

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
CRACK FILLING BITUMINOUS PAVEMENT WITH FIBER-ASPHALT

Effective: October 1, 1991
Revised: January 1, 2007

All references to Section or Articles in this specification shall be construed to mean a specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation

Filling Cracks (Flexible Pavement). This work consists of cleaning and filling transverse and longitudinal joints and cracks in existing bituminous flexible pavement with fiber modified asphalt cement as shown in the plan details, as directed by the Engineer, and as described herein.

Materials. Materials shall meet the requirement of the following Articles of Section 1000 – Materials:

Item	Article
(a) Bituminous Materials (Note 1)	1032.01-1032.05

Note 1 - Asphalt cement shall be PG 58-28, PG 58-22, or PG 64-22.

Fibers should be short cut polypropylene fibers meeting the properties listed below:

Length,	mm:	8 - 12
Denier	:	13 - 16
Crimps	:	None
Tensile Strength, minimum,	MPa (psi):	275 (40,000)
Specific Gravity (typical)	:	0.91
Moisture Regain @ 21 °C (70 °F) and 65% RH (typical)	%:	0.1

The fiber may be accepted on certification from the manufacturer that it meets the specified requirements.

Equipment. An oil jacketed double wall kettle equipped with an agitator (reversing rotary auger action) and separate thermometers for the oil bath and mixing chamber will be required. The unit shall also be equipped with a reversible hydraulic 50 mm (2 inch) hot asphalt pump and a recirculating pump to circulate the oil bath. An air compressor capable of producing a minimum 620 kPa (90 psi) at the end of the discharge hose will be required.

Preparation of Mixture. The fiber modified asphalt cement or fiber-asphalt shall consist of a minimum of 8.0% by weight fiber in the fiber-asphalt mixture. Operating temperatures in the kettle shall be between 124 and 141 °C (255 and 285 °F). The temperature shall never exceed 143 °C (290 °F) as the fibers will melt into the asphalt cement.

Construction Methods. The fiber-asphalt filler shall be applied only when the joints and cracks are dry and free of dirt, vegetation, debris and loose filler. The joints and cracks shall be blown out with the 620 kPa (90 psi) compressed air. The blowing out operations shall be kept close to the filling operations to prevent debris being carried back into the cracks before filling. Routing will not be required. A hot compressed air lance meeting the approval of the engineer may be used to clean the cracks.

The fiber-asphalt filler shall be applied using a pressurized wand delivery system with such devices as necessary to fill the cracks and form a nominal 3 mm (0.125 inch) thick by 75 mm (3 inch) wide overseal band centered so that the center of the 75 mm (3 inch) wide band is within 25 mm (1 inch) of the crack. The fiber-asphalt filler shall be applied taking care to not use excessive material in either thickness or location. The engineer will determine the extent that fine cracks are filled. Care should be taken to not place filler on top of pavement markings, manholes and drainage castings.

The ambient temperature during filling shall be above 4 °C (40 °F) and below 29 °C (85 °F). The filler must cure before being opened to traffic. The contractor may use fine sand, mineral filler or portland cement to dust the filler if necessary to more quickly open the road to traffic. Dusting will be considered incidental.

A technical representative from the fiber manufacturer shall be available for initial filling work. Any suggestions or recommendations shall be submitted to the Engineer for approval.

Method of Measurement. Filling of cracks will be measured for payment in kilograms (pounds) of fiber-asphalt used.

Basis of Payment. This work will be paid for at the contract unit price per kilogram (pound) of FIBER-ASPHALT. The unit price shall include the cleaning of the joints and cracks and the furnishing and placing of the filler.