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Second edition  
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## Soil quality — Sampling —

Part 6:

### **Guidance on the collection, handling and storage of soil under aerobic conditions for the assessment of microbiological processes, biomass and diversity in the laboratory**

*Qualité du sol — Échantillonnage —*

*Partie 6: Lignes directrices pour la collecte, la manipulation et la conservation, dans des conditions aérobies, de sols destinés à l'évaluation en laboratoire des processus, de la biomasse et de la diversité microbiens*



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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 10381-6 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 4, *Biological methods*.

This second edition cancels and replaces the first edition (ISO 10381-6:1993), Subclauses 3.6, 3.7, 3.8 and Clause 4 of which have been technically revised. Table 1 has been added.

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 under aerobic conditions for the assessment of microbiological processes, biomass and diversity in the laboratory*
- *Part 7: Guidance on sampling of soil gas*
- *Part 8: Guidance on sampling of stockpiles*

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## Introduction

Soils are both complex and heterogeneous because they consist of both living and non-living components occurring in different combinations. Therefore, the condition of the soil, from collection to completion of an experiment, should be considered in relation to effects on the soil microflora. Temperature, water content, availability of oxygen and duration of storage are all known to affect the soil microflora, and thus the processes they mediate.

Soils can however be used effectively in laboratory systems to investigate microbially-mediated processes, provided that the dynamics of the living microflora are appreciated. This part of ISO 10381 provides guidance on the collection, handling and storage of soil for laboratory use where aerobic microbial activity is the main component of the study. It describes how to minimize the effects of differences in temperature, water content and availability of oxygen on aerobic processes to facilitate reproducible laboratory determinations [10], [11].