

**QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HOT MIX
ASPHALT, HMA, PAVEMENT
FOR
DENSE GRADED, QC/QA-HMA, 4.75 mm MIXTURE**

Description

This work shall be in accordance with 401 for a dense graded, QC/QA-HMA, 4.75 mm mixture, constructed on a prepared foundation in accordance with 105.03.

MATERIALS

Materials

Materials shall be in accordance with 401.03 except the fine aggregate type shall be based on the ESAL category as follows:

Fine Aggregate Type	ESAL CATEGORY		
	1 and 2	3	4 and 5
Air-Cooled Blast Furnace Slag	Yes	Yes	Yes
Steel Furnace Slag	Yes	Yes	Yes
Sandstone	Yes	Yes	Yes
Crushed Dolomite	Yes	Yes	Note 1
Polish Resistant Aggregates	Yes	Yes	Note 1
Crushed Stone	Note 2	No	No
Crushed Gravel	Yes	No	No
Natural Sand	Yes	No	No
<p>Note 1. Polish resistant aggregates or crushed dolomite may be used when blended with ACBF or sandstone but cannot exceed 50% of the coarse aggregate by weight (mass), or cannot exceed 40% of the coarse aggregate by weight (mass) when blended with steel furnace slag.</p> <p>Note 2. Crushed stone will not be limited.</p>			

Design Mix Formula

The design mix formula, DMF, shall be in accordance with 401.04. The 4.75 mm mixture may be produced as warm-mix asphalt (WMA) by using a water-injection foaming device for ESAL category 1, 2 and 3 mixtures. The DMF shall list the minimum plant discharge temperature for HMA and WMA as applicable to the 4.75 mm mixture.

Volumetric Mix Design

The volumetric mix design for the 4.75 mm mixture shall be in accordance with 401.05 except the single percentage of aggregate passing each required sieve shall be within the following limits:

Sieve Size	4.75 mm
9.5 mm	100.0
4.75 mm	90.0 – 99.0

2.36 mm	
1.18 mm	30.0 - 60.0
600 μ m	
300 μ m	
75 μ m	6.0 - 12.0

Recycled Materials

Recycled materials shall be in accordance with 401.06. A maximum of 25.0% RAP or 5.0% ARS by weight (mass) of the total mixture may be used in HMA or WMA for ESAL category 1 and 2 mixtures. The RAP material shall be 100% passing the 3/8 in. (9.5 mm) sieve and 95 to 100% passing the No. 4 (4.75 mm) sieve. Recycled materials will not be permitted for use in ESAL category 3, 4 or 5 mixtures.

Job Mix Formula

The job mix formula, JMF, shall be in accordance with 401.08. The JMF shall list the minimum plant discharge temperature for HMA and WMA as applicable to the 4.75 mm mixture.

Acceptance of Mixtures

Acceptance of the 4.75 mm mixture will be in accordance with 401.09 except the pay factors will be determined in accordance with 401.19(b).

CONSTRUCTION REQUIREMENTS

Spreading and Finishing

Spreading and finishing for the 4.75 mm mixture shall be in accordance with 401.14 except the finished thickness shall be at least one and a half times but not more than three times the maximum particle size as shown on the DMF.

Density

Density for the 4.75 mm mixture will be in accordance with 401.16. Vibratory rollers operating in vibratory mode shall not be used on the 4.75 mm mixture. If the core indicates a course thickness of less than one and a half times the maximum particle size, the core will be discarded and a core from a new random location will be selected for testing.

Pavement Smoothness

Pavement smoothness for the 4.75 mm mixture will be accepted in accordance with 401.18 by means of a profilograph.

Method of Measurement

The method of measurement will be in accordance with 401.21.

Basis of Payment

The basis of payment will be in accordance with 401.22.