SUBMIT/EMAIL

Reset Form

Revised: November 14, 2023
A. Hawcroft
CLT ID 00054

Procedure Checklist
T 88 (ASTM D421) Particle Size Analysis

SiteManager ID:	Date:
Technician:	QA Observer: SELECT

Hydrometer Analysis		RESULTS
1.	Composite correction for hydrometer reading determined. (AT EACH READING)	RESULTS
2.	Test sample weighs approximately 100 g (sandy) or 50 g (clay or silt).	RESULTS
3.	Sample placed in beaker, 125 mL of dispersing agent added, and stirred with glass rod.	RESULTS
4.	Sample soaked at least 12 hours in dispersing agent per AASHTO section 11.1. (ASTM section 9.2 requires a minimum of 16 hours soaking.)	RESULTS
5.	Sample washed into dispersion cup with distilled water until cup is more than half-full.	RESULTS
6.	Mechanical dispersion: Dispersed for 60 seconds.	RESULTS
7.	Mixture transferred to cylinder, distilled water added to suspension up to 1000 mL. (allowed to obtain uniform temperature)?.	RESULTS
8.	Cylinder and suspension turned upside down and back for 60 ± 5 turns in 60 seconds. (upside down and back is two turns).	RESULTS
9.	If material is clinging to the inside walls of the cylinder, it is rinsed down with small amount of distilled or demineralized water	RESULTS
10.	Time recorded at conclusion of shaking.	RESULTS
11.	Hydrometer readings taken at 2, 5, 15, 30, 60, 250, and 1440 minutes. Our data sheets have an option to take a 48 hour reading, but neither AASHTO section 12.2 or ASTM section 10.2 require it.	RESULTS
12.	Hydrometer slowly placed in suspension about 25 or 30 seconds before reading.	RESULTS
13.	Hydrometer floats freely and does not touch wall of cylinder.	RESULTS
14.	Hydrometer read at top of meniscus nearest 0.5 g/L or 0.0005 SP. G.	RESULTS
15.	Hydrometer removed from suspension between readings and placed in graduate of clean distilled or demineralized water with spinning motion.	RESULTS
16.	Temperature recorded immediately after each hydrometer reading.	RESULTS
Fine Sieve Analysis		**RESULTS**
1.	After final hydrometer reading, specimen washed over No. 200 (0.075 mm) sieve.	RESULTS
2.	Retained material washed into container for drying. No water decanted except through No. 200 (0.075 mm) sieve.	RESULTS
3.	Material retained on sieve oven-dried at 110 ± 5 °C (230 ± 9º F).	RESULTS
4.	Sieve analysis performed on No. 40 (0.425 mm) and No. 200 (0.075 mm) sieves (additional sieves allowed as required by material under test).	RESULTS
5.	Does your lab perform manual or mechanical sieving? We perform both, typically mechanical sieving.	RESULTS
Calculations and Reporting		**RESULTS**

1.	Hygroscopic Moisture Calculation performed.	RESULTS
2.	Coarse material sieve analysis percentages passing calculations performed.	RESULTS
3.	Hydrometer analysis calculations performed to determine percentage of soil still in suspension.	RESULTS
4.	Grain size diameter calculations performed.	RESULTS
5.	Fine material sieve analysis percentages passing calculations performed and corrected for hygroscopic moisture.	RESULTS
6.	Sieve analyses reported to nearest 0.1 percent passing.	RESULTS
7.	Hydrometer analysis reported to nearest 0.1 percent smaller than	RESULTS
8.	ASTM Compliant Report Includes: • Maximum particle size • Percent passing each sieve • Shape and hardness of sand and gravel particles • Notes regarding difficulties dispersing the portion passing No. 10 sieve if applicable • Specific Gravity if high or low • Dispersion device and length of dispersion period	RESULTS

***Note according to QA's Evaluation procedure the Branch Manager or Lab Supervisor will be responsible to review this evaluation report with the technician and correct any findings(s) noted, to verify that correct procedures are being followed in future testing.**

Remarks: