Canadian Council of Independent Laboratories   May 2016

RELATIVE DENSITY OF FINE AGGREGATES   LS-605-R30_____
                                                                       C128-15_____

APPARATUS:

1. Pycnometer:
   (a) One of the following containers:
   or   1. Volumetric Flask, capacity 500 mL (or more)?   _____
             2. Fruit jar with fitted pycnometer top?
   (b) Volume content can be reproduced to ± 0.1 cm³?   _____
   (c) Volume of container filled to mark at least 50% greater than space required
        to accommodate test sample?   _____
   (d) Pycnometer has been calibrated at 23 ± 2°C?   _____

2. Conical Mold:
   (a) Inside diameter at top 40 ± 3 mm?   _____
   (b) Inside diameter at bottom 90 ± 3 mm ?   _____
   (c) Height 75 ± 3 mm?   _____
   (d) Metal, 0.8mm minimum thickness?   _____

3. Tamper:
   (a) Weight 340 ± 15 g?   _____
   (b) Flat circular tamping face?   _____
   (c) Diameter of tamping face 25 ± 3 mm?   _____

4. Burette (Optional), readable to 0.15 mL?   _____
5. Balance, Capacity at least 1 kg?   _____
   Accurate to 0.1%, sensitive to 0.1g or less?
6. Oven, maintains 110 ± 5°C?   _____

COMMENTS:

RELATIVE DENSITY OF FINE AGGREGATES   LS-605-R30_____
                                                                        C128-15_____

PROCEDURE:

Sample Preparation

1. Sample obtained by ASTM D75; C702
2. Approximately 2400g of dried fine aggregate obtained and split into 2 approximately 1200 g subsamples?   _____
3. Samples washed as per LS-601?   _____
   Note: Oven drying not necessary if naturally moist condition is desired.
4. Covered with water or at least 6% moisture added?   _____
5. Allowed to stand 20 to 28 hours, or naturally moist?   _____
6. Excess water decanted (if necessary) without loss of fines?   _____
7. Sample spread on flat nonabsorbent surface?   _____
8. Uniformly dried by a current of warm air?   _____
9. Mold placed on flat, nonabsorbent surface and filled to overflowing?   _____
10. Tamped 25 times with 5mm drop? (Note: Provisional Cone test - C128, note 3, (1) may be used with materials that do not readily slump)   _____
11. Tamper allowed to fall freely under gravitational attraction?   _____
12. Loose sand removed from around base and mold lifted vertically?   _____
13. Sample fails to slump on first test?   _____
14. If it does slump, is water added, sample covered and allowed to stand 30 minutes?   _____
15. Drying continued and slump test repeated at frequent intervals until sample slumps slightly?   _____

Procedure

1. Pycnometer partially filled with water and 500 ± 10g sample added?   _____
2. Pycnometer filled to 90% capacity and agitated to eliminate air bubbles? _____
3. Temperature of contents adjusted to 23 ± 2°C?   _____
4. Water level adjusted to calibrated capacity and pycnometer and contents weighed?   _____
5. Sample removed and dried to constant weight at 110 ± 5°C?   _____
6. Sample cooled in air at room temperature for 1 ± ½ hour and weighed?   _____
7. Empty pycnometer filled to its calibration capacity with water at 23 ± 2°C and weighed?   _____
8. All weights determined to nearest 0.1g?   _____
9. Lab says proper book formulas used in calculations?   _____

Use of Laboratory Control Aggregate

1. Laboratory has a supply of control aggregate? Source: Sutherland Sand   _____
2. Control sample tested every 10 samples or at least every week when samples tested?   _____
3. Control sample mean relative density is 2.611, range is 2.593 to 2.629? _____
4. Control sample mean absorption is 1.85%, range is 1.58 to 2.12%?   _____
5. Control chart showing data for last 20 samples of reference material?   _____
                    Mean relative density for last 20 samples   _____
                    Low relative density for last 20 samples   _____
                    High relative density for last 20 samples   _____

COMMENTS: