

AYA  
Aggregates

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS FOR SAMPLING AND TESTING AGGREGATES

AS 1141.15  
DETERMINATION OF FLAKINESS INDEX

**1 SCOPE.** This standard sets out the method for determination of the flakiness index of an aggregate. The method normally applies to aggregates of nominal size 40 mm, 28 mm, 20 mm, 14 mm and 10 mm. The method includes a particle size distribution procedure which is necessary for determination of flakiness index.

**2 DEFINITIONS.** For the purpose of this standard, the definition in AS 1141.1, and the following apply:

**2.1 Mean dimension**—the mean of the smallest sieve size through which the particle passes and the largest sieve on which the particle is retained.

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

**2.3 Flakiness index**—the percentage by volume 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 as the case may be with blended aggregates.

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

- (a) *Sample dividers* (riffle boxes).
- (b) *Balances*—1 kg capacity, readable and accurate to 0.1 g.
- (c) *Oven*—thermostatically controlled to operate at a temperature of 105°C to 110°C, preferably with mechanical ventilation.
- (d) *Slotted sieves*—with rectangular apertures of the sizes shown in Table 1. Width of aperture is the only mandatory dimension.  
Alternatively, a thickness gauge with apertures conforming to the dimensions shown in Fig. 1 may be used and is normal for particles larger than 26.5 mm.
- (e) *Washing sieve*—75 µm mesh sieve suitably reinforced and with an appropriate guard sieve.
- (f) *Sieves*—sizes as required in AS 1141.2.
- (g) *Sieve shaker.*
- (h) *Sieve brushes.*
- (j) *Dishes and trays.*

Optional:

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

TABLE 1  
SLOTTED SIEVES

Size of particles		Size of rectangular apertures	
Passing*	Retained*	Length (desirable)	Width (mandatory)
63.0	53.0	100	34.5 ± 0.3
53.0	37.5	90	26.5 ± 0.3
37.5	26.5	80	19.4 ± 0.2
26.5	19.0	65	13.4 ± 0.2
19.0	13.2	50	9.5 ± 0.2
13.2	9.50	40	6.7 ± 0.1
9.50	6.70	25	4.7 ± 0.1

\*Sieve sizes in accordance with AS 1152, Test Sieves.

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