



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0016

JOHN ELIAS BALDACCI
GOVERNOR

DAVID A. COLE
COMMISSIONER

March 26, 2010
Subject: **Standish**
Federal Project No: STP-1730(200)X
State Pin No: 017302.00
Amendment No. 1

Dear Sir/Ms:

Make the follow changes to the Bid Documents.

In the Bid Book (page 1), "NOTICE TO CONTRACTORS", first paragraph, **CHANGE** the sentence that begins; "The lowest responsive bidder must..." to read as follows; "**The lowest responsive bidder must have demonstrated successful completion of similar type work to be considered for the award of this contract**". Make this change in pen and ink.

In the Bid Book (page 4), **REMOVE** the "SCHEDULE OF ITEMS", 1 page dated 100304 and **REPLACE** with the attached new "SCHEDULE OF ITEMS", 1 page dated 100325.

In the Bid Book (pages 37 thru 39) **REMOVE** "SPECIAL PROVISION, SECTION 424, LOW MODULAS CRACK SEALER", 3 pages dated 1/28/2010 and **REPLACE** with the attached "SPECIAL PROVISION, SECTION 424, FIBER REINFORCED LOW MODULUS OR FIBER MODIFIED ASPHALT CRACK SEALER", 5 pages dated March 17, 2009.

The following question has been received:

Question: We request the use of Fiber Modified Asphalt Crack Sealer be accepted as specified in item number 424.302. This material was accepted on all of the 2009 Maine DOT Regional Crack Sealing bids.

Response: Please see the above change

Consider these changes prior to submitting your bid on March 31, 2010.

Sincerely,

FOR

Scott Bickford
Contracts & Specifications Engineer



PRINTED ON RECYCLED PAPER

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 017302.00

PROJECT(S): STP-1730(200)X

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
SECTION 0001 PROJECT ITEMS						
0010	424.302 CRACK SEALER, APPLIED	G 600.000				
0020	659.10 MOBILIZATION	LUMP	LUMP			
	TOTAL BID					

SPECIAL PROVISION
SECTION 424
 FIBER REINFORCED LOW MODULUS OR FIBER MODIFIED ASPHALT
 CRACK SEALER

Description This work shall consist of the furnishing and placement of crack sealing material in the cracks of existing bituminous concrete pavement in accordance with these Special Provisions. Placement shall consist of: 1) crack cleaning and drying, 2) material preparation and application, 3) material finishing and shaping 4) barrier material and application.

Materials The sealant shall be either one of the following (A or B) and shall be subject to approval by the Resident prior to the start of work.

A) Fiber Reinforced Low Modulus Crack Sealant Material:

1. Low Modulus Crack Sealant Material shall conform to AASHTO M 324, Type IV (ASTM D 6690, Type IV) and the following specification.

Cone Penetration	90 - 150
Flow @ 60°C [140°F]	< 3.0mm [$\frac{1}{8}$ in]
Bond, non-immersed	Three 12.7mm [$\frac{1}{2}$ in] Specimens pass ^A 3 cycles @ 200% extension @ -29°C [-20°F]
Resilience, %	60 min
Asphalt Compatibility, ASTM D5329	Pass ^B

^AThe Development at any time during the test procedure of a crack, separation, or other opening that at any point is over 6 mm deep in the sealant or between the sealant and concrete block shall constitute failure of the test specimen. The depth of the crack, separation, or other opening shall be measured perpendicular to the side of the sealant showing the defect.

^BThere shall be no failure in adhesion, formation of any oily exudate at the interface between the sealant and asphaltic concrete or other deleterious effects on the asphaltic concrete or sealant when tested at 60°C [140°F].

