

GEOTEHNILINE UURIMINE JA KATSETAMINE. PINNASE
IDENTIFITSEERIMINE JA LIIGITAMINE. OSA 2:
LIIGITUSPÕHIMÕTTED

Geotechnical investigation and testing - Identification
and classification of soil - Part 2: Principles for a
classification (ISO 14688-2:2017)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14688-2:2018 sisaldab Euroopa standardi EN ISO 14688-2:2018 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14688-2:2018 consists of the English text of the European standard EN ISO 14688-2:2018.
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EUROPEAN STANDARD

EN ISO 14688-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN ISO 14688-2:2004

English Version

**Geotechnical investigation and testing - Identification and
classification of soil - Part 2: Principles for a classification
(ISO 14688-2:2017)**

Reconnaissance et essais géotechniques - Identification
et classification des sols - Partie 2: Principes pour une
classification (ISO 14688-2:2017)

Geotechnische Erkundung und Untersuchung -
Benennung, Beschreibung und Klassifizierung von
Boden - Teil 2: Grundlagen für Bodenklassifizierungen
(ISO 14688-2:2017)

This European Standard was approved by CEN on 20 November 2017.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 14688-2:2018) has been prepared by Technical Committee ISO/TC 182 “Geotechnics” in collaboration with Technical Committee CEN/TC 341 “Geotechnical Investigation and Testing” the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes EN ISO 14688-2:2004.

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 14688-2:2017 has been approved by CEN as EN ISO 14688-2:2018 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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 182, *Geotechnics*.

This second edition cancels and replaces the first edition (ISO 14688-2:2004), which has been technically revised. It also incorporates the Amendment ISO 14688-2:2004/Amd 1:2013.

A list of all parts in the ISO 14688 series can be found on the ISO website.

Introduction

This document gives the means by which soils can be classified into groups of similar composition and geotechnical properties based on the results of field and laboratory tests with respect to their suitability for geotechnical engineering purposes.

Prior to classification, ISO 14688-1 gives details of the procedures that should be followed in the identification and description of soils.

Geotechnical investigation and testing — Identification and classification of soil —

Part 2: Principles for a classification

1 Scope

This document specifies the basic principles for classification of those material characteristics most commonly used for soils for engineering purposes. It is intended to be read in conjunction with ISO 14688-1, which gives rules for the identification and description of soils. The relevant characteristics could vary and therefore, for particular projects or materials, more detailed subdivisions of the descriptive and classification terms could be appropriate. Due to differences in local geological conditions, practices to enhance relevant classification criteria are used.

The classification principles established in this document allow soils to be classified into groups of similar composition and geotechnical properties, based on the results of field and laboratory tests with respect to their suitability for geotechnical engineering purposes.

This document is applicable to natural soil *in situ*, natural soil reworked artificially and synthetic materials. A more detailed classification specific to use in earthworks is given in EN 16907-2.

NOTE 1 Identification and description of rocks are covered by ISO 14689. Identification and description of materials intermediate between soil and rock are carried out using the procedures in ISO 14688-1, this document and ISO 14689, as appropriate.

NOTE 2 The identification and classification of soil for pedological purposes, as well as in the framework of measurements for soil protection and for remediation of contaminated areas, is covered by ISO 25177.

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.

ISO 14688-1:2017, *Geotechnical investigation and testing — Identification and classification of soil — Part 1: Identification and description*

ISO 14689, *Geotechnical investigation and testing — Identification, description and classification of rock*

ISO 17892-1, *Geotechnical investigation and testing — Laboratory testing of soil — Part 1: Determination of water content*

ISO 17892-2, *Geotechnical investigation and testing — Laboratory testing of soil — Part 2: Determination of bulk density*

ISO 17892-3, *Geotechnical investigation and testing — Laboratory testing of soil — Part 3: Determination of particle density*

ISO 17892-4, *Geotechnical investigation and testing — Laboratory testing of soil — Part 4: Determination of particle size distribution*

ISO 17892-5, *Geotechnical investigation and testing — Laboratory testing of soil — Part 5: Incremental loading oedometer test*

ISO 17892-6, *Geotechnical investigation and testing — Laboratory testing of soil — Part 6: Fall cone test*

ISO/TS 17892-7, *Geotechnical investigation and testing — Laboratory testing of soil — Part 7: Unconfined compression test on fine-grained soils*

ISO/TS 17892-8, *Geotechnical investigation and testing — Laboratory testing of soil — Part 8: Unconsolidated undrained triaxial test*

ISO/TS 17892-9, *Geotechnical investigation and testing — Laboratory testing of soil — Part 9: Consolidated triaxial compression test*

ISO/TS 17892-10, *Geotechnical investigation and testing — Laboratory testing of soil — Part 10: Direct shear tests*

ISO/TS 17892-11, *Geotechnical investigation and testing — Laboratory testing of soil — Part 11: Permeability tests*

ISO/TS 17892-12, *Geotechnical investigation and testing — Laboratory testing of soil — Determination of Atterberg limits*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14688-1 and the following apply.

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

- ISO Online browsing platform: available at www.iso.org/obp
- IEC Electropedia: available at www.electropedia.org

3.1 coefficient of curvature

C_c
ratio $(D_{30})^2/(D_{10} \times D_{60})$, where D_{60} , D_{30} and D_{10} are the particle diameters corresponding to 60 %, 30 % and 10 % finer on the cumulative particle size distribution curve, respectively

3.2 compression index

C_c
defined in accordance with the following relation:

$$C_c = - \frac{\Delta e}{\lg[(\sigma' + \Delta\sigma')/\sigma']} = - \frac{\Delta e}{\Delta(\lg \sigma')}$$

Note 1 to entry: Δe is the change in void ratio (negative value when e decreases) for plastic deformation and is the change in void ratio Δe for a relative increase of effective stress from $\lg \sigma'$ to $\lg(\sigma' + \Delta\sigma')$.

3.3 consistency index

I_C
numerical difference between the *liquid limit* (3.6) and the *natural water content* (3.16) expressed as a percentage ratio of the *plasticity index* (3.10)

$$I_C = (w_L - w)/I_P$$