

Specific Gravity and Absorption of Fine Aggregate (ARIZ 211)

$$\text{Bulk Sp. Gr. (O.D. basis)} = \frac{A}{B + S - C} = \frac{(\quad)}{(\quad) + (\quad) - (\quad)} = \underline{\hspace{2cm}}$$

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.

$$\text{Bulk Sp. Gr. (SSD basis)} = \frac{S}{B + S - C} = \frac{(\quad)}{(\quad) + (\quad) - (\quad)} = \underline{\hspace{2cm}}$$

$$\text{Apparent Sp. Gr.} = \frac{A}{B + A - C} = \frac{(\quad)}{(\quad) + (\quad) - (\quad)} = \underline{\hspace{2cm}}$$

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

Specific Gravity and Absorption of Coarse Aggregate (ARIZ 210)

$$\text{Bulk Sp. Gr. (O.D. basis)} = \frac{A}{B - C} = \frac{(\quad)}{(\quad) - (\quad)} = \underline{\hspace{2cm}}$$

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.

$$\text{Bulk Sp. Gr. (SSD basis)} = \frac{B}{B - C} = \frac{(\quad)}{(\quad) - (\quad)} = \underline{\hspace{2cm}}$$

$$\text{Apparent Sp. Gr.} = \frac{A}{A - C} = \frac{(\quad)}{(\quad) - (\quad)} = \underline{\hspace{2cm}}$$

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

TEST OPERATOR & DATE PERFORMED

Coarse Sieve _____
Fine Sieve _____
P.I. _____
Abrasion _____
Fine Sp. Gr. _____
Coarse 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.

$$\text{*Percent Passing Slot (P)} = \frac{\text{Weight Passing Slot}}{\text{Weight of Test Sample}} \times 100$$

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

$$\text{FLAKINESS INDEX} = \underline{\hspace{4cm}} = \underline{\hspace{2cm}}\%$$

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) = $\frac{W2}{Wa} \times 100 = \underline{\hspace{2cm}}\%$

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

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