

Section 819—Fiber Stabilizing Additives

819.1 General Description

This Section covers the general requirements for fiber stabilizing additives that are incorporated into asphaltic concrete mixtures. These fibers are generally used to stabilize the asphalt film surrounding aggregate particles to reduce drain-down of the asphalt cement. Use a cellulose or mineral fiber stabilizer listed on [QPL 77](#), Fiber Stabilizing Additives.

819.1.01 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

ASTM C612

[GDT 124](#)

[QPL 77](#)

819.2 Materials

The selected fiber shall meet the properties described below. Dosage rates given are typical ranges but the Office of Materials and Research shall approve the actual dosage rate used.

A. Cellulose Fibers

Add cellulose fibers at a dosage rate between 0.2% and 0.4% by weight of the total mix as approved by the Engineer. Fiber properties shall be as follows:

Fiber length: 0.25 inch (6.35 mm) maximum

Sieve Analysis

Alpine Sieve Method

Passing No. 100 (150 μ m) sieve: 60-80%

Ro-Tap Sieve Method

Passing No. 20 (850 μ m) sieve: 80-95%

Passing No. 40 (425 μ m) sieve: 45-85%

Passing No. 100 (150 μ m) sieve: 5-40%

Ash Content: 18% non-volatiles (\pm 5%)

pH: 7.5 (\pm 1.0)

Oil Absorption: 5.0 (\pm 1.0) (times fiber weight)

Moisture Content: 5.0 % (maximum)

B. Cellulose Pellets

Use cellulose pellets that are a blend of cellulose fiber and asphalt cement. Add them at a dosage rate between 0.4% and 0.8% by weight of the total mix. The cellulose used shall comply with requirements of [Subsection 819.2.A](#).

- Pellet size: 1/4 cubic inch (4.093 cubic centimeters) maximum
- Asphalt: 25–80 pen.

Section 819—Fiber Stabilizing Additives

C. Mineral Fibers

Use mineral fibers that are made from virgin basalt, diabase, or slag that is treated with a cationic sizing agent to enhance disbursement of the fiber and to increase adhesion of the fiber surface to the bitumen. Add the fiber at a dosage rate between 0.2% to 0.5% by weight of the total mix as approved by the Engineer.

1. Size Analysis:

- Average Fiber length: 0.25 inches (6.35 mm) maximum
- Average Fiber thickness: 0.0002 inches (0.005 mm) maximum

Shot content (ASTM C612)

- Passing No. 60 (250 μ m) sieve: 90 - 100%
- Passing No. 230 (67 μ m) sieve: 65 - 100%
- Degradation ([GDT 124/McNett Fractionation](#)): 30% (maximum)

D. Materials Warranty

General Provisions 101 through 150.