

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1141.13-2007

Methods for sampling and testing aggregates

Method 13: Material finer than 2 μm

RECONFIRMATION NOTICE

Technical Committee CE-012 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 29 March 2018.

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NOTES

Australian Standard[®]

Methods for sampling and testing aggregates

Method 13: Material finer than 2 μm

This Standard incorporates Amendment No. 1 (April 2016). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

1 SCOPE

This Standard sets out the method for the determination of material finer than 2 μm in aggregate. The test is carried out on the wash water obtained during the performance of AS 1141.12 or AS 1141.11 if the sample is washed.

A1

2 APPLICATION

The test has application as a diagnostic procedure but is not considered applicable for control purposes if the percentage of material finer than 75 μm is less than 1% for a coarse aggregate, or less than 4% for a fine aggregate.

3 NORMATIVE REFERENCES

The following referenced documents are indispensable for the application of this document.

AS	
1141	Methods for sampling and testing aggregates
1141.1	Method 1: Definitions
1141.2	Method 2: Basic testing equipment
1141.11	Method 11: Particle size distribution by sieving
1141.12	Method 12: Materials finer than 75 μm in aggregates (by washing)

4 TERMS AND DEFINITIONS

For the purposes of this document, the terms and definitions given in AS 1141.1 apply.

5 APPARATUS

The following apparatus, complying with the relevant provisions of AS 1141.2, is required:

- (a) *Balance*—of adequate capacity with a limit of performance not exceeding ± 0.0005 g.
- (b) *Bath*—constant temperature bath, set to $25 \pm 0.1^\circ\text{C}$. The bath shall be vibration-free, and well illuminated.
- (c) *Beaker*—of approximately 250 mL capacity.
- (d) *Dessicator*—of 200–250 mm diameter, containing anhydrous silica gel.
- (e) *Glassware*:
 - (i) Petri dishes and covers.

- (ii) Plate, of sufficient area to allow preparation of test portion.
- (iii) Tube, sedimentation, 50 mm diameter and 340 mm long, graduated to 500 mL.
- (iv) Weighing bottle, capacity 100 mL.
- (v) 400 mL beaker.
- (f) *Oven*—thermostatically controlled to operate at a temperature of 105°C to 110°C. The atmosphere in the oven shall be dust free.

NOTES:

- 1 Normally, drying is performed in an oven at 105°C to 110°C, but when a method requires drying at different temperatures, the specified temperatures should be used.
 - 2 Material may be dried to constant mass (see AS 1141.1 for definition of constant mass) using alternative methods such as microwave ovens, infra-red lights or hotplates, provided tests have shown that these techniques do not disrupt or weaken particles to the extent that the property being measured changes.
- (g) *Pipette*—Sampling pipette fitted with a pressure and suction inlet and capacity of approximately 10 mm, as shown in Figure 1. The pipette shall be so arranged that it can be inserted under precise mechanical control into the sedimentation tube when the latter is immersed in a constant temperature bath. For assembly of the apparatus see Figure 2.
 - (h) *Stirrer*—mechanical stirrer.
 - (i) *Stopwatch*
 - (j) *Sundry equipment*—dish or saucepan, PTFE coated; spatula with 150 mm blade.

6 REAGENTS

The following reagents are required:

- (a) Deionized water.
- (b) Freshly made solution of 3.3 g sodium hexametaphosphate and 0.7 g sodium carbonate per 100 mL.

7 CALIBRATION AND USE OF PIPETTE (see Figure 2)

Immerse the nozzle in distilled water with tap B closed and tap E open. Draw in water at 25°C until the level reaches bulb D then close tap E. Allow surplus in D to run to waste through F. Discharge water in pipette and tap E into a tared weighing bottle and determine the mass of water (m_1).

8 TEST SAMPLE

The test sample shall be all of the wash water as derived from the test AS 1141.11 or AS 1141.12.

9 TEST PROCEDURE

- (a) Transfer the test portion to a pyrex or PTFE coated dish and evaporate to a thick slurry. Transfer this slurry to a tared beaker and dry to constant mass at 105°C to 110°C. Determine mass of material (m_2).
- (b) Cone and quarter the dried material on a glass plate to give a test portion of approximately 10 g. Dry the test sample to constant mass in a Petri dish and determine mass of material (m_3).