SLOVENSKI STANDARD
oSIST prEN 18068:2024

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Kmetijski stroji - Varnost - Kompaktni nosilci

Agricultural machinery - Safety - Compact carriers

Landmaschinen - Sicherheit - Kompakt-Geräteträger

Matériel agricole - Sécurité - Porte-outils compacts

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65.060.01	Kmetijski stroji in oprema na splošno	Agricultural machines and equipment in general

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 18068:2024) has been prepared by Technical Committee CEN/TC 144 “Tractors and machinery for agriculture and forestry”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Introduction

This document is a type-C standard as stated in ISO 12100:2010.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

Significant hazards that are common to all of the agricultural machines (self-propelled, mounted, semi-mounted and trailed) are dealt with in EN ISO 4254-1.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

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 organizations, 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.

1 Scope

This document specifies the safety requirements and their verification for the design and construction of compact carriers. It is intended to be used together with EN ISO 4254-1:2015[2]. When provisions of this document are different from those which are stated in EN ISO 4254-1:2015, the provisions of this document take precedence over the provisions of EN ISO 4254-1:2015 for machines that have been designed and built according to the provisions of this document.

This document deals with the significant hazards, hazardous situations and events relevant to compact carriers, when they are used as intended and under the conditions foreseen by the manufacturer but also taking into account any reasonably foreseeable misuse thereof (see Annex A).

In addition, this document specifies the type of information on safe working practices that is provided by the manufacturer.

The following significant and relevant hazards are not covered in this document:

— design of machinery to facilitate its handling;

— external radiation;

— laser radiation;

— lightning;

— falling objects;

— towing devices;

— transmission of power between self-propelled machinery (or tractor) and recipient machinery;

and hazards related to:

— the presence of a seated operator;

— the environment on compact carrier intended for pesticide application;

— lifting operations;

— lifting of persons.

While this document does not deal with the design and construction of interchangeable equipment, requirements in this document also address hazards which can occur from the combination of compact carriers with interchangeable equipment as per multiple uses intended by the manufacturer of the compact carrier.

Compact carriers when provided with cab and provisions for fitting a cab are not dealt with this document.

This document is not applicable to machines manufactured before the date of its publication.

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.

EN 1032:2003+A1:2008, *Mechanical vibration - Testing of mobile machinery in order to determine the vibration emission value*

EN 60529:1991,[1] *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN ISO 2860:2008, *Earth-moving machinery - Minimum access dimensions (ISO 2860:1992)*

EN ISO 3450:2011, *Earth-moving machinery - Wheeled or high-speed rubber-tracked machines - Performance requirements and test procedures for brake systems (ISO 3450:2011)*

EN ISO 3457:2008, *Earth-moving machinery - Guards - Definitions and requirements (ISO 3457:2003)*

EN ISO 4254-1:2015,[2] *Agricultural machinery - Safety - Part 1: General requirements (ISO 4254-1:2013)*

EN ISO 6682:2008, *Earth-moving machinery - Zones of comfort and reach for controls (ISO 6682:1986, including Amd 1:1989)*

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13850:2015, *Safety of machinery - Emergency stop function - Principles for design (ISO 13850:2015)*

EN ISO 13856-1:2013, *Safety of machinery - Pressure-sensitive protective devices - Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors (ISO 13856-1:2013)*

EN ISO 13856-2:2013, *Safety of machinery - Pressure-sensitive protective devices - Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars (ISO 13856-2:2013)*

EN ISO 13856-3:2013, *Safety of machinery - Pressure-sensitive protective devices - Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices (ISO 13856-3:2013)*

EN ISO 13857:2019, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 14119:2013, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection (ISO 14119:2013)*

EN ISO 14120:2015, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 16231-2:2015, *Self-propelled agricultural machinery - Assessment of stability - Part 2: Determination of static stability and test procedures (ISO 16231-2:2015)*

[1] As impacted by EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013.
[2] As impacted by EN ISO 4254-1:2015/A1:2021.

IEC 60204-1:2016+AMD1:2021 CSV, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60364-1:2005, *Low-voltage electrical installations — Part 1: Fundamental principles, assessment of general characteristics, definitions*

IEC 60364-5-51:2005, *Electrical installations of buildings — Part 5-51: Selection and erection of electrical equipment — Common rules*

IEC 60364-5-52:2009, *Low-voltage electrical installations — Part 5-52: Selection and erection of electrical equipment — Wiring systems*

IEC 61496-1:2020, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*

ISO 789-6:2019, *Agricultural tractors — Test procedures — Part 6: Centre of gravity*

ISO 3600:2022, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Operator's manuals — Content and format*

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-2:2016, *Graphical symbols — Safety colours and safety signs — Part 2: Design principles for product safety labels*

ISO 3864-3:2012, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 3864-4:2011, *Graphical symbols — Safety colours and safety signs — Part 4: Colorimetric and photometric properties of safety sign materials*

ISO 6011:2023, *Earth-moving machinery — Visual display of machine operation*

ISO 6016:2008, *Earth-moving machinery — Methods of measuring the masses of whole machines, their equipment and components*

ISO 6405-1:2017, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 6749:1984, *Earth-moving machinery — Preservation and storage*

ISO 9244:2008,[3] *Earth-moving machinery — Machine safety labels — General principles*

ISO 9247:1990,[4] *Earth-moving machinery — Electrical wires and cables — Principles of identification and marking*

ISO 10261:2021, *Earth-moving machinery — Product identification numbering system*

[3] As impacted by ISO 9244:2008/Amd 1:2016.
[4] As impacted by ISO 9247:1990/Amd 1:1998.

