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Agricultural engineering — Electrical and electronic equipment — Testing resistance to environmental conditions

Génie agricole — Matériel électrique et électronique — Essais de résistance aux conditions environnementales

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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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This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 19, *Agricultural electronics*.

This second edition cancels and replaces the first edition (ISO 15003:2006), which has been technically revised.

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

— integration of editorial corrections;

— updates to the list of normative references and guidance on the application of the normative references;

— removal of the dates of the normative references;

— correction in the Bibliography.

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.

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Agricultural engineering — Electrical and electronic equipment — Testing resistance to environmental conditions

1 Scope

This document provides design requirements and guidance for the manufacturers of electrical and electronic equipment for use in all kinds of mobile (including hand-held) agricultural machinery, forestry machinery, landscaping and gardening machinery [referred to hereafter as machine(s)]. The term machinery covers tractors and implements. This document gives tests for specific environmental conditions and defines severity levels for tests which relate to the environmental extremes that can be experienced in practical operation of the equipment.

This document is intended to be used in determining the suitability of the equipment of these machines, for use in a specified range of environmental conditions.

NOTE The severity levels given are general guidelines and not guaranteed worst-case exposure levels.

2 Normative references

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 14982, *Agricultural and forestry machinery — Electromagnetic compatibility — Test methods and acceptance criteria*

ISO 16750 (all parts), *Road vehicles — Environmental conditions and testing for electrical and electronic equipment*

IEC 60068-1:2013, *Environmental testing — Part 1: General and guidance*

IEC 60068-2-5:2018, *Basic environmental testing procedures — Part 2: Tests — Test Sa: Simulated solar radiation at ground level*

IEC 60068-2-6, *Environmental testing — Part 2: Tests — Test Fc: Vibration (sinusoidal)*

IEC 60068-2-11, *Basic environmental testing procedures — Part 2: Tests — Test Ka: Salt mist*

IEC 60068-2-13, *Basic environmental testing procedures — Part 2: Tests — Test M: Low air pressure*

IEC 60068-2-14, *Basic environmental testing procedure — Part 2: Tests — Test N: Change of temperature*

IEC 60068-2-27, *Basic environmental testing procedures — Part 2: Tests — Test Ea and guidance: Shock*

IEC 60068-2-30, *Basic environmental testing procedures — Part 2: Tests — Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle)*

IEC 60068-2-47, *Environmental testing — Part 2: Tests — Mounting of specimens to vibration, impact and similar dynamic tests*

IEC 60068-2-64, *Environmental testing — Part 2: Test methods — Test Fh: Vibration, broad-band random (digital control) and guidance*

IEC 60068-2-78, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state*

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