

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENTAL SPECIFICATION 826
ASPHALT CONCRETE WITH FIBERS**

July 17, 2015

- 826.01 General**
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826.01 General. This work consists of constructing a surface course or an intermediate course of aggregate, fiber and asphalt cement mixed in a central plant and spread and compacted on a prepared surface.

The requirements of Item 441, 442, and 448 apply, except as modified by this specification.

826.02 Fibers. Use fibers specifically manufactured and drawn for use in asphalt concrete mixes. Use the specified fiber type conforming to the following requirements:

Fiber Type	A	B	C
Material	polyester	polypropylene	aramid
Denier; ASTM D 1577*	4.5 ± 1.5	4 ± 1	n/a
Length, inch (mm)	0.25 ± 0.02 (6.35 ± 0.51)	0.39 ± 0.08 (9.91 ± 2.0)	0.75 ± 0.13 (19.0 ± 3.2)
Crimps; ASTM D 3937	None	None	None
Tensile strength, minimum, psi (Mpa); ASTM D 2256*	70,000(483)	40,000(276)	400,000(2760)
Specific gravity	1.36 ± 0.04	0.91 ± 0.04	1.44 ± 0.05
Melting temperature, minimum, °F (°C)	475(246)	320(160)	800(427)

*This data must be obtained prior to cutting the fibers.

Furnish fibers according to the Department’s Qualified Products List (QPL). Ensure Type A and B fibers have a uniform singular color of white to light gray. Furnish Type C fibers intended for use in asphalt concrete mixes. Ensure Type C fibers are blended with 3/4 inch (19 mm) fibrillated polyolefin fibers or wax coated to ensure proper distribution in the mix.

During production, the District will obtain a random 0.5 pound (250 gram) sample of the finished fibers for each 24,000 pounds (11,000 kg) of fiber used. Forward the sample to OMM.

826.03 Composition. Design the mix in accordance with 441.02 or 442.02. Add Type A or B fibers at the rate of 6.0 pounds per ton (3.0 kg/metric ton) of total mix. Add Type C fibers at the rate of 1.8 to 4.0

ounces (60 to 113 g) of pure aramid fiber, not including the weight of any polyolefin fibers or coating, per ton (metric ton) of total mix.

Use no more than 10 percent reclaimed asphalt concrete pavement when using Type A or B fibers.

826.04 Mixing. Prior to the start of full production, produce a test batch of fiber asphalt concrete to demonstrate to District Testing how the fibers will be introduced and mixed into the asphalt concrete. Achieve satisfactory results before beginning full production. If during production an unsatisfactory mix is produced, cease production until a satisfactory test batch is produced.

When a batch type plant is used, add fibers according to the manufacturer’s recommendation to the heated aggregate prior to introduction of the asphalt binder. Mix the aggregate and fibers dry for a minimum of 10 seconds after introduction of the fibers. The Laboratory may increase this mixing time if satisfactory results are not obtained.

When a drum mix type plant is used, introduce the fibers into the aggregates by the reclaimed material feed system or by an adjustable pipe near the asphalt feed pipe.

For Fiber Type B mixes, ensure the temperature of the aggregate and asphalt binder does not exceed 295 °F (146 °C) where the fiber is introduced.

826.05 Basis of Payment. The Department will pay for accepted quantities at the contract price for:

Item	Unit	Description
826	Cubic Yard (Cubic Meter)	Asphalt concrete surface course, Type 1, (448), Fiber Type __
826	Cubic Yard (Cubic Meter)	Asphalt concrete intermediate course Type 2, (448), Fiber Type __
826	Cubic Yard (Cubic Meter)	Asphalt concrete surface course, 442 12.5mm, (448), Fiber Type __
826	Cubic Yard (Cubic Meter)	Asphalt concrete intermediate course 442 19mm, (448), Fiber Type __

Designer note:

Type A, B, and C fibers can be selectively applied as an anti-rutting treatment according to the High Stress Guidelines Appendix B of the Pavement Design Manual. The guidelines in the Pavement Design Manual for 441 and 442 mixes with 448-acceptance apply. Type C fibers also provide enhanced structural capacity.