

## ITEM 302 ASPHALT CONCRETE BASE

### 302.01 Description

### 302.02 Composition

### 302.03 Mixing

### 302.04 Spreading and Finishing

### 302.05 Spreading and Surface Tolerances

### 302.06 Basis of Payment

**302.01 Description.** This work consists of constructing a base course of aggregate and asphalt binder, mixed in a central plant and spread and compacted on a prepared surface.

The requirements of Item 401 apply, except as modified by this specification.

### 302.02 Composition.

**A. General.** Furnish a mixture that conforms to the following gradation:

Sieve Size	Total Percent Passing
2 inch (50 mm)	100
1 1/2 inch (37.5 mm)	85 to 100
1 inch (25.0 mm) <sup>[1]</sup>	68 to 88
3/4 inch (19.0 mm) <sup>[1]</sup>	56 to 80
1/2 inch (12.5 mm) <sup>[1]</sup>	44 to 68
3/8 inch (9.5 mm) <sup>[1]</sup>	37 to 60
No. 4 (4.75 mm)	22 to 45
No. 8 (2.36 mm)	14 to 35
No. 16 (1.18 mm)	8 to 25
No. 30 (600 μm)	6 to 18
No. 50 (300 μm)	4 to 13
No. 200 (75 μm)	2 to 6

[1] Provide aggregate to retain a minimum of 7 percent of the material on each of these sieves. This requirement applies to the gradation of the JMF and the mix production according to Item 403.

In the design of the asphalt concrete base, the requirements of Item 441 apply, except as follows:

The Contractor may use reclaimed asphalt concrete pavement according to 401.04. Should problems with proper coating or other material issues related to the use of reclaimed asphalt concrete pavement be evident, the Laboratory may limit reclaimed asphalt concrete pavement to 30 percent. In this case the Laboratory will adjust the virgin binder content.

Add hydrated lime in the dry form at a rate of 0.75 percent by the dry weight of aggregate for asphalt concrete base, if antistrip additive is required and hydrated lime is used.

Design the asphalt concrete base to yield 4.0 percent air voids and the following properties:

302.03

Property	Acceptable Range of Values	
	minimum	maximum
Binder Content, % of total mix	2.0 [Virgin]	6.0[Total]
Stability, lb (N), 70 blow	3000 (13,345)	--
Flow, 0.25 mm, 70 blow	--	28
Voids in Mineral Aggregate, %	12.0	--

Use equipment that meets the requirements of a Level 3 Laboratory as specified in City Supplement 1041. Ensure that the following equipment is designed and manufactured to prepare and test a Marshall specimen with a 6.0-inch (152.4 mm) diameter and a  $3.75 \pm 0.05$  inch ( $95 \pm 1.3$  mm) height:

1. Specimen mold assembly.
2. Specimen extractor.
3. 22.5-pound (10 kg) compaction hammer.
4. Compaction pedestal specimen mold holder.
5. Marshall test apparatus.

Produce batches of asphalt concrete base in the amount that will result in a compacted specimen  $3.75 \pm 0.05$  inch ( $95 \pm 1.3$  mm) in height. This amount is about 4050 grams.

**B. Compaction of Specimens.** Fill the mold with asphalt concrete base by placing approximately one-half of the batch in the mold and spading it vigorously with a heated spatula or trowel 15 times around the perimeter and ten times over the interior. Place the second half of the batch in the mold and spade the mixture in the same manner.

Compact the specimen on both sides with 70 blows.

**C. Stability Correlation Ratios.** Convert measured stability values for specimens that depart from the standard 3.75-inch (95 mm) thickness to an equivalent 3.75-inch (95 mm) value by multiplying the stability value by the appropriate correlation ratio as follows:

Approximate Thickness of Specimen, inches (mm)		Correlation Ratio
3-1/2	(89)	1.12
3-9/16	(90)	1.09
3-5/8	(92)	1.06
3-11/16	(94)	1.03
3-3/4	(95)	1.00
3-13/16	(97)	0.97
3-7/8	(98)	0.95
3-15/16	(100)	0.92
4	(102)	0.90

**302.03 Mixing.** Conform to the requirements of 301.03.

**302.04 Spreading and Finishing.** Ensure that the compacted depth of any one layer is a minimum of 4 inches (100 mm) and a maximum of 7.75 inches (190 mm). Ensure

that the temperature of the mixture when delivered to the paver is a minimum of 250 °F (120 °C) if a hot mix asphalt and 230 °F (110 °C) if a warm mix asphalt according to 402.09. Ensure the temperature of the mixture is sufficient for the roller coverage to be effective in compacting the mixture

**302.05 Spreading and Surface Tolerances.** Conform to the requirements of 301.05.

**302.06 Basis of Payment.** The City will pay for accepted quantities, complete in place, at the contract price as follows:

<b>Item</b>	<b>Unit</b>	<b>Description</b>
302	Cubic Yard (Cubic Meter)	Asphalt Concrete Base