

November 1, 2013

**PREVENTATIVE MAINTENANCE THIN LIFT SURFACE**

**412 Preventative Maintenance Thin Lift Surface**

**412.1 Description**

This work consists of an asphalt plant thin lift surface course composed of crushed screenings, natural sand, fractionated recycled asphalt, recycled shingles, asphalt binder, and hydrated lime or LASA as anti-strip additives. The primary purpose of this mixture is to provide a preventative maintenance surface to encourage longer lasting wearing courses. This mixture is mixed in an approved plant and constructed in accordance with the lines, grades, dimensions, thickness and typical cross section shown on the plans or as otherwise specified. All applicable special provisions and sections of Standard Specifications, except noted herein apply.

**412.2 Materials**

**412.2.1 Aggregate**

Ensure that aggregates used in the Preventative Maintenance Thin Lift Surface meet the applicable requirements of Subsection 401.2.2 of the 2007 Standard Specifications. Use fractionated recycled asphalt, natural sand, and or screenings for all aggregates used in this mixture. Ensure that the parent stone or gravel meets the Los Angeles Abrasion requirements specified in Subsection 401.2.2.4 of the 2007 Standard Specifications and that no aggregate has an absorption value greater than 1.5% when tested in accordance with AASHTO T85.

**412.2.2 Asphalt Binder**

Conform the liquid asphalt binder to all requirements of AASHTO M 320 and ensure that it is PG64-22 performance grade unless otherwise specified.

**412.2.3 Hydrated Lime and Liquid Anti-Strip Additives (LASA)**

Use hydrated lime as an asphalt anti-stripping additive meeting the requirements of AASHTO M303, Type 1. Blend the hydrated lime with the damp aggregate at a rate of 1.0% by weight of dry aggregate and meet all requirements of Section 401.2.1.3 and 401.4.11 of the 2007 Standard Specifications. LASA may be used in lieu of hydrated lime in the Preventative Maintenance Thin Lift Surface. Use a LASA additive as an asphalt anti-stripping additive per SC-M-406.

**412.3 Composition of Mixture**

**412.3.1 Mix Design Criteria**

Combine the aggregates with asphalt binder in such proportions that the composition by weight of the aggregate is within the limits specified below.

<b>Required Job Mix Criteria</b>		
<b>Sieve Designation</b>		<b>% By Weight Passing</b>
3/8"	(9.5 mm)	100.0
No. 4	(4.75 mm)	90.0 -100.0
No. 8	(2.36 mm)	70.0 - 100.0
No. 30	(0.60 mm)	36.0 - 70.0
No. 100	(0.150 mm)	4.0 - 28.0
No. 200	(0.075 mm)	2.00 - 10.00
Binder Content (%)		5.5 – 7.0
Gyratory Stability (95 +/-5mm)		2500 lbs. min. (50 gyrations)

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## SUPPLEMENTAL SPECIFICATION

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A combination of the standard gradations of fractionated RAP and RAS (see SC-M-407 for maximum aged binder requirement), manufactured screenings, regular screenings, natural sand, and hydrated lime or LASA will normally meet the above requirements.

The mixture composition shall be submitted to the Office of Materials and Research in Columbia for review and approval at least 30 working days prior to construction of the mixture. Dust/Asphalt Ratio and Moisture Susceptibility requirements do not apply to this mixture.

### 412.3.2 Field Criteria

Once the mix meets the mix design criteria apply the job tolerances based on 401.2.3.3 of the 2007 Standard specifications. Do not extend the tolerance range beyond the mix design range limits listed in 412.3.1. Ensure that the minimum field gyratory stability is 2500 lbs using SC-T-96.

### 412.4 Construction

Conform all work to Section 401 of the Standard Specifications and other applicable supplemental specifications and special provisions except when noted in this specification. Place and compact the Preventative Maintenance Thin Lift Surface in a manner to provide the desired in-place compaction, and to produce a smooth riding surface.

### 412.5 Roadway

#### 412.5.1 Tack Coat

Apply approved emulsified asphalt to the surface on which the HMA thin lift seal course will be placed. Conform tack coat materials and application to the requirements of Subsection 401.4.18 of the 2007 Standard Specifications. The tack rate may be adjusted to a rate outside of the specified range if the RCE deems necessary.

#### 412.5.2 Temperature Requirements

Conform the placement of this mixture to the weather and surface temperature restrictions and mixture preparation and delivery temperature restrictions of Section 401 of the 2007 Standard Specifications.

#### 412.5.3 Spreading, Finishing, and Compaction

Spread the Preventative Maintenance Thin Lift Surface to ensure a minimum loose mat thickness of  $\frac{3}{4}$  inch is achieved directly behind the asphalt paver. The SCDOT Asphalt Roadway Technician (ART) will measure the loose mat thickness every 200 feet paved, measured in the middle of the paving width, to check the minimum thickness requirement. The loose compaction depth will be measured using a loose compaction depth gauge provided by the Contractor. The depth gauge should be verified to be set correctly prior to beginning paving each day. The SCDOT ART will immediately notify the paving foreman if the pavement fails to meet minimum depth requirements. In the event that a total of 3 or more 200 foot sections are found to not meet depth requirements for a day's production, no pay will be given for all sections not meeting depth requirements. All Sections not meeting this requirement will be milled and replaced at the contractor's expense if pavement shows signs of raveling or scaling related to low pavement thickness. Ensure that the mixture is rolled with an 8 – 12 ton tandem steel-wheel roller (minimum of 2 passes). Cease rolling as soon as the mixture is properly seated to the underlying surface.

**Note: This mix is only intended to be used at the thickness specified in this specification. No application rate should be specified in the contract plans or area strip maps.**

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SUPPLEMENTAL SPECIFICATION

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**412.6 Measurement**

Measure this work as specified in Subsection 401.5 of the 2007 Standard Specifications.

**412.7 Payment**

This work will be paid for as specified in Subsection 401.6 of the 2007 Standard Specifications.

Required Acceptance Criteria: Acceptance of this mixture will be based on the Supplemental Technical Specification titled, *Hot Mix Asphalt (HMA) Quality Assurance Acceptance of Hot Mix Asphalt Mixtures* (SC-M-400 as applicable in this contract), following the stipulations for Surface Type E.

<b>Item No.</b>	<b>Pay Item</b>	<b>Unit</b>
4036305	Preventative Maintenance Surface Treatment	SY