2. Fibers - Polyester, fully drawn.

Length	10 mm [0.4 in] (max)
Denier	15 dpf (max)
Tenacity	4 gpd (min)
Crimp	none
Color	natural

Fiber Reinforced Low Modulus Crack Sealant Material Properties:

Fiber concentration	0 to 5 % by weight of Low Modulus Crack Sealant Material; uniform dispersion of fibers
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Blending of the fibers with the low modulus crack sealant material shall be in accordance with the recommendations of the manufacturer of the fibers. The % of fibers to be added at the contractor’s discretion with final adjustments and approval made by the Department.

B) Fiber Reinforced Modified Asphalt compound consisting of:

1. Modified Asphalt Binder - This shall consist of a blend of neat asphalt cement and crumb rubber, which are chemically bonded to produce a modified asphalt binder that complies with all the requirements of AASHTO MP1a for PG 70-34, with a separation less than 5% (AASHTO PP 5-93, Section 8.3). The modified asphalt binder shall not contain any particles of rubber or elastomeric material when tested in accordance with AASHTO T 44. The viscosity shall not exceed 3 Pa·s at 300°F. The dynamic shear of the pressure aging vessel residue shall not exceed 5000 kPa at 7°C. The elastic recovery at 4°C (AASHTO T301) shall be not less than 70%. The modification at a minimum shall consist of 5% crumb rubber from tires. The supplier of the modified asphalt binder shall certify the composition and PG grade of the modified asphalt binder.
2. Asphalt Cement - The high temperature grade (AASHTO MP1a) of the neat asphalt cement shall not exceed PG 58-XX.
3. Crumb Rubber – The modified asphalt binder shall have a crumb rubber content of not less than 5% by weight of neat asphalt cement. The maximum size of the crumb rubber shall be 80 mesh.
4. Chemical Bonding Agent – The chemical bonding agent shall be heat stable and compatible with asphalt and rubber.
5. Fibers - Polyester, fully drawn.

Length	10 mm [0.4 in] (max)
Denier	15 dpf (max)
Tenacity	4 gpd (min)
Crimp	none
Color	natural

Fiber Reinforced Modified Asphalt Compound Properties:

Fiber concentration	8% by weight of modified asphalt binder; uniform dispersion of fibers
Elongation	8% at 0°F (max)
Tensile Strength	450 psi at 0°F (min)

Blending of the fibers with the modified asphalt binder shall be in accordance with the recommendations of the manufacturer of the fibers.

The contractor shall provide the Resident or authorized representative with a copy of the material manufacturer's recommendations for the sealant material being provided pertaining to heating, application, and reheating prior to the beginning of operations or the changing of materials.

CONSTRUCTION REQUIREMENTS

Weather Crack Sealant Material shall not be applied on a wet surface, after sunset or before sunrise, or when the atmospheric temperature is below 10°C [50°F] in a shaded area at the job site, or when weather conditions are otherwise unfavorable to proper construction procedures.

Equipment Equipment used in the performance of the work shall be subject to the Resident's or authorized representative's approval and shall be maintained in a satisfactory working condition at all times.

(a) Air Compressor: Air compressors shall be portable and capable of furnishing not less than 3 m³ [4 yd³] of air per minute at not less than 825 kPa [120 psi] pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.

(b) Sweeper: Manually operated, gas powered air-broom or self-propelled sweeper designed especially for use in cleaning pavements shall be used to remove debris, dirt, and dust from the cracks.

(c) Hot Air Lance: Should operate with propane and compressed air in combination at 1100°C - 1650°C [2000°F - 3000°F], exit air heated at not less than 825 kPa [120 psi]. The lance should draw propane from no smaller than a 45 Kg [100 lb] tank using separate hoses for propane and air draw. The lance shall be designed in such that the flame does not come in contact with the pavement. The hoses shall be wrapped together with reflectorized wrap to keep them together and to protect workers in low light situations.

(d) Hand Tools: Shall consist of V-shaped squeegee, brooms, shovels, metal bars with chisel shaped ends, and any other tools which may be satisfactorily used to accomplish this work.

