SLOVENSKI STANDARD
SIST EN ISO 18772:2014

01-maj-2014

Kakovost tal - Navodilo za postopke izluževanja za nadaljnje kemijske in ekotoksikološke preskuse tal in talnih materialov (ISO 18772:2008)

Soil quality - Guidance on leaching procedures for subsequent chemical and ecotoxicological testing of soils and soil materials (ISO 18772:2008)

Bodenbeschaffenheit - Anleitung zu Eluierungsverfahren für die nachfolgende chemische und ökotoxikologische Prüfung von Böden und Bodenmaterialien (ISO 18772:2008)

Qualité du sol - Lignes directrices relatives aux modes opératoires de lixiviation en vue d'essais chimiques et écotoxicologiques ultérieurs des sols et matériaux du sol (ISO 18772:2008)

Ta slovenski standard je istoveten z: **EN ISO 18772:2014**

ICS:

13.080.10	Kemijske značilnosti tal	Chemical characteristics of soils

SIST EN ISO 18772:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 18772

March 2014

ICS 13.080.05

English Version

Soil quality - Guidance on leaching procedures for subsequent chemical and ecotoxicological testing of soils and soil materials (ISO 18772:2008)

Qualité du sol - Lignes directrices relatives aux modes opératoires de lixiviation en vue d'essais chimiques et écotoxicologiques ultérieurs des sols et matériaux du sol (ISO 18772:2008)

Bodenbeschaffenheit - Anleitung für Elutionsverfahren für die nachfolgende chemische und ökotoxikologische Prüfung von Böden und Bodenmaterialien (ISO 18772:2008)

This European Standard was approved by CEN on 13 March 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

The text of ISO 18772:2008 has been prepared by Technical Committee ISO/TC 190 “Soil quality” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 18772:2014 by 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of an identical text or by endorsement, at the latest by September 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.

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Endorsement notice

The text of ISO 18772:2008 has been approved by CEN as EN ISO 18772:2014 without any modification.

INTERNATIONAL STANDARD

ISO 18772

First edition
2008-02-15

Soil quality — Guidance on leaching procedures for subsequent chemical and ecotoxicological testing of soils and soil materials

Qualité du sol — Lignes directrices relatives aux modes opératoires de lixiviation en vue d'essais chimiques et écotoxicologiques ultérieurs des sols et matériaux du sol

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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 18772 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 7, *Soil and site assessment*.

Introduction

Current soil and soil-materials management (risk assessment practices or regulations) is often based only on the total amount of contaminants in soil. However, total composition is inadequate for the assessment of several types of impacts such as impacts on soil, groundwater and surface water due to leaching and subsequent transport of contaminants (inorganic, organic and natural radionuclides) with water. Indeed, for many constituents, a significant fraction of the total content is essentially non-leachable, that is to say non-removable when it comes into contact with a liquid.

Thus, a key aspect to assess the possible management solutions for soil and soil materials in relation to the presence of contaminant is the release-to-the-water phase. This can be addressed with leaching tests which can be used to characterise the source term when performing impact assessment and also for the determination of a leached amount of contaminants when checking compliance with respect to existing limits or for comparison purposes (e.g. quality control, treatment efficiency).

These statements are relevant for natural, contaminated and agricultural soils and also for soil materials.

Leaching tests, particularly those developed for soil and soil materials, are suitable for the following applications:

a) Application of leaching tests to determine the leaching behaviour in the framework of impact assessment

Generally, impact assessment is based on the source/pathway/receptor framework.

— Source: assess the release, identify speciation of constituents and retention mechanisms.

— Receptor: determine the potential targets.

— Pathway: estimate the transfer of the source towards the target (e.g. underground water, surface water, plants, soil organisms, ecosystems).

In this process, leaching tests are used to characterise the source term (so-called characterisation tests) in accordance with a given scenario (e.g. contamination of the groundwater due to a contaminated site or a soil amended with sludges), which can either be generic or site-specific.

Leaching tests may also be used as a tool to assess bioavailability (see ISO 17402).

b) Application of leaching tests for compliance and comparison

Based on the background information on the soil and soil materials sampled (e.g. origin, nature of constituents and contaminants, existing documented information, leaching behaviour), relatively simple and quick leaching tests can be performed for compliance and comparison purposes. In contrast to characterisation tests, this type of test is not designed to provide information on leaching mechanisms and controlling factors. However, it should be possible to link the information obtained with compliance tests to the more elaborate characterisation tests.

Soil quality — Guidance on leaching procedures for subsequent chemical and ecotoxicological testing of soils and soil materials

1 Scope

This International Standard provides guidance on the appropriate use of leaching tests on soil and soil materials, in order to determine the leaching behaviour in the framework of impact assessment, or for compliance and comparison purposes, including information on the following:

— the choice of leaching tests, depending on the nature of the problem to be solved and the specific features of the different tests;

— the interpretation of the test results;

— the limitations of the tests.

In this respect, it is important to keep in mind that leaching tests do not aim to simulate real field conditions, but are designed to address the contact between a solid and a liquid phase for different purposes that are described in this International Standard.

This International Standard only concerns natural, contaminated and agricultural soils and soil materials. Questions relating to the leaching of wastes are not covered by this International Standard. It also does not cover the subject of bioavailability of contaminants to living organisms, which is covered by ISO 17402.

Leaching tests are designed and used for characterisation of the source term. It may be possible to address transport aspects with leaching tests if some basic requirements are known (e.g. hydrodynamic), thus allowing the determination of key transport parameters (e.g. retardation factors, particle-facilitated transport, attenuation processes).

In this International Standard, when the term “soil” is only quoted to simplify the writing, the broader term “soil and soil materials” shall be considered.

2 Normative references

The following referenced documents are indispensable for the application of this International Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TS 21268-1, *Soil quality — Leaching procedures for subsequent chemical and ecotoxicological testing of soil and soil materials — Part 1: Bach test using a liquid to solid ratio of 2 l/kg dry matter*

ISO/TS 21268-2, *Soil quality — Leaching procedures for subsequent chemical and ecotoxicological testing of soil and soil materials — Part 2: Bach test using a liquid to solid ratio of 10 l/kg dry matter*

ISO/TS 21268-3:2007, *Soil quality — Leaching procedures for subsequent chemical and ecotoxicological testing of soil and soil materials — Part 3: Up-flow percolation test*

ISO/TS 21268-4, *Soil quality — Leaching procedures for subsequent chemical and ecotoxicological testing of soil and soil materials — Part 4: Influence of pH on leaching with initial acid/base addition*

EN 12920, *Characterization of waste — Methodology for the determination of the leaching behaviour of waste under specificied conditions*