

QUICK SETTING TACK COAT (QS-1H)

1.0 Description. This work shall consist of preparing and treating an existing bituminous or concrete surface with a quick setting tack coat material prior to an asphalt overlay in accordance with Section 407, except as revised by this specification.

2.0 Material Requirements. All material shall be in accordance with Section 1015 of the Standard Specifications and specifically as follows:

Emulsion Properties for Quick Setting Tack Coat QS-1h			
Test on Emulsion	Method	Minimum	Maximum
Viscosity, Saybolt Furol @ 25°C (77°F), s	AASHTO T 59	20	100
Storage Stability Test, 24 hr, percent	AASHTO T 59	--	1.0
Cement mixing test, percent	AASHTO T 59	--	2
Sieve Test, percent retained	AASHTO T 59	--	0.10
Residue by Distillation, percent	AASHTO T 59	63	
Test on Residue from Distillation			
Penetration, 25°C (77°F), 100 g, 5 s	AASHTO T 49	35	50
Ductility, 25°C (77°F), 5 cm/min, cm	AASHTO T 51	40	--
Solubility in Trichlorethylene, %	AASHTO T 44	97.5	--

2.1 Low-Tracking Requirements. In addition to the above Material Requirements, no appreciable amount of quick setting tack (QS-1h) shall stick to the tires, tracks or other parts of paving equipment or vehicles. The surface to be overlaid shall not become visible or void of tack prior to the placement of the asphaltic concrete pavement mixture. The tack material shall exhibit a quick setting characteristic within 20 minutes of being applied to the roadway when ambient temperature or pavement surface temperatures are above 70°F.

3.0 Equipment and Construction Requirements. All equipment and construction requirements shall be in accordance with Section 407; except as revised as follows:

3.1 Weather Limitations. The quick setting tack coat shall not be placed on any wet surface or when the ambient temperature or the temperature of the pavement on which it is to be placed is below 40⁰ F. Temperatures shall be obtained in accordance with MoDOT Test Method TM 20.

3.2 Spraying Temperature. The quick setting tack coat emulsion shall be applied at a spray temperature between 150⁰ F and 170⁰ F. For cool weather paving (ambient or pavement surface temperatures are below 70°F) the emulsion spray temperature shall be between 160⁰ F and 170⁰ F. Temperature of the tack shall not exceed 170⁰ F and any overheated material shall be rejected.

3.3 Storage and Handling. All guidelines and instructions about storage and handling of the quick setting tack product shall be followed in accordance with the product manufacturer.

3.4 Distributor. The distributor shall have the full circulating and heating capabilities in the tank. If the particle charge of the quick setting tack is different from the particle charge of the emulsion that was previously used then the tank shall be thoroughly cleaned prior to use, since some products are not compatible. The following heating and circulating process shall be used:

- 1) The emulsion shall be slowly heated to 140⁰ F.
- 2) Begin circulating the emulsion in the distributor tank only (100 to 150 gallons per minute) and continue slowly increasing heat to 160⁰ F to 170⁰ F.

- 3) Once the desired temperature is reached, begin circulation in the distributor bar.
- 4) Maintain circulation in the distributor's spray bar for a minimum of 30 minutes prior to tack application.

3.5 Curing. The quick setting tack shall be allowed to cure prior to any construction traffic driving on the surface. A minimum of 15 minutes of cure time shall be allowed prior to driving on the tacked surface, unless less cure time is successfully demonstrated and approved by the Engineer.

4.0 Method of Measurement. Measurement of asphalt emulsion to the nearest 10 gallons shall be made as specified in Sec 1015. The measurement of asphalt emulsion shall be based upon undiluted material.

5.0 Basis of Payment. The accepted quantity of quick setting tack coat (QS-1h) will be paid for at the contract unit price 407-10.30 Tack Coat.