



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.
SECRETARY

March 24, 2006

Mr. Donald Davis
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 932
Proposed Specification: 9320102.D01 - Nonmetallic Accessory Materials For Concrete
Pavement and Concrete Structures.

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Nonmetallic Accessory Materials For Concrete Pavement and Concrete Structures.

This change was proposed by Karen Byram of the State Specifications Office to incorporate the original ASTM limits into the Spec and reference the new ASTM test method D5329. There is no actual change in requirements or testing. This only brings the Spec up to date.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Signature on File

Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/jo

Attachment

cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

NONMETALLIC ACCESSORY MATERIALS FOR CONCRETE PAVEMENT AND CONCRETE STRUCTURES.

(REV ~~1-13-063-24-06~~)

Subarticle 932-1.2 (Pages 830-831) is deleted and the following substituted:

932-1.2 Joint Sealer for Pavement and Structures:

932-1.2.1 General: This Specification covers joint sealer intended for use in sealing joints in asphaltic concrete pavement and portland cement concrete pavements. These materials may also be used to seal joints in portland cement concrete bridges and other structures.

932-1.2.2 Material: ~~The material shall meet the requirements of either ASTM D 1190 (Concrete Joint Sealer, Hot Poured Elastic Type) or ASTM D 3405 (Joint Sealants, Hot Poured, for Concrete and Asphalt Pavements). Manufacturers or distributors seeking approval of their material in accordance with this Specification shall demonstrate the performance of their products in accordance with Florida Test Methods FM 5-532 or FM 5-533~~ *The joint sealant shall be composed of a mixture of materials, typically but not limited to bituminous based, that will melt when heated for application and then solidify to form a resilient and adhesive compound capable of sealing joints in portland cement concrete and/or asphaltic concrete against the infiltration of moisture and foreign materials throughout normal pavement conditions and at ambient temperatures.— The manufacturer shall have the option of formulating the material according to their Specifications. However, the requirements delineated in this Specification shall apply regardless of the type of formulation used. The material shall cure sufficiently to not flow from the joint or be picked up by vehicle tires after 3 hours at 77°F ([25°C]).— The material shall be capable of a uniform application consistency suitable for filling joints without the inclusion of large air holes or discontinuities and without damage to the material.*

Materials for pavement joints shall be tested according to ASTM D 5329 (Standard Test Methods for Sealants and Fillers, Hot Applied, for Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements). Manufacturers or distributors seeking approval of their material in accordance with this Specification shall demonstrate the performance of their products in accordance with Florida Test Methods FM 5-532.

932-1.2.2.1 Physical Requirements of Joint Sealants for Portland Cement Concrete Physical Requirements Only:

Parameter	Limits
Pour Point	Greater than or equal to 20°F ([11°C]) lower than the safe heating temperature as stated by the manufacturer.
Cone-Penetration, Non-immersed at 77°F ([25°C]), 150g, 5s	Greater than or equal to 20°F ([11°C]) lower than the safe heating temperature as stated by the manufacturer.
Flow at 40°F ([60°C]), 5 h	Less than or equal to 5.0 mm
Bond, Non-immersed, 0°F ([-17.8°C]) for 5 cycles*	No cracking, separation, or opening that at any point is over ¼ inch ([6.4 mm]) deep, in the sealant or between

	<i>the sealant and the substrate.</i>
<i>*The depth of a crack, separation or opening shall be measured perpendicular to the side of the sealant showing the defect. At least two test samples in a group of three representing a given sample of sealant shall meet this requirement.</i>	

~~**The depth of a crack, separation or opening shall be measured perpendicular to the side of the sealant showing the defect. At least two test samples in a group of three representing a given sample of sealant shall meet this requirement.*~~

932-1.2.2.2 Physical Requirements of Joint Sealants for Portland Cement Concrete and/or Asphaltic Concrete ~~Physical Requirements:~~

<i>Parameters</i>	<i>Limits</i>
<i>Safe Heating Temperature</i>	<i>Equal to the pouring temperature as identified by the manufacturer</i>
<i>Cone-Penetration, Non-immersed at 77°F ([25°C]), 150g, 5s</i>	<i>Less than or equal to 90 mm</i>
<i>Flow at 40°F ([60°C]), 5 h</i>	<i>Less than or equal to 3.0 mm</i>
<i>Bond, Non-immersed, -20°F (-29°C) for 3 cycles*</i>	<i>No cracking, separation, or opening that at any point is over 1/4 inch ([6.4 mm]) deep, in the sealant or between the sealant and the substrate.</i>
<i>Resilience at 77°F ([25°C])</i>	<i>Recovery greater than or equal to 60%</i>
<i>Asphaltic Concrete Compatibility at 140°F ([60°C])</i>	<i>No failure in adhesion, formation of an oily exudates at the interface between the sealant and the asphaltic concrete, or softening or other deleterious effects on the asphaltic concrete or sealant.</i>
<i>*The depth of a crack, separation or opening shall be measured perpendicular to the side of the sealant showing the defect. At least two test samples in a group of three representing a given sample of sealant shall meet this requirement.</i>	

~~**The depth of a crack, separation or opening shall be measured perpendicular to the side of the sealant showing the defect. At least two test samples in a group of three representing a given sample of sealant shall meet this requirement.*~~

932-1.2.3 Certification: The Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 from the manufacturer, confirming that the joint sealer materials meets the requirements of this Section.

