

SECTION 402

HOT MIX ASPHALT BINDER COURSE

402.01 Description. This work shall consist of a binder or intermediate course composed of mineral aggregate and asphalt binder, mixed in an approved plant and constructed on a prepared surface in accordance with these specifications and conforming to the lines, grades, dimensions, thickness and typical cross-section shown on the plans or as otherwise specified.

MATERIALS

402.02 General. The materials shall meet the applicable requirements of Subsections **401.02** through **401.03**. Hydrated lime will be required in all binder courses as an anti-stripping additive.

402.03 Composition of Mixture. The mineral aggregates and asphalt binder shall be combined in such proportions that the composition by weight of the finished mixture shall be within the following composition limits shown in the following tables. When the mix is controlled, accepted, and paid for in accordance with the Volumetric, Low Tonnage, or other control and acceptance methods, specific requirements will be given in the special provisions.

Composition Limits for Hot Mix Asphalt Binder Courses

Required Gradation	
Sieve Designation	Percentage by Weight Passing
1 inch	100
3/4 inch	90 - 100
1/2 inch	72 - 90
No. 4	42 - 60
No. 8	30 - 48
No. 30	12 - 29
No. 100	6 - 16
No. 200	2 - 8
Note: The amount between any two consecutive sieves smaller than 1/2 inch shall not be less than 3%.	

Percent of Total Mixture	
Asphalt binder	3.5 - 6.2

Required Job Mix Marshall Design Criteria	
Minimum Stability, lbs.	1200
Air Voids, %	3.5 - 6.0
Flow, 0.01 inch	8 - 16
Dust/Asphalt Ratio	0.6 - 1.2

Voids In Mineral Aggregates (VMA)	
Nominal Maximum Aggregate Size	Minimum VMA
3/4 inch	14.0%
1/2 inch	15.0%

Required Field Marshall Criteria	
Minimum Stability, lbs.	1000
Air Voids, %	3.0 - 6.0
Dust/Asphalt Ratio	0.6 - 1.2

The composition limits are master ranges of tolerances. A closer control meeting the requirements as specified in Sub-section **401.04** will be required. However, the Contractor

shall furnish aggregate of such gradation that an asphalt binder content exceeding 5.7% will not be required.

Listed below are other requirements for each type of binder course.

Binder Course Type 1:

1. Fine aggregate shall be screenings.
2. Coarse aggregate shall be crushed aggregate.
3. Mix design using 75 blow Marshall design procedure.

Binder Course Type 2:

1. Mix design using 50 blow Marshall design procedure.

EQUIPMENT

402.04 Equipment Requirements. Equipment shall meet the applicable requirements of Subsections **401.06** through **401.14**

CONSTRUCTION REQUIREMENTS

402.05 Construction Requirements. Construction requirements specified in Subsections **401.15** through **401.37** shall apply to Hot Mix Asphalt Binder Courses work.

402.06 Method of Measurement and Basis of Payment. This work will be measured and paid for in a similar manner as specified in Subsections **401.38** and **401.39**.

Payment for this item includes all direct and indirect costs and expenses required to complete the work.

Payment will be made under:

Item No	Pay Item	Pay Unit
402XXXX	Hot Mix Asphalt Binder Course (Type <i>(1 or 2)</i>)	Ton