

## ORIGINATION FORM

**THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR**

Modify Specification \_\_\_\_\_932\_\_\_\_\_.  
Section/File number

New Section \_\_\_\_\_.  
Section number

**Subject:** Joint Sealer for Pavement and Structures

**Origination date:** December 14, 2005

**Originator:** Karen Byram

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**Userid:**

**Problem statement:** ASTM D1190 and ASTM D3907 references are no longer supported by ASTM as of 2002. This leaves the State without limits and test methods for the QPL materials.

**Information source:** Karen Byram, Specifications; Product Evaluation Administrator  
Emmanuel Uwaibi

**Background data:** 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.

**Recommended  
Usage Note:**

**Desired  
implementation  
date:**

Beginning with the January 2007 letting.



# Florida Department of Transportation

JEB BUSH  
GOVERNOR

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DENVER J. STUTLER, JR.  
SECRETARY

## MEMORANDUM

**DATE:** February 6, 2006  
**TO:** Specification Review Distribution List  
**FROM:** Duane F. Brautigam, P.E., State Specifications Engineer

**SUBJECT: Proposed Specification: 9320102 - Nonmetallic Accessory Materials For Concrete Pavement and Concrete Structures.**

Attached for your review and comments is a copy of the subject Special Provision for Nonmetallic Accessory Materials For Concrete Pavement and Concrete Structures.

This change was proposed by Karen Byram 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 share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DB or duane.brautigam@dot.state.fl.us. Comments received after March 6, 2006 may not be considered. Your input is encouraged.

DFB/jho

Attachment

COMMENTS:

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Submitted by:

Phone #:

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## NONMETALLIC ACCESSORY MATERIALS FOR CONCRETE PAVEMENT AND CONCRETE STRUCTURES.

(REV 1-13-06)

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 asphalt and concrete pavements. These materials may also be used to seal joints in 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 concrete and/or asphalt 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 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 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.*

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**932-1.2.2.2 Physical Requirements of Joint Sealants for Concrete and/or Asphalt-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</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 ([-29C]) 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>Asphalt 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.