FLORIDA DEPARTMENT OF TRANSPORTATION
State Materials Office
5007 NE 39th Avenue
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Florida Method of Test for Viscosity of Slurry

Designation: FM 8-RP13B-2

1. SCOPE

1.1. Viscosity relates to the flow properties of muds. The study of deformation and flow of matter is rheology.

1.2. The instrument used to measure viscosity of drilling fluids on a routine basis is the Marsh Funnel or Marsh Cone.

1.3. This test method has been adapted from Section 2 of the American Petroleum Institute (API) Recommended Practice FM 8-RP13B-1: Standard Procedure for Field Testing Water-Based Drilling Fluids (FM 8-RP13B-1). Use of a direct-reading viscometer has been eliminated.

2. EQUIPMENT

2.1. Marsh Funnel: A Marsh Funnel (see **Figure 1**) is calibrated to out-flow 946 mL (one quart) of fresh water at a temperature of 21 ±3°C (70 ±5°F) in 26 ±0.5 seconds. A graduated cup is used as a receiver.

Specifications
- Funnel Cone
  - Length ..... 305 mm (12.0 in.)
  - Diameter ..... 152 mm (6.0 in.)
  - Capacity to bottom of screen..... 1500 mL
- Orifice
  - Length..... 50.8 mm (2.0 in.)
  - Inside Diameter..... 4.7 mm (3/16 in.)
- Screen..... 12 mesh
  - Has 1.6 mm (1/16 in.) openings and is fixed at a level 19.0 mm (3/4 in.)

2.2. Graduated cup: 946 mL (one quart)

2.3. Stopwatch

2.4. Thermometer: 0-105°C (32-220°F)

3. PROCEDURE

3.1. Cover the funnel orifice with a finger and pour freshly sampled drilling fluid through the screen into the clean, upright funnel. Fill until fluid reaches the bottom of the screen.

3.2. Remove finger and start stopwatch. Measure the time for mud to fill to 946 mL (one quart) mark of the cup.

3.3. Measure temperature of fluid in degrees C (F).

3.4. Report the time to the nearest second as Marsh Funnel Viscosity. Report the temperature of the fluid to the nearest degree C (F).

Figure 1. Marsh Funnel and Cup