

ARIZONA DEPARTMENT OF TRANSPORTATION
SOIL AND AGGREGATE TABULATION

USE CAPITAL LETTERS
LAB NUMBER

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TEST NO. LOT OR SUFFIX SAMPLED BY MO DAY YEAR TIME MILITARY TIME

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SAMPLED FROM LIFT NO. RDWY STATION IF MILEPOST, INPUT DECIMAL

ORIGINAL SOURCE PROJECT ENGINEER / SUPERVISOR PROJECT NUMBER TRACS NUMBER

REMARKS

CONTACT PHONE NO.

ARIZ 201

ARIZ 248

- Dried to Constant Wt. Alt 1 Alt 2 Alt 3
 Not Dried to Constant Wt. Alt 4 Alt 5

% OVERSIZE

+ 3" + 6" COARSE FACTOR = $\frac{100}{\text{COARSE SIEVE TOTAL}}$

WET SAMPLE PREWEIGHT = _____
WET WT. OF - #4 = _____
- #4 SPLIT WET WT. = _____

WEIGHTS RETAINED	% RET.	% PASS	SPECS.	CUMULATIVE % RET. FINENESS MODULUS
3"				
2 1/2"				
2"				
1 1/2"				
1"				
3/4"				
1/2"				
3/8"				
1/4"				
#4				
- #4				
Total				

IF TOTAL SAMPLE IS WASHED:
UNWASHED WT. = _____
WASHED WT. = _____
ELUTRIATION = _____

DRY WT. OF -#4 SPLIT FINE FACTOR = $\frac{\% \text{ PASS } \#4}{\text{DRY WT. OF -#4 SPLIT}}$

WEIGHTS RETAINED	% RET.	% PASS	SPECS.
#8			
#10			
#16			
#30			
#40			
#50			
#100			
#200			
-#200			
Total			
Elutriation			

Dry Weight

FINENESS MODULUS = $\frac{\text{TOTAL CUMULATIVE \% RET.}}{100}$

T = AASHTO Tests

SPECS.

- A - ARIZ 225
C - ARIZ 226
D - ARIZ 226
AD - ARIZ 245
A1 - ARIZ 232
AD1 - ARIZ 246

PCF

Liquid Limit (LL)	T - 89			
Plastic Limit (PL)	T - 90			
Plasticity Index (PI) = LL - PL	T - 90			
Abrasion method (A,B,C,D)	T - 96			
@ 100 Revolutions			%	
@ 500 Revolutions			%	
Specific Gravity, OD	ARIZ 210 ARIZ 211			
Specific Gravity, SSD	ARIZ 210 ARIZ 211			
Specific Gravity, Apparent	ARIZ 210 ARIZ 211			
Absorption, H ₂ O	ARIZ 210 ARIZ 211			%
Proctor Method				
Optimum Moisture				%
Max. Dry Density				
Sand Equivalent	T - 176 ARIZ 242 (MAFC)			
At Least One Fractured Face	ARIZ 212			%
At Least Two Fractured Faces	ARIZ 212			%
Uncompacted Void Content	ARIZ 247			%
Moisture Content	T - 255 T - 265			%
Flakiness Index	ARIZ 233			%
Carbonates	ARIZ 238			%
pH	ARIZ 236 or 237			
Resistivity (ohm-cm)	ARIZ 236			
Soluble Salts (PPM)	ARIZ 237			
Unit Weight	T - 19			PCF
Voids	T - 19			%
Organic Impurities	T - 21			
Clay Lumps	T - 112			%
Chloride Content (PPM)	ARIZ 736			
Sulfate Content (PPM)	ARIZ 733			
Exchangeable Sodium (%)	ARIZ 729			
Exchangeable Sodium (PPM)	ARIZ 729			
Calcium Carbonate (%)	ARIZ 732			

- WHITE
YELLOW
BLUE

RECEIVED DATE

TEST OPERATOR & DATE

SUPERVISOR

Specific Gravity and Absorption of Fine Aggregate (ARIZ 211)

Bulk Sp. Gr. (O.D. basis) = $\frac{A}{B + S - C} = \frac{(\quad)}{(\quad) + (\quad) - (\quad)}$ = _____

where: A = mass of oven-dry sample in air, g.
 B = mass of pycnometer filled with water, g.
 C = mass of pycnometer with sample and water to calibration mark, g.
 S = mass of saturated-surface-dry sample, g.

Bulk Sp. Gr. (SSD basis) = $\frac{S}{B + S - C} = \frac{(\quad)}{(\quad) + (\quad) - (\quad)}$ = _____

Apparent Sp. Gr. = $\frac{A}{B + A - C} = \frac{(\quad)}{(\quad) + (\quad) - (\quad)}$ = _____

Absorption, percent = $\frac{S - A}{A} \times 100 = \frac{(\quad) - (\quad)}{(\quad)} \times 100 = \underline{\hspace{2cm}}\%$

Specific Gravity and Absorption of Course Aggregate (ARIZ 210)

Bulk Sp. Gr. (O.D. basis) = $\frac{A}{B - C} = \frac{(\quad)}{(\quad) - (\quad)}$ = _____

where: A = mass of oven-dry sample in air, g.
 B = mass of saturated-surface-dry sample in air, g.
 C = mass of saturated sample in water, g.

