Procedure Checklist
ASTM C 138 Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete

Item		P	F	N/A
1.	Dampen the interior of the measure and remove any standing water from the bottom.			
2.	Determine the mass (lb or kg) of the empty measure to be used.			
3.	Using a scoop, place the concrete in the measure in three layers of approximately equal volume moving the scoop around the perimeter of the measure opening to ensure an even distribution of the concrete.			
4.	For the first layer: fill the measure approximately 1/3 of its volume; rod the layer 25 times throughout its depth, use care not to damage the bottom of the measure; tap the sides of the measure 10 to 15 times with the mallet to close voids left by the tamping rod.			
5.	For the second layer: fill the measure approximately 2/3 of its volume; rod the layer 25 times, penetrate the first layer about 1 in. (25 mm), distribute the roddings uniformly over the cross section of the measure; tap the sides of the measure 10 to 15 times with the mallet to close voids left by the tamping rod.			
6.	For the third layer: add material so as to avoid overfilling; rod the layer 25 times, penetrate the second layer about 1 in. (25 mm), distribute the roddings uniformly over the cross section of the measure; tap the sides of the measure 10 to 15 times with the mallet to close voids left by the tamping rod.			
7.	After consolidating the third layer, an approximate 1/8 in. (3 mm) of excess concrete above the top of the measure is considered optimal. Representative material can be added or removed as needed prior to strike-off.			
8.	Strike-off the top surface of the concrete and finish it smoothly with the flat strike-off plate, leaving the measure just level full.			
9.	Completely clean the exterior of the measure and determine the mass (lb or kg) of the measure filled with concrete.			
10.	Report the density (unit weight) of the concrete to the nearest 0.1 lb/ft^3 [1.0 kg/m^3]).			

Remarks: **Comparison Criteria: +/- 2.31 lb/ft^3 [37.0 kg/m^3]**

Date: _____ Technician: _____ IA Observer:_____

Technician's E-mail Address: _____

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