

SECTION 315

ASPHALT CONCRETE PAVEMENT

I. GENERAL

1.1. DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material (except as herein provided), tools, equipment, supplies, and services; and, shall perform all Work necessary for constructing one or more courses of asphalt concrete on a prepared foundation, in accordance with the requirements of these specifications and in conformity with the lines shown in the Contract Documents or as established by the Owner.

1.2. MATERIALS

Materials shall be furnished by the Contractor in accordance with Section 200.

1.3. EQUIPMENT

A. Hauling Equipment

Trucks used for hauling asphalt mixtures shall have tight, clean, smooth metal or other non-absorptive, inert material bodies equipped with a positive locking metal tailgate. Metal surfaces in contact with asphalt mixtures shall be given a thin coat of an aliphatic hydrocarbon invert emulsion release agent (nonpuddling), a lime solution, or other material on the VDOT's list of approved release agents. The beds of dump trucks shall be raised to remove excess agent prior to loading. Only a nonpuddling agent shall be used in truck beds that do not dump. Each truck shall be equipped with a tarpaulin or other cover that will protect the mixture from moisture and foreign matter and prevent the rapid loss of heat during transportation.

B. Asphalt Pavers

The asphalt paver shall be designed and recommended by the manufacturer for the type of asphalt to be placed and shall be operated in accordance with the manufacturer's recommendations. Written recommendations pertaining to handling and placing of the mix shall be made readily available on the project site to the Owner. In the absence of manufacturer's recommendations, the recommendations of the National Asphalt Pavement Association shall be followed. The paver (including the screed extensions, when used) shall be capable of producing a smooth uniform texture, dense joints and a smooth riding surface. The paver shall be capable of smoothing and adjusting longitudinal joints between adjacent strips or courses of the same thickness.

C. Rollers

Rollers shall be steel wheel, static or vibrator, or pneumatic tire rollers and shall be capable of reversing without backlash. Rollers shall be operated at speeds slow enough to avoid displacement of the mixture. The number and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition. The use of equipment that results in excessive crushing of aggregate or marring of pavement surface

will not be permitted. If during construction, it is found that the equipment being used mars the surface to the extent that imperfections cannot satisfactorily be corrected or produces permanent blemishes, the use of the equipment shall be discontinued and it shall be replaced with satisfactory units.

D. **Rotary Saw**

A gasoline-powered rotary saw with a carbide blade shall be furnished for cutting test samples from the pavement. The Contractor shall furnish gasoline, oil, additional carbide blades, and maintenance for the rotary saw. The Contractor shall cool the pavement prior to sawing the sample. In lieu of a rotary saw, the Contractor may furnish the necessary equipment for coring and testing 4-inch core samples in accordance with the requirements of the *Virginia Test Methods Manual VTM-22*.

E. **Material Transfer Vehicle (MTV)**

When required in the Contract, the Contractor shall furnish a self-propelled MTV storage unit capable of receiving material from trucks, storing the material, and transferring the material from the unit to a paver hopper insert via a conveyor system. The paver hopper insert and unit shall have a combined minimum storage capacity of 15 tons. The storage unit or paver hopper insert must be able to remix the material in order to produce a uniform, non-segregated mix having a uniform temperature prior to placing the asphalt material on the roadway surface.

1.4. PLACEMENT LIMITATIONS

A. **Asphalt Concrete Produced with Warm Mix Asphalt Additives or Processes:**

1. When the base temperature is 40°F and above: The Owner will permit laydown at any temperature below the maximum limits given in Section 211.08.
2. When the mixture temperature is below 200°F: The Contractor will not be allowed to place the material.

B. **Asphalt Concrete Produced without Warm Mix Asphalt Additives or Processes:**

1. When the base temperature is above 80°F: The Owner will allow laydown of the mixture at any temperature conforming to the limits specified in VDOT Road and Bridge Specifications, Section 211.
2. When the base temperature is between 40°F and 80°F: The Contractor shall use the Nomograph, Table 315-1, to determine the minimum laydown temperature of the asphalt concrete mixes. At no time shall the base temperature for base (BM) and intermediate (IM) mixes be less than 40°F. At no time shall the laydown temperature for base (BM) and intermediate (IM) mixes be less than 250°F.

