

Australian Standard™

Methods of testing soils for engineering purposes

Method 5.8.5: Soil compaction and density tests—Nuclear surface moisture-density gauges —Density of a Type A or Type C standard density block

1 SCOPE This Standard sets out the method for determination of the density of a Type A or Type C standard density block to be used in the calibration of nuclear surface moisture-density gauges in accordance with AS 1289.5.8.4. The Type A or Type C standard density blocks are defined in AS 1289.5.8.4. The density is determined by obtaining separately the mass of the block and the volume of the block either by direct measurement or by displacement of water. Guidance on the number of blocks required for a set of standard density blocks is given in AS 1289.5.8.4.

2 REFERENCED DOCUMENTS The following document is referred to in this Standard:

AS

1289 Methods of testing soils for engineering purposes

1289.5.8.4 Method 5.8.4 Soil compaction and density tests—Nuclear surface moisture-density gauges—Calibration using standard blocks

3 APPARATUS The following apparatus shall be used:

- (a) Standard density block (Type A or Type C), complying with the requirements of AS 1289.5.8.4.
- (b) Balance, or load cell and load indicator, of sufficient capacity to determine the mass of the block, with a limit of performance not exceeding 200 g.
- (c) Suitable lifting apparatus.
- (d) Vernier callipers or micrometers, with an uncertainty of measurement not exceeding 0.1 mm, and one of sufficient opening to span the longest dimension of the block.
- (e) Steel ruler, of length at least 50 mm, and graduated in 0.5 mm divisions.
- (f) Straightedge and feeler gauges, or a suitable alternative capable of determining flatness of a plane, with an uncertainty of measurement not exceeding 0.1 mm.
- (g) Water bath of about 400 L capacity, filled to about 250 L with potable water.
- (h) Thermometer, covering a range of 0–50°C, with an uncertainty of measurement not exceeding 0.5°C.
- (i) Other incidental items which become necessary for the determination, such as a balance of about 10 kg capacity, tape, potting clay or an abrasive stone.

NOTE: Mass and volume may be determined using apparatus with uncertainties greater than that specified above, provided that the uncertainty of density of the block, calculated at Clause 5.6, does not exceed the limit specified in AS 1289.5.8.4.