Washington State Department of Transportation

# Volumetrics Worksheet

| Contract Number | Mix Type | Binder Type | Sample Number | JMF Number |
|---|---|---|---|---|
| Sample Date | Sample By | Tested Date | Tested By | |
| Contract Title | | | | |

## Required Data

| | |
|---|---|
| % Binder (Pb) | |
| % Pass #200 Sieve | |
| **Gmm** (Rice Specific Gravity) | |
| Compaction Temperature | |
| Initial Weight of Uncompacted Mixture | |
| Number of Gyrations @ Initial | |
| Number of Gyrations @ Design | |
| **Gb** If Gb is different from JMF enter new Gb here | |
| **Gsb** Blend | |

## Rice Specific Gravity Gmm

| | |
|---|---|
| A = Sample Mass (Wt.) | |
| D = Mass (Wt.) of Pyncometer plus water and cover | |
| E = Mass (Wt.) of Pyncometer Jar plus sample, water and cover | |
| F = Rice specific gravity = A / ( A + D - E) | |

## Bulk Density (AASHTO T-166 Method A)

| | | |
|---|---|---|
| Dry Mass (A) | | |
| SSD Mass (B) | | |
| Mass in Water (C) | | |
| **Gmb =** A / (B-C) | (nearest 0.001) | |

## Gyratory Data (AASHTO T-312)

| | | |
|---|---|---|
| H @ **N**ini | | |
| H @ **N**des | | |
| **% Gmm** @ **N**ini = ( **Hdes*Gmb** / **Hini*Gmm** )*100 | (nearest 0.1) | |

## Volumetrics

| | | |
|---|---|---|
| **Va** = 100 *(1-(Gmb/Gmm)) | (nearest 0.1) | |
| **VMA** = 100 - ((Gmb*Ps)/Gsb) | (nearest 0.1) | |
| **VFA** = 100 * [( VMA - Va ) / VMA] | (nearest 1) | |

## Dust to Asphalt Binder Ratio (D/A)

| | | |
|---|---|---|
| **Gse** = ( 100 - **Pb** ) / [( 100 / **Gmm** ) - ( **Pb** / **Gb** )] | (nearest 0.001) | |
| **Pbe** = [Ps*Gb)*(Gse-Gsb)/(Gse*Gsb]+Pb | (nearest 0.1) | |
| **Ps** = 100 - Pb | (nearest 0.1) | |
| **D/A** = **% Passing # 200 Sieve / Pbe** | (nearest 0.1) | |

| Contractor's Signature | Date |
|---|---|
| Inspector's Signature | Date |