

**SECTION 465: COLD MIX ASPHALT MATERIAL**

**465.1 DESCRIPTION**

This work shall consist of furnishing, placing, and compaction of cold mix asphalt material. Uses include but are not limited to temporary patching, temporary detour, and maintenance operations.

**465.2 MATERIALS**

Cold mix asphalt shall be composed of a mixture of emulsified asphalt binder and aggregate. The use of cutback asphalt shall not be permitted.

**465.2.1 Aggregate**

The aggregate gradation of the cold mix asphalt material shall meet the requirements of Table 465.2.1:1, "CMA Aggregate Gradation Requirements."

**Table 465.2.1:1  
CMA Aggregate Gradation Requirements**

Sieve Size	Percent Passing by Wt
½ inch	100
3/8 inch	100
No. 4	70-100
No. 8	45-70
No. 40	20-40
No. 100	5-15
No. 200	3-8
Percent of Asphalt*	6.5-7.5

- Percent of Asphalt shall be calculated on the basis of the total weight (mass) of the mixture, exclusive of water.

The aggregate shall meet the quality requirements of Table 465.2.1:2, "Aggregate Quality Requirements."

**Table 465.2.1:2  
Aggregate Quality Requirements**

Quality Item	Specification Requirement	Specification
Sand Equivalent of minus No. 4	45% or greater	AASHTO T 176
Aggregate Index of plus No. 4	Less than or equal to 25	NMDOT Section 910
Fractured Faces of Plus No.4 Material	75%at least two fractured face	AASHTO T 335
Flat and elongated particles of plus 3/8 in. material	20% maximum with dimensional ratio of 3:1	ASTM D 4791
Fine Aggregate Angularity	40 minimum	AASHTO T 304, Method A

The moisture condition of the aggregate shall be such that the aggregate is uniformly coated and satisfactorily retains the required amount of asphalt during the stockpiling, hauling, and spreading operations.

#### **465.2.2 Asphalt Binder**

Unless otherwise specified by the City Engineer or designee, the asphalt binder shall be an emulsified asphalt of type Medium Set (MS), Cationic Medium Set (CMS), Anionic Medium Set (AMS), Rapid Set (RS), Cationic Rapid Set (CRS), Anionic Rapid Set (ARS), or High Float Emulsion (HFE).

Emulsified asphalt shall consist of uncracked petroleum asphalt uniformly emulsified with water and an emulsifying or stabilizing agent. Emulsified asphalt shall be homogenous after mixing. Anionic emulsified asphalt shall be provided in accordance with AASHTO M 140 and cationic emulsified asphalt shall be provided in accordance with AASHTO M 208.

### **465.3 CONSTRUCTION REQUIREMENTS**

#### **465.3.1 Mixing**

Mixing shall be done in an asphalt production plant which shall contain at a minimum a mixer, an asphalt storage tank, an emulsion metering pump, a control for monitoring and controlling mix components, and a conveyor for feeding the aggregate. Mixing of the liquid bituminous material and aggregate shall be by means of a continuous or pugmill type mixer capable of producing a uniform, thoroughly mixed material free from segregation.

Equipment used for heating the liquid bituminous material shall be capable of heating the material to the required temperature without the introduction of moisture, localized overheating or otherwise changing the characteristics of the material. Plant equipment shall include a thermometer that will indicate the temperature of the liquid bituminous material at the time of mixing.

The aggregate shall be heated to a temperature between 185°F and 225°F, and the asphalt shall be heated to a temperature between 135°F and 175°F. The completed mix shall have a temperature not to exceed 180°F.

The mixing time shall be of sufficient length to produce a homogenous mixture, uniform in color. The mixing time will be determined by the Contractor and shall uniformly coat the aggregate.

#### **465.3.2 Mix Design**

The mix design shall be developed by a Certified Testing Laboratory approved by the NMDOT to prepare mix designs at no cost to the City. A copy of the mix design shall be submitted to the City Engineer or designee for verification along with an Asphalt Certification Letter certifying that the submitted mix design and all components of the mix comply with the requirements of this Section 465. The Asphalt Certification Letter shall reference the mix design number, date of issuance, certified testing laboratory, percent asphalt binder, and job mix formula.

#### **465.3.3 Acceptance of Materials**

Samples of the component materials and the produced mixture shall be provided to an independent testing laboratory in order to test the materials qualities for conformance with these specifications and the mix design.

Acceptance of the materials and the produced mixture will be based on test results for gradation, fractured faces, and residual asphalt content.

**465.3.4 Performance Requirements**

The aggregate shall be uniformly coated with no stripping of the bituminous material from the aggregate. The mixture shall be capable of being stored in a stockpile for a period of at least six months without hardening or stripping and shall remain workable during all expected weather conditions during this storage.

**465.3.5 Patch Preparation and Placement Procedures**

Patch preparation and placement shall be performed in accordance with Section 470.3.4.4, "Patch Preparation" of these Standard Specifications.

Cold mix asphalt material shall be considered a temporary asphalt patch material and shall be placed as a temporary measure when weather and temperature limitation prevent the placement of a permanent asphalt patch material as defined in Section 470, "Patching Asphalt Pavements" of these Standard Specifications.

The temporary asphalt patch cold mix material shall be removed and replaced with a permanent asphalt patch as soon as weather and temperature limitations allow in accordance with Section 470.3.3, "Temperature and Weather Limitations" of these Standard Specifications.

After the cold mix asphalt material has been spread, struck off and surface irregularities adjusted, the mixture shall be compacted thoroughly and uniformly by at least three complete passes over the entire area with a steel wheel roller weighing no less than ten (10) tons. Rolling shall be continued until there is no visible evidence of further consolidation and until roller marks are eliminated.

After compaction, the surface of the cold mix asphalt shall be uniform and smooth. The finished surface shall be true to the established crown and grade. Any material showing an excess of liquid binder, becomes loose and broken, or is in any way defective shall be removed and replaced by the Contractor at the Contractor's expense.

**465.4 METHOD OF MEASUREMENT**

Cold Mix Asphalt Material specified in the Plans or Contract documents shall be measured by the ton.

The use of Cold Mix Asphalt Material placed by the Contractor to temporarily pave or patch an area requiring a permanent asphalt patch shall be at the Contractor's expense and no direct measurement or payment shall be made thereof.

**465.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay unit</b>
<i>Cold Mix Asphalt Material</i>	Ton