



**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS AND TESTS**

**QUANTITY DETERMINATION
OF ASPHALT MATERIALS AND
AGGREGATES FOR SEAL COATS
ITM No. 579-15**

1.0 SCOPE.

1.1 This method covers the procedure for determination of the quantity of asphalt materials and aggregates in seal coat applications.

1.2 This ITM may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101.

3.0 SIGNIFICANCE AND USE. This ITM shall be used to determine the quantity of asphalt materials and aggregates required for a seal coat application.

4.0 APPARATUS.

4.1 Traffic control equipment and personnel to be furnished by the District

4.2 Pneumatic tire roller or vehicle

4.3 Yield test scales

4.4 Buckets as needed

4.5 5 gal. can with pour spout

4.6 Stove

4.7 0.5 yd² template consisting of a 30 x 48 in. metal plate with a 18 x 36 in. opening

4.8 Aggregate shaker box approximately 18 in. square and 3 in. deep with a 1 in. open slot in the bottom along one side. A piece of 1/2 in. opening screen cloth shall extend under this open slot.

4.9 Squeegee and brushes as needed

4.10 Thermometer, range 50 to 300°F

5.0 MATERIALS.

5.1 A minimum of 5 gal. of the asphalt material that is to be used on the project.

5.2 A minimum of 75 lbm of the aggregate that is to be used on the project.

6.0 PROCEDURE.

6.1 Select a location typical of the project. Sites shall be selected to prevent tracking of asphalt from one test area to another. On the mainline select a wheel path.

6.2 Set up traffic control

6.3 Heat the asphalt material according to the following:

Asphalt	Temperature
AE-90, AE-150	140 – 160°F
RS-2	120 – 140°F
RC-800	230 – 250°F
RC-3000	250 – 275°F

6.4 Clean and prepare surface as necessary

6.5 Place the template on the selected site

6.6 Weigh the aggregate. The quantity shall be within the values listed in Table 1.

6.7 Weigh the heated bituminous material. The quantity shall be within the values listed in Table 1.

6.8 Apply the liquid asphalt uniformly on the test area by pouring and using the squeegee, and brush to distribute

6.9 Place the aggregate uniformly on the test area with the shaker box

6.10 Remove the template

- 6.11** Roll the test area with the pneumatic tire roller or the vehicle tire
- 6.12** Repeat the above procedure by varying the quantities of asphalt material and aggregates until the desired result is obtained

Rate of Application per Square Yard		
Aggregate Size No.	Cover Aggregate lbm	Asphalt Material gal. at 60°F
23, 24	12 – 15	0.12 – 0.16
12	14 – 17	0.29 – 0.33
11	16 – 20	0.36 – 0.40
9	28 – 32	0.63 – 0.68

Table 1

- 6.13** Remove traffic control. If test areas are on the mainline, removal of traffic control shall be delayed until the asphalt material has cured sufficiently to hold the aggregate without displacement.
- 6.14** Return to location the next day and broom off and weigh the excess aggregate for shoulder locations. This procedure is not required for mainline locations.
- 6.15** Make a visual inspection of the test areas for asphalt content and aggregate retention. Further visual inspection shall be made until the seal coat operation starts. The test area shall appear to be one aggregate particle in depth and the particle shall be embedded in the asphalt material 50-70%.

7.0 REPORT.

- 7.1** The quantity of asphalt material and aggregate for the seal coat shall be reported on the appropriate form for use on the proposed project. If there are different pavement sections on the project, several test sections may be necessary.