



SLOVENSKI STANDARD
oSIST prEN ISO 11267:2012
01-november-2012

Kakovost tal - Zaviranje razmnoževanja Collembola (Folsomia candida) zaradi onesnaževal v tleh (ISO/DIS 11267:2012)

Soil quality - Inhibition of reproduction of Collembola (Folsomia candida) by soil pollutants (ISO/DIS 11267:2012)

Bodenbeschaffenheit - Hemmung der Reproduktion von Collembolen (Folsomia candida) durch Bodenschadstoffe (ISO/DIS 11267:2012)

Qualité du sol - Inhibition de la reproduction de Collembola (Folsomia candida) par des polluants du sol (ISO/DIS 11267:2012)

Ta slovenski standard je istoveten z: prEN ISO 11267

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ICS:

13.080.30 Biološke lastnosti tal Biological properties of soils

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EUROPEAN STANDARD
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English Version

Soil quality - Inhibition of reproduction of Collembola (*Folsomia candida*) by soil pollutants (ISO/DIS 11267:2012)

Qualité du sol - Inhibition de la reproduction de Collembola
(*Folsomia candida*) par des polluants du sol (ISO/DIS
11267:2012)

Bodenbeschaffenheit - Hemmung der Reproduktion von
Collembolen (*Folsomia candida*) durch Bodenschadstoffe
(ISO/DIS 11267:2012)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 345.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Foreword

This document (prEN ISO 11267:2012) 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 document is currently submitted to the parallel Enquiry.

Endorsement notice

The text of ISO/DIS 11267:2012 has been approved by CEN as a prEN ISO 11267:2012 without any modification.

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DRAFT INTERNATIONAL STANDARD ISO/DIS 11267

ISO/TC 190/SC 4

Secretariat: **AFNOR**Voting begins on
2012-09-06Voting terminates on
2013-02-06

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Soil quality — Inhibition of reproduction of Collembola (Folsomia candida) by soil pollutants

Qualité du sol — Inhibition de la reproduction de Collembola (Folsomia candida) par des polluants du sol

[Revision of first edition (ISO 11267:1999)]

ICS 13.080.30

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

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ISO/DIS 11267**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 11267 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 4, *Biological methods*.

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

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Introduction

Ecotoxicological test systems are applied to obtain information about the effects of contaminants in soil and are proposed to complement conventional chemical analysis (see ISO 15799 and ISO 17616). ISO 15799 includes a list and short characterisation of recommended and standardized test systems and ISO 17616 gives guidance on the choice and evaluation of the bioassays. Aquatic test systems with soil eluate are applied to obtain information about the fraction of contaminants potentially reaching the groundwater by the water path (retention function of soils), whereas terrestrial test systems are used to assess the habitat function of soils.

Soil dwelling Collembola are ecologically relevant species for ecotoxicological testing. Springtails are prey animals for a variety of endogeic and epigeic invertebrates and they contribute to decomposition processes in soils. In acidic soils they may be the most important soil invertebrates besides enchytraeids with respect to that function, since earthworms are typically absent [23]. Additionally, Collembola represent arthropod species with a different route and a different rate of exposure compared to earthworms [3] and enchytraeids [8]. Various species were used in bioassays of which four species were used most commonly, *Folsomia candida*, *Folsomia fimetaria*, *Onychiurus armatus*, and *Orchesella cincta* [24]. Numerous soil toxicity tests supported by Environment Canada (EC) resulted in the development and standardization of a biological test method for determining the lethal and sublethal toxicity of samples of contaminated soil to Collembola [14]. The method prepared by EC includes 3 species, *Orthonychiurus folsomi*, *Folsomia candida*, and *Folsomia fimetaria*. As standardized test systems using Collembola as indicator organisms for the habitat function of soil, another two methods exist. One is designed for assessing the effects of chemicals on the reproductive output of the Collembola, *Folsomia fimetaria* L. and *Folsomia candida* Willem in soil [23], [25], and the other method being described here, focuses on testing contaminated soil. Optionally the method can be used for testing chemicals added to standard soils (e.g. artificial soil) for their sublethal hazard potential to Collembola.

This International Standard describes a method that is based on the determination of sublethal effects of contaminated soils to adult Collembola of the species *Folsomia candida* (Willem). The species is distributed world wide. It plays a similar ecological role as *Folsomia fimetaria* [14], [23]. *Folsomia candida* reproduces parthenogenetically and is an easy accessible species as it is commercially available and easy to culture. *Folsomia candida* is considered to be a representative of soil arthropods and Collembola in particular. Background information on the ecology of springtails and their use in ecotoxicological testing is available [26].