



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

THOMAS F. BARRY, JR.
SECRETARY

MEMORANDUM

DATE: October 21, 2002

TO: Specification Review Distribution List

FROM: Duane F. Brautigam, P.E., State Specifications Engineer

COPY: David Chason, State Construction Office

SUBJECT: **Proposed Specifications Change** – D3000009 - Prime and Tack Coats for Base Courses - Measurement

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change to Prime and Tack Coats for Base Courses - Measurement.

This change was proposed by David Chason for calibration of tanks and temperature correction.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DB or duane.brautigam@dot.state.fl.us. Comments received after November 18, 2002 may not be considered. Your input is encouraged.

DFB/sh

Attachment

COMMENTS:

Submitted by:

Phone #:

**PRIME AND TACK COATS FOR BASE COURSES - MEASUREMENT.
(REV 10-14-02)**

ARTICLE 300-9 (of the Supplemental Specifications) is deleted and the following substituted:

300-9 Method of Measurement.

300-9.1 General: ~~The quantity to be paid for will be the volume, in gallons [liters], of bituminous material actually applied and accepted. This quantity will be determined from measurements made by the Contractor and verified by the Engineer based on tank calibrations, as specified in 300-9.2. Where it is specified that prime coat material or tack coat material is to be diluted with water, the quantity to be paid for will be the volume after dilution.~~

~~Provide a Certified Invoice on the form provided by the Department, no later than twelve o'clock noon, Monday after the monthly cutoff date, or as directed by the Engineer, based on the quantity of prime or tack coat placed and accepted. The progress estimate may be held if the Contractor fails to submit the required Certified Invoice.~~

~~Show the following on the Certified Invoice:~~

~~Invoice Number and period represented by the Invoice,~~

~~Contract, FPID and State Project Numbers,~~

~~Type of bituminous coat placed,~~

~~Gallons [Liters] based on the criteria specified in this Subarticle.~~

300-9.2 Calibration of Tanks: ~~Ensure that all distributors used for applying tack or prime coats are calibrated prior to use by a reliable and recognized firm engaged in calibrating tanks. Provide a certification of calibration and the calibration chart to the Engineer prior to use. In lieu of a volumetrically calibrated distributor, use a distributor that is equipped with a calibrated meter and is approved by the Engineer.~~

300-9.3 Temperature Correction: ~~Measure the volume and increase or decrease the volume actually measured to a corrected volume at a temperature of 60°F [15°C].~~

~~Make the correction for temperature by applying the applicable conversion factor (K), as shown below.~~

~~For petroleum oils having a specific gravity (60°F/60°F) [(15°C/15°C)] above 0.966, K = 0.00035 [0.00063] per degree.~~

~~For petroleum oils having a specific gravity (60°F/60°F) [(15°C/15°C)] of between 0.850 and 0.966, K = 0.00040 [0.00072] per degree.~~

~~For emulsified asphalt, K = 0.00025 [0.00045] per degree.~~

~~When volume correction tables based on the above conversion factors are not available, use the following formula in computing the corrections for volumetric change:~~

$$V = \frac{V^1}{K(T - 60)[(T15)] + 1}$$

~~Where:~~

~~V= Volume of the bituminous material at 60°F [15°C](pay volume).~~

~~V¹= Volume of bituminous material as measured.~~

~~K= Correction factor (Coefficient of Expansion).~~

~~T= Temperature (in °F [°C]), of the bituminous material when measured.~~*The*

quantity specified will be the volume, in gallons [liters] of bituminous material actually applied and accepted. This spread rate will be determined from measurements made by the Contractor and verified by the Engineer based on tank calibrations, as specified in 300-9.2. Where it is specified that prime coat or

tack coat material is to be diluted with water, the amount specified for the spread rate will be the volume after dilution.

300-9.2 Calibration of Tanks: Ensure that all distributors used for applying tack or prime coats are calibrated prior to use by a reliable and recognized firm engaged in calibrating tanks. Provide a certification of calibration and the calibration chart to the Engineer prior to use. In lieu of a volumetrically calibrated distributor, use a distributor that is equipped with a calibrated meter and is approved by the Engineer.

300-9.3 Temperature Correction: Measure the volume and increase or decrease the volume actually measured to a corrected volume at a temperature of 60°F [15°C].

Make the correction for temperature by applying the applicable conversion factor (K), as shown below.

For petroleum oils having a specific gravity (60°F/60°F) [(15°C/15°C)] above 0.966, K = 0.00035 [0.00063] per degree.

For petroleum oils having a specific gravity (60°F/60°F) [(15°C/15°C)] of between 0.850 and 0.966, K = 0.00040 [0.00072] per degree.

For emulsified asphalt, K = 0.00025 [0.00045] per degree.

When volume-correction tables based on the above conversion factors are not available, use the following formula in computing the corrections for volumetric change:

$$V = \frac{V^1}{K(T - 60)[(T15)] + 1}$$

Where:

V = Volume of the bituminous material at 60°F [15°C] (pay volume).

V¹ = Volume of bituminous material as measured.

K = Correction factor (Coefficient of Expansion).

T = Temperature (in °F [°C]), of the bituminous material when measured.

ARTICLE 300-10 (of the Supplemental Specifications) is deleted.