

Australian Standard®

Methods of testing soils for engineering purposes

Method 4.4.1: Soil chemical tests— Determination of the electrical resistivity of a soil—Method for fine granular materials

AS 1289.4.4.1:2017

1 SCOPE

This Standard sets out a procedure for the measurement of electrical resistivity of fine granular materials with a maximum particle size of 2.36 mm. This test is used for the quality control of bedding and backfilling materials for cast iron and steel pipe, buried metallic structures and reinforcement. This test does not indicate the corrosion hazards to buried metals as these are largely controlled by the nature of the groundwater.

The compacted density, moisture content and water type all influence the final value. The results obtained using this test method are specific to the conditions created within the method.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- 1289 Methods of testing soils for engineering purposes
- 1289.0 Part 0: Definitions and general requirements
- 1289.2.1.1 Method 2.1.1: Soil moisture content tests—Determination of the moisture content of a soil—Oven drying method (standard method)

ISO

- 3310 Test sieves—Technical requirements and testing (series)

3 APPARATUS

The following apparatus is required:

- (a) A plastic soil box.

NOTE: See Figure 1.

The box shall be approximately 220 mm long with internal dimensions of 40 mm wide × 30 mm deep. It shall be fitted with plate electrodes at each end and potential measurement pins on one side spaced so that the distance between their axes in centimetres is numerically equal to the cross-sectional area of the box in square centimetres. Potential measuring pins shall span the full width of the box.

- (b) A suitable rectangular tamping tool.
- (c) An instrument for measuring soil resistance readable and accurate to 1 Ω.
- (d) A balance of sufficient capacity with a limit of performance not exceeding 0.5 g.