

GDT 43

A. Scope

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

Use this test method to measure the stamina of slurry seal mixtures using the proportioning of ingredients found by GDT 91. The stamina or resistance to wear or raveling is measured by checking the loss of material from the thin wearing when tested under laboratory simulation of wet traffic conditions.

B. Apparatus

The apparatus consists of the following:

1. Balance: Use a balance with a capacity not less than 5 lbs (2.5 kg) and sensitive to 0.001lb (0.5 g).
2. Mixer: Use a planetary-type mixer with a gear ratio (Pinion: Planetary) of 2.510. The outside planetary turns at 236 revolutions per minute, and the inside planetary turns at 94 revolutions per minute.
3. Pan: Use a flat bottom pan approximately 12 in (305 mm) diameter equipped with screw clamps capable of securing an 11-3/4 in (298.45 mm) diameter specimen to the bottom of the pan.
4. Oven: Use an oven thermostatically controlled at 140 °, ± 5 °F (60 ° ± 3 °C).
5. Straightedge: Use a steel straightedge 14 in (350 mm) long for smoothing the specimen surface (WS-13-1).
6. Mold: Use an aluminum disc 0.25 in (6 mm) thick and 11.75 in (298.45 mm) diameter with a 9.5 in (241.3 mm) diameter hole concentric with the disc center.
7. Mixing Bowl: Use a stainless steel bowl with a 4 qt (4 liter) capacity (WB-12).
8. Spoon: Use a large spoon for mixing the materials (WS-14).
9. Felt: Use a smooth, textured, 30 to 40 lbs (13.6 to 18.1 kg) weight roofing felt.
10. Graduated Cylinder: Use a container for dispensing water in the mixture on the scales.
11. Abrasion Head: Use a 5.0 lbs (2.3 kg) weighted rubber hose holding device with approximately 0.5 in (13 mm) free up and down movement in the shaft sleeve (see [Figure 43-1](#)).
12. Rubber Hose: Use a rubber hose with a 0.75 in (19 mm) inside diameter and approximately a 0.25 in (13 mm) wall thickness. Cut the hose into 5 in (13 mm) lengths and drill with two 0.375 in (9.5 mm) holes aligned on 4 in (100 mm) centers (see [Figure 43-1](#)).

C. Sample Size and Preparation

1. Weigh 1.76 lbs (800 g) of dried aggregate into the mixing bowl.
2. Add the amount of mineral filler determined by the consistency test (GDT 91) and thoroughly dry the mix.
3. Add the amount of water determined by the GDT 91 mix to make a uniform wetness.
4. Thoroughly mix in the amount of emulsion determined by GDT 91.
5. Mix the material until no lumps or uncoated aggregate are visible.

NOTE: All liquid quantities added are based on the dry weight of aggregate and mineral filler.

D. Procedures

1. Place the circular mold over a previously cut 11.75 in (298.45 mm) diameter piece of roofing felt.
2. Pour the slurry seal mixture onto the felt.
3. Use a straightedge to smooth the slurry over the surface of the mold. Usually one pass over the mold will provide a flat surface to simulate the roadway.
4. Remove the mold.
5. Place the specimen in an oven at 140 ° F ± 5 °F (60 ° ± 3 °C) for a minimum of 15 hours or until the specimen reaches a constant weight.
6. After the specimen has dried, remove it from the oven and cool to room temperature.

7. Weigh the specimen.
8. Place it in a water bath at room temperature for 60 to 75 minutes.
9. Remove the specimen from the water.
10. Place it in the 12 in (305 mm) diameter flat pan and secure it to the bottom of the pan with wing nuts.
11. Pour room temperature water into the pan until the specimen is completely submerged.
12. Secure the pan and specimen on the platform of the mixer.
13. Place the rubber hose abrasion head on the specimen and abrade for 3.5 minutes.
14. When the abrasion cycle is completed, remove the specimen from the pan.
15. Wash all of the loose particles away (make sure that only the abraded material is washed off).
16. Place the specimen in the oven at 140 °F (60 °C) until it reaches a constant weight.
17. Weigh the specimen again.

