**Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C127 - 15**

APPARATUS / SECTION 6

1. Balance / Clause 6.1

   a. Sensitive, readable, and accurate to 0.05 % of the sample mass at any point
   Within the range used for this test or 0.5 g, whichever is greater……………….. _____
   b. Equipped with a suitable apparatus for suspending sample container in water
   under the center of the balance …………………………………………………….. _____

2. Sample Container / Clause 6.2

   a. Wire basket to suspend from balance (3.35 mm or finer mesh) or bucket
   of approximately equal breadth and height (4 to 7L capacity for 37.5 mm nominal max. size aggregate
   or less) ……………………………………………………………………….…… _____

   Note 1: Wire suspending container should be of the smallest practical size.

3. Water Tank / Clause 6.3

   a. Suitable size water tank of sufficient volume to suspend sample container from Balance
   …………………………………………………………………………………… _____

4. Sieves / Clause 6.4

   a. A 4.75 mm (No. 4) sieve or sieves (as specified in Section 7.0) conforming to
   ASTM E11 ………………………………………………………………………….. _____

5. Oven / Clause 6.5

   a. Capable of maintaining a uniform temperature of 110 ± 5.0°C (230 ± 9°F) ……. _____

SAMPLING / CLAUSE 7.1

   a. S a m p l e in accordance with Practice D 75 ……………………………………….. __

SAMPLE PREPARATION / CLAUSE 7.2 to 7.4

   a. Reduce sample to the approximate required amount using applicable procedure specified in ASTM
   C702 ………………………………………………………………………………… _____
   b. Exclude P/4.75 mm material by dry sieving and then washing R/4.75 mm to
   Remove dust or other coatings from the surface ………………………………… _____

   Note 2: Designation CA (R/4.75 mm) can be substituted for CA (R/2.36 mm) if a substantial quantity of
   No. 8 (2.36 mm) material is present in the sample.

   Alternatively

   Material passing the P/4.75 mm sieve can be tested in accordance with ASTM C128.

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ASTM C127 - 15**

SAMPLE PREPARATION (CONTINUED)

c. Minimum mass of test sample as given in chart below ………………………….. _____

Nominal Max. Size / mm (in.)	Minimum Mass of Test Sample kg(lb)
12.5 (½) or less	2 (4.4)
19.0 (¾)	3 (6.6)
25.0 (1.0)	4 (8.8)
37.5 (1½)	5 (11)
50.0 (2.0)	8 (18)
63 (2½)	12 (26)
75 (3.0)	18 (40)
90 (3½)	25 (55)
100 (4.0)	40 (88)
125 (5.0)	75 (165)

d. Sample tested in several size fraction ……………………………………………… _____

-   Sample tested in 2 or more size fractions as determined by gradation in accordance with ASTM C136 using the required sieves for separating the required size fractions ………………………………………………………………………… _____
-   IF CA contains more than 15% material on the R/37.5 mm sieve, material larger than 37.5 mm to be tested in one or more size fractions separately from the smaller size fractions ………………………………………………………………………….. _____

    Note 3: Samples tested in separate size fractions, the minimum mass of test sample for each fraction as determined by gradation shall not be less than the difference between the masses specified in above chart.

    Note 4: When calculating % of material in each size fraction, do not include the P/4.75 or P/2.36 mm (if applicable) material.

PROCEDUR / SECTION 8

a. Dry test sample to a constant mass at a temperature of 110 ± 5.0° C – allow to cool for 1 to 3 h?..…………………………………………………………………… _____
b. Immerse aggregate in water at room Temp. for period of 24 ± 4 h? ……............ _____
c. Remove sample from water and roll particles in a large absorbent cloth (towel) removing all visible films of water taking care to avoid evaporation of water from aggregate pores during the saturated-surface-dry (SSD) operation? ………………………………………………..….. _____
d. Determine mass of the test sample in the SSD condition and record? ………… _____
e. Place SSD sample in water container and determine apparent mass in water at 23 ± 2.0°C – shake container to remove any trapped air before weighing? …… _____
f. Determine mass in water and record? …………………………………………... _____
g. Dry sample in oven at 110 ± 5.0° C – cool at room temp. for 1 to 3 h and determine mass? ………………………………………………………………….. _____

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CALCULATIONS / SECTION 9

a. Calculate Relative density (specific gravity) (OD) of oven dried sample? ……… _____

Example: Relative Density (specific gravity) (OD) = A/(B - C) Where:

A = Mass of oven-dry test sample in air, g.
B = Mass of saturated surface-dry sample in air g,
C = Apparent mass of saturated test sample in water, g.

b. Calculate Relative density (specific gravity) (SSD) – Saturated Surface Dry? … _____

Example: Relative Density (specific gravity) (SSD) = B/(B –C)

c. Calculate Apparent Relative Density (apparent specific gravity)? …………….. _____

Example: Apparent Relative Density (apparent specific gravity) = A/(A-C)

d. Calculate % of Absorption

Example: Absorption, % = [(B –A)/A] x 100

REPORTING / SECTION 10

a. Report Relative Density to the nearest 0.01? …………………………………… _____
b. Report Absorption to the nearest 0.1%? ………………………………………… _____

COMMENTS