INTERNATIONAL STANDARD

ISO 16586

First edition
2003-04-01

Soil quality — Determination of soil water content as a volume fraction on the basis of known dry bulk density — Gravimetric method

Qualité du sol — Détermination de la teneur en eau volumique du sol à partir de la masse volumique apparente sèche connue — Méthode gravimétrique

Reference number
ISO 16586:2003(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16586 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 5, *Physical methods*.

Introduction

The determination of water content volume fraction using coring sleeves, which is described in ISO 11461, is the basic method for determination of the water content volume fraction. This International Standard provides a less precise method than that given in ISO 11461.

Soil quality — Determination of soil water content as a volume fraction on the basis of known dry bulk density — Gravimetric method

1 Scope

This International Standard specifies a method for the gravimetric determination of soil water content as a volume fraction on the basis of the ratio of measured water content mass to known dry bulk density.

This International Standard is applicable to all types of non-swelling or non-shrinking soils. It is used as a reference method (e.g. the calibration of indirect methods for determination of water content).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11465:1993, *Soil quality — Determination of dry matter and water content on a mass basis — Gravimetric method*

3 Terms and definitions

3.1
water content
water content mass fraction
water content mass ratio
ratio of the mass of water evaporating from the soil when dried to constant mass at 105 °C, to the dry mass of the soil sample

NOTE For soil with high content of organic matter, drying at a temperature below 70 °C is usual practice.

3.2
dry bulk density
mass of the solid particles divided by the undisturbed bulk volume of the soil

3.3
water content volume fraction
volumetric water content
ratio of the volume of water evaporating from the soil when dried to constant mass at 105 °C, to the original bulk volume of the soil