The minimum base and laydown temperatures for surface mixes (SM) shall never be less than the following:

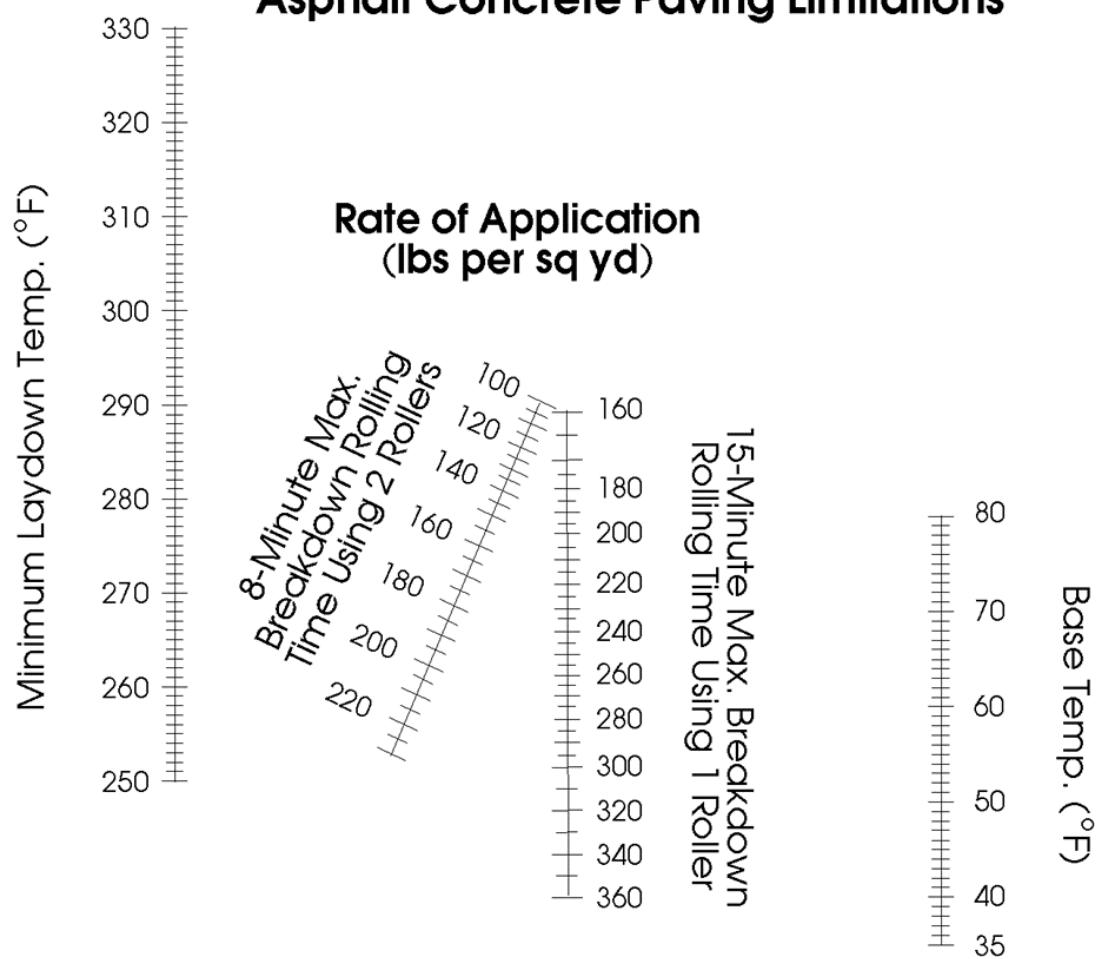
PG Binder/Mix Designation	Percentage of Reclaimed Asphalt Pavement (RAP) Added to Mix	Minimum Base Temperature	Minimum Placement Temperature
PG 64S-22 (A)	<=25%	40 °F	250 °F
PG 64S-22 (A)	>25%	50 °F	270 °F
PG 64H-22 (D)	<=30%	50 °F	270 °F
PG 64E-22 (E)	<=15%	50 °F	290 °F
PG 64S-22 (S)	<=30%	50 °F	290 °F

- When the laydown temperature is between 301°F and 325°F: The number of compaction rollers shall be the same number as those required for 300°F.

Intermediate and base courses that are placed at rates of application that exceed the application rates shown in Table 315-1 shall conform to the requirements for the maximum application rate shown for 8-minute and 15-minute compaction rolling as per number of rollers used.

