

**Standard Method of Test for
Determination of Asphalt Tack Coat Rate
SCDOT Designation: SC-T-86 (07/19)**

1. SCOPE

This method covers the determination of tack rate using specific properties such as temperature correction for the asphalt product being applied.

2. REFERENCED DOCUMENT

2.1 Table of Temperature-Volume Corrections for Emulsified Asphalts

3. SUMMARY OF TEST METHOD

3.1 The road is measured and the asphalt distributor truck is checked before and after coverage. The rate of coverage is determined using the temperature-volume correction.

4. SIGNIFICANCE AND USE

4.1 The purpose of this procedure is to ensure that the proper amount of asphalt tack is applied to the roadway according to SCDOT specifications. The asphalt tack is used to bond layers of asphalt mixture together, prevent slippage, and obtain long service life of the new pavement.

5. APPARATUS

5.1 Calculator

6. TEST SPECIMEN

6.1 None

7. PROCEDURE

7.1 The roadway must be measured first to determine the proper area for calculating tack rate. This measurement can be taken in many different ways such as pavement markings, surveys, or using any other measuring device such a tape measure or rolling wheel. Both the longitudinal and transverse area of the roadway covered with the tack will be measured in order to achieve a total roadway area in square yards or square meters.

7.1.1 The quantity of tack used can be measured from the tack truck distributor by reading the attached flow meter. The meter should be read at the beginning and the end of the tack run. The difference from the beginning and the end is the total number of gallons used to spray tack on the calculated area of roadway.

7.1.2 The temperature of the tack has to be measured from the distributor to determine the proper temperature-volume correction needed to adjust the amount of tack being used.

This temperature needs to be referenced to “Table 1: Temperature –Volume Correction for Emulsified Asphalts”. The temperature-volume correction must be applied to achieve a correction for total gallons or liters of tack used to cover the roadway.

8. CALCULATIONS

The tack rate will be calculated using the corrected amount of gallons used to cover the calculated roadway area. The corrected amount of tack used will show the proper temperature correction for the asphalt tack material.

Example 1: CRS-1 Tack

Area of Roadway: Width: 12 ft. Length: 4765 ft.

Length x Width = Total Area in Square Feet = 12 ft. x 4765 ft. = 57,180 ft²

Total Square Feet = 57,180 ft² / (9ft²/yd²) = 6553.3 yd²

Total Gallons of Tack Used = Beginning Distributor Reading – Ending Distributor Reading

123 - 478 = 355 gallons measured

Corrected gallons of Tack Used = CRS-1 (tank temp of 150 degrees F)

355 gallons x .97750 (referenced from figure SC-T-86-A) = 347.0 gallons used

Corrected Tack Rate = Total Corrected Amount of Tack Used / Total Area Covered in Square Yards

347.0 g / 6553.3 yd² = 0.053 g/yd²

9. REPORT

Report the corrected rate of tack placed on Form 400.04 (Roadway Report).

Table 1: Temperature - Volume Corrections for Emulsified Asphalts*M = Multiplier for correcting volumes to the basis of 15.6 °C (60 °F)*

°C	°F	M	°C	°F	M	°C	°F	M
10.0	50	1.00250	33.3	92	0.99200	56.7	134	0.98150
10.6	51	1.00225	33.9	93	0.99175	57.2	135	0.98125
11.1	52	1.00200	34.4	94	0.99150	57.8	136	0.98100
11.7	53	1.00175	35.0	95	0.99125	58.3	137	0.98075
12.2	54	1.00150	35.6	96	0.99100	58.9	138	0.98050
12.8	55	1.00125	36.1	97	0.99075	59.4	139	0.98025
13.3	56	1.00100	36.7	98	0.99050	60.0	140	0.98000
13.9	57	1.00075	37.2	99	0.99025	60.6	141	0.97975
14.4	58	1.00050	37.8	100	0.99000	61.1	142	0.97950
15.0	59	1.00025	38.3	101	0.98975	61.7	143	0.97925
15.6	60	1.00000	38.9	102	0.98950	62.2	144	0.97900
16.1	61	0.99975	39.4	103	0.98925	62.8	145	0.97875
16.7	62	0.99950	40.0	104	0.98900	63.3	146	0.97850
17.2	63	0.99925	40.6	105	0.98875	63.9	147	0.97825
17.8	64	0.99900	41.1	106	0.98850	64.4	148	0.97800
18.3	65	0.99875	41.7	107	0.98825	65.0	149	0.97775
18.9	66	0.99850	42.2	108	0.98800	65.6	150	0.97750
19.4	67	0.99825	42.8	109	0.98775	66.1	151	0.97725
20.0	68	0.99800	43.3	110	0.98750	66.7	152	0.97700
20.6	69	0.99775	43.9	111	0.98725	67.2	153	0.97675
21.1	70	0.99750	44.4	112	0.98700	67.8	154	0.97650
21.7	71	0.99725	45.0	113	0.98675	68.3	155	0.97625
22.2	72	0.99700	45.6	114	0.98650	68.9	156	0.97600
22.8	73	0.99675	46.1	115	0.98625	69.4	157	0.97575
23.3	74	0.99650	46.7	116	0.98600	70.0	158	0.97550
23.9	75	0.99625	47.2	117	0.98575	70.6	159	0.97525
24.4	76	0.99600	47.8	118	0.98550	71.1	160	0.97500
25.0	77	0.99575	48.3	119	0.98525	71.7	161	0.97475
25.6	78	0.99550	48.9	120	0.98500	72.2	162	0.97450
26.1	79	0.99525	49.0	121	0.98475	72.8	163	0.97425
26.7	80	0.99500	50.0	122	0.98450	73.3	164	0.97400
27.2	81	0.99475	50.6	123	0.98425	73.9	165	0.97375
27.8	82	0.99450	51.1	124	0.98400	74.4	166	0.97350
28.3	83	0.99425	51.7	125	0.98375	75.0	167	0.97325
28.9	84	0.99400	52.2	126	0.98350	75.6	168	0.97300
29.4	85	0.99375	52.8	127	0.98325	76.1	169	0.97275
30.0	86	0.99350	53.3	128	0.98300	76.7	170	0.97250
30.6	87	0.99325	53.9	129	0.98275	77.2	171	0.97225
31.1	88	0.99300	54.4	130	0.98250	77.8	172	0.97200
31.7	89	0.99275	55.0	131	0.98225	78.3	173	0.97175
32.2	90	0.99250	55.6	132	0.98200	78.9	174	0.97150
32.8	91	0.99225	56.1	133	0.98175	79.4	175	0.97125