

# IN-HOUSE PROCEDURE # \_\_\_\_\_

## PROCEDURE FOR VERIFYING GYRATORY COMPACTOR

### Item:

Superpave Gyratory Compactor

### Purpose:

This method provides instructions for verifying the internal angle, pressure, gyration speed, and height measurement of a gyratory compactor.

### Inspection Equipment Required:

1. Internal angle measuring device
2. Proving ring or load cell
3. Timer
4. Height calibration block(s)
5. Gyratory mold
6. Gyratory end plate(s)

### Tolerance:

Equipment shall meet the specification tolerances in the applicable test method.

### Procedure:

#### INTERNAL ANGLE

1. Verify the internal angle measuring device according to the manufacturer's directions. The device must read within  $\pm 0.01^\circ$  of the calibrated angle.
2. Clean and properly lubricate the gyratory compactor, mold and end plate(s) of all coatings and debris.
3. Bring the mold to the recommended temperature for an internal angle verification.
4. Verify the settings on the compactor for pressure and gyration speed.
5. Set the gyrations on the compactor in accordance with the recommendations of the manufacturer of the angle measurement device.
6. Load the internal angle measuring device into the mold and secure the mold in the gyratory.
7. Conduct two tests with the device in the upright position and two tests with the device upside down. Record the indicated angles to the nearest 0.01 degree.
8. Calculate the effective internal angle. If the effective internal angle is  $1.16 \pm 0.02^\circ$ , then the internal angle of the gyratory is acceptable.

#### PRESSURE

1. Clean ram foot and base platen.
2. Insert proving ring or load cell into gyratory.
3. Follow the gyratory manufacturer's recommendations for verification of pressure.
4. Record the indicated pressures. If the measured pressures are within  $\pm 3\%$  of the target pressure, then the pressure is acceptable.

#### GYRATION SPEED

1. Place a removable mark on the base platen and the moving portion of the base.
2. Zero timer.
3. Follow the gyratory manufacturer's recommendations for verification of gyration speed.
4. Count the number of gyrations and record the indicated time.
5. Calculate the speed of gyration. If the speed of gyration is  $30 \pm 0.5$  gyrations / minute, then the gyration speed is acceptable.

#### HEIGHT

1. Clean gauge calibration blocks, ram foot, and base platen.
2. Follow the gyratory manufacturer's recommendations for verification of the height measurement system.
3. Record the indicated heights. If the measured heights are within  $\pm 0.004$  in. ( $\pm 0.1$  mm) of the target height, then the height is acceptable.