



SLOVENSKI STANDARD

SIST ISO 8026:2015

01-april-2015

Nadomešča:
SIST ISO 8026:1999

Oprema za namakanje kmetijskih površin - Razpršilniki - Splošne zahteve in preskusne metode

Agricultural irrigation equipment - Sprayers - General requirements and test methods

iTeh STANDARD PREVIEW

Matériel agricole d'irrigation - Diffuseurs - Exigences générales et méthodes d'essai

Ta slovenski standard je istoveten z: SIST ISO 8026:2015 **ISO 8026:2009**
http://www.sist.si/standards/standards/8026-2015/819-44a2-b912-188cf6b0d069/sist-iso-8026-2015

ICS:

65.060.35	Namakalna in drenažna oprema	Irrigation and drainage equipment
-----------	------------------------------	-----------------------------------

SIST ISO 8026:2015

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ISO 8026:2015](#)

<https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015>

INTERNATIONAL STANDARD

**ISO
8026**

Third edition
2009-12-15

Agricultural irrigation equipment — Sprayers — General requirements and test methods

*Matériel agricole d'irrigation — Diffuseurs — Exigences générales et
méthodes d'essai*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ISO 8026:2015](https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015)

[https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-
188cf6b0d069/sist-iso-8026-2015](https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015)



Reference number
ISO 8026:2009(E)

© ISO 2009

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ISO 8026:2015](https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015)

<https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015>

**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2009

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
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification	3
4.1 Classification according to uniformity of coverage	3
4.2 Classification according to water-spray characteristic(s)	3
4.3 Classification according to performance characteristics (flow rate regulation)	4
4.4 Classification according to type of connection	4
4.5 Classification according to additional functions	4
5 General requirements	4
5.1 Materials	4
5.2 Manufacture and assembly	4
5.3 Connections	4
6 Test methods	5
6.1 Measurements	5
6.2 General test conditions	5
6.3 Hydraulic tests	6
6.4 Durability test	16
6.5 Mechanical test	16
7 Identification and marking	17
8 Data to be supplied by the manufacturer	17

ISO 8026:2009(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 8026 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

This third edition cancels and replaces the second edition (ISO 8026:1995), which has been technically revised. It also incorporates the Amendment ISO 8026:1995/Amd.1:2000.

SIST ISO 8026:2015

<https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015>

Agricultural irrigation equipment — Sprayers — General requirements and test methods

1 Scope

This International Standard specifies the general requirements and test methods for irrigation sprayers.

It is applicable to sprayers intended for installation on a pipe lateral and for operation with irrigation water.

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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 15886-3:2004, *Agricultural irrigation equipment — Sprinklers — Part 3: Characterization of distribution and test methods*

[SIST ISO 8026:2015](https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015)

<https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015>

3 Terms and definitions

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

3.1

ambient temperature

temperature of the air surrounding a sprayer

3.2

collector

receptacle into which water is deposited during a water distribution test, a diameter of coverage test or a spray coverage pattern

3.3

diameter of coverage

distance between the most remote points at which a continuously operating sprayer deposits water at an effective application rate, measured along a straight line through the sprayer, equal numerically to twice the radius of throw

3.4

effective application rate

application rate greater than or equal to 0,26 mm/h for sprayers with flow rates exceeding 75 l/h and 0,13 mm/h for sprayers with flow rates equal to or less than 75 l/h

ISO 8026:2009(E)

3.5

irrigation lateral

branch supply line in an irrigation system on which water distribution devices, such as sprayers, are mounted directly or by means of fittings, risers or tubes

3.6

irrigation sprayer

device that discharges water in the form of fine jets or in a fan shape without rotational movement of its parts

3.7

maximum working pressure

highest pressure immediately upstream from a sprayer, as specified by this International Standard or the manufacturer, to ensure continuous operation and functionality specific to the device

3.8

minimum working pressure

lowest pressure immediately upstream from a sprayer, as specified by this International Standard or the manufacturer, to ensure continuous operation and functionality specific to the device

3.9

nominal flow rate

volume of water discharged per unit of time from a sprayer under test pressure

3.10

non-regulated sprayer**non-pressure-compensating sprayer**

sprayer with a variable flow rate at varying water pressures at the sprayer inlet

3.11

nozzle

aperture or adjutage of the sprayer through which water is discharged

3.12

pop-up sprayer

irrigation sprayer designed for installation such that the sprayer nozzle is below ground level when it is not pressurized and above ground when it is pressurized

3.13

radius of throw**wetted radius**

distance measured from a continuously operating sprayer to the most remote point at which the sprayer deposits water at a minimum rate of 0,26 mm/h for a sprayer with a discharge exceeding 75 l/h and at a minimum rate of 0,13 mm/h, for a sprayer with a discharge equal to or less than 75 l/h, measured at any arc of coverage, except near the arc extremes for part-circle sprayers

3.14

range of regulation

all of the working pressures at the inlet of a regulated sprayer within which the sprayer is declared by the manufacturer to regulate flow within a specified accuracy

3.15

range of working pressures

all of the working pressures between the minimum working pressure and the maximum working pressure

3.16

regulated sprayer

sprayer that maintains a relatively constant flow rate at varying water pressures at the sprayer inlet within the limits specified by the manufacturer

3.17**spray coverage pattern**

area wetted by the sprayer, which operates according to the conditions specified by the manufacturer

3.18**test pressure**

pressure at the inlet of a sprayer declared by the manufacturer as the pressure to be used for test purposes

NOTE In the absence of such a declaration, 200 kPa is used.

