

Item Special - THINLAY ASPHALT CONCRETE

- .01 Description**
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- .01 Description.** This work consists of constructing a surface course of aggregate and asphalt binder mixed in a central plant and spread and compacted on a prepared surface. The requirements of 401 apply, except as modified by this specification.
- .02 Composition.** Establish a Job Mix Formula (JMF) by combining coarse aggregate, fine aggregate, reclaimed asphalt pavement (RAP) and asphalt binder in proportions that result in an asphalt mixture meeting the blend limits in **Table .02-1** for the mix types shown.

TABLE.02-1 – MIXTURE COMPOSITION

Property	Type HT^[2]	Type MED^[2]	Type LT	Type ULT
Fine Aggregate (703.05A)	65% Mech. Crush / 35% Natural Sand	50% Mech. Crush / 50% Natural Sand ^[3]	≥ 50% Natural Sand	≥ 50% Natural Sand
RAP (max. %)	25	25	25	25
Total binder content min. (% by weight of mix)	6.4	6.4	6.6	6.6
Virgin binder min. (% by weight of mix)	5.2	5.2	5.2	5.2
Asphalt Binder Grade (PG)	70-22M	64-22	58-28	52-28
F/A Ratio, max	1.2	1.2	1.2	1.2
Blows	75	50	50	50
Stability, min., pounds (N)	1800 (8006)	1200 (5338)	750 (3336)	750 (3336)
Flow, 0.25mm	8 to 14	8 to 16	8 to 18	8 to 18
Design Air Voids	3.5	3.5	3.5	3.5
VMA, min.	15	16	16	16
Sieve Size	Total Percent Passing ^[1]			
1/2 inch (12.5 mm)	100			
3/8 inch (9.5 mm)	95 to 100			
No. 4 (4.75 mm)	72			
No. 8 (2.36 mm)	42 to 60			
No. 16 (1.18 mm)	27 to 45			
No. 50 (300 μm)	10 to 22			
No. 200 (75 μm)	0 to 8			

[1] Gradation includes any mineral filler and is specified in percent passing.

[2] Provide coarse aggregate with a minimum of 90 percent fractured (two or more faces) according to ASTM D5821

[3] Provide fine aggregate as a 50% crushed/50% nat. sand blend. Ensure crushed fine aggregate meets FAA of 44 or is crushed carbonate stone, trap rock or air cooled blast furnace slag.

[4] Provide fine aggregate as a 65% crushed/35% nat. sand blend. Ensure crushed fine aggregate meets FAA of 44 or is crushed carbonate stone, trap rock or air cooled blast furnace slag.

- .03 Materials.** Furnish clean, uncoated aggregate conforming to the applicable requirements of Table.03-1 and quality requirements of 703.05. Provide mineral filler conforming to 703.07. Provide binders conforming to 702.01. For PG52-28 binder: Comply with AASHTO M320 except that Flash Point is 260°C min. and Mass Change is 0.75% max. Process RAP according to Method 2 (extended) RAP, Table 401.04-2. Only incorporate RAP passing the 9/16 inch sieve into the mix.
- .04 Mixing.** Ensure the mixing plant conforms to 402.
- .05 Weather Limitations.** Do not place the asphalt concrete when the surface of the existing pavement is less than 60 °F (15 °C) or the air temperature is less than 60 °F (15 °C).

.06 Spreading Compacting and Finishing. Only use static (non-vibratory) compaction methods. Use a minimum of two rollers. Compact mixes conforming to 401.13 and 401.16. Three wheel rollers per 401.16 will not be required. Double the maximum capacity square yards per hour provided in Table 401.13-1 for course thickness one inch or less.

Ensure that the mix temperature immediately before rolling is not less than 260 °F (127 °C). Complete rolling, with full coverage of the roller train, before the mix temperature reaches 175 °F (80 °C). Provide an analysis to the Engineer using PaveCool software to model asphalt cooling under actual placement conditions at the start of each paving day. Ensure the placement rate and roller coverage are coordinated to allow full roller train coverage in the recommended rolling times. Do not allow traffic on the compacted mixture until it has cooled sufficiently to prevent damage.

.07 Surface Tolerances. Ensure the completed surface course conforms to 401.19. Prior to placing asphalt concrete, pre-fill the depression caused by the removal of the casting with material meeting this specification.

.08 Acceptance. Comply with all requirements of 448 except 448.02 Density. Do not conduct density gauge quality control testing per Supplement 1055.

.09 Basis of Payment.

Payment for accepted quantities, completed in place, at the contract price will be as follows:

Item	Unit	Description
Special	Cubic Yard (Cubic Meter)	Thinlay Asphalt Concrete, Type HT
Special	Cubic Yard (Cubic Meter)	Thinlay Asphalt Concrete, Type MED
Special	Cubic Yard (Cubic Meter)	Thinlay Asphalt Concrete, Type LT
Special	Cubic Yard (Cubic Meter)	Thinlay Asphalt Concrete, Type ULT