

Australian Standard®

AS 1141.12:2015

Methods for sampling and testing aggregates**Method 12: Materials finer than 75 µm in aggregates (by washing)**

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PREFACE

This Standard incorporates Amendment No. 1 (December 2018). 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 the amount of material finer than 75 µm in aggregate, by washing (see Note).

NOTE: When samples have previously been tested using the methodology of AS 1141.11.1, Clause 5.6, which is a requirement when the passing 75 µm is specified for that test method, it is not recommended to also test under AS 1141.12.

2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents for informative purposes are listed in the Bibliography.

AS

1141 Methods for sampling and testing aggregates

1141.1 Part 1: Definitions

1141.2 Method 2: Basic testing equipment

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[Text deleted]**3 DEFINITIONS**

For the purpose of this Standard, the definitions given in AS 1141.1 apply.

4 PRINCIPLE

Clay particles and other aggregate particles which are dispersed by the wash water and water soluble materials will be removed from the aggregate during the test for inclusion in the general term 'materials finer than 75 µm'.

5 APPARATUS

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The following apparatus, conforming to the relevant provisions of AS 1141.2 and the requirements given below, is required:

- (a) *Balance*—of adequate capacity having a limit of performance of ± 0.5 g. Where asphalt fillers are tested, the limit of performance of the balance shall be ± 0.05 g.

- (b) *Drying oven*—complying with the requirements of AS 1141.2 and capable of operating at a temperature of 105°C to 110°C.

NOTE: Material may be dried to constant mass using other 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.

- (c) *Sample divider*—complying with requirements of AS 1141.2.

NOTE: A rotary cone splitter may be used in place of the sample divider.

- A1 | (d) *Sieves*—in sizes 1.18 mm and 75 µm.

The following apparatus is optional:

Washing sieve—a 75 µm mesh mounted in a deeper frame to allow for washing the sample on the sieve mesh without spillage. The 75 µm mesh should be protected with a coarser guard mesh and may be supported with a coarse mesh or frame.

6 TEST PORTION

The minimum mass of the test portion shall be determined by the nominal size of the aggregate in accordance with Table 1. The test portion required shall be obtained by sample division and no attempt shall be made to secure an exact predetermined mass.

NOTE: Where possible, the test portion should be prepared from a sample obtained in accordance with AS 1141.3.1.

TABLE 1
MINIMUM MASS OF TEST PORTION FOR SIEVING

Nominal size mm	75	40	28	20	14	10	7	5	Fine aggregate	Fillers
Graded aggregate	30 kg	15 kg	5 kg	3 kg	1.5 kg	800 g	500 g	300 g	150 g	25 g
One-sized aggregate	25 kg	10 kg	4 kg	1.5 kg	700 g	500 g	300 g	200 g	100 g	—

7 PROCEDURE

The procedure shall be as follows:

- (a) Dry the test portion to constant mass (see AS 1141.1) and determine its mass (m_1).
- (b) Place the dried test portion in a dish or pan and add sufficient clean potable water to cover it. For materials that contain clay, a dispersing agent that does not react with the test portion may be used.

NOTE: 5 mm aggregate, fine aggregates and fillers may be washed directly on the washing sieve or the 75 µm sieve, provided that the mesh is not overloaded (see Table 2 of AS 1141.11.1).

- (c) Vigorously agitate the contents without spilling the water to take the fine material into suspension and immediately pour the wash water through the pair of sieves nested together with the 1.18 mm sieve at the top. Avoid, as far as possible, decantation of the coarse particles of the test portion. Return the material retained on the sieves to the test portions.
- (d) Continue agitation and washing until the water is clear in the pan and passing through the sieves.

NOTE: Where the amount of material finer than 2 µm is to be determined, retain the wash water for use in AS 1141.13.

- (e) Dry the washed aggregate to constant mass and determine the mass (m_2) of dried aggregate.

8 CALCULATION

Calculate the percentage passing the 75 μm sieve from the following equation:

$$\text{Percentage passing the 75 } \mu\text{m sieve} = \frac{(m_1 - m_2)}{m_1} \times 100$$

where

m_1 = the mass of the dried test portion before washing, in grams

m_2 = the mass of the dried washed test portion, in grams

9 REPORT

The following shall be reported:

- (a) The percentage passing the 75 μm sieve to the nearest whole number.
- (b) The method of drying, if other than by the oven at 105°C to 110°C.
- (c) The number of this Standard, i.e. AS 1141.12.