Procedure Checklist
ASTM C 173 Air Content of Freshly Mixed Concrete by the Volumetric Method

Item		P	F	N/A
1.	Dampen the interior of the measuring bowl and remove any standing water from the bottom.			
2.	Using the scoop, fill the measuring bowl with freshly mixed concrete in two layers of approximately equal volume, moving the scoop around the perimeter of the measuring bowl opening to ensure an even distribution of the concrete with minimal segregation..			
3.	Rod the bottom layer 25 times uniformly over the cross section and throughout its depth with the rounded end of the tamping rod. Use care not to damage the bottom of the measuring bowl.			
4.	Tap the sides of the measuring bowl 10 to 15 times with the mallet to close any voids left by the tamping rod and to release any large bubbles of air.			
5.	Rod the upper layer 25 times uniformly over the cross section, penetrating through the layer being rodded and into the layer below approximately 25 mm [1 in.], with the rounded end of the tamping rod.			
6.	Tap the sides of the measuring bowl 10 to 15 times with the mallet to close any voids left by the tamping rod and to release any large bubbles of air.			
7.	After tapping the final layer, a slight excess of concrete, 3 mm [⅛ in.] or less, above the rim is acceptable. Add or remove a representative sample of concrete as necessary to obtain the required amount of concrete.			
8.	Strike-off the excess concrete with the strike-off bar and wipe the flange of the measuring bowl clean.			
9.	Wet the inside of the top section of the meter, including the gasket, and attach it to the measuring bowl, creating a water-tight seal.			
10.	Insert the funnel and add at least 0.5 L [1 pt] of water followed by the selected amount of isopropyl alcohol. Record the amount of alcohol added.			
11.	Add water until it appears in the neck of the top section. Remove the funnel. Adjust the liquid (water and alcohol) level with the syringe until the bottom of the meniscus is level with the zero mark on the transparent scale.			
12.	Attach and tighten the cap, producing a water-tight seal.			
13.	Quickly invert the meter, shake the measuring bowl, and return the meter to the upright position. Do not invert the meter for more than 5 seconds at a time.			
14.	Repeat the inversion, shaking, and upright process for a minimum of 45 seconds, and until the concrete is free from the measuring bowl.			
15.	Using the hand on the flange to rotate the meter, vigorously roll the meter ¼ to ½ turn forward and back several times, quickly starting and stopping the roll.			
16.	Turn the measuring bowl about ⅓ turn and repeat the rolling procedure in Step 15.			
17.	Repeat Steps 15 and 16 for approximately 1 min. while listening for aggregate sliding in the meter.			
18.	Set the meter upright, loosen the cap, and allow the liquid level to stabilize. The liquid level is stable when it does not change more than 0.25% within a 2 min. period.			

19.	If the liquid level does not stabilize within 6 minutes, discard the test and conduct a new test using additional alcohol.			
20.	If there is more foam present in the neck than that which is equivalent to 2 full air percent divisions, discard the test and conduct a new test using additional alcohol.			
21.	If the air content is greater than the 9% range, add calibrated cups of water to the meter to bring the liquid level into the graduated range of the meter. Record the number of cups of water added.			
22.	When the liquid level is stable, read the level to the bottom of the meniscus, to the nearest 0.25%. This is the Initial Meter Reading.			
23.	Re-tighten the cap and repeat Steps 17 through 24.			
24.	If the second reading of the liquid level has not changed more than 0.25% from the Initial Meter Reading, record the reading as the Final Meter Reading. Proceed to Step 29.			
25.	If the second reading differs from the first by more than 0.25%, record the second reading as the Initial Meter Reading and repeat Steps 17 through 24.			
26.	If the third reading of the liquid level has not changed more than 0.25% from the Initial Meter Reading, record the third reading as the Final Meter Reading. Otherwise, discard the test and conduct a new test using additional alcohol.			
27.	Disassemble the air meter by detaching the top section from the measuring bowl. Allow the liquid to discharge from the air meter.			
28.	Dump out the contents of the measuring bowl, and examine the measuring bowl for portions of undisturbed, tightly packed concrete. If such material is present, the test is invalid.			
29.	The final air content is equal to the Final Meter Reading, minus the correction factor, plus the number of calibrated cups of water added. Report the air content to the nearest 0.25%.			

Remarks: **Comparison Criteria: Air Content = 32% of Measured Air Content**

Date:_____ Technician: _____ IA Observer: _____

Technician's E-mail Address:_____

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