LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
VERIFICATION PROCEDURE

PENETROMETER

Equipment

1. Balance, readable to 0.01 g.
2. Microscope or eyepiece, 10X.
3. Metal block, 10.0 mm high.
4. Metal block, 25.4 mm (l in) high.
5. Support block, 3 - 3.5 in. high
6. Ruler, readable to 1 mm.
7. Calibrated Stopwatch, readable to 0.1 sec.

Procedures

1. Remove the spindle, 50 and 100 gram weights from the penetrometer. Record the weight of each to the nearest 0.01 gram.
2. Weight each needle to the nearest 0.01 gram. Visually examine each needle with a microscope or eyepiece. Each needle should be straight and free of burrs. The base of each needle should be flat.
3. If an automatic timing mechanism is used on the penetrometer, start the calibrated stopwatch when the plunger is released and stop the calibrated stopwatch when the plunger stops. Record the time indicated on the calibrated stopwatch to the nearest 0.1 sec. If a manual device us used to release the plunger, check the accuracy of the timing device over a 60 seconds interval. Record the elapsed time to the nearest 0.1 second.
4. Place the support block on the base of the penetrometer. Place the 10 mm block on the support block. Adjust the needle height so that its tip just touches the top of the 10 mm block. Remove the 10 mm block and release the needle to the support base. Adjust the instrument to measures the distance moved. Repeat step 4 using the 25.4 mm (1") block. Determine dial accuracy by comparing the readings with the height of the blocks.
5. Measure and record the distance from the perforated shelf to the bottom of the water bath. Measure and record the distance from the perforated shelf to the surface of the water. Measure and record the distance the thermometer is immersed in the water.
6. Observe and record the temperature of the water in the bath to the nearest 0.1 °F. (0.05 °C.).