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**Blato, obdelani biološki odpadki in tla – Določevanje kalivosti rastlinskih semen in preživetvene sposobnosti vegetativnih razmnoževalnih organov**

Sludge, treated biowaste and soil – Determination of viable plant seeds and propagules

Boues, bio-déchets traités et sols – Détermination de la germination des graines adventices viables et des propagules végétales

Schlamm, behandelter Bioabfall und Boden – Bestimmung der Keimfähigkeit von wachstumsfähigen Grassamen und Pflanzenstecklingen

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## NACIONALNI UVOD

Tehnična specifikacija SIST-TS CEN/TS 16201 ((sl),en), Blato, obdelani biološki odpadki in tla – Določevanje kalivosti rastlinskih semen in preživetvene sposobnosti vegetativnih razmnoževalnih organov, 2013, ima status slovenske tehnične specifikacije in je istovetna evropski tehnični specifikaciji CEN/TS 16201, Sludge, treated biowaste and soil – Determination of viable plant seeds and propagules, 2013.

## NACIONALNI PREDGOVOR

Evropsko tehnično specifikacijo CEN/TS 16201:2013 je pripravil tehnični odbor Evropskega komiteja za standardizacijo CEN/TC 400 Horizontalni standardi na področju blata, obdelanih bioloških odpadkov in tal, katerega sekretariat vodi DIN.

CEN je pripravil ta dokument na podlagi mandata M/330 Evropske komisije in Evropskega združenja za prosto trgovino, ki narekuje pripravo standardov za vzorčenje in analize metode za higienske in biološke kakor tudi za anorganske in organske parametre, ki bi bili primerni za blata, obdelane biološke odpadke in tla, kolikor je to tehnično izvedljivo.

Odločitev za privzem te tehnične specifikacije je dne 25. septembra 2013 sprejel tehnični odbor SIST/TC KAT Kakovost tal.

## ZVEZE S STANDARDI

S privzemom te evropske tehnične specifikacije veljajo za omenjeni namen referenčnih standardov vsi standardi, navedeni v izvorniku, razen tistih, ki so že sprejeti v nacionalno standardizacijo:

SIST EN 13037 (en)	Izboljševalci tal in rastni substrati – Določevanje pH
SIST EN 13038 (en)	Izboljševalci tal in rastni substrati – Določevanje električne prevodnosti
SIST EN 13040 (en)	Izboljševalci tal in rastni substrati – Priprava vzorcev za kemijske in fizikalne preskuse, določevanje suhe snovi, vlage in laboratorijsko stisnjene prostorninske gostote -2013
SIST EN 15933 (en)	Blato, obdelani biološki odpadki in tla – Določevanje pH
SIST-TS CEN/TS 15937 (en)	Blato, obdelani biološki odpadki in tla – Določevanje specifične električne prevodnosti
SIST EN ISO 3696 (en)	Voda za analitsko laboratorijsko uporabo – Specifikacija in preskusne metode (ISO 3696)

## IZRAZI IN DEFINICIJE

V tem dokumentu se uporabljajo naslednji izrazi in definicije:

### 3.1

**vegetativni razmnoževalni organi** (*angl. plant propagule; nem. Pflanzenfortpflanzungskeim*) del rastline, ki je sposoben odgnati

### 3.2

**plevel** (*angl. weed; nem. Unkraut*) nezaželene kaleče ali vznikle rastline

## OSNOVA ZA IZDAJO TEHNIČNE SPECIFIKACIJE

- privzem tehnične specifikacije CEN/TS 16201:2013

**OPOMBE**

- Powsod, kjer se v besedilu tehnične specifikacije uporablja izraz “evropska tehnična specifikacija”, v SIST-TS CEN/TS 16201:2013 to pomeni “slovenska tehnična specifikacija”.
- Nacionalni uvod in nacionalni predgovor nista sestavni del te tehnične specifikacije.
- Ta nacionalni dokument je istoveten s CEN/TS 16201:2013 in je objavljen z dovoljenjem

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ICS 13.030.01

English Version

## Sludge, treated biowaste and soil - Determination of viable plant seeds and propagules

Boues, bio-déchets traités et sols - Détermination de la germination des graines adventices viables et des propagules végétales

Schlamm, behandelter Bioabfall und Boden - Bestimmung keimfähiger Pflanzensamen und Keimlinge

This Technical Specification (CEN/TS) was approved by CEN on 5 March 2011 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Foreword

This document (CEN/TS 16201:2013) has been prepared by Technical Committee CEN/TC 400 "Project Committee - Horizontal standards in the field of sludge, biowaste and soil", the secretariat of which is held by DIN.

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.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This Technical Specification is part of a modular horizontal approach in which this document belongs to the analytical step.

The preparation of this document by CEN is based on a mandate by the European Commission (Mandate M/330), which assigned the development of standards on sampling and analytical methods for hygienic and biological parameters as well as inorganic and organic determinants, aiming to make these standards applicable to sludge, treated biowaste and soil as far as this is technically feasible.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: 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.

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## **Introduction**

This Technical Specification is the result of a desk study "Horizontal European Standards for Contamination with Viable Weed Seeds and Plant Propagules" which aimed at evaluating the latest developments in assessing weeds and plant propagules in sludge, treated biowaste and soil.

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## 1 Scope

This Technical Specification specifies a test procedure for the determination of the content of unwanted viable weed seeds and plant propagules in growing media and soil improvers (see also Annex B for validation results).

The method in general is also applicable to soils and sludges.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13037, *Soil improvers and growing media — Determination of pH*

EN 13038, *Soil improvers and growing media — Determination of electrical conductivity*

EN 13040, *Soil improvers and growing media — Sample preparation for chemical and physical tests, determination of dry matter content, moisture content and laboratory compacted bulk density*

EN 15933, *Sludge, treated biowaste and soil — Determination of pH*

CEN/TS 15937, *Sludge, treated biowaste and soil — Determination of specific electrical conductivity*

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

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## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **plant propagule**

part of a plant capable of tillering

### 3.2

#### **weed**

any unwanted plant that germinates or emerges

## 4 Principle

Samples are gently pretreated (by sieving, mixing, sub-dividing), the pH and the electrical conductivity are measured, and the development of plants, whether from seeds, or plant propagules, is determined after a 21-day incubation period under controlled conditions.

## 5 Reagents and test materials

**5.1 Water**, quality 3 according to EN ISO 3696:1995 (tap water).

**5.2 Sphagnum peat**, with a degree of humification of H3 to H5, according to von Post scale, having a pH of between 3,0 and 4,5, an electrical conductivity of between 1 mS · m<sup>-1</sup> and 5 mS · m<sup>-1</sup>, a particle size of