ISO 10265:2008, *Earth-moving machinery — Crawler machines — Performance requirements and test procedures for braking systems*

ISO 10968:2020, *Earth-moving machinery — Operator's controls*

ISO 11862:1993, *Earth-moving machinery — Auxiliary starting aid electrical connector*

ISO 12508:1994, *Earth-moving machinery — Operator station and maintenance areas — Bluntness of edges*

ISO 14396:2002, *Reciprocating internal combustion engines — Determination and method for the measurement of engine power — Additional requirements for exhaust emission tests in accordance with ISO 8178*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 4254-1:2015 and the following apply.

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

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

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

3.1
compact carrier
CC
self-propelled crawler or wheeled machine primarily designed for operation with interchangeable equipment, having an operating mass of less than 2 000 kg, having either a pedestrian operating position or a standing operator platform at the rear of the machine, provided with coupling system for interchangeable equipment or with lift arms/structure equipped with coupling system for interchangeable equipment

Note 1 to entry: Examples of a compact carrier are illustrated in Annex F.

3.2
operating mass
mass of the *compact carrier (3.1)* as specified by the manufacturer without *interchangeable equipment (3.8)* and ballast, and with the operator (75 kg) if the machine is provided with an *operator platform (3.4)*, half empty fuel tank and all fluid systems at the levels specified by the manufacturer

3.3
gross mass
combined mass of the *operating mass (3.2)* of the machine and the maximum mass that can be carried as foreseen by the CC's manufacturer

Note 1 to entry: Maximum mass that can be carried includes ballast, the mass of the *interchangeable equipment (3.8)* and its rated payload, if any. Additional fluid systems of the interchangeable equipment at the levels specified by the manufacturer are included in the mass of the interchangeable equipment.

3.4
operator platform
surface provided for a ride-on, standing operator to operate the *compact carrier (3.1)*

3.5
ground-supported operator platform
operator platform (3.1) that pivots about a connection on the base machine and is supported with one or more trail wheels or skid surfaces that follows the contour of the ground

3.6
lift arms/structure for interchangeable equipment
moving arms or structures equipped with *coupling system for interchangeable equipment (3.7)* and installed on *compact carrier (3.1)*

3.7
coupling system for interchangeable equipment
means for coupling *interchangeable equipment (3.8)* or device mounted on the *compact carrier (3.1)* to facilitate the quick interchange of *interchangeable equipment (3.8)* from the base machine

Note 1 to entry: Coupling system for interchangeable equipment could be a quick coupler.

3.8
interchangeable equipment
device which, after the putting into service of *compact carrier (3.1)*, is assembled with that machinery by the operator himself in order to change its function or attribute a new function, in so far as this equipment is not a tool

3.8.1
non-load carrying interchangeable equipment
interchangeable equipment (3.8) that during its normal use would not contain or support a payload

Note 1 to entry: Examples of non-load carrying interchangeable equipment are snow blade, snow blower, planer, auger, mower, etc.

3.8.2
load carrying interchangeable equipment
interchangeable equipment (3.8) that during its normal use would contain or support a payload

Note 1 to entry: Examples of load carrying interchangeable equipment are dump body, concrete mixer, bucket, excavator, sweeper, tank, etc.

3.8.3
interchangeable equipment for ground use
interchangeable equipment (3.8) whose working configuration, provided by the manufacturer, is mainly in contact with the ground and/or in contact with a surface

Note 1 to entry: Examples of interchangeable equipment for ground use are sweeper, planer, auger, mower, front blade, trencher, rotary tiller, etc.

3.8.4
interchangeable equipment for non-ground use
interchangeable equipment (3.8) whose working configuration, provided by the manufacturer, is not only in contact with the ground or a surface

Note 1 to entry: Examples of interchangeable equipment for non-ground use are dumper body, concrete mixer, bucket, mast with forks, sprayer, etc.

3.8.5
interchangeable equipment for stationary use
interchangeable equipment (3.8) designed to be used only with *compact carrier (3.1)* in stationary conditions apart from travelling phase

Note 1 to entry: Examples of interchangeable equipment for stationary use are chipper.

3.9
machine side planes
planes parallel to machine longitudinal median plane passing through the outermost lateral contour of the machine

3.10
service brake system
primary braking device designed for stopping and holding the machine in a stationary position

3.11
secondary/emergency braking system
braking system designed to stop the machine in the event of any failure in the *service brake system (3.10)*

3.12
parking brake system
system designed to hold a stopped machine in a stationary position and which, if appropriate, may also be part of a *secondary/emergency braking system (3.11)*

4 Safety requirements and protective measures

4.1 General

Compact carrier shall comply with the safety requirements and protective measures of EN ISO 4254-1:2015, in as far as those are not modified by the specific requirements of this clause.

In addition, the machine shall be designed according to the principles of EN ISO 12100:2010 for relevant but not significant hazards which are not dealt with by this document.

4.2 Operator's station

4.2.1 General

A suitable device (e.g. handhold) providing a means of support for the operator during machine travel shall be provided within the operator control zone defined in Figure 1. This device may also be used as the handhold for access (see 4.2.2). If the compact carrier is equipped with an operator platform, the device shall not restrict or impede the operator’s access to and egress from the platform.

EN ISO 4254-1:2015, 4.7, does not apply.

4.2.2 Access

In the event the compact carrier is fitted with an operator platform, the machine shall have a handhold in accordance with ISO 2867:2011 to facilitate ingress to and egress from the platform.

4.2.3 Moving parts

EN ISO 4254-1:2015, 4.2, shall apply with the following addition.

Measures shall be taken to avoid inadvertent contact from the operating position with moving parts, e.g. the wheels, or track or working equipment and/or attachment.