Table 315-1

Asphalt Concrete Paving Limitations



If the Contractor is unable to complete the compaction rolling within the applicable 8-minute or 15-minute period, the Owner will either require the placing of the asphalt mixture to cease until sufficient rollers are used or other corrective action be taken to complete the compaction rolling within the specified time period.

The Contractor shall complete compaction rolling prior to the mat cooling down to 175°F. Finish rolling may be performed at a lower mat temperature.

The Contractor shall not place the final asphalt pavement finish course until temporary pavement markings will no longer be required.

1.5. SUBMITTALS

- A. Submittals shall be made by the Contractor in accordance with the procedures set forth in Section 105.
- B. The Contractor shall submit reports of material analysis and asphalt mix designs confirming the conformance of all materials with the requirements of this section and all applicable VDOT or permit requirements.

II. EXECUTION

The Contractor shall execute the Work in accordance with the latest edition of the VDOT *Road and Bridge Specifications*, Section 315.05, Procedures. Any references to "Engineer" or VDOT personnel shall mean the "Owner".

III. MEASUREMENT FOR PAYMENT

- A. Pavement preparation, materials, labor, tools, equipment, maintenance of traffic and all other incidentals necessary to complete the Work will not be measured and will not be paid for as such, but will be included in other items of Work. Prices for asphalt shall also include heat stabilization additive(s), furnishing samples, and maintaining traffic.
- B. Asphalt concrete (Type and Class) base and surface mixes will be measured and paid in tons or in square yards of a specified thickness in inches, as indicated on the Bid form. When paid in tons, net weight information shall be furnished with each load of material delivered in accordance with VDOT *Road and Bridge Specifications*, Section 211. Batch weights will not be permitted as a method of measurement unless the Contractor's plant is equipped in accordance with VDOT *Road and Bridge Specifications*, Section 211, in which case the cumulative weight of the batches will be used for payment.
- C. Asphalt used in the mixtures, when a pay item, will be measured in tons in accordance with Section 109.02 except that transporting vehicles shall be tare weighed prior to each load. The weight will be adjusted in accordance with the percentage of asphalt indicated by laboratory extractions.
- D. Tack coat, when not a pay item, shall be included in the price for other appropriate pay items. Asphalt concrete sidewalks will be measured and paid in tons of asphalt mixture placed.
- E. Liquid asphalt cement, when a pay item, will be measured in tons and will be paid for at the contract unit price per ton.

- F. Material Transfer Vehicle (MTV), when required in the Contract, will not be measured for separate payment. The cost for furnishing and operating the MTV shall be included in the contract unit prices of other appropriate items.
- G. Warm Mix Asphalt (WMA) additive or process will not be measured for separate payment, the cost of which, shall be included in the contract unit prices of other appropriate items.
- H. Rumble strips will be measured in linear feet and will be paid for at the contract unit price per linear foot of mainline pavement or shoulder where the rumble strips are actually placed and accepted, excluding the test site. This distance will be measured longitudinally along the center line of pavement (mainline) or edge of pavement (shoulders) with deductions for bridge decks, acceleration/deceleration lanes, surface drainage structures, and other sections where the rumble strips were not installed. This price shall include installing, cleaning up debris and disposing of waste material. The test site will not be measured for payment but shall be included in the unit price for rumble strip.
- I. Liquid asphalt coating (rumble strips) will be measured in square yards and will be paid for at the contract unit price per square yard as described herein. This price shall include cleaning rumble strips prior to application of the coating and furnishing and applying coating as specified herein.
- J. Saw-cut asphalt concrete pavement will be measured in linear feet for the depth specified and will be paid for at the contract unit price per linear foot, which price shall be full compensation for saw-cutting the asphalt pavement to the depth specified, cleaning up debris and disposal of waste material.
- K. Patching will be paid for in accordance with Section 317.
- L. Clipping shoulders shall be measured and paid per linear foot. Each side of the road shall be measured separately.
- M. See Section 515 for measurement and payment for Cold Planing.
- N. See Section 510 for measurement and payment for adjustments to existing structures.
- O. Control strips and test lots are considered incidental to the cost of furnishing, placing and compacting the specified course and will not be measured for payment.
- P. All cost for constructing tie-ins in the asphalt concrete overlay shall be included in the price bid for asphalt concrete.
- Q. Asphalt driveway replacement will be measured and paid per square yard of the specified thickness (in inches) of base and asphaltic materials as identified in the Contract Documents; or, for each driveway replaced, as indicated on the Bid form.

End of Section