SLOVENSKI STANDARD
SIST EN 14049:2004/A1:2006

01-marec-2006

Namakalna tehnika ï Koliļina porabe vode ï Raļunske osnove in merilne metode

Irrigation techniques - Water application intensity - Calculation principles and measurement methods

Bewässerungsverfahren - Bewässerungsintensität - Berechnungsgrundlagen und Messverfahren

Techniques d'irrigation - Intensité d'apport d'eau - Principes de calcul et méthodes de mesure

Ta slovenski standard je istoveten z: **EN 14049:2003/A1:2005**

ICS:

65.060.35	Namakalna in drenažna oprema	Irrigation and drainage equipment

SIST EN 14049:2004/A1:2006 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14049:2003/A1

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ICS 65.060.35

English Version

Irrigation techniques - Water application intensity - Calculation principles and measurement methods

Techniques d'irrigation - Intensité d'apport d'eau - Principes de calcul et méthodes de mesure

Bewässerungsverfahren - Bewässerungsintensität - Berechnungsgrundlagen und Messverfahren

This amendment A1 modifies the European Standard EN 14049:2003; it was approved by CEN on 8 August 2005.

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

This amendment 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 Central Secretariat has the same status as the official versions.

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

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Contents

Foreword

This European Standard (EN 14049:2003/A1:2005) has been prepared by Technical Committee CEN/TC 334 “Irrigation techniques”, the secretariat of which is held by AENOR.

This Amendment to the European Standard EN 14049:2003 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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.

1 Modification to 4.2.5.3.2

Replace the text 4.2.5.3.2 by the following:

4.2.5.3.2. Water application intensity at distance *r* from the pivot point

At a radius *r* from the pivot point, the irrigation duration *t(r)* is calculated from equation (7)

$$t(r) = \frac{2W_r \times R_{LT}}{V \times r} \qquad (11)$$

where

t(r) irrigation duration at distance r (h);

W_r effective wetted radius of the sprinkler at a distance *r* (m);

V actual machine's speed at a distance R_{LT} from the pivot point (m h^{-1});

R_{LT} last tower distance to the centre point of the machine (m);

r distance from the pivot point to the evaluated point (m).

and the average depth of water applied *D* is calculated from equations (1) and (2):

$$D = 1000 \times \frac{Q \times t}{\pi \times R^2} = 1000 \times \frac{Q \times 2\pi \times R_{LT}}{\pi \times V \times R^2} = 1000 \times \frac{Q \times 2 \times R_{LT}}{V \times R^2} (mm) \qquad (12)$$

where

D average dose applied in one pass of the machine (mm);

t time spends by the pivot to complete one pass (h);

$$t = \frac{\pi \times R_{LT}^2}{V}$$

Q flow passing through the irrigation system (m^3/h);

R_{LT} last tower distance to the centre point of the machine (m);

V actual machine's speed at a distance R_{LT} from the pivot point ($m\ h^{-1}$);

R effective wetted radius of the pivot (m).

using equation (4) with equations (11) and (12), the average water application intensity *I* at a distance *r* from the pivot point is:

$$I(r) = \frac{D}{t} = 1000 \times \frac{Q \times 2 \times R_{LT}}{R^2 \times V} \times \frac{V \times r}{2 \times W_r \times R_{LT}} = 1000 \times \frac{Q \times r}{R^2 \times W_r} (mm/h) \qquad (13)$$

where

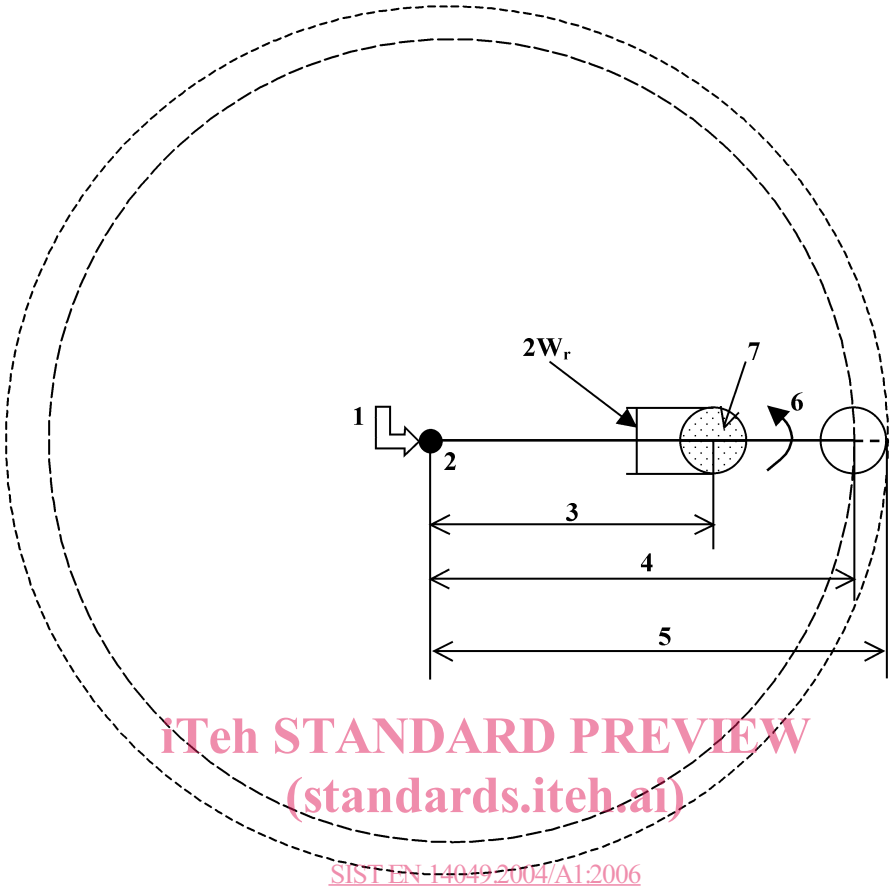
I (r) average water application intensity at distance r from the pivot point (mm/h);

Q flow passing through the irrigation system (m^3/h);

r distance from the pivot point to the evaluated point (m);

R effective wetted radius of the pivot (m);

W_r effective wetted radius of the sprinkler at a distance *r* (m).



Key

1 flow *Q* passing through the pivot
2 pivot point
3 *r*, distance of the sprinkler to the pivot point
4 R_{LT}, last tower distance to the centre point of the machine
5 *R*, effective wetted radius of the pivot
6 direction of the movement
7 surface wetted by the evaluated sprinkler

Figure 3 – Sprinkler moving in rotation around a pivot point