Procedure Checklist
FM 1-T084 Specific Gravity & Absorption of Fine Aggregate

		P	F	N/A
Preparation				
1.	Sample the aggregate in accordance with FM 1-T002.			
2.	Obtain approximately 3 pounds of the fine aggregate per FM 1 T-248.			
3.	Dry sample to constant mass at 110 ± 5°C (230 ± 9ºF) allow to cool..			
4.	Sieve the material to remove the portion retained on the #4 sieve. If more than 10 percent is retained on the #4 sieve, separate the coarser material and test the coarser material according to FM 1-T085			
5.	Saturate by the addition of at least 6 percent moisture to the fine aggregate. Let stand 15 to 19 hours.			
6.	Spread the sample on a flat nonabsorbent surface exposed to gently moving current of warm air, and stir frequently to assure homogeneous drying. Continue until sample approaches a free flowing condition.			
Cone Test for Surface Moisture				
7.	Hold the mold on a flat nonabsorbent surface with large diameter down.			
8.	Place a portion of the SSD sample loosely in the mold by filling until overflow occurs and heaping additional material above the top of the mold by holding the top with the cupped fingers of the hand.			
9.	Lightly tamp the fine aggregate into the mold with 25 light drops of the tamper.			
10.	Each drop should be about 0.2 inches above the top surface of the fine aggregate.			
11.	Remove loose sand from the base and lift the mold vertically. If surface moisture is still present, the fine aggregate will retain the molded shape. When the fine aggregate slumps slightly it has reached an SSD condition.			
Procedure				
12.	Partially fill the pycnometer with water.			
13.	Immediately introduce 500 ± 0.1 g of SSD fine aggregate into pycnometer , then immediately weigh an additional 500.0 ± 0.1 g of fine aggregate into a container to oven dry, and fill the pycnometer with additional water to approximately 90% of calibrated capacity. (S)			
14.	Roll, invert, and agitate the pycnometer to eliminate all air bubbles.			
15.	Adjust temperature to 23.0 ± 1.7°C (73.4 ± 3ºF) if necessary by immersion in circulating water, and bring the water level in the pycnometer to its calibrated capacity.			
16.	Determine total mass of pycnometer, specimen, and water. (C)			
17.	Record this and all other mass determinations to 0.1 g.			
18.	Oven dry the material to a constant mass at 110 ± 5°C (230 ±9ºF) cool in air for 1 to 2 hours, and determine the mass. (A)			
19.	Determine the mass of the pycnometer filled to its calibrated capacity with water at 23.0 ± 1.7°C (73.4 ± 3ºF)			
20.	Calculate bulk specific gravity and absorption using the following formulas: Bulk Specific Gravity = A/(B + S - C) Bulk Specific Gravity (SSD) = S/(B + S - C) Apparent Specific Gravity = A/(B + A - C) Absorption, percent = [(S - A)/A] x 100			
21.	Report specific gravity results to nearest 0.001 and absorption to nearest 0.1%.			

Remarks: **Comparison Criteria:** **Bulk Specific Gravity (dry) = 0.066**
Bulk Specific Gravity (SSD) = 0.056
Apparent Specific Gravity = 0.056
Absorption, percent = 0.66

Date: _____ Technician: _____ IA Observer:_____

Technician's E-mail Address: _____

Employer's/ Supervisor's E-mail Address: _____