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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS FOR SAMPLING AND TESTING AGGREGATES

AS 1141.15
METHOD 15: FLAKINESS INDEX

1 SCOPE. This Standard sets out a method for determining the flakiness index of an aggregate. The method applies to aggregates having a nominal size of not greater than 63 mm and having at least 80% by mass retained on a 6.7 mm sieve. The method makes reference to a particle size distribution procedure which is required for determination of flakiness index.

2 REFERENCED DOCUMENTS. The documents below are referred to in this Standard:

AS
1141 Methods for sampling and testing aggregates
Method 2: Basic testing equipment (AS 1141.2)
Method 3: Sampling of aggregates and rock (AS 1141.3)
Method 11: Particle size distribution by dry sieving (AS 1141.11)
Method 12: Material finer than 75 μm in aggregates (by washing) (AS 1141.12)

1152 Test sieves

1681 Electrically heated ovens in which flammable volatiles occur—Type 1 ovens

3 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

3.1 Mean dimension—the mean of the smallest sieve aperture through which the particle passes and the largest sieve on which the particle is retained.

3.2 Flaky particle—a particle with a least dimension (thickness) less than 0.6 of its mean dimension.

3.3 Flakiness index—the percentage by mass of flaky particles.

NOTE: For all shape factors the relative effect between size fractions is volumetric and not gravimetric but, in practice, testing and calculations are carried out on a 'per mass' basis. This does not introduce significant error unless the test sample contains particles of markedly different densities.

4 APPARATUS. The following apparatus complying with the relevant requirements of AS 1141.2 is required:

(a) *Sample dividers (riffle splitters).*

(b) *Balance.* Balance of adequate capacity, readable to 1 g and having a limit of performance to 3 g in accordance with AS 1141.2.

(c) *Oven.* Thermostatically controlled oven to operate at a temperature of 105 °C to 110 °C.

NOTE: If the stones in the aggregate are precoated with a bitumen based precoating material the oven should be a Type 1 oven complying with AS 1681.

(d) *Slotted sieves.* Slotted sieve sizes with rectangular apertures as shown in Table 1.

Alternatively, a thickness gauge with apertures conforming to the dimensions shown in Figure 1 may be used. It is usual for a thickness gauge to be used for particles larger than 26.5 mm.

(e) *Sieves.* Sieve sizes as required in accordance with AS 1152.

(f) *Sieve brushes.*

(g) *Dishes and trays.*

(h) *Optional equipment:*

(i) Sieve shaker.

(ii) Vibrating table or vibrating sieve shaker, having a high frequency lateral and vertical motion.

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