Bulk Sp. Gr. (SSD basis) = $\frac{B}{B - C} = \frac{(\quad)}{(\quad) - (\quad)}$ = _____

Apparent Sp. Gr. = $\frac{A}{A - C} = \frac{(\quad)}{(\quad) - (\quad)}$ = _____

Absorption, percent = $\frac{B - A}{A} \times 100 = \frac{(\quad) - (\quad)}{(\quad)} \times 100 = \underline{\hspace{2cm}}\%$

TEST OPERATOR & DATE PERFORMED

Coarse Sieve _____
 Fine Sieve _____
 P.I. _____
 Abrasion _____
 Fine Sp. Gr. _____
 Course Sp. Gr. _____
 Proctor _____
 Sand Equiv. _____
 Fractured Faces _____
 Uncompacted Voids _____
 Moisture _____
 Flakiness Index _____
 Carbonates _____
 pH _____
 Resistivity _____
 Soluble Salts _____
 Unit Weight/Voids _____
 Org. Impurities _____
 Clay Lumps _____
 Chloride Content _____
 Sulfate Content _____
 Exchangeable Sodium _____
 Calcium Carbonates _____

Flakiness Index (ARIZ 233)

Sieve Size	1-1/2"	1"	3/4"	1/2"	3/8"	1/4"	#4	#8
% Pass from Sieve Analysis								
% Ret. From Sieve Analysis (F)								
Weight of Test Sample								
Weight Passing Slot								
*Percent Passing Slot (P)								
NOTE: Only the size fractions which have 10 or more percent retained are tested for passing the appropriate slot, and used to determine the Flakiness Index by the equation below.	*Percent Passing Slot (P) = $\frac{\text{Weight Passing Slot}}{\text{Weight of Test Sample}} \times 100$							

Fractured Particles (ARIZ 212)

At least one Fractured Face:
 Wt. of test sample (Wa) = _____
 Wt. of fract. particles (Wf) = _____
 Fract. Particles (FF) = $\frac{Wf}{Wa} \times 100 = \underline{\hspace{2cm}}\%$

At least two Fractured Faces:
 Wt. of test sample (Wa) = _____
 Wt. of fract. particles (W2) = _____
 Fract. Particles (FF2) = $\frac{W2}{Wa} \times 100 = \underline{\hspace{2cm}}\%$

FLAKINESS INDEX = $\frac{[F(1-1/2") \times P(1-1/2")] + \dots + [F(\text{No. } 8) \times P(\text{No. } 8)]}{[F(1-1/2") + \dots + F(\text{No. } 8)]}$

FLAKINESS INDEX = _____ = _____%

Moisture Content (T255, T265) = $\frac{\text{Wet Weight} - \text{Dry Weight}}{\text{Dry Weight}} \times 100 = \frac{(\quad) - (\quad)}{(\quad)} \times 100 = \underline{\hspace{2cm}}\%$

SAND EQUIVALENT (AASHTO T 176) (ARIZ 242 FOR M.A.F.C.)	ABRASION (AASHTO T96)	UNCOMPACTED VOIDS (ARIZ 247)	PLASTICITY INDEX (AASHTO T89 & 90)
SAND READING _____ CLAY READING _____ SAND EQUIV. _____	% Abrasion = $\frac{A - B}{A} \times 100$ Where: A = Original Mass (5000 ± 10 grams) B = Plus #12 Material after Abrasion	MASS OF MEASURE & AGG. 1. _____ g 2. _____ g MASS OF MEASURE 1. _____ g 2. _____ g MASS OF AGGREGATE 1. _____ g 2. _____ g AVERAGE MASS OF AGG. _____ g FINE O.D. SPECIFIC GRAVITY _____ VOLUME OF MEASURE _____ cm ³	LIQUID LIMIT (LL): BOTTLE # _____ TARE WT _____ # BLOWS _____ % MOISTURE = $\frac{(\text{WET WT. WITH BOTTLE}) - (\text{DRY WT. WITH BOTTLE})}{(\text{DR WT. WITH BOTTLE}) - (\text{TARE WT. OF BOTTLE})} \times 100$ = $\frac{(\quad) - (\quad)}{(\quad) - (\quad)} \times 100 = \underline{\hspace{2cm}}\%$ LIQUID LIMIT = _____ (FOR 25 BLOWS) PLASTIC LIMIT (PL): BOTTLE # _____ TARE WT _____ PLASTIC LIMIT: = $\frac{(\text{WET WT. WITH BOTTLE}) - (\text{DRY WT. WITH BOTTLE})}{(\text{DR WT. WITH BOTTLE}) - (\text{TARE WT. OF BOTTLE})} \times 100$ = $\frac{(\quad) - (\quad)}{(\quad) - (\quad)} \times 100 = \underline{\hspace{2cm}}\%$ PLASTICITY INDEX (PI): PI = LL - PL = (_____) - (_____) = _____
SAND READING _____ CLAY READING _____ SAND EQUIV. _____	100 REV: _____ x 100 = _____%	UV = _____ _____ - (_____ / _____) x 100	
SAND READING _____ CLAY READING _____ SAND EQUIV. _____	500 REV: _____ x 100 = _____%	UV = _____%	
AVERAGE SAND EQUIV. = _____	TYPE OF ABRASION: _____		