

**PREPARATION OF HOT MIX ASPHALT SPECIMENS
BY MEANS OF THE
SUPERPAVE GYRATORY COMPACTOR
AASHTO T 312**

APPARATUS

- [] Superpave Gyratory Compactor, Approved List device
 - [] Calibration settings verified on 1 mo. frequency in accordance with ITM 908
 - [] Documentation of internal angle verification within last 12 months in accordance with AASHTO TP 71 or AASHTO PP 48
 - [] Schedule of machine maintenance within frequency guidelines
- [] Molds
 - [] Inside diameter of molds 149.90 to 150.00 mm
 - [] At least 250 mm high
 - [] Walls at least 7.5 mm thick
 - [] Base and top plate face have a diameter of 149.50 to 149.75 mm
- [] Oven themostatically controlled to $\pm 5^{\circ}\text{F}$

PROCEDURE -- COMPACTION

- [] Sample pan lined with non-absorbent paper is heated in oven to $300 \pm 9^{\circ}\text{F}$ for dense graded or SMA mixtures or $260 \pm 9^{\circ}\text{F}$ for open graded mixtures
- [] Sample covered with non-absorbent paper and thermometer placed in the sample center mass for continuing reading of mixture temperature by external digital readout
- [] Mold and base plate heated for a minimum of 30 minutes at required compaction temperature
- [] Inside of mold checked with non-contact digital infrared thermometer to verify the mold meets the mix compaction temperature requirements
- [] Disk placed in mold, mixture placed into mold in one quick motion, mixture leveled with spatula, and paper disk placed on top of leveled mixture
- [] Ram pressure set at 600 Pa
- [] Angle of gyration $\pm 0.02^{\circ}$ from adjusted external angle
- [] Rate of gyrations set at 30 gyrations per minute
- [] Number of gyrations is the same as required for N_{des} from the mix design

PROCEDURE -- COOLING (DENSE GRADED AND SMA)

- [] Specimen is initially cooled in the mold for 10 ± 1 minutes. For compactors that require the specimen to be extruded from the mold in the compactor, a fan is directed towards the top of the mold in the compactor. For compactors that require removal of the mold from the compactor to extrude the specimen, the mold may be left in the compactor and cooled with a fan or removed from the compactor and cooled by a fan or by refrigeration.

- [] Specimen extruded from mold, removed from base plate, and papers removed
- [] Specimen cooled by fan until temperature measured with non-contact digital infrared thermometer is $77 \pm 9^{\circ}\text{F}$

PROCEDURE -- COOLING (OPEN GRADED)

- [] After compaction, a fan is directed towards the top of the mold. For compactors that require the specimen to be extruded from the mold in the compactor, the fan is directed toward the top of the mold in the compactor. For compactors that require removal of the mold from the compactor to extrude the specimen, the mold is removed from the compactor and the fan is directed toward the top of the mold.
- [] If mold is removed from compactor, specimen is extruded until flush with top of mold
- [] Plate and paper removed
- [] Specimen extruded approximately 1 1/4 in. and cooled with a fan for 5 minutes
- [] Specimen extruded a total of approximately 2 1/2 in. and cooled with a fan for 5 minutes
- [] Specimen extruded a total of approximately 3 3/4 in. and cooled with a fan for 5 minutes
- [] Specimen and base plate extruded from mold and placed on flat surface
- [] Specimen lifted from base plate and inverted on flat surface
- [] Paper removed
- [] Specimen cooled with a fan until temperature measured with non-contact digital infrared thermometer is $77 \pm 9^{\circ}\text{F}$

NA - Not Applicable
 X - Requires Corrective Action
 √ - Satisfactory

Acceptance Technician

INDOT

Date

Comments: _____
