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Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Symbols ... **2**
5 Principle ... **2**
6 Field sampling ... **3**
7 Sample preparation ... **4**
8 Dry sieving (material >2 mm) ... **4**
8.1 General ... 4
8.2 Apparatus ... 4
8.3 Procedure ... 5
8.4 Calculation and expression of results ... 6
9 Wet sieving and sedimentation (material <2 mm) ... **6**
9.1 General ... 6
9.2 Apparatus ... 6
9.3 Reagents ... 15
9.4 Calibrations ... 16
9.4.1 Sampling pipette (see Figure 4) ... 16
9.4.2 Dispersing-agent correction ... 16
9.5 Test sample ... 16
9.6 Destruction of organic matter ... 17
9.6.1 General ... 17
9.6.2 Method A ... 18
9.6.3 Method B ... 18
9.7 Removal of soluble salts and gypsum ... 19
9.8 Removal of carbonates ... 19
9.9 Removal of iron oxides ... 20
9.10 Dispersion ... 20
9.11 Wet sieving at 0,063 mm ... 20
9.12 Sedimentation ... 21
9.13 Calculation of results for fractions <2 mm ... 22
10 Test report ... **23**
Annex A (normative) **Determination of particle size distribution of mineral soil material that is not dried prior to analysis** ... **24**
Annex B (normative) **Determination of particle size distribution of mineral soils by a hydrometer method following destruction of organic matter** ... **27**
Annex C (informative) **Precision of the method** ... **36**
Bibliography ... **38**

Foreword

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This document was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical and physical characterization*.

This third edition cancels and replaces the second edition (ISO 11277:2009), which has been technically revised. The main changes compared to the previous edition are as follows:

— Alternative digestion methods were added;

— A practical order of preparation steps was added;

— References were updated;

— Document has been editorially revised.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The physical and chemical behaviour of soils is controlled in part by the amounts of mineral particles of different sizes in the soil. The subject of this document is the quantitative measurement of such amounts (expressed as a proportion or percentage of the total mass of the mineral soil), within stated size classes.

The determination of particle size distribution is affected by organic matter, soluble salts, cementing agents (like iron compounds), relatively insoluble substances such as carbonates and sulfates, or combinations of these. Some soils change their behaviour to such a degree, upon drying, that the particle size distribution of the dried material bears little or no relation to that of the undried material encountered under natural conditions. This is particularly true of soils rich in organic matter, those developed from recent volcanic deposits, some highly weathered tropical soils, and soils often described as “cohesive” (see Reference [4]). Other soils, such as the so-called “sub-plastic” soils of Australia, show little or no tendency to disperse under normal laboratory treatments, despite field evidence of large clay content.

The procedures given in this document recognize these kinds of differences between soils from different environments, and the methodology presented is designed to deal with them in a structured manner. Such differences in soil behaviour can be very important, but awareness of them depends usually on local knowledge. Given that the laboratory is commonly distant from the site of the field operation, the information supplied by field teams becomes crucial to the choice of an appropriate laboratory procedure. This choice can be made only if the laboratory is made fully aware of this background information.

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