SLOVENSKI

SIST EN 13041:2001/oprA1:2006

PREDSTANDARD

februar 2006

Izboljševalci tal in rastni substrati – Določanje fizikalnih lastnosti – prostorninske gostote (suhe), kapacitete za zrak, kapacitete za vodo, vrednosti skrčenja in celotne poroznosti

Soil improvers and growing media - Determination of physical properties - dry bulk density, air volume, water volume, shrinkage value and total pore space

ICS 65.080

Referenčna številka
SIST EN 13041:2001/oprA1:2006(en)

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

FINAL DRAFT
EN 13041:1999

prA1

November 2005

ICS 65.080

English Version

Soil improvers and growing media - Determination of physical properties - dry bulk density, air volume, water volume, shrinkage value and total pore space

Bodenverbesserungsmittel und Kultursubstrate - Bestimmung der physikalischen Eigenschaften - Rohdichte (trocken), Luftkapazität, Wasserkapazität, Schrumpfungswert und Gesamtporenvolumen

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 223.

This draft amendment A1, if approved, will modify the European Standard EN 13041:1999. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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 Management Centre has the same status as the official versions.

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

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 13041:1999/prA1:2005: E

Contents

Page

Foreword

This document (EN 13041:1999/prA1:2005) has been prepared by Technical Committee CEN/TC 223 “Soil improvers and growing media”, the secretariat of which is held by BSI.

This document is currently submitted to the Unique Acceptance Procedure.

4 Principle

After the last sentence, add the following new sentence

After –10 cm water pressure head it is optional also to apply respectively –50 and –100 cm water pressure head.

5.4 Sand suction table

Delete the existing text and substitute the following:

Prepare the sand suction table for example in accordance with annex A, using the fine sand to obtain the required suction. The pressure head in the plastic tubes (minus 50 cm) is measured from the bottom of the tube. The pressure head in the rings (minus 10 cm, −50 cm and –100 cm) is measured from the middle of the lower ring (Figure A.3). The setting of the pressure head can be checked with a tensiometer or pressure transducer.

7 Procedure

Modify the title of 7.3 as follows:

7.3 Suction –10 cm water pressure head

Delete existing 7.4.3 and 7.4.4. Add new 7.5 and 7.6 as follows:

7.5 Optional suction –50 and –100 cm water pressure head

NOTE After –10 cm water pressure head it is possible also to determine the air and water volume at –50 and –100 cm water pressure head. The following procedure (7.5) can be skipped if only values for water and air volume at –10 cm are necessary.

7.5.1 Carefully place the ring to the sand bath (5.4) making sure there is contact between the sand and the lower part of the ring. Cover the sand box and apply a minus 50 cm pressure head, measured from the middle of the ring.

7.5.2 It is important to regularly check that no air bubbles are present in the suction level regulator tubes.

7.5.3 Apply the suction until equilibrium is reached. A minimum of 48 h and up to 72 h is required.

7.5.4 Record the mass (m_3).

7.5.5 Carefully place the ring to the sand bath (5.4) making sure there is contact between the sand and the lower part of the ring. Cover the sand box and apply a minus 100 cm pressure head, measured from the middle of the ring.

7.5.6 It is important to regularly check that no air bubbles are present in the suction level regulator tubes.

7.5.7 Apply the suction until equilibrium is reached. A minimum of 48 h and up to 72 h is required.

7.5.8 Record the mass (m_4).

7.6 Drying

7.6.1 Place in the drying oven (5.5) without altering the structure and dry at 103 °C ± 2 °C to constant mass (m_5).

7.6.2 Remove the ring and measure with a calliper gauge the mean height (quadruplicate measurements) (h_2) and mean diameter (triplicate measurements; top middle and bottom) (d_2) of the dried samples.

NOTE This procedure cannot be carried out with some granular materials because they do not retain their shape on drying. In these cases, it is recommended to measure the height prior to drying.

7.5 Organic matter (W_{om})

Renumber existing subclause as 7.7.

7.6 Ash content (W_{ash})

Renumber existing subclause as 7.8.

8 Expression of results

8.4 Particle density

Delete the first line and replace with the following:

Calculate the particle density in duplicate using the following equation:

8.5 Total pore space

Correct equation 5 to read as follows:

$$P_s = \left[1 - \left(\frac{D_{BD}}{P_D}\right)\right] \times 100$$

Delete the existing definition of the term P_D and replace with the following:

P_D is the mean value of the particle density in kilograms per cubic metre (kg/m^3)

8.6 Water volume

Delete the existing text and replace with the following:

Calculate the water volume after applying minus 10 and optional at minus 50 and minus 100 cm pressure head using the following equations:

$$W_V \text{ at } -10 \text{ cm pressure head} = \frac{(m_2 - m_5)}{V_1} \times 100 \quad (7)$$

$$W_V \text{ at } -50 \text{ cm pressure head} = \frac{(m_3 - m_5)}{V_1} \times 100 \quad (8)$$

$$W_V \text{ at } -100 \text{ cm pressure head} = \frac{(m_4 - m_5)}{V_1} \times 100 \quad (9)$$

Where

W_v is the water volume content expressed as a percentage by volume, % *(V/V),* wet sample at minus 10, minus 50 or minus 100 centimetre pressure head;

V_1 is the volume in cubic centimetres of the sample ring;

m_2 is the mass in grams of the wet sample plus sample ring at minus 10 centimetre pressure head;

m_3 is the mass in grams of the wet sample plus sample ring at minus 50 centimetre pressure head;

m_4 is the mass in grams of the wet sample plus sample ring at minus 100 centimetre pressure head;

m_5 is the mass in grams of the dried sample plus sample ring.

8.7 Air volume

Delete the existing text and replace with the following:

Calculate the air volume content in the sample after applying minus 10 centimetre pressure head and optional at minus 50 and minus 100 cm pressure head using the following equations:

A_V at −10 cm pressure head = P_s − W_v at −10 cm pressure head (10)

A_V at −50 cm pressure head = P_s − W_v at −50 cm pressure head (11)

A_V at −100 cm pressure head = P_s − W_v at −100 cm pressure head (12)

where

A_v is the air volumetric content expressed as a percentage by volume, % (*V/V*), wet sample at minus 10, minus 50 or minus 100 centimetre pressure head;

P_s is the total pore space expressed as a percentage by volume, % (*V/V*), wet sample at minus 10 centimetre pressure head (as defined in 8.5);

W_v is the water volume content expressed as a percentage by volume, % (*V/V*), wet sample at minus 10, −50 or −100 centimetre pressure (as defined in 8.6).

9 Number of replicates

Add a new paragraph as follows:

The calculation of the particle density should be carried out on the basis of two replicates on both results to be reported.

Bibliography

Add

[4] Wever, G. 2005. Interlaboratory study EN-Methods. Analysis of Growing Media and Soil Improvers, Amendment EN 13041 pressure heads -50 cm and -100 cm. CEN/TC 223 WG4 document N60.

Annex B

Add new annex B as follows: