Australian Standard®

Methods for sampling and testing aggregates

Method 4: Bulk density of aggregate

1 SCOPE This Standard sets out the method for determining the bulk density of fine, coarse, or mixed aggregates. The bulk density is determined in the uncompacted, compacted, or uncompacted and compacted states.

The test is normally performed on material dried to constant mass, but may be performed at other moisture conditions if specifically required. The values obtained for bulk density of fine aggregates at different moisture conditions will differ significantly.

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

AS
1141 Methods for sampling and testing aggregates
1141.1 Method 1: Definitions
1141.2 Method 2: Basic testing equipment
1141.3.1 Method 3.1: Sampling—Aggregates

3 DEFINITIONS For the purpose of this Standard the definitions in AS 1141.1 and those below apply.

3.1 Graded aggregate—an aggregate for which more than 15 percent by mass of the total material is retained on at least three consecutive sieves in the set 75.0 mm, 37.5 mm, 26.5 mm, 19.0 mm, 13.2 mm, 9.50 mm, 6.70 mm, 4.75 mm, 2.36 mm, 0.600 mm and 0.075 mm. Crushed rock which consists of a mixture of fine and coarse aggregates, the coarse fraction being graded, is considered a graded aggregate for the purpose of this definition.

3.2 One-sized aggregate—an aggregate of which at least 60 percent of the mass of the whole material passes a sieve, selected from the set 75.0 mm, 37.5 mm, 26.5 mm, 19.0 mm, 13.2 mm, 9.50 mm, 6.70 mm, 4.75 mm, 3.35 mm, which is immediately less than the normal size of the aggregate and is retained on the sieve immediately following the selected sieve in this series.

4 APPARATUS The following apparatus is required:

(a) *Balance or scale*—of sufficient capacity to weigh the filled measure with a limit of performance not exceeding ±5 g.

(b) *Cylindrical, watertight measure*—with a smooth internal surface and made of metal sufficiently thick to ensure that its form is retained during usage. It shall be free from corrosion and fitted with handles of a convenient form.

The measure shall conform to the dimensions given in Table 1.