
Potujoči namakalni stroji - 1. del: Obratovalne značilnosti ter laboratorijske in terenske preskusne metode (ISO/DIS 8224-1:2026)

Traveller irrigation machines - Part 1: Operational characteristics and laboratory and field test methods (ISO/DIS 8224-1:2026)

Mobile Beregnungsmaschinen - Teil 1: Betriebskennwerte und Prüfverfahren für Labor- und Felduntersuchungen (ISO/DIS 8224-1:2026)

Machines d'irrigation mobiles - Partie 1: Caractéristiques de fonctionnement et méthodes d'essai en laboratoire et au champ (ISO/DIS 8224-1:2026)

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ISO/DIS 8224-1

Traveller irrigation machines — Part 1: Operational characteristics and laboratory and field test methods

Machines d'irrigation mobiles —

*Partie 1: Caractéristiques de fonctionnement et méthodes d'essai
en laboratoire et au champ*

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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.

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).

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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 of ISO 8824-1 cancels and replaces the second edition (ISO 8824-1:2003), which has been technically revised.

The main changes are as follows:

- the test length has been redefined to four characteristic sections;
- the test conditions have been clarified;
- the calculation method of travel speed error has been added;
- [Table 3](#) *Collector spacing* has been added;
- the former [Figure 5](#) about test bench configuration has been divided into two figures: [Figure 5](#) for uniformity and [Figure 8](#) for drive and resistance force;
- the mandatory clauses Normative references ([Clause 2](#)) and Terms and definitions ([Clause 3](#)) have been modified, and subsequent clauses have been renumbered.

A list of all parts in the ISO 8824 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.

ISO/DIS 8224-1:2026(en)**Introduction**

The operational characteristics and laboratory and field test methods of traveller irrigation machines are becoming increasingly important, especially for the following reasons:

- to ensure irrigation efficiency and rational use of water resources, avoiding water waste or unsatisfactory irrigation performance due to poor operational behaviour, and
- to comprehensively evaluate the operational characteristics of the irrigation machine under different working conditions through laboratory and field tests, ensuring its stability and adaptability, and providing a uniformly comparable test basis for product development validation, factory quality control and performance evaluation.

Moreover, the relevant industries need guidance in carrying out performance testing and quality control of traveller irrigation machines so that the state of the art and a basis for future specifications can be evaluated.

The ISO 8224 series specifies test methods related to the operational characteristics and laboratory and field tests of traveller irrigation machines, offering the user the means to evaluate the combined performance of their operational characteristics and laboratory and field test methods.

This document not only provides a means for testing and evaluating the operational characteristics of traveller irrigation machines, but also provides the means for obtaining detailed laboratory and field test results that can be used for their subsequent improvement.

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Traveller irrigation machines —

Part 1: Operational characteristics and laboratory and field test methods

1 Scope (*mandatory*)

This part of ISO 8224 specifies the operational characteristics of, and laboratory and field test methods for, traveller irrigation machines. It includes

- user-oriented technical information for inclusion in the manufacturer's accompanying product literature,
- laboratory test procedures for evaluating the uniformity of water application on an irrigated strip by a machine operating within a specified range of conditions and for determining the maximum travelling rates the drive mechanism is able to achieve in response to specified operating conditions, and
- field test procedures for determining the uniformity of water application on a given irrigated strip under local conditions prevailing in the field at time of testing.

It is applicable only to traveller irrigation machines and not to other types of irrigation machine such as centre-pivot and moving lateral irrigation machines.

2 Normative references (*mandatory*)

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 15886-3, *Agricultural irrigation equipment — Sprinklers — Part 3: Characterization of distribution and test methods*

ISO 8026, *Agricultural irrigation equipment — Sprayers — General requirements and test methods*

3 Terms and definitions (*mandatory*)

For the purposes of this document, the following terms, definitions and symbols (see [Table 1](#)) apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

traveller irrigation machine

machine designed to irrigate a field sequentially, strip by strip, using an emission device (or devices) that move across the field while operating and having a hose for moving water from a distribution point to the emission devices

Note 1 to entry: There are three types of traveller irrigation machines, each having a structure that includes a reel, drum or winch, and a travelling water distribution system.

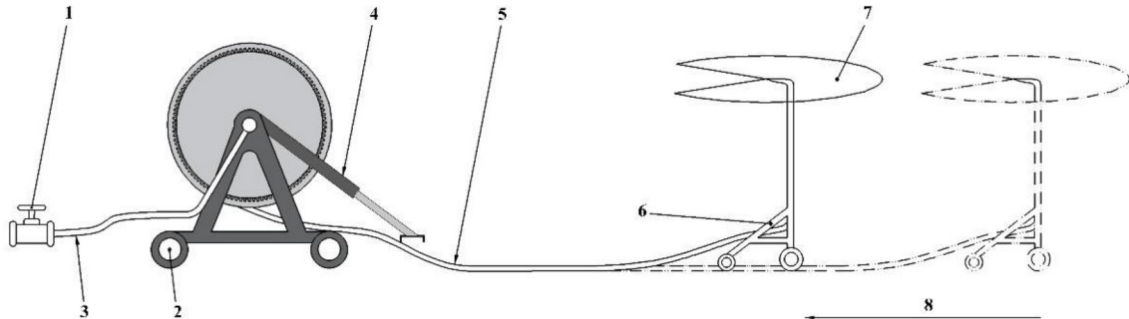
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3.2

reel machine

type 1 traveller irrigation machine with a stationary reel coiling a distribution hose that drags a travelling cart on which a water distribution system (most often a gun-type sprinkler) is installed and carries water to the water distribution system

Note 1 to entry: See [Figure 1](#).

