Australian Standard®

Methods for sampling and testing aggregates

Method 14: Particle shape, by proportional calliper

1 SCOPE This Standard describes the determination of the proportion of flat particles, elongated particles and, flat and elongated particles found in those fractions of a coarse aggregate retained on a 9.50 mm test sieve, using a proportional calliper.

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

AS
1141 Methods for sampling and testing aggregates
1141.2 Method 2: Basic testing equipment
1152 Specification for test sieves

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

3.1 Elongated particle—an elongated particle is one having a ratio of length (*L*) to width (*W*) greater than the calliper ratio adopted.

3.2 Flat and elongated particle—a flat and elongated particle is one having a ratio of length (*L*) to width (*W*) and a ratio of width (*W*) to thickness (*T*) greater than the calliper ratio adopted.

3.3 Flat particle—a flat particle is one having a ratio of width (*W*) to thickness (*T*) greater than the calliper ratio adopted.

3.4 Length, width and thickness—the length (*L*), width (*W*), and thickness (*T*) are, respectively, the greatest, intermediate and least dimensions of any particle, as measured along mutually perpendicular directions, i.e. they are the principal dimensions of the circumscribing rectangular prism.

3.5 Proportion of elongated particles—the proportion of elongated particles is the percentage of elongated, and flat and elongated particles.

3.6 Proportion of flat particles—the proportion of flat particles is the percentage of flat, and flat and elongated, particles in the aggregate retained on 9.50 mm test sieve, determined by summing the weighted percentages.

3.7 Proportion of misshapen particles—the proportion of misshapen particles is the percentage of flat, elongated, and flat and elongated particles in the size fraction measured, determined by summing the weighted percentages.

3.8 Size fraction—a size fraction is that portion of the sample retained between two of the successive sieves specified for the test.

3.9 Weighted percentage—the weighted percentage is the percentage of a type of misshapen particle in a particular size fraction multiplied by the amount of material in that size fraction (expressed as a percentage of all the material measured) and divided by one hundred.