

**SECTION 405: HOT-MIX ASPHALT (HMA) MATERIAL**

**405.1 DESCRIPTION**

This work shall consist of providing, mixing, applying, and producing hot-mix asphalt (HMA) and HMA Materials including bituminous materials, hydrated lime or anhydrite based material.

**405.2 MATERIALS**

**405.2.1 General**

HMA shall be composed of a mixture of asphalt binder, aggregate, blending sand, mineral filler, and hydrated lime or anhydrite based material. The Contractor shall size, uniformly grade, and combine aggregate fractions in accordance with the Contract. All Materials shall be tested in accordance with applicable AASHTO methods, as modified by the City (if applicable) or other test procedures as directed by the City Engineer or designee. The City Engineer shall decide all questions pertaining to the interpretation of test procedures.

**405.2.2 Aggregate**

The Contract or City Standard Details will specify the type of HMA the Contractor is to use. Aggregate gradation, quality and fractured face requirements shall be based on the HMA type specified.

**405.2.2.1 Aggregate Gradation Requirements**

The aggregate gradation of the HMA mixture shall meet the requirements of Table 405.2.2.1:1, "HMA Aggregate Gradation Requirements." The City Engineer or designee may require, at no additional cost to the City, wet preparation, per AASHTO T 146, Method A, if the City Engineer or designee believes there are Deleterious Materials present in the aggregate stockpiles before aggregate gradation testing. The City will allow the Contractor to combine Materials from two or more sources to produce aggregate only when each individual aggregate source meets all applicable quality requirements.

**Table 405.2.2.1:1  
HMA Aggregate Gradation Requirements**

Sieve size	% Passing per HMA Type			
	SP-III		SP-IV	
	Min	Max	Min	Max
2 in				
1 ½ in				
1 in	100			
¾ in	90	100	100	
½ in	-	90	90	100
⅜ in	-	-	-	90
No. 8	23	49	28	58
No. 200	2.0	8.0	2.0	10.0

**405.2.2.2 Aggregate Quality and Fractured Faces**

Aggregate Quality and Fractured Faces shall meet the requirements of Section 423.2.2.1.1 Aggregate Quality and Section 423.2.2.1.2 Fractured Faces of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

#### **405.2.2.3 Production**

When producing aggregates for HMA, natural fines shall be removed by screening and the aggregate shall be stockpiled separately. The Contractor shall use the No. 4 sieve as a minimum or larger screen if needed to properly control the crushing and screening operation. The Material retained on the scalping screen shall be crushed and separated into at least two stockpiles of fine and coarse aggregates. Crushing operations shall be regulated to produce Material within the specified gradation band.

#### **405.2.2.4 Stockpiling**

Stockpiles shall be constructed upon prepared sites and when completed shall be neat and regular in shape. Stockpiles shall be constructed to prevent segregation of the aggregate.

Sufficient storage space shall be provided for each size of aggregate stockpile. Stockpiles shall be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregate. The different aggregate sizes shall be kept separated until they have been delivered to the cold feed system feeding the drier.

The Contractor shall prevent foreign matter from contaminating the stockpiles and shall store stockpiles away from vehicular and Equipment traffic. The storage yard shall be maintained neat and orderly and the separate stockpiles shall be readily accessible for sampling.

#### **405.2.2.5 Combining**

When the crushed materials from the stockpiles are combined, the product of such combination shall meet the gradation requirements. Controlled feeders from each stockpile shall be used to blend the materials.

#### **405.2.3 Asphalt Binder**

The Contract or applicable sections of these Standard Specifications will specify the type and grade of asphalt binder.

Asphalt binder shall meet the requirements of Section 402, "Asphalt Materials, Hydrated Lime, and Anhydrite Based Material," of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

The asphalt binder source to be used shall not be changed without the written approval of the City Engineer or designee.

#### **405.2.4 Hydrated Lime or Anhydrite Based Material**

Hydrated lime or anhydrite based material shall be provided in accordance with Section 402, "Asphalt Materials, Hydrated Lime, and Anhydrite Based Material," of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

#### **405.2.5 Blending Sand**

Blending sand shall be provided in accordance with Section 423.2.5, "Blending Sand," of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

#### **405.2.6 Mineral Filler**

Mineral filler shall be provided in accordance with Section 423.2.6, "Mineral Filler," of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

The Contractor shall not use fly ash as mineral filler for HMA.

#### **405.2.7 Mix Design**

An Asphalt Certification Letter shall be provided by the Contractor to the City Engineer or designee at a minimum five (5) working days prior to the beginning of HMA paving operations. The Asphalt Certification Letter must reference an approved and current HMA mix design from the NMDOT. The Asphalt Certification Letter must clearly identify the NMDOT State Materials Laboratory mix design number and NMDOT lab number.

The HMA mix design and mix design adjustment shall be provided in accordance with Section 423.2.8, "Mix Design," of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

City concurrence of a mix design will not relieve the Contractor of full responsibility for producing an acceptable mixture.

The City Engineer will require at least 1.0% hydrated lime or anhydrite based material in all mix designs.

If tests indicate the need for additives or modifiers not specified in the Contract or a change in source of binder to satisfy mix design requirements, the Contractor will perform the required changes at no additional cost to the City.

#### **405.2.8 Job Mix Formula**

Job Mix Formula and Job mix Formula Adjustment shall be provided in accordance with Section 423.2.9, "Job Mix Formula," and all associated sub-sections of the NMDOT Standard Specifications for Highway and Bridge Construction, current edition.

### **405.3 CONSTRUCTION REQUIREMENTS**

#### **405.3.1 General**

Materials shall be mixed, applied, or incorporated in the work in accordance with the requirements of the Contract, applicable sections of the specifications, or City Standard Details. The Contractor shall submit the name and address of the Material Supplier to the City Engineer or designee.

Representative samples of each grade or classification of asphalt Materials to be furnished shall be submitted for testing, when required by the City Engineer or designee. Asphalt Materials shall be mixed and applied within the approved temperature range.

The Contractor shall not make changes to the asphalt crude stock source, asphalt manufacture method, or the asphalt Supplier without written approval from the City Engineer or designee.

### **405.4 METHOD OF MEASUREMENT**

Aggregate, blending sand, and mineral filler shall be considered incidental to HMA as provided in applicable sections of the specifications and no separate measurement or payment will be made.

Asphalt Materials, hydrated lime, and anhydrite based material will be measured and paid for by the Ton or as described in applicable sections of the specifications.

If asphalt Materials are not stored in tanks for exclusive use on the project, the City will determine the acceptable quantity of *Asphalt Material*, per lot, based on the following equation:

$$Q = T \times X$$

where

*Q* = quantity of *Asphalt Material* (in tons)

*T* = quantity of placed and accepted asphalt pavement (in tons)

*X* = the average percent asphalt content in the asphalt pavement (per lot)

**405.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
<i>Asphalt Material</i>	Ton
<i>Hydrated Lime</i>	Ton
<i>Anhydrite Based Material</i>	Ton