**Key**

- 1 water source
- 2 stationary reel
- 3 source connection hose
- 4 stabilizer legs
- 5 distribution hose — dragged
- 6 cart or trolley
- 7 water distribution device or system
- 8 direction of movement

Figure 1 — Sketch of operating type 1 traveller irrigation machine — Reel machine

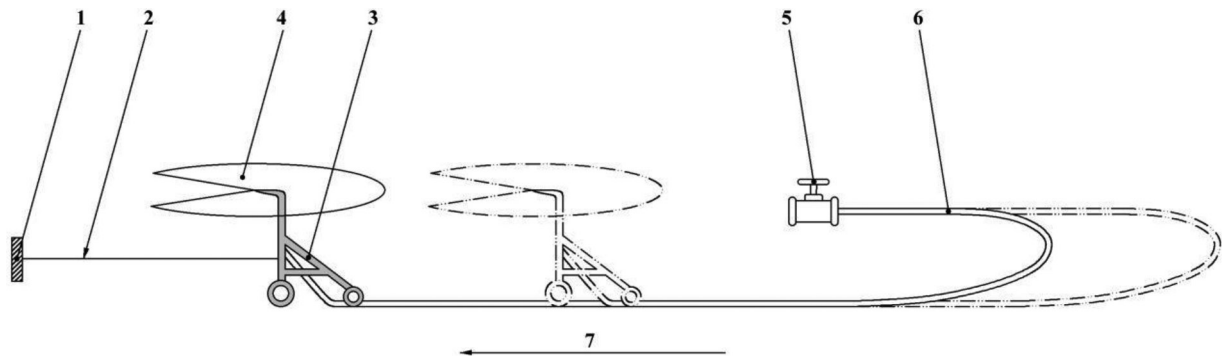
3.3

traveller

type 2 traveller irrigation machine with a travelling water distribution system that drags the distribution hose with no need to coil it

Note 1 to entry: See [Figure 2](#).

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**Key**

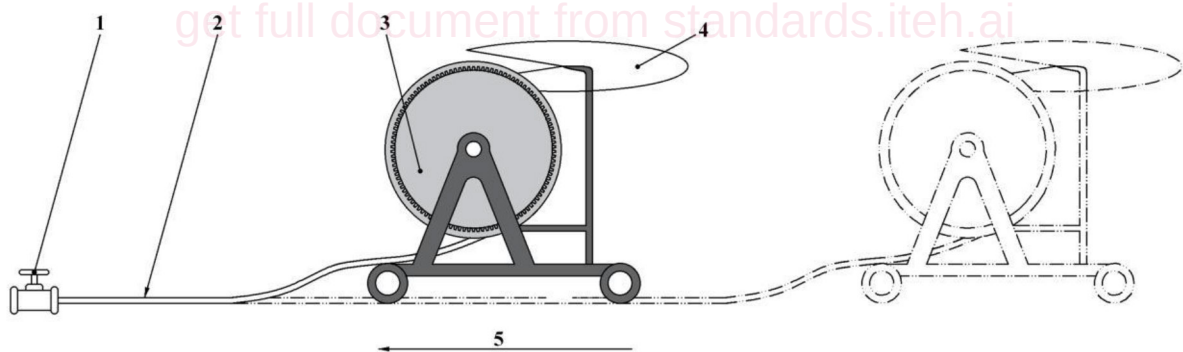
- 1 tow cable anchor
- 2 tow cable
- 3 cart or trolley
- 4 water distribution device or system
- 5 water source
- 6 distribution hose — dragged
- 7 direction of movement

Figure 2 — Sketch of operating type 2 traveller irrigation machine — Traveller

3.4 self-propelled reel machine

type 3 traveller irrigation machine with a stationary distribution hose that carries irrigation water to a travelling structure accommodating a reel on which the distribution hose is coiled, a drive train, self-propelled wheels and water distribution system

Note 1 to entry: See [Figure 3](#).

**Key**

- 1 water source
- 2 distribution hose
- 3 self-propelled structure
- 4 water distribution device or system
- 5 direction of movement

Figure 3 — Sketch of operating type 3 traveller irrigation machine — Self-propelled reel machine

ISO/DIS 8224-1:2026(en)**3.5****water distribution system**

sprinkling and travelling part of a traveller irrigation machine through which irrigation water is distributed and applied over a strip

EXAMPLE Sprinkler, gun-type sprinkler, combination of sprinklers and gun-type sprinklers, boom with set of sprinklers or sprayers

3.6**field resistance coefficient**

a

coefficient characterizing the resistance drag force exerted by the field on a traveller irrigation machine while travelling along a strip

3.7**distribution hose**

flexible supply line that conveys irrigation water from the stationary reel to the travelling water distribution system of a traveller irrigation machine

3.8**source connection hose**

source connection conduit

flexible supply conduit used to connect an irrigation water source to the stationary structure of a traveller irrigation machine

3.9**irrigation strip**

lane

portion of a field irrigated sequentially by a traveller irrigation machine

3.10**irrigation strip width**

lane width

strip spacing

distance between two adjacent travel paths of a cart

3.11**travel path**

path within a strip where the water distribution system moves during its irrigation travel

3.12**length of travel**

distance a traveller irrigation machine moves along its travel path within a strip

3.13**reel**

component of a traveller irrigation machine, consisting of a drum with flanges, rotating on an axial shaft and intended for coiling the part of the distribution pipe

Note 1 to entry: See [Figure 4](#).