavement distresses

## Packaging

	US Short Ton	Metric Ton
Bags	1.0 lb	0.5 kg
Bulk Bags	30.0 lb	13.6 kg
Cartons	35 bags	35 bags
Bulk Carton	35 lb, loose in carton	16 kg, loose in carton
Pallets	16 cartons/560 bags	12 cartons/210 bags (standard cont.) 28 cartons/980 bags (high cube cont.)
Gaylord Pallets	600 lb	273 kg

## Fiber Vs. Control

This county road suffered severe alligator cracking from years of heavy truck traffic. To repair the road, engineers wanted to explore FORTA-FI as an alternate reinforcement method. They applied a 2 inch overlay directly onto the existing pavement without milling. They used the same base mix for the entire road; however, for one-half of the road, the mix included FORTA-FI, and for the other half, the mix did not.

After 7 months, the side without fiber reinforcement had begun to reflect cracking from the old asphalt layers below. As you can see, the FORTA-FI section outperformed the control section when it came to reducing reflective and alligator cracking, which directly leads to an extension of pavement life.



## Additional Information

Additional information such as the Safety Data Sheet, Certifications, videos and other literature can be found on the [forta-fi.com](http://forta-fi.com) website. The website also features Project Profiles that show the many applications and benefits of FORTA-FI and other fibers for asphalt first-hand.

## Limited Warranty

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