Australian Standard™

Methods of testing soils for engineering purposes

Method 5.8.7: Soil compaction and density tests—Nuclear surface moisture-density gauges—Water content of a standard moisture block using hydrogen content of components

1 SCOPE This Standard sets out the method for the construction of and assignment of water content using the hydrogen content of the components, to a standard moisture block for use in the calibration of nuclear surface moisture-density gauges in accordance with AS 1289.5.8.4. The block shall consist of an intimate mix of sand and polystyrene at a specific proportion. Guidance on the number of blocks required for a set of standard moisture blocks and the proportioning of the sand and polystyrene mixes is given in AS 1289.5.8.4.

NOTE: A standard moisture block constructed in accordance with this Standard may be used as—

(a) a standard moisture block for use in the calibration of nuclear surface moisture-density gauges in accordance with AS 1289.5.8.4, if the water content has been assigned in accordance with this Standard;

(b) a primary standard moisture block for use in AS 1289.5.8.9 if the water content has been assigned in accordance with this Standard or as

(c) a standard moisture block for which the moisture content may be assigned by comparison against primary standard moisture blocks in accordance with AS 1289.5.8.9.

2 REFERENCED DOCUMENTS The following documents are 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

1289.5.8.9 Method 5.8.9: Soil compaction and density tests—Nuclear surface moisture-density gauges—Water content of a standard moisture block using comparison against primary blocks

3 APPARATUS The following apparatus shall be used:

(a) Clean quartz sand, with 100% passing a 1.18 mm sieve and not more than 5% passing a 0.425 mm sieve. The hygroscopic moisture content of the sand shall not exceed 0.5%, with the total hydrogen content of the sand and its hygroscopic moisture content being determined to an accuracy of 0.2% of the reported values.

The sand may require washing or chemical treatment to remove any deleterious organic material. The sand shall be dried to constant mass before sampling for analysis and construction of the block.