



BSI Standards Publication

Soil quality — Sampling of soil invertebrates

Part 2: Sampling and extraction of micro-arthropods (Collembola and Acarina)

National foreword

This British Standard is the UK implementation of EN ISO 23611-2:2024. It is identical to ISO 23611-2:2024. It supersedes BS EN ISO 23611-2:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EH/4, Soil quality.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Sampling and extraction of micro-arthropods (Collembola
and Acarina) (ISO 23611-2:2024)

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Partie 2: Prélèvement et extraction des micro-
arthropodes (Collembola et Acarina) (ISO 23611-
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Bodenbeschaffenheit - Probenahme von Wirbellosen
im Boden - Teil 2: Probenahme und Extraktion von
Mikroarthropoden (Collembolen und Milben) (ISO
23611-2:2024)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 23611-2:2024) 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of an identical text or by endorsement, at the latest by November 2024, and conflicting national standards shall be withdrawn at the latest by November 2024.

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 23611-2:2011.

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Endorsement notice

The text of ISO 23611-2:2024 has been approved by CEN as EN ISO 23611-2:2024 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 document 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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This document was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 4, *Biological 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 23611-2:2006), which has been technically revised.

The main changes are as follows:

- an additional Note was added in [7.3.2.1](#) with the description of an alternative method to the classic pre-heating techniques for specimen preparation for Collembola taxonomic identification;
- the bibliographic references list was revised and updated.

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 was prepared in response to a growing need for the standardization of sampling and extraction methods of soil micro-arthropods. These methods are needed for the following purposes:

- biological classification of soils including soil quality assessment (e.g. References [19], [24], [27], [30], [36], [40], [41]);
- terrestrial bioindication and long-term monitoring (e.g. References [3], [12], [14], [19], [31], [34], [37]).

Data collected by standardized methods can be more accurately evaluated, allowing more reliable comparisons between sites (e.g. polluted versus non-polluted sites, changes in land-use practices).

From the several micro-arthropod groups, Collembola and Acarina are the most studied in soil ecology. Their relevance for the soil system comes from their high abundance and diversity, and also from their role in key biological processes. Collembola and Oribatid mites act mainly as catalysts in organic matter decomposition,^{[6],[21]} whereas predacious mites can act as webmasters in soil food webs.^{[21],[26]} These characteristics, allied to a widespread taxonomic knowledge, allow their use as study organisms in several research programmes dealing with the impacts of forest practices (e.g. References [8], [16], [17], [18], [22], [23], [24], [28], [29], [32], [33], [35], [42]) or crop management practices (e.g [2], [7], [10], [13], [20], [25], [43], [44]). These features make them suitable organisms to be used as bio-indicators of changes in soil quality, especially due to land-use practices and pollution^[38].

For the sampling design of field studies in general, see ISO 18400-104^[45] for general guidance on the development of site investigation strategies and detailed guidance on the development of sampling strategies.

Methods for other soil organism groups, such as earthworms, enchytraeids, nematodes and macro-invertebrates are covered in ISO 23611-1^[52], ISO 23611-3^[53], ISO 23611-4^[54] and ISO 23611-5^[55], respectively.

