

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENTAL SPECIFICATION 925
HOT APPLIED CRACK SEALING MATERIAL**

April 19, 2002

- 925.01 Description**
- 925.02 Type II Crack Sealant**
- 925.03 Type III Crack Sealant**
- 925.04 Type IV Crack Sealant**

925.01 Description. This specification specifies the required material properties and acceptance of hot applied crack sealing material.

925.02 Type II Crack Sealant. Type II crack sealant shall be a mixture of certified binder (Supplement 1032) meeting PG64-22 and polyester fibers (recycled fibers not permitted) meeting the following requirements:

Denier; ASTM D 1577*	3.0 to 6.0
Length	0.25 ± 0.02 inch (6.35± 0.51mm)
Crimps; ASTM D 3937	None
Tensile strength, minimum, ASTM D 2256*	70,000 psi (483 Mpa)
Specific gravity	1.32 to 1.40
Minimum melting temperature	475 ⁰ F (256 ⁰ C)
Ignition temperature	1000 ⁰ F (538 ⁰ C) min.

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

The manufacturer of the fiber shall furnish certified test data annually to the Laboratory, or at the request of the Laboratory. A letter of certification stating that the material complies with specification requirements shall be furnished with each shipment.

The material shall be combined so the fibers are a minimum of 5.0 percent by total weight of the asphalt cement. The combined materials shall meet the following properties:

Strength (at break)	at 72 ⁰ F (22 ⁰ C)	350 psi (2.4 MPa) min.
	at 0 ⁰ F (-18 ⁰ C)	500 psi (3.5 MPa) min.
Elongation (at break)	at 72 ⁰ F (22 ⁰ C)	50 percent min.
	at 0 ⁰ F (-18 ⁰ C)	20 percent min.

The option for using premixed and prepackaged Type II crack sealant shall be permitted providing (1) the fibers and the fiber binder meet the requirements as shown and, (2) the fiber binder meets the manufacturer's specifications. The manufacturers of the fiber and the fiber binder shall furnish certified test data annually to the Laboratory, or at the request of the laboratory. A letter of certification stating that the material complies with specification requirements shall be furnished with each shipment.

925.03 Type III Crack Sealant. Type III crack sealant shall be a mixture of binder meeting PG64-22 and polypropylene fibers (recycled fibers not permitted) meeting the following requirements:

Denier; ASTM D 1577*	15 ± 3
Length,	0.39 ± 0.08 inch (9.91± 2.0 mm)
Crimps; ASTM D 3937	None
Tensile strength, minimum, ASTM D 2256*	40,000 psi (276 MPa)
Specific gravity	0.91 ± 0.04
Minimum melting point	320° F (160° C)

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

The manufacturers of the fiber and the modified asphalt shall furnish certified test data annually to the Laboratory, or at the request of the Laboratory. A letter of certification stating that the material complies with specification requirements shall be furnished with each shipment.

The material shall be combined so the fibers are a minimum of 7.0 percent by total weight of the asphalt cement. The combined materials shall meet the following properties:

Strength (at break)	at 72° F (22° C)	350 psi (2.4 MPa) min.
	at 0° F (-18° C)	500 psi (3.5 MPa) min.
Elongation (at break)	at 72° F (22° C)	50 percent min.
	at 0° F (-18° C)	20 percent min.

925.04 Type IV Crack Sealant. Type IV crack sealant shall be a prepackaged preapproved mixture of modified binder meeting the following properties and minimum 2 percent polyester fibers (recycled fibers not permitted) meeting the following properties. No fiber binder shall be placed without a manufacturer's representative for the fiber binder on site to ensure proper application and conditions.

Modified binder:

Cone penetration, 77° F(25° C)	50-90
Flow, 140° F (60° C)	1.0 cm max
Resilience, 77° F (25° C)	25-60 percent
Ductility, 77° F (25° C)	40 cm min
Bond, 0° F (-18° C), 100 percent ext.	Pass 5 cycles
Impact, 0° F (-18° C)	Pass
Compression recovery	0.40 min
Recommended pour temperature	380° F (193° C)
Safe heating temperature	410° F (210° C)

Polyester fiber properties and fiber approval: Same as for Type II crack sealant.

Fiber binder properties:

Safe heating temperature	400° F (204° C)
Softening point	190° F (88° C)
Viscosity, 400° F(225° C)	3000 cp min
Cone penetration, 77° F(25° C)	25-45
Workability	Capable of being melted and applied through a pressure feed, indirect heated and agitated melter
Flexibility *	Pass

* 1 inch (25mm) sample at -20° F(-30° C), 90 degree bend, 10 sec

Any supplier must be approved by the Laboratory. Supplier approval shall consist of submitting 10 pounds (4.5 kg) of base modified binder and 10 pounds (4.5 kg) of fiber binder from the same batch. Supplier approval shall be renewed annually. The fiber binder shall be preapproved by the Laboratory before shipment to the project. Preapproval shall consist of testing and approval of fiber binder properties. Additional testing or submission of samples of the base modified binder may be required by the Laboratory at any time.