

SURFACE TECH

2021 AQU Polymer Fiber Data Sheet

Materials:

Aramid Polymer Fiber Reinforcement. Provide AQU Polymer Fiber (pre-treated para-aramid reinforcing aramid fiber) conforming to the requirements below. Design asphalt mix without fiber and do not alter the final mix design for the addition of fiber at the plant. Use the dosage rate of 2.8 oz. coated weight per ton of asphalt mix (of which 2.1 oz. is pure aramid). The fiber addition tolerance allowed shall be no less than 2.8 oz. coated weight (2.1 oz. pure aramid) and not more than 3.08 oz. coated weight (2.31 oz. pure aramid) per ton of asphalt mix. Please note that AQU Polymer Fiber contains 75% actual aramid fiber and 25% water binder, by weight. This pretreated para-aramid (water bound) fiber remains in the form of a fiber strand with over 10,000 individual fibers / strand that is efficiently conveyed to the asphalt mixing drum. In the mixing drum, the water evaporates allowing the dry fibers to disperse into the asphalt mix.

Material Properties:

Material	Para-Aramid (75% by weight)
Treatment	Water Binder (25% by weight)
Length	3/4" (19mm) or 1.5" (38mm)
Form	Cut Water Bound Fiber Clips
Color	Yellow
Specific Gravity	1.44 g/cm ³
Fiber Tensile Strength	400,000 psi
Fiber Melting Temperature	800F

Bituminous Mixing Plant:

Fiber Supply System. Add treated fibers manually or through specialized equipment that can accurately proportion or meter the proper amount per batch for batch plants, or continuously and in a steady uniform manner for drum plants.

Asphalt Supply Temperature. AQU Polymer Fibers are designed for HMA, but are well suited for WMA, cold and water mix processes as the water binder releases the fiber at much lower temperatures typically associated with cold and warm mixes. While it is preferred that the mix temperature be higher than 100 °C (212 °F), the water binder evaporates at lower temperatures allowing the mixing process to disperse the fibers throughout the mix.

Batch Plant or Drum Plant. Feed treated aramid manually, or with machine operated equipment, onto RAP or aggregate belts, or for batch plants, directly into the pug mill or weigh hopper. For drum plants, feed directly into the mixing drum through the RAP Collar. Standard project WMA batch mixing times apply. Metering shall be based on batch size (tons) and dosage rate (oz/ton). Feeding shall occur in a constant stream-like manner during the heated aggregate mixing batch time. If necessary, increase the mixing time with heated aggregates to ensure the aramid fibers are uniformly distributed. Rate the feeding of fibers with the rate the plant is producing asphalt mix. If a fiber feeder is used, it must be properly calibrated for treated aramid fiber to deliver the fiber at the correct rate.

Notice: Fibers are supplied in a sealed bag in a corrugated box containing a net weight of 50 pounds. Close bags immediately after removing desired amount of fiber to prevent water evaporation which could alter the addition tolerance in subsequent uses. Store fibers in a dry environment out of contact with moisture.

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