

**BULK SPECIFIC GRAVITY
OF
COMPACTED HOT MIX ASPHALT
USING
SATURATED SURFACE-DRY SPECIMENS
AASHTO T 166**

APPARATUS

- Balance, sufficient capacity for sample, readable to 0.1 g or better, in accordance with AASHTO M 231
- Suspension apparatus
 - Center of balance pan
 - Suspension wire of smallest practical size
 - Holder and sample completely immersed
- Water Bath
 - Equipped with overflow outlet to maintain constant water level
 - Deep enough to completely immerse holder and sample
 - Water is $77 \pm 1.8^{\circ}\text{F}$
- Drying Oven
 - Capable of maintaining $125 \pm 5^{\circ}\text{F}$
- Vacuum Drying Chamber
 - Meeting requirements of ASTM D7227
- Large flat bottom drying pan (Method C)

PROCEDURE -- METHOD A

- Specimen dried (Recently prepared laboratory specimens that have not been exposed to moisture do not require drying)
 - In an oven until constant weight (Note 1) is achieved (Saturated samples should be dried overnight and constant weight then determined)
 - In a vacuum chamber until constant weight (Note 1) is achieved
- Specimen cooled to room temperature at $77 \pm 9^{\circ}\text{F}$ and weighed
- Specimen immersed in water for 3-5 minutes and weight recorded
- Specimen surface dried by blotting with a damp towel as quickly as possible and weighed (damp is considered to be when no water can be wrung from the towel)

Note 1 -- Constant weight is defined as the weight at which further drying in an oven at $125 \pm 5^{\circ}\text{F}$ does not alter the weight by more than 0.05 percent when weighed at 2-h intervals when using oven drying or by more than 0.05 percent when weighed after at least 2 drying cycles of the vacuum-drying apparatus required in ASTM D 7227

Calculations

- [] Bulk specific gravity calculated correctly to three decimal places (0.000) as follows:

$$\text{Bulk Specific Gravity} = \frac{A}{B - C}$$

where:

A = weight of sample in air, g

B = weight of surface - dry specimen in air, g

C = weight of sample in water, g

- [] Percent water absorbed by specimen is equal to or less than 2.0 percent by volume as follows:

$$\text{Water Absorbed by Volume, \%} = \frac{B - A}{B - C} \times 100$$

PROCEDURE -- METHOD C (RAPID TEST FOR SPECIMENS OBTAINED BY CORING OR SAWING)

- [] Specimen immersed in water for 3-5 minutes and weight recorded
- [] Specimen surface dried by blotting with a damp towel as quickly as possible and weighed
- [] Specimen placed in large flat bottom drying pan of known weight
- [] Pan and specimen placed in oven at $230 \pm 9^\circ\text{F}$ until the specimen may be easily separated to the point where the particles of the fine aggregate - binder portion are not larger than 1/4 in.
- [] Separated specimen dried in oven at 230°F to constant weight (Note 1)
- [] Pan and specimen cooled in air to room temperature at $77 \pm 9^\circ\text{F}$ and weighed
- [] Dry weight of specimen determined by subtracting the weight of pan from weight of pan and sample
- [] Bulk specific gravity is calculated correctly to three decimal places (0.000) using the same procedure in Method A

NA - Not Applicable

X - Requires Corrective Action

√ - Satisfactory

Acceptance Technician

INDOT

Date

Comments: _____