Soil quality - Determination of dry bulk density (ISO 11272:2017)

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 11272:2017 sisaldab Euroopa standardi EN ISO 11272:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11272:2017 consists of the English text of the European standard EN ISO 11272:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 29.03.2017.	Date of Availability of the European standard is 29.03.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPÄISCHE NORM

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Soil quality - Determination of dry bulk density (ISO 11272:2017)

Qualité du sol - Détermination de la masse volumique apparente sèche (ISO 11272:2017)

Bodenbeschaffenheit - Bestimmung der Trockenrohdichte (ISO 11272:2017)

This European Standard was approved by CEN on 11 February 2017.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 11272:2017) has been prepared by Technical Committee ISO/TC 190 "Soil quality" in collaboration with Technical Committee CEN/TC 444 “Test methods for environmental characterization of solid matrices” the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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

This document supersedes EN ISO 11272:2014.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 11272:2017 has been approved by CEN as EN ISO 11272:2017 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 11272:1998), which has been technically revised.

Introduction

The dry bulk density is used together with the particle density (see ISO 11508) for the calculation of the solids content and porosity of soil for the evaluation of soil structure and conversion of concentrations of substances in soil from mass/volume to mass/mass and vice versa.

Soil quality — Determination of dry bulk density

1 Scope

This document specifies three methods for the determination of dry bulk density of soils calculated from the mass and the volume of a soil sample. The methods involve drying and weighing a soil sample, the volume of which is either known [core method (see 4.1)] or determined [excavation method (see 4.2) and clod method (see 4.4)].

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. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ASTM D1556, *Standard test method for density and unit weight of soil in place by sand-cone method*

ASTM D2167, *Standard test method for density and unit weight of soil in place by the rubber balloon method*

ASTM D4914, *Standard test methods for density of soil and rock in place by the sand replacement method in a test pit*

ASTM D5030, *Standard test methods for density of soil and rock in place by the water replacement method in a test pit*

DIN 18125-2, *Soil investigation and testing — Determination of density of soil — Part 2: Field tests*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
dry bulk density
ratio of the oven-dry mass of the solids to the volume of the soil

Note 1 to entry: The bulk volume includes the volume of the solids and of the pore space.

Note 2 to entry: The preferred SI unit of measurement is kilograms per cubic metre ($kg \cdot m^{-3}$), but grams per cubic centimetre ($g \cdot cm^{-3}$) is also very common. Note that $x\ g \cdot cm^{-3} = 1\ 000\ x\ kg \cdot m^{-3}$.