Earthworks - Chemical tests - Part 1: Determination of loss on ignition

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17685-1:2023 sisaldab Euroopa standardi EN 17685-1:2023 ingliskeelset teksti.	This Estonian standard EVS-EN 17685-1:2023 consists of the English text of the European standard EN 17685-1:2023.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.03.2023.	Date of Availability of the European standard is 01.03.2023.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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

ICS 13.080.99, 93.020

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17685-1

March 2023

ICS 13.080.99; 93.020

English Version

Earthworks - Chemical tests - Part 1: Determination of loss on ignition

Terrassements - Essais chimiques - Partie 1 : Détermination de la perte au feu

Erdarbeiten - Chemische Prüfverfahren - Teil 1: Bestimmung des Glühverlusts

This European Standard was approved by CEN on 23 January 2023.

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

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Ref. No. EN 17685-1:2023 E

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European foreword

This document (EN 17685-1:2023) has been prepared by Technical Committee CEN/TC 396 “Earthworks”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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Introduction

The method described in this document has been developed from EN 15935:2021 which was prepared by CEN/TC 444 "Environmental characterization of solid matrices". Adjustments were made to make the method more suitable for the materials used in earthworks, particularly for the pretreatment of the sample.

This document specifies a method for the determination of the loss on ignition (w_{LOI}) of fine, intermediate, composite and coarse soils, organic soils and anthropogenic materials (according to EN 16907-2) after ignition under air at 550°C. A method is given in Annex B in order to estimate the organic matter content (C_{OM}) from the value of w_{LOI}. The organic matter content C_{OM} is used for the classification of soils with organic matter content C_{OM} greater than 2 % according EN 16907-2 (Table 4 in EN 16907-2:2018).

Other methods to estimate the organic content is e.g. wet burning with H_2O_2 or $KMnO_4$.

1 Scope

This document specifies a method for the determination of the loss on ignition (w_{LOI}) of fine, intermediate, composite and coarse soils, organic soils and anthropogenic materials (according to EN 16907-2) after ignition under air at 550°C.

NOTE The loss of mass suffered by these materials at 550 °C is usually due to the release of volatile compounds, water (absorbed, crystalized or structural) and gases from decomposition of organic matter and inorganic substances such as sulfur, sulfides or hydroxides (e.g. H_2O, CO_2, SO_2).

A method is given in Annex B in order to estimate the organic matter content (C_{OM}) from the value of w_{LOI} for clayey soils.

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.

EN ISO 17892-12, *Geotechnical investigation and testing - Laboratory testing of soil - Part 12: Determination of liquid and plastic limits (ISO 17892-12)*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Abbreviations and symbols

C_{OM}	Organic matter content, deduced from w_{LOI}	dimensionless (%)
D_{max}	Maximum diameter of particles in a soil mass	mm
LOI	Loss On Ignition	
m_c	Mass of the empty crucible	g
m_1	Mass of the crucible containing the dried sample	g
m_2	Mass of the crucible containing the ignited sample	g
w_L	Liquid limit according to EN ISO 17892-12	dimensionless (%)