

# 1501 - HOT JOINT SEALING COMPOUND

## SECTION 1501

### HOT JOINT SEALING COMPOUND

#### 1501.1 DESCRIPTION

This specification covers hot joint sealing compound for use in sealing joints and cracks in asphalt and portland cement concrete pavements.

#### 1501.2 REQUIREMENTS

**a. General.** Provide a joint sealing compound that is a homogeneous blend of elastomers and other plasticizers and agents blended to result in a product that seals cracks in pavements from water intrusion. The sealant must retain adhesion and flexibility during extremes of expansion and contraction of the crack through a temperature range of 0°F to 140°F. Heat and apply the material according to manufacturer's recommendations.

**b. Bond.** When tested at -20°F to 200% extension of 1/2 inch to 1-1/2 inch for 3 cycles, the material exhibits no cracking, separation, or other opening that at any point is greater than 1/4 inch deep in the sealer or between the sealer and the mortar block. A minimum of 2 test specimens in a set of 3 representing a given sample must comply with this requirement.

**c. Flow.** 5 mm maximum.

**d. Resilience.** 50 – 80% recovery.

**e. Cone Penetration.** 0°F, 150 grams, 5 seconds: 18 - 80

**f.** Provide material capable of a minimum 12-hour pot life at application temperature and of being re-heatable at least once (in a normal field application) without experiencing changes in application characteristics, polymer and oil separation, balling or other signs of gelling.

**g.** Package the material in pails or boxes clearly marked with recommended pouring temperature, maximum heating temperature, shelf life if appropriate, and batch number. The size of a batch, which is any well-defined quantity produced by essentially the same process during a designated amount or time (such as an 8-hour shift), must be a minimum of 10,000 lbs.

**h.** Lots from the same manufacturer may be commingled during application. Do not commingle materials from different manufacturers.

#### 1501.3 TEST METHODS

**a. Sample Preparation.** ASTM D5167, sample size of 5 lbs. Maintain the material at the manufacturer's recommended pouring temperature for 6 hours for both initial and reheat, before preparing the specimens.

**b. Bond.** ASTM D5329, Section 9. In forming the bond test specimens, space the blocks  $0.50 \pm 0.01$  inch apart by means of suitable spacer strips to enclose a space of  $2.0 \pm 0.05$  inch by  $2.0 \pm 0.05$  inch.

**c. Flow.** ASTM D5329, Section 8.

**d. Resilience.** ASTM D5329, Section 12.

**e. Cone Penetration.** ASTM D5329, Section 6 with the following variations:

(1) Pour the sample into a 6 oz. tin flush with the top and allow to cool overnight.

(2) Place the specimen in a freezer at 0°F for 4 hours. Place the cone in the freezer for the last hour before the test.

## 1501 - HOT JOINT SEALING COMPOUND

(3) At the end of the 4-hour period, remove the cone from the freezer, place the specimen on the stand, and penetrate immediately.

(4) Return the specimen to the freezer, clean the cone, and return the cone to the freezer for 30 minutes before making each successive penetration.

**f. Reheat.** Allow the remainder of the sample to cool to room temperature until the next working day. Repeat subsections 1501.3a. through 1501.3e. Results of tests must meet requirements, and be consistent with those from the first set of specimens.

### 1501.4 PREQUALIFICATION

**a.** Manufacturers interested in prequalifying material under this specification must provide a thirty pound sample to the Engineer of Tests for laboratory testing. Include a copy of the quality control test report for the batch of material the sample represents, material safety data sheets, and a complete set of heating and installation recommendations and instructions. Include any conditions and limits to the number of re-heating cycles for the material.

**b.** Results of testing from the AASHTO National Transportation Product Evaluation Program (NTPEP) will be accepted in lieu of the sample requested above. Include the most recent NTPEP test report along with the other documentation requested. Include evidence that the product being offered is identical to the one reported in the NTPEP report.

**c.** The material will be evaluated for compliance with this specification, and the manufacturer will be notified of the results. The Bureau of Construction and Materials will maintain a list of qualified materials. Products will remain on the prequalified list as long as the results of batch testing and field performance are satisfactory. Report any changes in formulation to the Engineer of Tests for review and evaluation to determine if requalification is necessary.

### 1501.5 BASIS OF ACCEPTANCE

**a.** Prequalification as required in subsection 1501.4.

**b.** Receipt and approval of manufacturer's certification for minimum pot life and reheatability requirements. The manufacturer must certify that the material is capable of a minimum 12-hour pot life at application temperature and is re-heatable at least once (in a normal field application) without experiencing changes in application characteristics, polymer and oil separation, balling or any other signs of jelling. The manufacturer must designate any conditions and limits to the number of re-heating cycles for the material.

**c.** Satisfactory results of tests conducted at the Materials and Research Center on each batch of material. Samples will be obtained by a representative of KDOT and must be available for testing at the Materials and Research Center a minimum of 10 working days before the date the material is required for installation.

**d.** Visual observation of performance in the field.