



## BITUMINOUS STOCKPILE PATCHING MATERIAL MGS-93-07A

**1.0 DESCRIPTION.** This specification covers furnishing a plant Mixed bituminous mixture for patching asphalt or concrete pavement, suitable for stockpiling and cold-applied use during inclement weather conditions.

**1.1** For purposes of this specification, the manufacturer is considered to be the entity overseeing combination of the raw materials and responsible for the quality of the final product. All pre-approvals will be handled through the manufacturer.

**1.2** The attention of the bidder is specifically directed to the mixture performance characteristics of this provision. Material not meeting these characteristics and any other material not meeting the specifications and deemed unusable by the engineer shall be removed and disposed of by the bidder immediately upon notification, at no cost to the purchaser. This requirement is to be expressly understood as a part of the bid.

**2.0 MATERIALS.** All mixtures furnished under this specification shall be pre-approved and shall meet the manufacturer's specifications, as well as any additional requirements listed herein.

**2.1 AGGREGATE.** The aggregate shall be from sources recommended by the asphalt supplier and shall meet the manufacturer's recommended tolerances for quality and gradation when tested on extracted material prior to use. One hundred percent of the material shall pass a 1/2" sieve.

**2.2 ASPHALT.** The asphalt portion is considered to include the bituminous material and any additives used in the formation of the mixture, other than aggregates. The percent asphalt shall not vary by more than 0.5% from the manufacturer's recommended asphalt content. Other asphalt properties shall meet the manufacturer's tolerances when tested.

**2.3 MIXTURE.** Aggregates shall be artificially heated and at least surface dried prior to uniformly mixing with the asphalt.

### **3.0 MIXTURE PERFORMANCE CHARACTERISTICS.**

**3.1** The mixture shall remain pliable and workable in the field at a mixture temperature of 20 F or less. It shall pass the workability test in the laboratory.

**3.2** No stripping of the asphalt from the aggregate shall occur in the field. It shall pass the water resistance test in the laboratory.

**3.3** The material shall be suitable for "pothole" or other small repair type application, however is not required to be suitable for mechanical spreading operations.

**3.4** The only requirement for application shall be removal of loose and non-bonded material from the repair area and compaction by truck or other wheel-applied loads.

**3.5** The mixture shall maintain adhesive qualities in areas which are wet at the time of application and shall not bleed or flush when overlaid with hot mix. No tack or prime material shall be required to hold the material in any application for repair to asphalt or concrete pavement.

**3.6** After delivery, the mixture shall be capable of maintaining all performance characteristics after remaining in a stockpile of 25 tons or more, for a minimum of 6 months. Except for the workability characteristic, the in-place mixtures shall be capable of maintaining all performance characteristics for a period of 3 months under all forms of traffic and weather.

#### **4.0 TEST PROCEDURES.**

**4.1 WATER RESISTANCE TEST.** Fifty grams of the mixture, whether freshly prepared or taken from the stockpile, shall be heated at 250 F in a laboratory oven for one hour, cooled to 200 F at ambient temperature, and then placed in 400 ml of boiling distilled water in a 600 ml glass beaker and stirred with a glass rod at the rate of one revolution per second for 3 minutes. The water shall be decanted and the mix spread on an absorbent paper for visual observation of the coating. The aggregate shall be at least 90 percent coated with a bituminous film.

**4.2 WORKABILITY TEST.** Approximately five pounds of the mixture shall be cooled to 20 F in the laboratory. After cooling, the mixture shall be capable of being broken up readily with a spatula having a blade length of approximately eight inches.

**5.0 APPROVAL AND PREQUALIFICATION.** The following information shall be furnished for each aggregate, asphalt, and mixture combination. At the engineer's discretion, part or all of the combinations may be laboratory and/or field evaluated.

**5.1** Prior to use or acceptance of any material, the manufacturer shall submit samples for laboratory evaluation to the State Materials Engineer, Jefferson City, MO, along with specific test results for any specified laboratory test and a manufacturer's certification. Following satisfactory evaluation of the submittal and the material, a minimum of one ton of material shall be furnished free of charge to a local maintenance building designated by the State Maintenance Engineer for field evaluation. The field evaluation period will not be less than one winter period. Material submitted for evaluation after October 1 will not be considered for field evaluation for that winter. Mixtures containing the same asphalt and similar aggregates may be considered for approval without field testing, at the engineer's discretion.

**5.2 MANUFACTURER'S CERTIFICATION.** The manufacturer shall certify to the following information: 1) The brand name or other identification of the material being submitted for approval, 2) The formation and source of the aggregates, 3) The source and supplier of the asphalt. 4) The gradation and asphalt content of the mixture, 5) Allowable ranges for the asphalt content and each designated sieve size, specifically including the # 200 sieve, and 6) A list of any specific limitations as to the use of the material, specifically including maximum/minimum roadway temperatures and maximum storage time, outside in an uncovered condition. Furthermore, the manufacturer shall certify that the material is intended for use as described in this provision and that no changes in composition, materials, or properties will be made without proper notification. In the event that the manufacturer is

not the asphalt supplier, the certification shall include a letter from the asphalt supplier stating that they concur with use of their material for these purposes.

**5.3 MIXTURE CHANGES.** The manufacturer shall notify the State Materials Engineer of any changes to the mixture. Typically changes in materials (other than some aggregate sources) will require field evaluation. Small changes in additives or the composition for improvements may not, however the engineer will make the final judgement as to whether a new field evaluation is required.

**6.0 BASIS OF ACCEPTANCE.** Each lot or shipment furnished shall be accompanied by a manufacturer's certification that the material furnished is of the same ingredients and composition as that submitted for evaluation on (date submitted) and that no changes have been made. All material will be accepted on the basis of brand name, required certification, and other such tests as might be performed by the engineer.

**7.0 INSPECTION.** Inspection will be made at the point of delivery.