

**State of Nevada  
Department of Transportation  
Materials Division**

**METHOD OF TEST FOR OBTAINING CALCULATED PERCENT AIR VOIDS  
OF COMPACTED BITUMINOUS MIXTURES**

**SCOPE**

This method covers the procedure for determining the calculated percent air voids of specimens of compacted bituminous mixtures.

**A. PREPARATION OF SAMPLE**

Specimen that has been prepared and tested for stabilometer value, (Nev. T303) and bulk specific gravity of compacted bituminous mixtures using saturated surface-dry specimens (AASHTO T166).

**B. CALCULATION**

Calculate the percent air voids for each specimen as follows:

$$\text{Percent air voids} = 100 - ((\text{Bulk Sp. Gr.} / \text{Calculated Max Sp. Gr.}) \times 100)$$

$$\text{where: Calculated Max Sp. Gr.} = (100 + \% \text{ asphalt}) / ((100 / \text{agg. Sp. Gr.}) + \% \text{ asphalt})$$

Aggregate Sp. Gr. is obtained by combining the bulk specific gravity of the coarse aggregate (AASHTO T85) and the apparent specific gravity of the fine aggregate (Nev T224) by the proper percentages of + No. 4 and - No. 4 of the combined gradation (see Nev T303).

$$\text{agg. Sp. Gr.} = 100 / ((A/C) + (B/D))$$

- where: A = % Coarse (% retained on #4 sieve)  
B = % Fine (% passing #4 sieve)  
C = Sp. Gr. Coarse  
D = Sp. Gr. Fine