3.19**trajectory angle**

angle above the horizontal plane of the water spray discharged from a sprayer nozzle operating at test pressure

3.20**trajectory height**

maximum height above a sprayer of the trajectory of the water spray discharged from the sprayer nozzle operating at test pressure

3.21**water distribution curve****distribution curve**

graphical plot of water application depth as a function of distance from a sprayer along a specified radius

3.22**water outlet height**

height above ground level of the water outlet of a sprayer when the sprayer is installed as specified by the manufacturer

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ISO 8026:2015](https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015)

4 Classification

<https://standards.iteh.ai/catalog/standards/sist/3a0ae1e2-2819-44a2-b912-188cf6b0d069/sist-iso-8026-2015>

4.1 Classification according to uniformity of coverage

4.1.1 Uniform spray coverage pattern

4.1.2 Non-uniform spray coverage pattern

4.2 Classification according to water-spray characteristic(s)

4.2.1 Area of coverage

4.2.1.1 Circular

4.2.1.1.1 Full-circle

4.2.1.1.2 Part-circle

4.2.1.1.2.1 Fixed-pattern

4.2.1.1.2.2 Adjustable pattern

4.2.1.2 Non-circular (polygonal, rounded non-circular)

4.2.2 Type of spray

4.2.2.1 Sheet spray

4.2.2.2 Jet spray

ISO 8026:2009(E)**4.3 Classification according to performance characteristics (flow rate regulation)**

- 4.3.1 Regulated sprayers
- 4.3.2 Non-regulated sprayers

4.4 Classification according to type of connection

- 4.4.1 Threaded
- 4.4.2 Insert barb
- 4.4.3 Bayonet
- 4.4.4 Other

4.5 Classification according to additional functions

- 4.5.1 Pop-up/fixed
- 4.5.2 Valve in head

5 General requirements**5.1 Materials**

The plastics parts of the sprayers, which conduct water and which are exposed to sunlight, shall be opaque and shall contain an additive to protect against UV radiation.

Sprayers may be made from a copper alloy or from other materials, whose mechanical properties and resistance to corrosion when used with irrigation water are similar to those of copper alloys.

On request, the manufacturer shall provide information about the resistance of the sprayer to chemicals used in agriculture.

5.2 Manufacture and assembly

The sprayers shall have no manufacturing defects which might be detrimental to their operation.

The sprayers shall incorporate features for easy fitting and assembly. All sprayers equipped with removable parts shall be easy to assemble manually or by using common tools. Should any special tool be required, the manufacturer shall be able to furnish them on request. The removable parts of one sprayer shall be interchangeable with those of other units of the same make and type.

5.3 Connections

The sprayer connections shall be specified according to the connection type and the corresponding International Standard.

5.3.1 Threaded connection

For sprayers designed for threaded connection to irrigation laterals, the screw threads shall comply with ISO 7-1. Alternatively, other threads may be allowed provided that a suitable adaptor is supplied with each threaded connection, making it comply with ISO 7-1.

5.3.2 On line connection

The manufacturer shall specify the type and size of flexible tube for which the connections are suitable.

All complementary information shall be supplied by the manufacturer.

6 Test methods

6.1 Measurements

The accuracy required for all measurements not specifically addressed in this International Standard shall be $\pm 3\%$.

Application depths within collectors shall be measured to an accuracy of $\pm 1\%$.

The test pressure shall not vary by more than $\pm 2\%$ during the test period. The pressure shall be measured to an accuracy of $\pm 1\%$.

The flow rate through the sprayer shall be measured to an accuracy of $\pm 1\%$.

The temperature shall be measured to an accuracy of $\pm 0,5\text{ }^{\circ}\text{C}$. For indoor testing, the water temperature shall be $(23 \pm 3)\text{ }^{\circ}\text{C}$.

Time shall be measured with stopwatches accurate to $\pm 0,1\text{ s}$.

6.2 General test conditions

Perform the test on sprayers which have previously been examined visually (without disassembly) for satisfactory workmanship and quality.

Attach test sprayers to the supply line according to the field assembly recommendations of the manufacturer.

Maintain the sprayer within $\pm 2^{\circ}$ of vertical.

There shall be no visually detectable external leakage during the test.

Sprayers of the same type, but with different nozzles or different means of attachment, shall be tested separately for each combination of sprayer and nozzle or sprayer and means of attachment.

Collectors shall be designed in accordance with ISO 15886-3:2004, 4.1, and shall incorporate the following features.

- a) They shall be identical.
- b) The vertical dimension of each collector shall be at least twice the maximum depth of the water collected during the test, but not less than 150 mm.
- c) The circular opening with sharp edges shall be free of deformities.
- d) The diameter shall be from one half to one times the height, but shall not be less than 85 mm.

The opening of all collectors shall be in a common horizontal plane, with a slope not exceeding 2 % in any direction.

Sprayer nozzle height above the openings of the collectors shall be 0,20 m or at a height as specified by the manufacturer.