
Soil quality — Sampling —

Part 4:

**Guidance on the procedure for
investigation of natural, near-natural and
cultivated sites**

Qualité du sol — Échantillonnage —

*Partie 4: Lignes directrices pour les procédures d'investigation des sites
naturels, quasi naturels et cultivés*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 10381-4 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 2, *Sampling*.

ISO 10381 consists of the following parts, under the general title *Soil quality — Sampling*:

- *Part 1: Guidance on the design of sampling programmes*
- *Part 2: Guidance on sampling techniques*
- *Part 3: Guidance on safety*
- *Part 4: Guidance on the procedure for investigation of natural, near-natural and cultivated sites*
- *Part 6: Guidance on the collection, handling and storage of soil for the assessment of aerobic microbial processes in the laboratory*

The following parts are under preparation:

- *Part 5: Guidance on investigation of soil contamination of urban and industrial sites*
- *Part 7: Guidance on the investigation and sampling of soil gas*
- *Part 8: Guidance on the sampling of stockpiles*

Introduction

This part of ISO 10381 is one of a group of International Standards intended to be used in conjunction with each other where necessary. ISO 10381 (all parts) deals with sampling procedures for the various purposes of soil investigation.

The general terminology used is in accordance with that established in ISO/TC 190 and, more particularly, with the terminology on sampling given in ISO 11074-2.

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Soil quality — Sampling —

Part 4:

Guidance on the procedure for investigation of natural, near-natural and cultivated sites

1 Scope

This part of ISO 10381 describes the sampling of soils of

- natural and near-natural sites,
- areas used for agriculture (arable and pasture sites),
- areas used for horticulture (including domestic gardens, allotments),
- areas used for special crop-cultivation, arboreal, vineyard, etc.,
- forest areas and woods.

It is applicable to

- soil investigations and evaluations in the field,
- chemical, geochemical, physical, biological and radiological characterization of soil and soil materials in the laboratory after sampling.

This part of ISO 10381, sets out appropriate strategies for the design of sampling programmes, field procedures and subsequent treatment of samples for transport and storage prior to sample pretreatment (e.g. drying, milling).

NOTE This part of ISO 10381 is intended to be used in conjunction with the other parts of ISO 10381 when appropriate.

2 Normative references

The following referenced documents are indispensable for the application 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 10381-1, *Soil quality — Sampling — Part 1: Guidance on the design of sampling programmes*

ISO 10381-2, *Soil quality — Sampling — Part 2: Guidance on sampling techniques*

ISO 10381-3, *Soil quality — Sampling — Part 3: Guidance on safety*

ISO 10381-5, *Soil quality — Sampling — Part 5: Guidance on investigation of soil contamination of urban and industrial sites*

ISO 10381-6, *Soil quality — Sampling — Part 6: Guidance on the collection, handling and storage of soil for the assessment of aerobic microbial processes in the laboratory*

ISO 11074-1:1996, *Soil quality — Vocabulary — Part 1: Terms and definitions relating to the protection and pollution of the soil*

ISO 11074-2:1998, *Soil quality — Vocabulary — Part 2: Terms and definitions relating to sampling*

ISO 11277, *Soil quality — Determination of particle size distribution in mineral soil material — Method by sieving and sedimentation*

ISO 11464, *Soil quality — Pretreatment of samples for physico-chemical analyses*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11074-1 and ISO 11074-2 apply.

4 Objectives of sampling

The sampling strategy is mainly affected by

- the objective of the investigation,
- current and previous soil/land use.

The objective of investigations may be

- collection of information on general soil quality with regard to preservation and improvement of ecological soil functions,
- collection of information for evaluation of soil quality and nutrient supply or nutrient demand with regard to preservation and improvement of productivity of soils,
- collection of information for soil mapping, classification and taxation,
- collection of information for establishment and maintenance of soil monitoring areas,
- collection of information for replicate samples used for soil specimen banks or environmental specimen banks.

Table 1 gives information on different objectives and strategies for the sampling of soils.

More information about the objectives for soil sampling is given in ISO 10381-1.

Table 1 — Objectives of soil sampling

No.	Objectives	Land use	Average concentration	Spatial variability		Time change	ISO 10381 reference to Part
				horizontal	vertical		
1	Mapping	all	—	+	+	—	1, 2, 3
2	Classification	all	+	—	+	—	1, 2, 3
3	Monitoring	agricultural	+	—	+/-	+	1, 2, 3
		forestry	+/-	+	+	+	1, 2, 3
		natural	+/-	+	+	+	1, 2, 3
4	Taxation	all	+/-	+	+/-	plot	1, 2, 3
5	Improving soil function	all	+	—	—	+/-	1, 2, 3, 5
6	Maximum ^a loading	agricultural	+	—	+/-	+	1, 2, 3, 5

— not important
 +/- not too important
 + important

^a Nutrient supply/residues of pesticides and organic substances, metals in traces