

Nadomešča:**SIST EN ISO 23611-3:2012**

**Kakovost tal - Vzorčenje nevretenčarjev v tleh - 3. del: Vzorčenje in ekstrakcija
enhitrej iz tal (ISO 23611-3:2019)**Soil quality - Sampling of soil invertebrates - Part 3: Sampling and extraction of
enchytraeids (ISO 23611-3:2019)Bodenbeschaffenheit - Probenahme von Wirbellosen im Boden - Teil 3: Probenahme
und Bodenextraktion von Enchytraeen (ISO 23611-3:2019)Qualité du sol - Prélèvement des invertébrés du sol - Partie 3: Prélèvement et extraction
des enchytréides (ISO 23611-3:2019)**Ta slovenski standard je istoveten z: EN ISO 23611-3:2019****ICS:**

13.080.30 Biološke lastnosti tal Biological properties of soils

SIST EN ISO 23611-3:2020**en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 23611-3:2020

<https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020>

EUROPEAN STANDARD

EN ISO 23611-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2019

ICS 13.080.05; 13.080.30

Supersedes EN ISO 23611-3:2011

English Version

Soil quality - Sampling of soil invertebrates - Part 3: Sampling and extraction of enchytraeids (ISO 23611- 3:2019)

Qualité du sol - Prélèvement des invertébrés du sol -
Partie 3: Prélèvement et extraction des enchytréides
(ISO 23611-3:2019)

Bodenbeschaffenheit - Probenahme von Wirbellosen
im Boden - Teil 3: Probenahme und Bodenextraktion
von Enchytraeen (ISO 23611-3:2019)

This European Standard was approved by CEN on 12 August 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

iTeh STANDARD PREVIEW

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.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.



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

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

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 23611-3:2020](https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020)
<https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020>

European foreword

This document (EN ISO 23611-3:2019) 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 April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

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 23611-3:2011.

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, Turkey and the United Kingdom.

iTeh STANDARD PREVIEW
Endorsement notice
(standards.iteh.ai)

The text of ISO 23611-3:2019 has been approved by CEN as EN ISO 23611-3:2019 without any modification.

[SIST EN ISO 23611-3:2020
https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020](https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 23611-3:2020

<https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020>

INTERNATIONAL
STANDARD

ISO
23611-3

Second edition
2019-08

**Soil quality — Sampling of soil
invertebrates —**

**Part 3:
Sampling and extraction of
enchytraeids**

iTeh STANDARD PREVIEW
*Qualité du sol — Prélèvement des invertébrés du sol —
Partie 3: Prélèvement et extraction des enchytréides*
(standards.iteh.ai)

SIST EN ISO 23611-3:2020

<https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020>



Reference number
ISO 23611-3:2019(E)

© ISO 2019

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 23611-3:2020

<https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Principle.....	2
5 Reagents.....	2
6 Apparatus.....	2
7 Procedure.....	3
7.1 Soil sampling.....	3
7.2 Extraction of the enchytraeids.....	3
7.3 Microscopic identification.....	4
7.4 Preservation of Enchytraeidae.....	5
7.5 Validity of the extraction process.....	5
7.6 Determination of biomass.....	5
8 Data assessment.....	5
9 Test report.....	6
Annex A (informative) Quick extraction of enchytraeids.....	7
Annex B (informative) Examples of the use of soil invertebrates in soil monitoring programmes (including presentation of their results).....	9
Bibliography.....	11

ISO 23611-3:2019(E)

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 4, *Biological characterization*.

This second edition cancels and replaces the first edition (ISO 23611-3:2007), which has been technically revised. The main changes to the previous edition are as follows:

- addition of examples of enchytraeid monitoring programmes (including presentation of their results) as an informative annex.

A list of all parts in the ISO 23611 series can be found on the ISO website.

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

This document has been developed to address a growing need for the standardization of terrestrial zoological field methods. Such methods, mainly covering the sampling, extraction and handling of soil invertebrates, are needed for the following purposes:

- biological classification of soils including soil quality assessment (e.g. References [4], [25], [27], [31], [36]);
- terrestrial bioindication and long-term monitoring (e.g. References [4], [30]);
- evaluation of the effects of chemicals on soil animals (References [18], [26], [28]).

Data for these purposes are gained by standardized methods since they can form the basis for far-reaching decisions (e.g. whether a given site should be remediated or not). In fact, the lack of such standardized methods is one of the most important reasons why biological classification concepts in terrestrial (i.e. soil) habitats have so far been relatively rarely used in comparison with aquatic sites.

Originally, the methods described here were developed for taxonomical and ecological studies, investigating the role of enchytraeids in various soil ecosystems. These animals without doubt belong to the most important soil invertebrates in temperate regions (mainly in acidic soils^[7]). Their influence on soil functions like litter decomposition and nutrient cycling is well known^{[17][23]}. Due to their often very high numbers, and their population biomass, they are also important in many terrestrial food-webs^[6]. Some species have unintentionally been distributed by humans in many soils of the world.

Since it is neither possible nor useful to standardize methods for all soil organisms, the most important ones have been selected. Microbiological parameters are already covered by existing ISO standards (e.g. ISO 14240-1, ISO 14240-2, ISO 17601, ISO/TS 29843-1 and ISO/TS 29843-2).

[SIST EN ISO 23611-3:2020](https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020)

<https://standards.iteh.ai/catalog/standards/sist/b5433751-e96b-4c9c-9d9b-2e5f62a504ad/sist-en-iso-23611-3-2020>