

APPARATUS / SECTION 3

1. BALANCES:

- Balance readable to 0.01 g for materials passing 2.0 mm?....._____
- Balance with basic tolerance of $\pm 0.1\%$ of sample mass for material retained on the 2.00 mm sieve?_____

- 2. DRYING OVEN: Thermostatically controlled, forced-draft and capable of maintaining a uniform temperature of $110^{\circ}\pm 5^{\circ}\text{C}$ throughout?....._____

3. STIRRING APPARATUS:

- a) Mechanically operated with rotating speed $\geq 10\ 000$ rpm?_____
- b) Rotating shaft equipped with replaceable paddle as per Figure 1a?_____
- c) Paddle capable of operating ≥ 19 mm and ≤ 38 mm above bottom of cup?_____
- d) Dispersion cup conforming to designs shown in Figure 2?....._____

4. HYDROMETER:

- a) Meets requirements of Type 152 H of ASTM E 100?_____
- b) Graduated to read in grams per litre?_____

5. SEDIMENTATION AND CONTROL CYLINDERS:

- a) 1000 mL capacity graduated glass cylinder?_____
- b) Cylinder measures 457 mm in height and 60 ± 1.2 mm in diameter?_____
- c) 1000-mL mark at 360 mm ± 20 mm from bottom, measured inside?_____

6. THERMOMETER:

- a) Readable to 0.5°C ?....._____
- b) Calibrated to a thermometer accurate to 0.1°C ?_____

7. SIEVES:

- a) Set of square-mesh, woven-wire cloth sieves conforming to ASTM E 11 in satisfactory condition?_____
- b) Set of sieves giving a uniform spacing of points on the grain size distribution curve?_____
- c) Such a set normally consists of 75 mm, 37.5 mm, 19 mm, 9.5 mm, 4.75 mm, 2.36 mm, 1.18 mm, 600 μm , 300 μm , 150 μm and 75 μm ?_____

- 8. MECHANICAL SIEVE SHAKER: Used for the sieving operation of the material pass 2.00 mm retained on 75 μm . Motion is such that it causes the particles to bounce and turn._____

APPARATUS / SECTION 3 (CONTINUED)

9. CONSTANT TEMPERATURE ROOM/WATER BATH

- a) Temperature control by water bath or constant temperature room?
- b) Capable of maintaining $20^{\circ} \pm 2^{\circ}\text{C}$ temperature throughout 24 hrs? Use K to correct temperature..

10. BEAKER: 250 ml to 400 mL glass beaker?.....

11. TIMER: A clock, stopwatch, or digital timer readable to one second?.....

12. SAMPLE SPLITTER: Minimum of 12 chutes, 12.5 - 20 mm wide for fine aggregates?.....

13. DISPERSING AGENT:

- a) Strength of solution corresponds to type of soil to be tested (Table 1)?
- b) Solution prepared freshly and adjusted to a pH between 8 and 9?

14. WATER: A supply of distilled water for preparation of test specimen and dispersing solution?.....

15. SAMPLE PREPARATION: Does the laboratory have the equipment capable of preparing the sample as outlined in ASTM D 421? This should include a mechanical device consisting of a power driven rubber-covered pestle (or soil mill) suitable for breaking up the aggregation of solid particles without reducing the size of the individual grains?.....

NOTE: a hand operated rubber-covered pestle may be suitable.

COMMENTS