

INTERNATIONAL
STANDARD

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**Agricultural irrigation — Wiring and
equipment for electrically driven or
controlled irrigation machines**

*Irrigation agricole — Câblage et matériel pour les machines d'irrigation
entraînées ou commandées électriquement*



Reference number
ISO 12374:1995(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.

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.

International Standard ISO 12374 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

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Agricultural irrigation — Wiring and equipment for electrically driven or controlled irrigation machines

1 Scope

This International Standard provides detailed information for the application of electrical apparatus to electrically driven or controlled agricultural irrigation machines, covering all electrical equipment, apparatus, components and wiring necessary from the point of connection of electric power to the machine. It applies to electrical equipment for use on circuits operating at voltages from 30 V to 600 V.

The purpose of this International Standard is to improve the degree of personal safety in operation and application of products and materials under a reasonable range of conditions.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 11684:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*.

IEC 173:1964, *Colours of the cores of flexible cables and cords*.

IEC 228:1978, *Conductors of insulated cables*.

IEC 529:1989, *Degrees of protection provided by enclosures (IP Code)*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 ampacity: Allowable current-carrying capacity of a conductor determined by the conductor diameter and the insulation on the conductor.

NOTE 1 The conductors can carry more than the allowable current; however, the allowable current is set to prevent overheating and damage to insulation or equipment.

3.2 auxiliary conductor: Conductor that carries current to a device which is not necessary for movement of the machine.

3.3 auxiliary panel: Enclosure containing auxiliary control devices for the machine such as motor controllers, relays, switches and transformers, but not including the main controller and other main control devices that supply power to the entire machine.

NOTE 2 A junction box is not an auxiliary panel.

3.4 bonded connection: Reliable connection to ensure the necessary electrical conductivity between metal parts required to be electrically connected.

3.5 collector ring: Assembly of slip rings for transferring electrical energy from a stationary conductor to a rotating conductor.

3.6 control conductor: Conductor that carries current to a control device that is necessary for movement of the machine.

3.7 front-mounted device: Replaceable device mounted so that it may be individually replaced from the front of an enclosure without removing subpanels,