

Australian Standard[®]

AS 1141.27:2015

Methods for sampling and testing aggregates

Method 27: Resistance to wear by attrition

1 SCOPE

This Standard sets out the method for testing aggregate or rock for resistance to wear using the Deval attrition machine, and for measuring the attrition value of freshly crushed rock.

2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

AS

- 1141 Methods for sampling and testing aggregates
- 1141.2 Method 2: Basic testing equipment
- 1141.3.1 Method 3.1: Sampling—Aggregates
- 1141.3.2 Method 3.2: Sampling—Rock spalls and boulders
- 1141.14 Method 14: Particle shape by proportional calliper
- 1152 Specification for test sieves

3 APPARATUS

The following apparatus complying with the requirements of AS 1141.2 and as follows is required:

- (a) *Deval attrition machine*—consisting of two hollow steel cylinders closed at one end and furnished with a tightly fitting steel cover at the other. The cylinders shall have internal dimensions of 200 mm in diameter and 340 mm in length, and shall be mounted on a shaft with their axes inclined at 30° to the axis of rotation of the shaft, and the axes shall intersect at the midpoints of the hollow cylinders' axes (see Figure 1).

The rate of rotation shall be 30 rev/min to 33 rev/min.

- (b) *Sieves*—53.0 mm, 37.5 mm and 2.36 mm test sieves in accordance with AS 1152.
- (c) *Balance*—having a limit of performance not exceeding ± 5 g.
- (d) *Oven*—thermostatically controlled, to operate at a temperature within the range of 105°C to 110°C.
- (e) *Dishes and trays*.