

IA Checklist

ASTM D1140 - Determining the Amount of Material Finer than 75- μ m (No. 200) Sieve in Soils by Washing

Procedure		P	F	NA
1	After obtaining a representative specimen of sufficient size in accordance with D1140 9.2 , transfer the test specimen into a pre-weighed container.			
2	Dry the entire test specimen to a constant mass at a temperature of 230+/- 9°F (110 +/- 5°C) and determine the mass to four significant digits.			
3	<u>Method A – Non-cohesive Soils:</u> Fully inundate (cover) the specimen with water and allow to soak for minimum of ten minutes.			
4	<u>Method B – Cohesive Soils:</u> Fully inundate (cover) the specimen with a dispersing solution (D1140 Note: 5) - Normally a concentration of 40 g of sodium hexametaphosphate to 1000 ml of water has proven to be sufficient for adequate soil dispersal) and allow to soak for a minimum of 2 hours.			
5	During the soaking period for either method A or B, the specimen shall be periodically manually agitated or by mechanical means to facilitate complete separation of the particles			
6	Following the soaking period, agitate the contents of the container vigorously and immediately transfer the specimen from the container onto the 75- μ m (No. 200) wash sieve or guard sieve (No. 40 or larger) if used. If testing for T88 , see size and wash methods in IA Checklist for AASHTO T88 which includes using a mechanically operated stirring apparatus (malt mixer).			
7	Wash the specimen on the sieve(s) by means of a stream of water from the water delivery mechanism. The velocity of the water should not cause any splashing of the material over the sides of the sieve. The water temperature shall not exceed 90°F (32°C) and be maintained close to room temperature. Continue washing the specimen until the water coming through the sieve(s) is clear. (See D1140 Note: 7 & 8).			
8	The material retained on the No. 75- μ m (No. 200) sieve, and all the guard sieves if used, shall be transferred back into the specimen container by rinsing the contents retained on the sieve(s) into the container. Excess water may be removed by decanting, demonstrating care not to lose any of the retained material. No water should be decanted from the container except through the 75- μ m (No. 200) sieve, to avoid loss of material if testing for T 88 .			
9	Dry the residue from all of the sieves to a constant mass at a temperature of 230+/- 9°F (110 +/- 5°C) and determine the mass using a balance having the same accuracy as described in D1140 10.1 (determine the mass to four significant digits) and 10.1.2 .(example for minimum readability).			
10	Calculate the amount of material pass the No. 75- μ m (No. 200) sieve by washing (wash loss). If testing for T 88 , obtain the percentage passing the No. 75- μ m (No. 200) sieve by sieve analysis according to AASHTO T 88 .			
11	Record the results to the nearest 0.1% for materials with a maximum particle size passing the 4.75-mm (No. 4) sieve. Record the results to the nearest 1% for materials with a maximum particle size retained on 4.75 mm (No. 4) sieve and passing the 75 mm (3 in.) sieve.			

Equipment		P	F	NA
1	Calibrations records current.			
2	Sieves - Wash Sieve: A 75- μ m (No. 200) sieve with a diameter sufficient to handle the required size of specimen and minimum height above the screen of 2 in. (50mm). Conforms to requirements of ASTM E11 . Guard Sieves (<i>optional</i>) – A sieve or multiple sieves having a sieve opening of 425- μ m (No. 40) or larger. The diameter of the guard sieve(s) frame shall be equal to or less than the 75- μ m (No. 200) wash sieve when stacked.			
3	Container- Smooth walled, corrosion resistant material and of sufficient size to accommodate the test specimen. The containers shall be without tight corners that may allow for material to lodge or become trapped.			
4	Oven-An oven of sufficient size, thermostatically controlled and capable of maintaining a uniform temperature of 230+/- 9°F (110 +/- 5°C). The oven shall meet the criteria of Specification E145 and preferably be a forced draft oven.			
5	Balance-A balance or scale conforming to the requirements of Specification D4753 , having a readability with no estimation to four significant digits.			

Remarks: