

**Method of Test for Percentage of Particles of Less Than
1.95 Specific Gravity in Fine Aggregates**

1. Scope:

This test is for determining the percentage of lightweight particles in fine 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 Sieves. A #30 sieve conforming to the requirements of ASTM E11.
- 2.3 Strainer. A piece of #30 sieve cloth, conforming to ASTM E11, of suitable size and shape for separating the floating pieces from the heavy liquid.
- 2.4 Beakers and graduate. Two 1000 mL glass beakers and one glass graduate of at least 250 mL capacity.
- 2.5 Containers suitable for drying the aggregate sample.
- 2.6 Hydrometer for measuring the specific gravity of the liquid, readable to 0.01.
- 2.7 Zinc chloride solution having a specific gravity of 1.95 ± 0.01 .
- 2.8 Drying oven capable of maintaining a temperature of $230^{\circ} \pm 9^{\circ}\text{F}$.

3. Procedure:

- 3.1 Using the 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 250 to 350 g sample in accordance with SD 201 and dry in an oven at $230^{\circ} \pm 9^{\circ}\text{F}$ to a constant weight as per SD 108. Weigh the material to the nearest 0.1 gram.

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

- 3.3 Screen the material on a #30 sieve and save the retained portion for the test.
- 3.4 Place approximately 600 mL of the solution in a glass beaker. The material is poured into the solution and at the same time stir the solution with a spoon. Continue stirring to ensure that all of the material is in suspension. Allow the material to settle until there is a defined cleavage plane between the rising and settling material.

- 3.5 Decant the solution over the strainer into a glass beaker. Continue decanting until the settled material appears near the lip of the beaker.
- 3.6 Pour the solution back into the settled material at the same time stirring with a spoon to bring all material into suspension. Decant the solution as described in paragraph 3.5.
- 3.7 Thoroughly wash the material retained on the strainer to remove all zinc chloride. Dry the material to a constant weight in an oven at $230^{\circ} \pm 9^{\circ}\text{F}$. Weigh the material to the nearest 0.1 gram.

4. Report:

- 4.1 The approximate percentage of lightweight particles is calculated in the following manner:

% lightweight particles =

$$\frac{\text{wt. of decanted particles}}{\text{wt. of original dry sample}} \times 100$$

- 4.2 Report the percentage of lightweight particles to the nearest 0.1%.

5. References:

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