



WSDOT SOP 736

In-Place Density of Bituminous Mixes Using Cores

1. Scope

This test method describes the procedure for determining the relative density of bituminous mixes by means of roadway cores.

2. Procedure

Cores for densities will be taken in accordance with WSDOT SOP 734 Sampling Hot Mix Asphalt After Compaction (Obtaining Core)

The bulk specific gravity (G_{mb}) of the core will be determined in accordance with WSDOT FOP for T 166 Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturate Surface-Dry Specimens.

The Theoretical maximum density of the mix will be determined in accordance with WSDOT FOP for AASHTO T 209 Theoretical Maximum Specific Gravity and Density of Hot-Mix Asphalt Paving Mixtures.

Determine the average theoretical maximum density in accordance with WSDOT SOP 729 Determination of the Moving Average of Theoretical Maximum Density (TMD) for HMA

3. Calculation of Percent of Compaction

The percent compaction is determined by comparing the density of the roadway core to the theoretical maximum density.

Calculate core density to the nearest 0.1 pcf as follows:

$$\text{Core Density} = G_{mb} \times 62.245 \text{ pcf}$$

Calculate percent compact (round to the nearest 0.1 percent) as follows:

$$\text{Percent Compaction} = (\text{Core Density}) / (\text{Average Theoretical Maximum Density}) \times 100$$

