

ARIZONA DEPARTMENT OF TRANSPORTATION
ASPHALTIC CONCRETE TABULATION – IGNITION FURNACE

SMA TESTING ONLY

44-9372 R10/25 azdot.gov

USE CAPITAL LETTERS

LAB NUMBER				UNIT NUMBER				MATL		TYPE			PUR-POSE		TEST LAB		SIZE		SIZE %	
TEST NO.				LOT OR SUFFIX		SAMPLED BY				MO		DAY		YEAR		TIME				
																MILITARY TIME				
SAMPLED FROM										LIFT NO.		RDWY		STATION						
ORIGINAL SOURCE					PROJECT ENGINEER / SUPERVISOR					PROJECT NUMBER					TRACS NUMBER					
REMARKS																				
CONTACT NUMBER																				

WEIGHTS RETAINED					100 COARSE SIEVE TOTAL				
					% RET	% PASS	SPECS		
3"									
2 1/2"									
2"									
1 1/2"									
1"									
3/4"									
1/2"									
3/8"									
1/4"									
#4									
#8									
- #8									
Total					= i (Rounded)				

WEIGHTS RETAINED					% Pass #8 Wt. of Pass #8 Split				
					% RET	% PASS	SPECS		
#10									
#16									
#30									
#40									
#50									
#100									
#200									
-#200									
Total					q = Dry Weight				
Elutriation					= p - q				
					r = s Corrected % Pass No. 200				
					% Pass No. 200 Correction Factor (±) . s				

AASHTO T308

a. Wet Mass of Moisture Sample		g
b. Dry Mass of Moisture Sample		g
c. Moisture Content T329 [(a - b) / b] x 100		%
d. Mass of Basket Assembly		g
e. Mass of Sample and Basket Assembly		g
f. Initial Mass of Sample (e-d)		g
g. Ignition Furnace Set Temperature		°C
h. Mass of Sample and Basket Assembly After Ignition		g
i. Mass of Sample After Ignition (h-d)		g
j. Uncorrected Asphalt Binder Content [(f - i) / f] x 100		%
k. Asphalt Binder Content Calibration Factor (±)		%
l. Corrected Asphalt Binder Content (j - k - c - l)		%
m. Design Asphalt Binder Content		%
n. Elapsed Time of Test (minutes)		

COMPACTION

RICE

Sample Max. Sp. Gr. (Gmm)	
Sample Max. Density [(Gmm) x (62.3)]	pcf

GYRATORY

Average Bulk Density (% Gmm) at Ndesign [(Gmb) x (62.3)]	pcf
Air Voids =	%
$\left[1 - \frac{\text{Average Bulk (Gmb)}}{\text{Max Density (Gmm)}} \right] \times 100$	

RECEIVED DATE

TEST OPERATOR AND DATE

SUPERVISOR AND DATE

SEE BACK ALSO

SMA-AC

Only For SMA Testing

44-9372 R10/25 (BACK)

If samples were fan dried, the maximum density is determined utilizing "Wsd" weights shown below:

Rice Test (AASHTO T209)

FLASK NUMBER OR I.D.	"Wf" WT. OF FLASK	"Wmm" WT. OF SAMPLE IN AIR Wfs - Wf	"B" WT. OF FLASK OF + WATER	"C" WT. OF FLASK + SAMPLE + WATER Wa - Wp	"Vvm" VOLUME OF VOIDLESS MIX Wmm + B - C	"Gmm" MAXIMUM SPECIFIC GRAVITY $\frac{Wmm}{Vvm}$	"Wsd" SURFACE DRY WEIGHT	"Vvm" VOLUME OF VOIDLESS MIX Wsd + B - C	"Gmm" MAXIMUM SPECIFIC GRAVITY $\frac{Wmm}{Vvm}$

FLASK SAMPLE OR I.D.		REMARKS:
WT. OF FLASK + SAMPLE, "Wfs"		
WT. OF FLASK + SAMPLE + WATER + GLASS PLATE, "Wa"		
WT. OF GLASS PLATE, "Wp"		

Gyratory Compaction (AASHTO R46, T312, M325)

Three specimens are used when referee testing is performed.

Specimen I.D. = _____ (_____)

Specimen Height (0.001 in.) = _____ (_____) At Ndesign (_____ of gyrations)

Specimen Weight (gyrations) = _____ (_____)

Bulk Specific Gravity, Bulk Density, & Absorption of Specimens (AASHTO T312, AASHTO T166)

A = mass, in grams, of specimen in air = _____ (_____)

B = mass, in grams, of SSD specimen in air = _____ (_____)

C = mass, in grams, of specimen in water = _____ (_____)

Bulk Specific Gravity $\frac{A}{B - C}$ (lbs./ft.) = _____ (_____) AVERAGE (Gmb) = _____

% Absorption = $\frac{B - A}{B - C} \times 100$ = _____ (_____)

Bulk Density (lbs./cu.ft.) (Bulk Specific Gravity x 62.3) = _____ (_____) AVERAGE = _____

RANGE = _____

TEST OPERATOR & DATE PERFORMED

Coarse Sieve _____

Fine Sieve _____

Furnace _____

Moisture _____

Rice Test _____

Gyratory Compaction _____

Bulk Sp. Gr. _____

Air Voids _____

Gyratory Make _____

Gyratory Model _____

AIR VOIDS (AASHTO T269) =

$$\left[\frac{\text{Average Bulk Density (Gmb)}}{1 - \frac{\text{Max. Density From Rice Test (Gmm)}}{1}} \right] \times 100 = \left[1 - \frac{\left(\frac{\text{Gmb}}{\text{Gmm}} \right)}{\left(\frac{\text{Gmb}}{\text{Gmm}} \right)} \right] \times 100 = \text{_____ \%}$$

VCA - AASHTO R46

$$VCA_{DRC} = \left[\frac{(Gca \times Yw) - Ys}{Gca \times Yw} \right] \times 100$$

Equation 1 =

Where,
Gca = Bulk specific gravity of the course aggregate fraction
Yw = Unit weight of water
Ys = Dry-rodded unit weight of the coarse aggregate fraction

Next, determine the percent of coarse aggregate retained on the breakpoint sieve (Pbp) based on the total weight of the mix by using Equation 2. Lastly, determine the VCAmix with Equation 3.

$$P_{bp} = (100 - \% \text{ passing breakpoint sieve}) \times \left[1.0 - \frac{\% \text{ asphalt} + \% \text{ fiber}}{100} \right]$$

Equation 2 =

$$VCA_{mix} = 100 - \left[\left(\frac{Gmb}{Gca} \right) \times P_{bp} \right]$$

Equation 3 =

Where,
Gmb = Bulk specific gravity of the course aggregate fraction
Gca = Unit weight of water
Pbp = Dry-rodded unit weight of the coarse aggregate fraction