



## Performance Examination - Aggregate

### Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate (ASTM C127-15) [AASHTO T 85-14]

Candidate Name: \_\_\_\_\_ NICET ID: \_\_\_\_\_

| Apparatus   | Trial 1 | Trial 2 |
|---|---------|---------|
| <b>Balance</b> Sensitive, readable, and accurate to 0.05% of sample weight or 0.5 g (greater) |         |         |
| <b>Sieves</b> 4.75 mm (No. 4) or other sizes as needed  |         |         |
| <b>Oven</b> Maintains uniform temperature of 110 ± 5 °C (230 ± 9 °F)                          |         |         |
| <b>Water Tank</b> Capable of completely submerging the sample container                       |         |         |
| <b>Sample Container</b> Wire basket of 3.35-mm (No. 6) mesh or finer                          |         |         |
| <b>Immersion Water</b> Temperature is 23 ± 2 °C   |         |         |

| Procedure  | Trial 1 | Trial 2 |
|--|---------|---------|
| 1. The sample is obtained by Practice C702   |         |         |
| 2. Screened on 4.75-mm (No. 4 sieve) (or 2.36-mm (No. 8 sieve) if sample contains No. 4 material)  |         |         |
| 3. Sample mass as follows: ½ in. or less - 2 kg; ¾ in. - 3 kg; 1 in. - 4 kg; 1 ½ in. - 5 kg  |         |         |
| 4. Wash sample to clean surfaces of particles  |         |         |
| 5. Sample dried to constant mass at 110 ± 5 °C (230 ± 9 °F) and cooled to room temperature for 1 to 3 hours (for up to 1 ½ in. nominal maximum size, longer for larger sizes)<br><i>Note: Oven drying not necessary if naturally moist condition is desired.</i> |         |         |
| 6. Cover sample with water for 15 to 19 hours  |         |         |
| 7. Roll sample in cloth to remove visible films of water ( <i>A moving stream of air may be used to assist in the drying operation.</i> )  |         |         |
| 8. Wipe larger particles individually and avoid evaporation  |         |         |
| 9. SSD sample mass in air determined; All masses determined to nearest 0.5 g or 0.05% of sample weight (whichever is greater)  |         |         |
| 10. Immediately place sample in the sample container   |         |         |
| 11. Before weighing, remove entrapped air by shaking container while immersed  |         |         |
| 12. Mass determined in water at 23 ± 2 °C  |         |         |
| 13. Dried to constant mass at 110 ± 5 °C (230 ± 9 °F) and cooled to room temperature for 1 to 3 hours (or until aggregate has cooled to comfortable handling temperature, approximately 50 °C)   |         |         |
| 14. Oven dried sample mass determined  |         |         |
| 15. Bulk specific gravity calculated to nearest 0.01 using the following formulas  |         |         |

Examiner Name: \_\_\_\_\_ Examiner Signature: \_\_\_\_\_ Date: \_\_\_\_\_



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| Type                                   | Formula                                       |
|--|---|
| Bulk Specific Gravity ( $G_{sb}$ )     | $\frac{A}{(B - C)}$                           |
| Bulk Specific Gravity (by SSD Mass)    | $\frac{B}{(B - C)}$                           |
| Apparent Specific Gravity ( $G_{sa}$ ) | $\frac{A}{(A - C)}$                           |
| Absorption (in Percent)                | $\left[ \frac{(B - A)}{A} \right] \times 100$ |

First Attempt: Pass: \_\_\_\_\_ Fail: \_\_\_\_\_ Second Attempt: Pass: \_\_\_\_\_ Fail: \_\_\_\_\_

Comments:

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Examiner Name: \_\_\_\_\_ Examiner Signature: \_\_\_\_\_ Date: \_\_\_\_\_