

**SUPERPAVE ASPHALT CONCRETE – REINFORCING FIBER IN ASPHALT.  
(1-24-19)**

ARTICLE 334-2 is expanded by the following new Subarticle:

**334-2.5 Reinforcing Fibers:** When specified in the Contract Documents, provide reinforcing fibers conforming to the requirements below. Design the asphalt mixture without the fiber. Do not alter the final mix design for the addition of fiber at the asphalt plant.

**334-2.5.1 Description:** Furnish all materials, equipment, labor, and incidentals for mixing aramid fiber into the asphalt mix. Aramid fibers must be treated to prevent them from becoming airborne during the mixing process and the treatment must become soluble in the asphalt binder. Continuously feed and mix treated aramid fiber into the asphalt mix per the dosage and mixing requirements of this specification. Provide a certification report signed and sealed by a registered professional engineer upon project completion, which provides the actual dosage rate used for the project and states all specification requirements were adhered to.

**334-2.5.2 Materials:** Meet the following Aramid and Treatment material properties.

<b><u>Aramid Properties</u></b>	<b><u>Measure</u></b>
Material	Para-Aramid Fiber (50-52% by weight)
Form	Filament Yarn
Tensile Strength	> 2.758 (GPa)
Elongation at Break	< 4.4 (%)
Modulus	> 95 (GPa)
Specific Gravity	1.44-1.45 (g/cm <sup>3</sup> )
Decomposition Temperature	> 800 (°F)
<b><u>Treatment Properties</u></b>	<b><u>Measure</u></b>
Treatment Type	Sasobit® Wax (48-50% by weight)
Treatment Melting Temperature	> 175 (°F)
<b><u>Short Cut Aramid Fiber Bundles</u></b>	<b><u>Measure</u></b>
Length	1.50 +/-0.05 (inch)
Appearance/Handling	Free Flowing Coated Fiber Bundles (visual)
Storage	Store dry with no contact with moisture

**334-2.5.3 Dosage & Mixing Requirements:** Use an aramid dosage rate of 2.1 ounces (+/- 5.0%) per ton of mix. This does not include the treatment weight. Meter and continuously feed treated aramid fibers in a constant stream-like manner for uniform disbursement. Mix the fibers with the heated aggregates before injection of the liquid asphalt during the asphalt mixing process. Use an automated dosing machine to feed the treated aramid fibers into the mixing drum through the RAP collar. Calibrate the metering based on the asphalt production rate (tons/hr), and the dosage rate (oz/ton). Feed the fibers in a constant stream-like manner through the RAP collar.