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Agricultural irrigation equipment — Sprinklers —

Part 3: Characterization of distribution and test methods

Matériel agricole d'irrigation — Asperseurs —

Partie 3: Caractérisation de la distribution et méthodes d'essai

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Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document 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 15886-3:2012), which has been technically revised. It also incorporates the Amendment ISO 15886-3:2012/Amd 1:2016.

The main changes compared to the previous edition are as follows:

— the definitions have been updated;

— the following test methods have been changed:

  — for the installation of sprinkles under test, the height of the top of the sprinkler riser has been modified;

  — for the pressure measurement, the test method for pop-up sprinklers has been modified;

— the radius of throw and water distribution curve tests have been added.

A list of all parts in the ISO 15886 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Agricultural irrigation equipment — Sprinklers —

Part 3: Characterization of distribution and test methods

1 Scope

This document specifies the conditions and methods used for testing and characterizing the water distribution patterns of irrigation sprinklers.

The term sprinkler is used in this document in a broad generic sense and is meant to cover a wide variety of products. The specific performance measurements addressed include distribution uniformity, wetted radius, and water jet trajectory height. This document applies to all irrigation sprinkler classifications for which those three performance measurements are required to verify the design objectives as defined by the manufacturer.

This document deals both with indoor and outdoor tests and with radial and full grid tests. It is organized so as to deal with conditions common to all tests first and then with conditions unique to indoor testing only and finally with conditions unique to outdoor testing only.

For any given sprinkler, a wide range of nozzle configurations, operating conditions, and adjustments generate at least a theoretical need for a correspondingly large number of tests. Testing agencies and manufacturers can use interpolation techniques to reduce the number of actual test runs provided accuracy standards are still being met.

This document does not address the specific performance testing required for sprinklers intended for use in frost protection.

This document does not address the topic of drop spectrum measurement and characterization and the related questions of soil compaction, spray drift, evaporative losses, etc., all of which can be considerations in the design of sprinkler irrigation systems.

This document is used for evaluating irrigation coverage of sprinklers that are identical and arranged in a fixed repeating geometric pattern. This document does not apply to moving systems.

This document applies to part-circle sprinklers provided that the testing agency can satisfy questions of potential anomalies in performance parameters.

NOTE Annex A addresses the procedures for the characterization of sprinkler pattern uniformity. Annex B addresses testing part-circle sprinklers.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/