GDT 91

A. Scope

For a complete list of GDTs, see the Table of Contents.

Use this test method to determine the proper consistency for a slurry seal mix. Test materials from the quarry and material stockpiled on the project.

B. Apparatus

The apparatus consists of the following:

1. Mold—Use a brass frustum cone 2.9 in (73.66 mm) high, 1.5 in (38.1 mm) diameter at the top and 3.5 in (88.9 mm) diameter at the bottom.
2. Flow Measure—Use the center of an 8-1/2 x 11-in (115.9 mm x 279.4 mm) sheet of paper is inscribed with a circle 3.5 in (89 mm) diameter and 6 additional concentric circles, each 3/8 in (10 mm) greater in diameter than the preceding circle.
3. Balance—Use a device capable of weighing 2.6 lb (1200 g) within ± 0.00022 lb (0.1 g).
4. Oven—Use an oven thermostatically controlled at 230 °, ± 9 °F (110 °, ± 5 °C).
5. Mixing Container—Use a 1 qt (1 L) square plastic freezer container.
6. Spatula—Use an 8 in (200 mm) long spatula (WS-10-1).

C. Sample Size and Preparation

Note: During preparation, be sure to: Ensure that all weights added are based on the aggregate dry weight. Adjust the water that you add in Sample Size and Preparation, step 3 to account for hygroscopic moisture in the air-dried aggregate. Repeat this procedure with varying percentages of mineral filler, water, and emulsion until you obtain the desired mix properties.

1. Weigh 1.1 lb (500 g) of air-dried aggregate into the mixing container.
2. Add the mineral filler (0.3% to 1.5%) and thoroughly mix.
3. Add water (0.3% to 1.5%) and mix to a uniform wetness.
4. Thoroughly mix in the emulsion (7.5% to 13.5% residual asphalt) until you see no lumps or uncoated aggregate (mix for 1 to 2 minutes).

D. Procedures

1. Center the mold on the flow scale.
2. Thoroughly mix the mixture.
3. Loosely fill the mold and strike off the excess material.
4. Immediately remove the mold with a gentle, smooth, vertical motion.
5. Measure the diameter of the outflow of the slurry seal mixture at four points 90° apart.

E. Calculations

No specific calculations are necessary for this test.

F. Report

1. The desired workability is obtained at 1 in (25 mm) radial flow, so any flow from 3/4 in to 1-1/8 in (20 mm to 30 mm) is acceptable.
2. Average and record as "_____in (mm) of flow at _____% mineral filler, _____% emulsion, and _____% water."
3. Report the results on the appropriate form.