
**Agricultural irrigation equipment —
Sprayers — General requirements and
test methods**

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

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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
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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.

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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.

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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*

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

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

4 Classification**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