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Part 1: **Common requirements**

Machines mobiles pour la construction de routes — Sécurité — Partie 1: Prescriptions communes

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement. (standards.iteh.ai)

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 195, *Building construction machinery and equipment.*

ISO 20500 consists of the following parts, under the general title *Mobile road construction machinery* — *Safety*:

- Part 1: Common requirements
- Part 2: Specific requirements for road-milling machines
- Part 3: Specific requirements for soil-stabilising machines and recycling machines
- Part 4: Specific requirements for compaction machines
- Part 5: Specific requirements for paver-finishers
- Part 6: Specific requirements for mobile feeders
- Part 7: Specific requirements for slip form pavers and texture curing machines

A list of all parts in the ISO 20500 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.

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Introduction

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

- a) Type-A standards (basis standards) give basic concepts, principle for design and general aspects that can be applied to machinery.
- b) Type-B standards (generic safety standards) dealing with one or more safety aspect(s) or one or more type(s) 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).
- c) Type-C standards (machinery safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

This International Standard is a type-C standard, as stated in ISO 12100.

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

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Mobile road construction machinery — Safety —

Part 1: **Common requirements**

1 Scope

This document specifies the common safety requirements for mobile road construction machinery. The ISO 20500 series is applicable to mobile road construction machinery as listed in Annex A.

NOTE 1 For travelling on public roads, the national roading regulations apply (e.g. braking, steering, lighting).

This document deals with the significant hazards common to mobile road construction machinery, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer associated with the whole life time of the machine.

NOTE 2 The requirements specified in this document are common to two or more families of mobile road construction machinery.

This document gives safety requirements for all types of mobile road construction machinery and shall be used in conjunction with one of parts 2 to 7. These machine specific parts do not repeat the requirements from part 1 but add to or replace (supplement or modify) the requirements for the type of mobile road construction machinery in question.

This document does not deal with hazards related to transport of dangerous goods by road.

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This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards as specified in Annex H.

This International Standard applies to machines which are manufactured after the date of publication of this International Standard by ISO.

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.

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ISO 11112:1995+AMD 1:2001, Earth-moving machinery — Operator's seat — Dimensions and requirements; Amendment 1

ISO 11862:1993, Earth-moving machinery; auxiliary starting aid electrical connector

ISO 12100:2010, Safety of machinery — General principles for design — Risk assessment and risk reduction

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

ISO 12509:2004, Earth-moving machinery — Lighting, signalling and marking lights, and reflex-reflector devices

ISO 13333:1994, Earth-moving machinery — Dumper body support and operator's cab tilt support devices

ISO 13732-1, Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces

ISO 13766-1:2018, Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 1: General EMC requirements under typical electromagnetic environmental conditions

ISO 13766-2:2018, Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 2: Additional EMC requirements for functional safety

ISO 13849-1:2015, Safety of machinery Safety-related parts of control systems — Part 1: General principles for design (8900380355c/iso-dis-20500-1

ISO 13850:2015, Safety of machinery — Emergency stop function — Principles for design

ISO 13857:2008, Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs

ISO 14119:2013, Safety of machinery — Interlocking devices associated with guards — Principles for design and selection

ISO 14120:2015, Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards

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

ISO 14401-1:2009, Earth-moving machinery — Field of vision of surveillance and rear-view mirrors — Part 1: Test methods

ISO 14401-2:2009, Earth-moving machinery — Field of vision of surveillance and rear-view mirrors — Part 2: Performance criteria

ISO 14990-3:2016, Earth-moving machinery— Electrical safety of machines utilizing electric drives and related components and systems — Part 3: Particular requirements for self-powered machines

ISO 15817, Earth-moving machinery — Safety requirements for remote operator control systems

ISO 15818:2017, Earth-moving machinery — Lifting and tying-down attachment points — Performance requirements

ISO 16001:2017, Earth-moving machinery — Object detection systems and visibility aids — Performance requirements and tests

ISO 16528-1:2007, Boilers and pressure vessels — Part 1: Performance requirements

ISO 16528-2:2007, Boilers and pressure vessels — Part 2: Procedures for fulfilling the requirements of ISO 16528-1

ISO 17063:2003, Earth-moving machinery — Braking systems of pedestrian-controlled machines — Performance requirements and test procedures

ISO 29463-5:2011, *High-efficiency filters and filter media for removing particles in air — Part 5: Test method for filter elements*

ISO/TR 11688-1:1995, Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning

3 Terms and definitions iTeh STANDARD PREVIEW

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses: <u>ISO/DIS 20500-1</u>

- IEC Electropedia:available at http://www.electropedia.org/80-466b-a416d8900380355c/iso-dis-20500-1
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1

mobile road construction machinery

machine intended for either one of, or a combination of construction, maintenance and marking of roads or other road like surfaces

Note to entry: The machines are listed in Annex A.

3.1.1

compact machine

mobile road construction machinery (3.1), except for vibratory plates and rammers (ISO 20500-4), having an operating mass (3.2.1) of 4 500 kg or less

3.1.2

direct-control machine

self-propelled *mobile road construction machinery* (3.1) where the machine is controlled by an operator in physical contact with the machine

3.1.3

ride-on machine

self-propelled *direct-control machine* (3.1.2) where the control devices are located on the machine and the machine is controlled by an operator carried on the machine