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Agricultural machinery and tractors — Safety of highly automated agricultural machines — Principles for design

Tracteurs et matériels agricoles — Sécurité des machines hautement automatisées — Principes de conception

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Foreword

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For an explanation on 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 the following URL: 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 3, *Safety and comfort*.

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.

Introduction

This document is a type-B1 standard as stated in ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organisations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises);

— consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

In addition, this document is intended for standardization bodies elaborating type-C standards.

The requirements of this document can be supplemented or modified by a type-C standard.

For machines which are covered by the scope of a type-C standard and which have been designed and built according to the requirements of that standard, the requirements of that type-C standard take precedence.

The structure of safety standards in the field of machinery is as follows.

— Type-A standards (basis standards) give basic concepts, principles for design, and general aspects that can be applied to machinery.

— Type-B standards (generic safety standards) deal with one or more safety aspects or one or more types of safeguards that can be used across a wide range of machinery:

  — Type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

  — Type-B2 standards on safeguards (e.g. two-hands controls, interlocking devices, pressure sensitive devices, guards).

— Type-C standards (machinery safety standards) deal with detailed safety requirements for a particular machine or group of machines.

Highly automated agricultural machine operations are an enabling technology. Customer benefits are increased; productivity and increased operator comfort.

Highly automated operation is a departure from traditional machine applications in the agricultural machinery and mobile equipment sectors that up to now required an on-board operator to perform work. Highly automated operations require unique safety considerations.

The objective of this document is to specify principles for the design of highly automated agricultural machine operations to achieve safe operation. Should requirements of this document for highly automated operation be different from those which are stated in a machine-specific standard dealing with highly automated operation, the requirements of the machine-specific standard take precedence over the requirements of this document.