

DEPARTMENT OF TRANSPORTATION
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METHOD OF TEST FOR DETERMINING THE QUANTITY OF ASPHALT REJUVENATING AGENT REQUIRED FOR AN ASPHALTIC PAVEMENT

CAUTION: Prior to handling test materials, performing equipment setups, and/or conducting this method, testers are required to read "**SAFETY AND HEALTH**" in Section J of this method. It is the responsibility of the user of this method to consult and use departmental safety and health practices and determine the applicability of regulatory limitations before any testing is performed.

CT 345 has been withdrawn (Feb. 2024). It is no longer maintained by Caltrans.

A. SCOPE

This method of test describes the procedure for determining the quantity of asphalt rejuvenating agent an asphaltic pavement will absorb in a specified period of time

B. APPARATUS

1. One aluminum template 152.4 mm diameter with handle
2. One caulking gun with a 127 mm piece of 6.4 mm copper tubing with cap.
3. One 25 mL graduated cylinder (plastic or glass).
4. One 217 mm trowel.
5. Two small stiff bristle brushes.
6. Two 3.8L friction top cans, one containing medium weight chassis grease.

7. One 203 mm spatula.
8. Two pieces of yellow lumber crayon.
9. One stop watch with 60 s dial.

NOTE: Most of the above items are in the Permeability Kit Box used for California Test 341.

C. MATERIAL

1. Medium weight chassis grease.
2. Quart can containing a dilution of 2 parts rejuvenating agent and one part distilled water.

D. PROCEDURE

1. With lumber crayon and template, draw a 152.4 mm diameter circle on the pavement.

E. SEPARATING COARSE AND FINE PORTIONS ON THE 4.75 mm SIEVE

1. Follow the sieving instructions in California Test 202 to separate the material on the 4.75 mm sieve.
2. Extrude grease from the caulking gun on the circle. The diameter of the grease should be about 6.4 mm.
3. Run index finger around the outside of the grease ring, pushing a small amount of grease into the pavement. This will form a sealed reservoir for the test solution.
4. Measure 8.3 mL of asphalt rejuvenating agent, 2:1 dilution, in the graduated cylinder and pour into grease ring. Start stop watch and quickly brush agent uniformly over the area within the grease ring.
5. Record the time required for the rejuvenating agent to completely penetrate the surface. Complete penetration is generally indicated by a loss in color of the rejuvenating agent giving a dull dark appearance to the surface.

NOTE: Loss of color can also occur when evaporation of the water takes place leaving a thin film of the residue on the surface of the pavement giving a shiny appearance. *In this case penetration has not occurred.*

6. If 8.3 mL is absorbed within a 15 min interval, make a new grease ring and repeat test with additional testing solution in increments of 8.3 mL (16.6 mL, 24.9 mL, etc.) until time of penetration just exceeds 15 min.
7. If 8.3 mL is not absorbed within the 15 min period, repeat the test using 4.1 mL.

NOTE: 4.1 mL is equivalent to 0.23 L/m² spread rate.
8.3 mL is equivalent to 0.45 L/m² spread rate.
16.5 mL is equivalent to 0.90 L/m² spread rate.

24.8 mL is equivalent to 1.36 L/m² spread rate.

8. The graduated cylinder can be easily cleaned with water.
9. Pick up grease with trowel and place in 3.8 L can. Do not mix used grease with new grease furnished with kit.

E. PROCEDURE FOR DETERMINING PAVEMENT REQUIREMENTS

The following procedure is recommended for obtaining the average absorption rate or quantity of rejuvenating agent required for a given section of highway. In any travel lane, determine the absorption at 7.6 m intervals in the outer wheel track (O.W.T.), inner wheel track (I.W.T.) and between wheel tracks (B.W.T.) for a total of three readings. The three readings should be averaged to obtain the reading for the test area. This procedure should be repeated at intervals of approximately 610 m.

J. SAFETY AND HEALTH

Prior to handling, testing or disposing of any waste materials, testers are required to read: Part A (Section 5.0), Part B (Sections: 5.0, 6.0, 10.0 and 12.0) and Part C (Section 1.0) of Caltrans Laboratory Safety Manual. Users of this method do so at their own risk.

REFERENCES:

"Method of Test for Determining Quantity and Rate of Absorption of Reclamite into an Asphalt Pavement" by Golden Bear Oil Company, Bakersfield, California

California Test 341

End of Text (California Test 345 contains 2 pages)

Withdrawn