932-1.2.4 Qualified Products List: The joint sealant materials used shall be one of the products listed on the Department's Qualified Products List (QPL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.

932-1.2.5 Shipment: The material shall be delivered in containers plainly marked with the manufacturer's name or trademark product name, LOT number and date of expiration.

932-1.2.6 Bond Breaker Rod: The bond breaker rod shall be a closed cell, expanded polyethylene foam rod of the size and dimensions shown on the plans. It shall be compatible with the joint sealant and no bond or reaction shall occur between the rod and the sealant.

All bond breaker rods installed shall be covered by a sealant at the end of each work day.

Bond breaker tape approved by the sealant manufacturer may be used in lieu of bond breaker rod when sealing random cracks.

NONMETALLIC ACCESSORY MATERIALS FOR CONCRETE PAVEMENT AND CONCRETE STRUCTURES.

(REV 3-24-06)

Subarticle 932-1.2 (Pages 830-831) is deleted and the following substituted:

932-1.2 Joint Sealer for Pavement and Structures:

932-1.2.1 General: This Specification covers joint sealer intended for use in sealing joints in asphaltic concrete pavement and portland cement concrete pavement. These materials may also be used to seal joints in portland cement concrete bridges and other structures.

932-1.2.2 Material: The joint sealant shall be composed of a mixture of materials, typically but not limited to bituminous based, that will melt when heated for application and then solidify to form a resilient and adhesive compound capable of sealing joints in portland cement concrete and/or asphaltic concrete against the infiltration of moisture and foreign materials throughout normal pavement conditions and at ambient temperatures. The manufacturer shall have the option of formulating the material according to their Specifications. However, the requirements delineated in this Specification shall apply regardless of the type of formulation used. The material shall cure sufficiently to not flow from the joint or be picked up by vehicle tires after 3 hours at 77°F [25°C]. The material shall be capable of a uniform application consistency suitable for filling joints without the inclusion of large air holes or discontinuities and without damage to the material.

Materials for pavement joints shall be tested according to ASTM D 5329. Manufacturers or distributors seeking approval of their material in accordance with this Specification shall demonstrate the performance of their products in accordance with Florida Test Methods FM 5-532.

932-1.2.2.1 Physical Requirements of Joint Sealants for Portland Cement Concrete Only:

Parameter	Limits
Pour Point	Greater than or equal to 20°F [11°C] lower than the safe heating temperature as stated by the manufacturer.
Cone-Penetration, Non-immersed at 77°F [25°C], 150g, 5s	Greater than or equal to 20°F [11°C] lower than the safe heating temperature as stated by the manufacturer.
Flow at 40°F [60°C], 5 h	Less than or equal to 5.0 mm
Bond, Non-immersed, 0°F [-17.8°C] for 5 cycles*	No cracking, separation, or opening that at any point is over 1/4 inch [6.4 mm] deep, in the sealant or between the sealant and the substrate.
*The depth of a crack, separation or opening shall be measured perpendicular to the side of the sealant showing the defect. At least two test samples in a group of three representing a given sample of sealant shall meet this requirement.	

932-1.2.2.2 Physical Requirements of Joint Sealants for Portland Cement Concrete and/or Asphaltic Concrete:

Parameters	Limits
Safe Heating Temperature	Equal to the pouring temperature as identified by the manufacturer
Cone-Penetration, Non-immersed at 77°F [25°C], 150g, 5s	Less than or equal to 90 mm
Flow at 40°F [60°C], 5 h	Less than or equal to 3.0 mm
Bond, Non-immersed, -20°F [-29C] for 3 cycles*	No cracking, separation, or opening that at any point is over 1/4 inch [6.4 mm] deep, in the sealant or between the sealant and the substrate.
Resilience at 77°F [25°C]	Recovery greater than or equal to 60%
Asphaltic Concrete Compatibility at 140°F [60°C]	No failure in adhesion, formation of an oily exudates at the interface between the sealant and the asphaltic concrete, or softening or other deleterious effects on the asphaltic concrete or sealant.
*The depth of a crack, separation or opening shall be measured perpendicular to the side of the sealant showing the defect. At least two test samples in a group of three representing a given sample of sealant shall meet this requirement.	

932-1.2.3 Certification: The Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 from the manufacturer, confirming that the joint sealer materials meets the requirements of this Section.

932-1.2.4 Qualified Products List: The joint sealant materials used shall be one of the products listed on the Department's Qualified Products List (QPL). Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.

932-1.2.5 Shipment: The material shall be delivered in containers plainly marked with the manufacturer's name or trademark product name, LOT number and date of expiration.

932-1.2.6 Bond Breaker Rod: The bond breaker rod shall be a closed cell, expanded polyethylene foam rod of the size and dimensions shown on the plans. It shall be compatible with the joint sealant and no bond or reaction shall occur between the rod and the sealant.

All bond breaker rods installed shall be covered by a sealant at the end of each work day.

Bond breaker tape approved by the sealant manufacturer may be used in lieu of bond breaker rod when sealing random cracks.