AS 1289.4.3.1:2021

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Methods of testing soils for engineering purposes

Method 4.3.1: Soil chemical tests — Determination of the pH value of a soil — Electrometric method

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Australian Building Codes Board
Australian Chamber of Commerce and Industry
Austroads
Cement Concrete and Aggregates Australia — Aggregates
Engineering and Construction Laboratories Association
Engineers Australia/Australian Geomechanics Society
National Association of Testing Authorities Australia
University of Melbourne
University of Sydney
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Preface

This Standard was prepared by the Standards Australia committee CE-009, Testing of Soils for Engineering Purposes, to supersede AS 1289.4.3.1:1997.

The objective of this document is to specify the electrometric determination of the pH value of a soil-suspension.

The major changes in this edition are as follows:

(a) The accuracy requirements of the balance have decreased.

(b) Removing the option of using deionised water instead of distilled water to make the soil-suspension.

(c) Mixing and settling are better defined and measurement in the suspended soil is mandated.

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1 Scope

This Standard covers the electrometric determination of the pH value of a soil-suspension.

NOTE The pH value of a sample of groundwater can be measured in a similar manner to that used for a soil-suspension.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1289.1.1, *Methods of testing soils for engineering purposes, Method 1.1: Preparation of disturbed soil samples for testing*

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

3 Terms and definitions

No terms and definitions are listed in this document.

4 Apparatus

The following apparatus are required:

(a) pH meter, covering at least the range pH 3.0 to pH 13.0, fitted with a scale that is readable and accurate to 0.05 pH units.

NOTE 1 Soils with high pH values, such as stabilized soils and naturally occurring soils with a pH in excess of 10, should use an electrode reading to pH 13.0 as other electrodes would be adversely affected.

NOTE 2 The pH meter manufacturer's instructions should be followed.

(b) Balance of at least 100 g capacity, with a limit of performance not greater than ± 0.05 g.

(c) 100 mL glass beakers, with cover glasses and stirring rods.

(d) Wash-bottle, preferably plastic, containing distilled water.

(e) 2.36 mm sieve, conforming to ISO 3310-2.

(f) Thermometer, readable and accurate to 1 °C

NOTE 3 This thermometer may be incorporated into the pH meter.