E. Calculations

Grams per square meter = Grams of lost material x 2.26.

F. Report

Report the loss due to abrasion to the nearest 0.1 grams per 0.09 m².

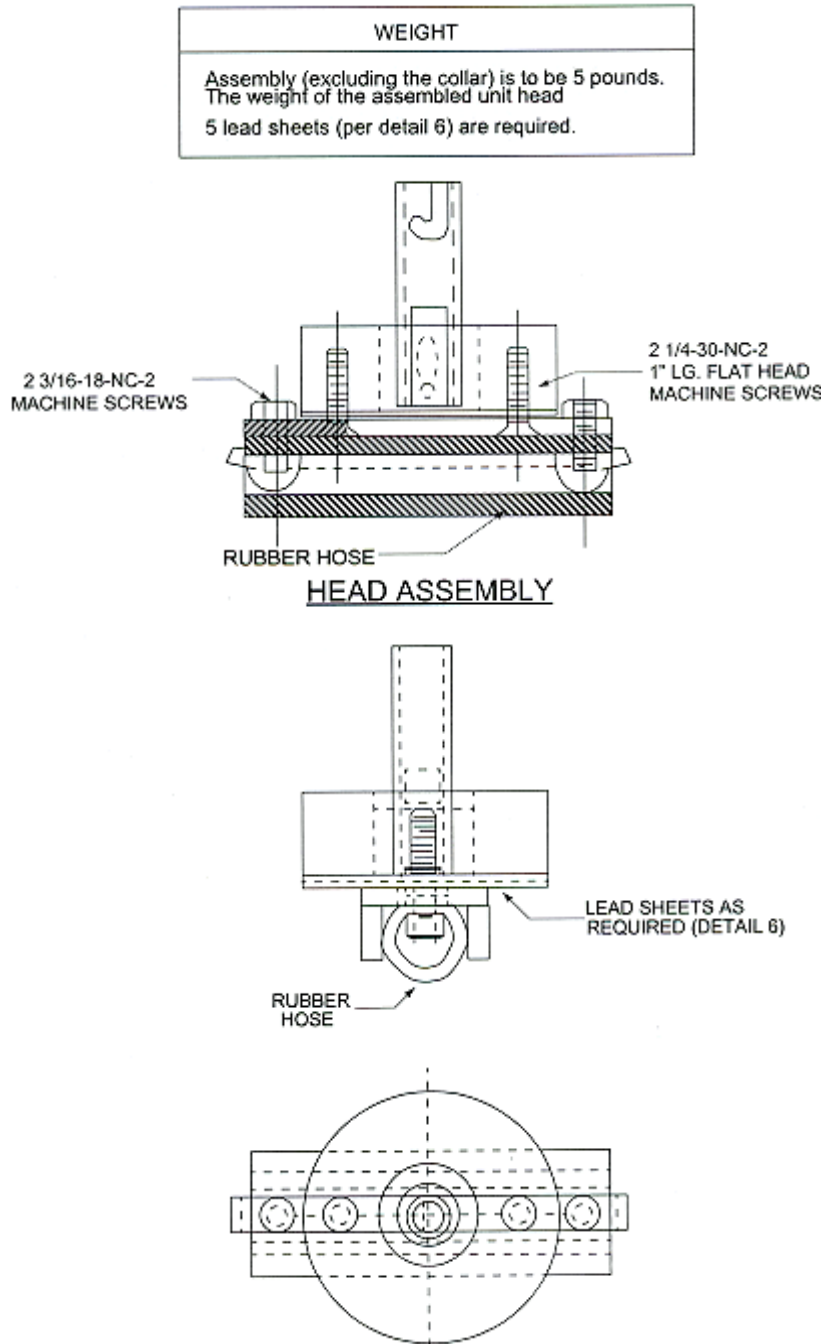


Figure 43-1