# 4E

# HOT-MIX ASPHALT – PRIME COAT

(Effective: January 1, 2012, Revised: August 1, 2013)

Revise Note 1 of Article 406.02 of the Standard Specifications to read:

“Note 1. The bituminous material used for prime coat shall be one of the types listed in the following table. When more than one type is shown for a particular application, the Engineer reserves the right to specify the type which shall be used.

When emulsified asphalts are used, any dilution with water shall be performed by the emulsion producer. The emulsified asphalt shall be thoroughly agitated within 24 hours of application and show no separation of water and emulsion.

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| Application | Bituminous Material Types |
| Prime Coat on Brick, Concrete, or HMA Bases | SS-1, SS-1h, SS-1hP, SS-1vh, CSS-1, CSS-1h, CSS-1hP, HFE-90, RC-70 |
| Prime Coat on Aggregate Bases | MC-30, PEP” |

Revise Article 406.05(b) of the Standard Specifications to read:

“(b) Prime Coat. The bituminous material shall be prepared according to Article 403.05 and applied according to Article 403.10. The use of RC-70 shall be limited to air temperatures less than 60 ⁰F (15 ⁰C).”

“(1) Brick, Concrete or HMA Bases. The base shall be cleaned of all dust, debris and any substance that will prevent the prime coat from adhering to the base. Cleaning shall be accomplished by sweeping and vacuuming or sweeping and air blasting methods, as approved by the Engineer. The base shall be free of standing water at the time of application. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface as specified in the following table.

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| Type of Surface to be Primed | Residual Asphalt Rate lb/sq ft (kg/sq m) |
| Milled HMA, Aged Non-Milled HMA, Milled Concrete, Non-Milled Concrete & Tined Concrete | 0.05  |
| Fog Coat between HMA Lifts, IL-4.75 & Brick | 0.025 |

The bituminous material for the prime coat shall be placed one lane at a time. The primed lane shall remain closed until the prime coat is fully cured and does not pickup under traffic. When placing prime coat through an intersection where it is not possible to keep the lane closed, the prime coat may be covered immediately following its application with fine aggregate mechanically spread at a uniform rate of 2 to 4 lb/sq yd (1 to 2 kg/sq m).

(2) Aggregate Bases. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface of 0.25 lb/sq ft ± 0.01 (1.21 kg/sq m ± 0.05).

The prime coat shall be permitted to cure until the penetration has been approved by the Engineer, but at no time shall the curing period be less than 24 hours for MC-30 or four hours for PEP. Pools of prime occurring in the depressions shall be broomed or squeegeed over the surrounding surface the same day the prime coat is applied.

The base shall be primed 1/2 width at a time. The prime coat on the second half/width shall not be applied until the prime coat on the first half/width has cured so that it will not pick up under traffic.

The asphalt binder rate will be verified a minimum of once per application type consisting of at least 2000 tons of HMA according to the “Determination of Residual Asphalt in Prime and Tack Coat Materials” test procedure.

Prime coat shall be fully cured prior to placement of HMA to prevent pickup by haul trucks or paving equipment. If pickup occurs, paving shall cease in order to provide additional cure time.

Prime coat shall be placed no more than five days in advance of the placement of HMA. If after five days loss of prime coat is evident prior to covering with HMA, additional prime coat shall be placed as determined by the Engineer at no additional cost to the Department.”

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

“Aggregate for covering prime coat will not be measured for payment.”

Revise the first paragraph of Article 406.14 of the Standard Specifications to read:

“Prime Coat will be paid for at the contract unit price per pound (kilogram) of residual asphalt applied for BITUMINOUS MATERIALS (PRIME COAT), POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT) or NON-TRACKING BITUMINOUS MATERIALS (PRIME COAT).”

Revise Article 1032.02 of the Standard Specifications to read:

“1032.02 Measurement.Asphalt binders, emulsified asphalts, rapid curing liquid asphalt, medium curing liquid asphalts, slow curing liquid asphalts, asphalt fillers, and road oils will be measured by weight.

A weight ticket for each truck load shall be furnished to the inspector. The truck shall be weighed at a location approved by the Engineer. The ticket shall show the weight of the empty truck (the truck being weighed each time before it is loaded), the weight of the loaded truck, and the net weight of the bituminous material.

When emulsion is used, the proportions of emulsion and any water added to the emulsion shall be shown on the Bill of Lading.

Payment will not be made for bituminous materials in excess of 105 percent of the amount specified by the Engineer.”

Add the following to the table in article 1032.04 of the Standard Specifications:

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| “SS-1vh  | 160 - 180 | 70 – 80” |

Add the following to Article 1032.06 of the Standard Specifications:

“(g) Non Tracking Emulsified Asphalt SS-1vh:

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| Requirements for SS-1vh |
| Test | SPEC | AASHTO Test Method |
| Saybolt Viscosity @ 25C, SFS | 20-200 | T 72 |
| Storage Stability, 24hr., % | 1 max. | T 59 |
| Residue by Evaporation, % | 50 min. | T 59 |
| Sieve Test, % | 0.3 max. | T 59 |
| Tests on Residue from Evaporation |
| Penetration @25°C, 100g., 5 sec., dmm | 20 max. | T 49 |
| Softening Point, °C  | 65 min. | T 53 |
| Solubility, % | 97.5 min. | T 44 |
| Orig. DSR @ 82°C, kPa | 1.00 min. | T 315” |

Revise the last table of Article 1032.06 to read:

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| “Grade | Use |
| SS-1, SS-1h, CSS-1, CSS-1h, HFE-90, SS-1hP, CSS-1hP, SS-1vh | Prime or fog seal |
| PEP | Bituminous surface treatment prime |
| RS-2, HFE-90, HFE-150, HFE- 300, CRSP, HFP, CRS-2, HFRS-2 | Bituminous surface treatment |
| CSS-1h Latex Modified | Microsurfacing” |

Designer notes:

Use pay item X4060110 BITUMINOUS MATERIALS (PRIME COAT) - POUND

Do not pay for aggregate prime coat separately