



SLOVENSKI STANDARD SIST EN ISO 11269-1:2013

01-maj-2013

Nadomešča:
SIST ISO 11269-1:2001

Kakovost tal - Vpliv onesnaževal na talno floro - 1. del: Metoda za merjenje zaviranja rasti korenin (ISO 11269-1:2012)

Soil quality - Determination of the effects of pollutants on soil flora - Part 1: Method for the measurement of inhibition of root growth (ISO 11269-1:2012)

Bodenbeschaffenheit - Bestimmung der Wirkungen von Schadstoffen auf die Bodenflora - Teil 1: Verfahren zur Messung der Wurzelwachstumshemmung (ISO 11269-1:2012)

Qualité du sol - Détermination des effets des polluants sur la flore du sol - Partie 1: Méthode de mesurage de l'inhibition de la croissance des racines (ISO 11269-1:2012)

Ta slovenski standard je istoveten z: EN ISO 11269-1:2012

ICS:

13.080.30 Biološke lastnosti tal Biological properties of soils

SIST EN ISO 11269-1:2013 **en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 11269-1:2013](#)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 11269-1

December 2012

ICS 13.080.30

English Version

**Soil quality - Determination of the effects of pollutants on soil
flora - Part 1: Method for the measurement of inhibition of root
growth (ISO 11269-1:2012)**

Qualité du sol - Détermination des effets des polluants sur
la flore du sol - Partie 1: Méthode de mesurage de
l'inhibition de la croissance des racines (ISO 11269-1:2012)

Bodenbeschaffenheit - Bestimmung der Wirkungen von
Schadstoffen auf die Bodenflora - Teil 1: Verfahren zur
Messung der Wurzelwachstumshemmung (ISO 11269-
1:2012)

This European Standard was approved by CEN on 11 November 2012.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....3

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[SIST EN ISO 11269-1:2013](https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>

Foreword

The text of ISO 11269-1:2012 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 11269-1:2012 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 June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

iTeh STANDARD PREVIEW Endorsement notice (standards.iteh.ai)

The text of ISO 11269-1:2012 has been approved by CEN as a EN ISO 11269-1:2012 without any modification.

[SIST EN ISO 11269-1:2013](https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 11269-1:2013](#)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>

INTERNATIONAL STANDARD

ISO
11269-1

Second edition
2012-03-01

Soil quality — Determination of the effects of pollutants on soil flora —

Part 1:

Method for the measurement of inhibition of root growth

*Qualité du sol — Détermination des effets des polluants sur la flore du
sol —
Partie 1: Méthode de mesurage de l'inhibition de la croissance des racines*

[SIST EN ISO 11269-1:2013](https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>



Reference number
ISO 11269-1:2012(E)

© ISO 2012

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 11269-1:2013](https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Test plants	3
6 Materials	3
6.1 Test vessels	3
6.2 Soil	3
7 Equipment	5
8 Reference substance	5
9 Procedure	5
9.1 Experimental design	5
9.2 Preparation of pots	6
9.3 Pregermination of the seeds	6
9.4 Growing conditions	6
9.5 Test duration	6
9.6 Measurements	7
10 Expression of results and data	7
11 Validity criteria	7
12 Test report	7
Annex A (informative) Recommended method for measuring the water-holding capacity of the soil	9
Annex B (informative) Results of tests performed on reference substances	10
Annex C (informative) Example of results obtained with boric acid using sand as the substrate	11
Annex D (informative) Recommended methods for the incorporation of chemicals into soils	12
Annex E (informative) Recommended methods for the incorporation of compost, sludge or waste into soils	13
Annex F (informative) Example of seedlings of winter barley collected at the end of the test after removal from artificial soil	15
Bibliography	16

ISO 11269-1:2012(E)

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 11269-1 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 11269-1:1993), which has been technically revised.

ISO 11269 consists of the following parts, under the general title *Soil quality — Determination of the effects of pollutants on soil flora*:

- *Part 1: Method for the measurement of inhibition of root growth*
- *Part 2: Effects of contaminated soil on the emergence and early growth of higher plants*

iTeh STANDARD PREVIEW
(standards.iteh.ai)
[SIST EN ISO 11269-1:2013](https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013)
<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>

Introduction

Chemical analysis of soil samples or waste materials to be disposed on soil, together with ecotoxicological testing, provides substantial evidence of the suitability of the soil for arable production, or gives information on the potential environmental risk resulting from the disposal of wastes such as sewage sludge on farmland. There is also a need to assess the quality of the soil after reclamation of industrial sites and colliery tips or when capping landfill sites. As the ability of the soil to grow crops is the main criterion, a rapid-growth test has been developed, based on seedling growth in controlled environmental conditions.

Two major prerequisites of a phytotoxicity test are that it provides consistently reliable results and that it can be used at any time of the year. It is therefore essential that seeds be grown in a controlled environment to ensure optimal growing conditions which can be maintained for any number of tests, producing reproducible results over a long period of time.

The test method described in this part of ISO 11269 can be used to compare soils, to monitor changes in their activity or to determine the effect of added chemicals or materials (compost, sludge, waste).

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 11269-1:2013](https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/7fd9939a-d181-42d5-95af-94a722e72ec4/sist-en-iso-11269-1-2013>