

**Method of Test for Percentage of Particles of Less Than
1.95 Specific Gravity in Coarse Aggregate**

1. Scope:

This test is for determining the percentage of lightweight particles in coarse aggregate.

2. Apparatus:

- 2.1 Scale or balance having the capacity to weigh any sample which may be tested utilizing this procedure and readable to the nearest 0.1 gram.
- 2.2 A suitable container and basket that will permit submerging the specimen to a minimum of 2" below the surface of the solution. The basket shall have openings not larger than a #8 mesh.
- 2.3 A #4 sieve conforming to ASTM E11.
- 2.4 A strainer with openings not larger than a #8 mesh.
- 2.5 A glass graduate of at least 250 mL capacity and a hydrometer for measuring the specific gravity of the liquid, readable to 0.01.
- 2.6 Zinc chloride solution having a specific gravity of 1.95 ± 0.01 .
- 2.7 Drying oven capable of maintaining a temperature of $230^{\circ} \pm 9^{\circ}\text{F}$.

3. Procedure:

- 3.1 Using a graduate and hydrometer check the specific gravity of the zinc chloride solution and record on the worksheet to the nearest 0.01.
- 3.2 Obtain a 1500 to 2000 g sample of + #4 material collected from SD 202 and sampled in accordance with SD 201. Dry it to a constant weight as per SD 108 and weigh the material to the nearest 0.1 gram. The sample includes all rock above the #4 sieve.

NOTE: Previously washed material may not be used for this test.

- 3.3 Place the material in the basket and lower into the zinc chloride solution. Stir the aggregate with a large spoon. Skim off the floating particles using a strainer and save them. Repeat this process until no additional particles surface.

NOTE: The solution in the tank should be approximately 3 times the volume of the aggregate.

- 3.4 Thoroughly wash the particles that have been skimmed off, dry to a constant weight in an oven at $230^{\circ} \pm 9^{\circ}\text{F}$ and weigh the material to the nearest 0.1 gram.

4. Report:

- 4.1 Calculate the percentage of lightweight particles in the following manner.

% lightweight particles =

$$\frac{\text{Weight of lightweight particles} \times 100}{\text{Weight of + \#4 material}}$$

- 4.2 Report the percentage to the nearest 0.1%.

5. References:

ASTM E11
SD 108
SD 201
DOT-3
DOT-68
DOT-69