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Standards

Irish Standard  
I.S. EN ISO 16133:2018

# Soil quality - Guidance on the establishment and maintenance of monitoring programmes (ISO 16133:2018)

**I.S. EN ISO 16133:2018**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN ISO 16133:2018 is the adopted Irish version of the European Document EN ISO 16133:2018, Soil quality - Guidance on the establishment and maintenance of monitoring programmes (ISO 16133:2018)

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EUROPEAN STANDARD

EN ISO 16133

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 13.080.01

Supersedes EN ISO 16133:2011

English Version

## Soil quality - Guidance on the establishment and maintenance of monitoring programmes (ISO 16133:2018)

Qualité du sol - Lignes directrices pour l'établissement et l'entretien de programmes de surveillance (ISO 16133:2018)

Bodenbeschaffenheit - Leitfaden zur Einrichtung und zum Betrieb von Beobachtungsprogrammen (ISO 16133:2018)

This European Standard was approved by CEN on 8 December 2018.

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**EN ISO 16133:2018 (E)**

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## **European foreword**

This document (EN ISO 16133:2018) has been prepared by Technical Committee ISO/TC 190 "Soil quality" in collaboration with Technical Committee CEN/TC 345 "Characterization of soils" 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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 16133:2011.

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, 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 16133:2018 has been approved by CEN as EN ISO 16133:2018 without any modification.

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# INTERNATIONAL STANDARD

**ISO**  
**16133**

Second edition  
2018-12

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## **Soil quality — Guidance on the establishment and maintenance of monitoring programmes**

*Qualité du sol — Lignes directrices pour l'établissement et l'entretien  
de programmes de surveillance*



Reference number  
ISO 16133:2018(E)

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**ISO 16133:2018(E)**



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## ISO 16133:2018(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](http://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](http://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 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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 7, *Impact assessment*.

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](http://www.iso.org/members.html).

This second edition cancels and replaces the first edition (ISO 16133:2004), which has been technically revised. The main changes compared to the previous edition are as follows:

- [Clause 2](#) has been updated;
- [Clause 3](#) has been updated, definitions that were not used in the document have been deleted;
- new subclauses have been introduced regarding sampling designs ([5.2.4](#)), sampling in space ([5.2.5](#)) and in time ([5.2.6](#));
- all examples of monitoring programmes described in Annex A have been deleted as part were outdated.

## **Introduction**

Monitoring is the process of repetitive observation, for defined purposes, of one or more components of the environment according to pre-arranged schedules in space and time using comparable methods for environmental sensing and data collection<sup>[14][15]</sup>. Monitoring schemes are used all over the world for a large number of purposes. Soil monitoring, particularly, is a long-term undertaking. The quality and the utility of the information from the monitoring is to a large degree determined by the choice of monitoring sites and by their maintenance over the years, and by appropriate quality control at all stages of the process.

Monitoring associated with industrial (contaminated) sites can involve many specific considerations, including legal requirements. The guidance in this document is not designed or intended to cover such situations.



# Soil quality — Guidance on the establishment and maintenance of monitoring programmes

## 1 Scope

This document gives general guidance on the selection of procedures for the establishment and maintenance of programmes for long-term monitoring of soil quality. It takes into account the large number of objectives for soil-monitoring programmes.

This document is intended to help provide a basis for dialogue between parties which might be involved in a monitoring scheme.

## 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 15903, *Soil quality — Format for recording soil and site information*

ISO 18400 (all parts), *Soil quality — Sampling*

ISO 25177, *Soil quality — Field soil description*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11074 and the following apply.

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

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

### 3.1

#### **anthropogenic change**

change in soil properties caused by human activities

[SOURCE: ISO 11074:2015, 5.1.1, modified — “influence on” has been replaced by “change in”]

### 3.2

#### **background concentration**

concentration of an element or a substance characteristic of a soil type in an area or region arising from both natural sources and anthropogenic diffuse sources such as atmospheric deposition

[SOURCE: ISO 11074:2015, 3.5.1, modified — in the definition, “an element or” has been introduced before “a substance” and “anthropogenic” has replaced “non-natural”. Note 1 to entry has been removed.]

### 3.3

#### **habitat**

sum of the environment of a particular species or community (e.g. in terms of soil properties, land use, climate)

[SOURCE: ISO 23611-6:2012, 3.2.2]

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