(e) Melting Kettle: The unit used to melt the joint sealing compound shall be a double boiler, indirect fired type. The space between inner and outer shells shall be filled with a suitable heat transfer oil or substitute having a flash point of not less than 320°C [608°F]. The kettle shall be equipped with a satisfactory means of agitating and mixing the joint sealer at all times. This may be accomplished by continuous stirring with mechanically operated paddles and/or a continuous circulating gear pump attached to the heating unit. The kettle must be equipped with thermostatic control calibrated between 94°C [200°F] and 290°C [550°F].

(f) Application Wand: The application wand shall apply a controlled flow of material via an insulated or heated hose. The nozzle shall distribute the material as called for in this specification. A pressure regulator shall be provided to regulate pressure at the nozzle. A bypass line into the holding tank is required for use when the nozzle is shut off.

Preparation All cracks greater than 5 mm [$\frac{1}{4}$ in] shall be blown free of loose material, dirt, vegetation, and other debris by high pressure air. Material removed from the crack shall be removed from the pavement surface by means of a power sweeper or appropriate hand tools as required. Cracks showing evidence of vegetation after being blown out shall be additionally cleaned by appropriate hand tools and additionally blown out. All cracks must be blown and heated via the hot air lance a maximum of 5 minutes prior to the crack being sealed. Distance between the hot air lance and the crack sealing unit should be no more than 15 m [50 ft] to eliminate reinvasion of water, debris, and other incompressibles. All debris, vegetation, and water shall be removed to enhance adhesion of the crack sealing material. THIS WORK SHALL NOT BE DONE IN INCLEMENT WEATHER.

Preparation and Placement of Sealer The crack sealant material shall be heated and applied at the temperature specified by the manufacturer and approved by the Resident or authorized representative. Any material that has been heated above the manufacturer's specification shall not be used. Material that is reheated or held at temperature for an extended period of time may be used as allowed by the manufacturer's specification and approval of the Resident or authorized representative. The Contractor shall provide the Resident or authorized representative with a suitable device for verifying the sealant temperature in the kettle and at the application site.

Any over application or spills are to be removed to the satisfaction of the Resident or authorized representative. Any sealed areas with damaged or contaminated sealer or visible voids are to be removed, prepared and resealed at no additional cost to the Department.

Sealer shall be delivered to the crack while the cracks are still hot from the hot air lance preparation through a pressure hose line and applicator shoe. The sealer overbanding area shall be a maximum of 65 mm [2.5 in] wide and 2 mm [$\frac{3}{32}$ in] thick. The applicator shall be followed by a V-shaped squeegee to minimize the thickness of the overband. Any loose material on the surface or in the crack, which may contaminate the crack sealer or impede bonding of the sealant to the pavement, is to be removed by hand tools prior to crack filling. No crack filling material shall be applied in a crack that is wet or where frost, snow, or ice is present. The ambient air temperature must be 10°C [50°F] or higher.

Blotter material such as Glenzoil, Black Beauty or an equivalent approved by the Department shall be provided by the Contractor and shall be applied to the crack sealer to prevent pickup and tracking. Blotter material shall be incidental to item 424.30.

Quality of Work Excess of spilled sealer shall be removed from the pavement by approved methods and discarded. Any quality of work determined to be below normal acceptable standards will not be accepted, and will be corrected and/or replaced as directed by the Resident or authorized representative at no additional cost to the Department.

Method of Measurement Sealant will be measured by the liter (gallon) of sealant used and include all additions such as crumb rubber, bonding agents, and fibers. The manufacturer's weights of the sealant will be accepted as the basis for measurement.

Basis of Payment. The accepted quantity of Crack Sealer will be paid for at the contract unit price per liter [gallon] complete in place. This price shall be full compensation for furnishing and placing crack sealer, including cleaning cracks and furnishing and placing barrier materials.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
424.302 Crack Sealer, Applied	Liter [Gallon]