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Soil quality — Sampling —

Part 8:

Guidance on sampling of stockpiles

Qualité du sol — Échantillonnage —

Partie 8: Lignes directrices pour l'échantillonnage des stocks de réserve



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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 10381-8 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 5: Guidance on the procedure for the investigation of urban and industrial sites with regard to soil contamination*
- *Part 6: Guidance on the collection, handling and storage of soil for the assessment of aerobic microbial processes in the laboratory*
- *Part 7: Guidance on sampling of soil gas*
- *Part 8: Guidance on sampling of stockpiles*

This corrected version of ISO 10381-2:2006 incorporates the following corrections

Clause 3

[ISO 11074-2:1995] was changed to [ISO 11074:2005].

In 3.26, Note 3 was deleted.

Subclause 5.5, Table 1

In the third column following “Sampling technique”, “other” was replaced by “different”.

Subclause 6.5.5

In the second sentence of the second paragraph “shaded region” was replaced by “central region”.

Subclause 8.2.3

In the last line of g), “Note 3” was replaced by “item c) 3”.

Subclause D.4.4

In Equation D.1, the horizontal line of the square-root sign was extended to the right to include “+ *CV* analysis”.

Subclause H.1.4.4

In the line before Equation (H.5) “(H.4)” was replaced by “(H.5)”.

Subclause H.2.1

In the first line, “less” was replaced by “little”.

In addition, minor editorial changes were made. These changes do not alter the meaning of the text.

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Introduction

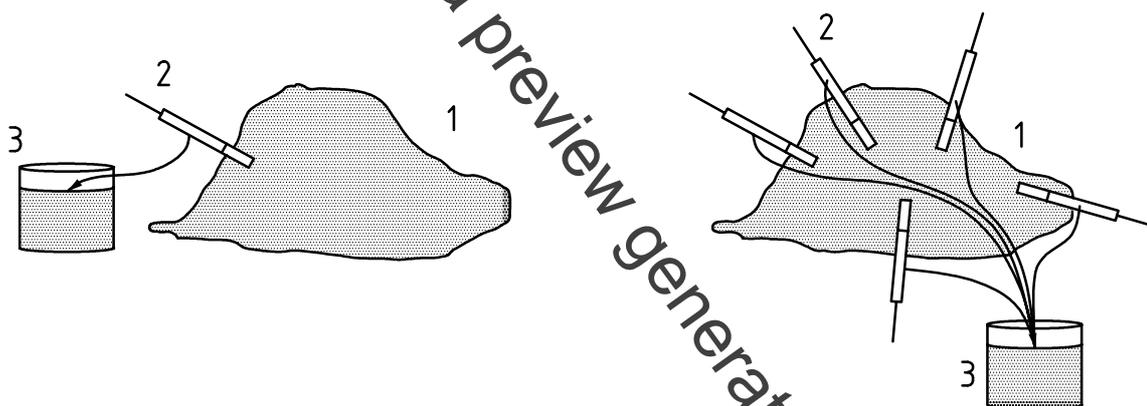
This part of ISO 10381 describes the methods to be applied when sampling soil from stockpiles. The general character of this part of ISO 10381 is a guideline. Nevertheless, many aspects of the sampling of stockpiles are based on well established methods and consequently are described in a prescriptive manner.

This part of ISO 10381 only includes the sampling of the soil material itself, i.e. the solid phase. It defines the different steps in sampling soil from a stockpile and gives instructions on how these steps should be carried out for specific situations.

This part of ISO 10381 is basically a code of practice. It describes what activities, circumstances and requirements should be addressed when sampling soil from stockpiles. As the circumstances can vary enormously, no detailed instructions on how samples should be taken in a specific situation can be given.

For a good understanding of this part of ISO 10381, the distinction between the terms “increment” (3.5), “sample” (3.16) and “composite sample” (3.4) is essential. Figure 1 illustrates this point.

An increment is obtained by a single operation of a sampling device and is per definition put together with other increments in a composite sample. A sample can also be obtained by a single operation of a sampling device, but the obtained material is packed and analysed as an entity.



- a) Only material of one sampling action in sample container: sample
- b) Two or more sampling actions: gathered material in one sample container: composite sample
Material of each individual action: increment

Key

- 1 stockpile
2 sampling device
3 sample container

Figure 1 — Sample, composite sample and increment

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Soil quality — Sampling —

Part 8: Guidance on sampling of stockpiles

1 Scope

This part of ISO 10381 defines the methods that should be applied when sampling soil from stockpiles. This part of ISO 10381 only includes the sampling of the soil material itself, i.e. the solid phase. It applies to the sampling of soil material that is present in a stockpile, generally a heap of soil material that is lying above the surface of the location.

The underlying reason for sampling the soil can differ widely as can the subsequent analysis on the obtained samples. This part of ISO 10381 therefore gives guidance on the various aspects that, together, describe the sampling activity:

- the definition of a sampling plan;
- the choice of an adequate sampling strategy;
- the sampling technique to be applied;
- the sample pretreatment directly after sampling (when necessary);
- the packing, preservation, storing, transport and delivery of the sample.

Given the wide differences in circumstances for all of the above-mentioned sampling steps, this part of ISO 10381 provides information on how to obtain clear and simple instructions for the sampling personnel.

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 10381-1:2002, *Soil quality — Sampling — Part 1: Guidance on the design of sampling programmes*

ISO 10381-3:2001, *Soil quality — Sampling — Part 3: Guidance on safety*

ISO 10381-5:2005, *Soil quality — Sampling — Part 5: Guidance on the procedure for the investigation of urban and industrial sites with regard to soil contamination*

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

ISO 14507, *Soil quality — Pretreatment of samples for determination of organic contaminants*