



SLOVENSKI STANDARD SIST EN 13742-1:2005

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Irrigation Techniques - Solid set sprinkler systems - Part 1: Selection, design, planning and installation

Bewässerungsverfahren - Ortsfest installierte Beregnungssysteme - Teil 1: Auswahl, Auslegung, Planung und Installation

Techniques d'irrigation - Installation de couverte intégrale par asperseurs - Partie 1 : Sélection, conception, planning et installation.

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Ta slovenski standard je istoveten z: EN 13742-1:2004

ICS:

65.060.35	Namakalna in drenažna oprema	Irrigation and drainage equipment
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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 13742-1

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Irrigation Techniques - Solid set sprinkler systems - Part 1: Selection, design, planning and installation

Techniques d'irrigation - Installation de couverture intégrale
par asperseurs - Partie 1 : Sélection, conception, planning
et installation

Bewässerungsverfahren - Ortsfest installierte
Beregnungssysteme - Teil 1: Auswahl, Auslegung, Planung
und Installation

This European Standard was approved by CEN on 2 September 2004.

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 Central Secretariat 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 Central Secretariat 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13742-1:2004) has been prepared by Technical Committee CEN/TC 334 "Irrigation techniques", the secretariat of which is held by AENOR.

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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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.

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EN 13742-1:2004 (E)**1 Scope**

This document provides guidelines to choose material, to design, to prepare plans, and to install a solid set irrigation system to apply water to the irrigated area with the greatest possible efficiency.

This document covers sprinkler irrigation systems installed at the beginning of the irrigation season and removed at the end without moving any component, sprinkler or pipe, during the entire irrigation season.

It covers only solid set system components located on the field and upstream from a water supply point defined by a pressure and a flow.

This document does not cover permanent systems with buried pipes nor hand-movable portable systems.

2 Normative references

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

EN 12734, *Irrigation techniques - Quick coupling pipes for movable irrigation supply - Technical characteristics and testing.*

EN 13742-2, *Irrigation techniques - Solid set sprinkler systems - Part 2: Test methods.*

ISO 7749-1:1995, *Agricultural irrigation equipment - Rotating sprinklers - Part 1: Design and operational requirements.*

ISO 7749-2, *Irrigation equipment - Rotating sprinklers - Part 2: Uniformity of distribution and test methods.*

ISO 9644, *Agricultural irrigation equipment - Pressure losses in irrigation valves - Test method.*

ISO 11419, *Agricultural irrigation equipment - Float type air release valves.*

3 Terms and definitions

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

3.1

solid set irrigation system

sprinkler irrigation system installed at the beginning of the irrigation season and removed at the end without moving any component, sprinkler or pipe, during the entire irrigation season

3.2

main-line

piping of a pressurized irrigation network connecting the water supply to the sub-mains or to the laterals

3.3

sub-mains

piping connecting main-line to laterals

3.4

laterals

piping connecting main-line or sub-main to sprinklers

3.5

piping

watertight pipes that can carry a pressurized fluid from one point to another

3.6

valve

device used to totally or partially permit or prevent circulation of a fluid

3.7

filter

device used to separate and remove solid particles from a fluid

3.8

riser

rigid pipe used to connect sprinklers to laterals

3.9

riser mount

component located on the lateral to allow riser installation

3.10

riser stand

device that maintains the riser in a vertical position, i.e. tripods, stabilizers etc.

3.11

sprinkler inlet

part of the sprinkler used to connect sprinkler to riser or lateral

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EN 13742-1:2004 (E)**3.12****rotating sprinkler**

device which by its rotating motion around its vertical axis distributes water over a circular area or part of a circular area

3.13**radius of throw**

farthest distance measured, while the sprinkler is rotating normally, from the centreline to the point at which the sprinkler deposits water at a rate of 0,25 mm/h for a sprinkler whose discharge exceeds 75 l/h, and 0,13 mm/h for a sprinkler whose discharge is equal to or less than 75 l/h, typically measured at any arc of coverage except at arc extremes for part-circle sprinklers according to ISO 7749-1

3.14**pressure regulator**

valve in which the water passage widens or narrows automatically to maintain a relatively constant pressure at the outlet of the pressure regulator under varying pressures or flow rates at the inlet of the pressure regulator

3.15**controller**

device that automatically controls all or part of the operation of an irrigation system

3.16**fertilizer unit**

fertilizer pump (electrical, hydraulic or other) or fertilizer injection tank which is used to inject fertilizer solutions into an irrigation system

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3.17**drain valve**

valve that allows to drain irrigation pipes

3.18**air release valve**

valve which opens automatically to allow air from the atmosphere to enter the water pipeline during drainage of the line and/or venting of air from the water pipeline to the atmosphere during filling or during normal operation of the pipeline under pressure

3.19**sprinkler nominal flow rate**

quantity of water per unit of time discharged by a sprinkler with a specific nozzle at ambient temperature at the test pressure declared by the manufacturer in the manufacturer's data sheets according to ISO 7749-1

3.20**sprinkler test pressure (see definition in ISO 7749-1:1995, 3.6 and 3.7)**

water pressure, within the range of minimum effective pressure and maximum effective pressure declared by the manufacturer as the pressure range in which the sprinkler operates effectively, used for testing the sprinkler

3.21**minimum effective pressure**

lowest working pressure declared by the manufacturer, measured near the base of the sprinkler, at a point situated about 0,2 m below the main nozzle of the sprinkler, but with the pressure gauge situated in the same plane as the main nozzle

3.22**maximum effective pressure**

highest working pressure declared by the manufacturer, measured near the base of the sprinkler, at a point situated about 0,2 m below the main nozzle of the sprinkler, but with the pressure gauge situated in the same plane as the main nozzle

3.23**system test pressure**

water pressure, within the range of effective pressure used for testing the system

3.24**nominal pressure**

operating pressure of a sprinkler equipped with a given nozzle, operating at ambient temperature and giving the nominal flow indicated by the manufacturer's performance charts. It is within the operating pressure range

3.25**system pressure**

the approximate operating pressure of the sprinklers used in the project to dimension the different pipes

3.26**quick coupling pipe**

a portable pipe with coupling parts which give a safe connection with the pipe of the same kind in a few seconds mostly without a tool and which can be loosened in the same easy way according to EN 12734.

3.27**quick coupling valve**

movable valve equipped with fittings allowing a secure connection between two pipes with the same quick couplers. Connection and disconnection is rapid and requires no tools

3.28**sub-unit**

number of sprinklers fed by the same water source and operating at the same time

3.29**potential evapotranspiration (ETP or ET)**

maximum quantity of water capable of being evaporated in a given climate, by a continuous expanse of vegetation covering the whole ground and well supplied with water. It includes evaporation from the soil and transpiration from the vegetation in a specific region during a 24 h period, expressed as a depth of water [EN 12484-1]

3.30**crop coefficients (Kc)**

factors correcting the evapotranspiration ratio according to the plant and its growing stage [EN 12484-1]

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