Sludge and solid environmental matrices - Determination of dry residue or water content and calculation of the dry matter fraction on a mass basis (ISO 11465:2025)

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 11465:2025 sisaldab Euroopa standardi EN ISO 11465:2025 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11465:2025 consists of the English text of the European standard EN ISO 11465:2025.
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 10.09.2025.	Date of Availability of the European standard is 10.09.2025.
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.

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EUROPEAN STANDARD

NORME EUROPÉENNE

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English Version

Sludge and solid environmental matrices - Determination of dry residue or water content and calculation of the dry matter fraction on a mass basis (ISO 11465:2025)

Boues et matrices environnementales solides - Détermination de la teneur en résidu sec ou en eau et calcul de la fraction massique de matière sèche (ISO 11465:2025)

Schlamm und feste Umweltmatrizes - Bestimmung des Trockenrückstands oder des Wassergehalts und Berechnung des Trockenmassenanteils auf Grundlage der Masse (ISO 11465:2025)

This European Standard was approved by CEN on 29 August 2025.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 17 December 2025.

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

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

Ref. No. EN ISO 11465:2025 E

European foreword

This document (EN ISO 11465:2025) has been prepared by Technical Committee ISO/TC 190 "Soil quality " in collaboration with Technical Committee CEN/TC 444 “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 March 2026, and conflicting national standards shall be withdrawn at the latest by March 2026.

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 12880:2000, EN 15934:2012.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 11465:2025 has been approved by CEN as EN ISO 11465:2025 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical and physical characterization*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 444, *Environmental characterization of solid matrices,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 11465:1993), which has been technically revised. It also incorporates the Technical Corrigendum ISO 11465:1993/Cor 1:1994.

The main changes are as follows:

— content was merged with the content of EN 12880 where appropriate;

— content was merged with the content of EN 15934 where appropriate.

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

In case of analysis of solids and sludge, water is usually not considered as part of the sample and results are generally related to dry matter, which can be calculated by determination of the dry residue (dry matter fraction). For this purpose, and for the determination of the water content, two methods are specified in this document. The choice of the method depends on the type of sample and its content of volatile substances excluding water.

As a result of the validation study, the determination of water content by azeotropic distillation has been replaced by Karl Fischer titration. Nevertheless, the distillation can be useful in certain cases.

This document is applicable and validated for several types of matrices as indicated in Table 1 (see also Annex A for the results of the validation).

Table 1 — Matrices for which this document is applicable and validated

Matrix		Materials used for validation
Sludge	(only method A)	Municipal sludge
Biowaste	(only method A)	Fresh compost
Soil	(only method A)	Sludge amended soil
Waste	(methods A and B)	Contaminated soil Dredged sludge Nickel sludge Filter cake Distillation residue Drilling emulsion

Sludge and solid environmental matrices — Determination of dry residue or water content and calculation of the dry matter fraction on a mass basis

WARNING — Persons using this document should be familiar with usual laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is essential that tests conducted according to this document be carried out by suitably trained staff.

1 Scope

This document specifies methods for the calculation of the dry matter fraction of sludge, sludge products, treated biowaste, soil and waste for which the results of performed analysis are calculated to the dry matter basis. Depending on the nature and origin of the sample, the calculation is based on a determination of the dry residue (method A) or a determination of the water content (methods A and B). It applies to samples containing more than 1 % (mass fraction) of dry residue or more than 1 % (mass fraction) of water.

Method A applies to sludge, sludge products, treated biowaste, soil and solid waste. Method B applies to liquid waste and to samples which are suspected or known to contain volatiles except for water.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

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

3.1
dry residue
remaining mass fraction of a sample after a drying process at 105 °C under specified conditions

3.2
water content
mass fraction of water in a sample determined by the method after drying at 105 °C or by Karl Fischer titration under specified conditions

3.3
dry matter fraction
mass fraction of a sample minus its water content