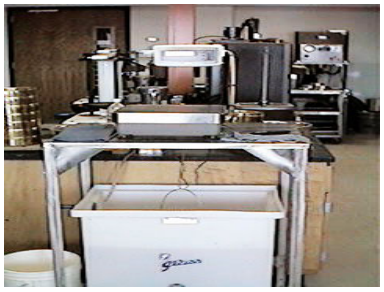
ASPHALT BINDER

Section 12 – Bulk Specific Gravity of Compacted Bituminous Material

Bulk Specific Gravity T 166



Bulk Specific Gravity of Compacted Bituminous Material

AASHTO T 166
WYDOT MTM 418.0

- **Make sure balance is level and readable to four figures.**
- **Make sure the suspension wire or chain is hanging freely from the bottom of the scale.**
- **Make sure that there is sufficient water to fully immerse the specimen and that the temperature of the water is (77° ± 1.8°F)**

Bulk Specific Gravity of Compacted Bituminous Material (continued)

- **Carefully trim the core to isolate the lift for which the bulk specific gravity is to be determined.**
- **Submerge the core in the water for 3 – 5 minutes and determine the mass while the sample is in the water.**
- **Determine the saturated surface-dry mass after using a damp towel to quickly blot away excess surface water.**

Section 12 - 4

Bulk Specific Gravity of Compacted Bituminous Material (continued)

- **Dry the core to a constant mass (less than .05% change) at temperature of 125° ± 5°F using successive mass determinations at 2 hour intervals.**
- **Determine the mass of the dry core in air.**
  - Note: if the sample is known to be completely dry, determine the mass of the dry core in the air first, the mass of the core second, and SSD mass third
- **Calculate the percent of water absorbed. (B-A)/(B-C) X (100) = % water absorbed**

Section 12 - 5

Bulk Specific Gravity of Compacted Bituminous Material (continued)

- **If the percent of water absorbed is less than 2% than the bulk specific gravity may be calculated.**

Density (lb/ft^3) = S. G. x 62.4

S.G. = A / (B-C)

Section 12 - 6

Bulk Specific Gravity of Compacted Bituminous Material (continued)

- If greater than 2% water is absorbed the the waxed core procedure should be used. Calculations:

  Density (lb/ft^3) = S. G. x 62.4

  S.G. = A / ((D – E) – ((D-A) / F)))

Bulk Specific Gravity of Compacted Bituminous Material (continued)

A = Mass of sample in air
B = Saturated surface dry mass
C = Mass of sample in water
D = Mass of waxed core sample in air
E = Mass of waxed core sample in water
F = Specific gravity of wax (0.90)
SG. = Bulk specific gravity