



International
Standard

ISO 20500-1

**Mobile road construction
machinery — Safety —**

Part 1:
Common requirements iTeh Standards

Machines mobiles pour la construction de routes — Sécurité — (<https://standards.iteh.ai>)

Partie 1: Prescriptions communes

First edition
2026-02

Document Preview

[ISO 20500-1:2026](#)

<https://standards.iteh.ai/catalog/standards/iso/d58f8294-d280-466b-a416-d8900380355c/iso-20500-1-2026>

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 20500-1:2026](#)

<https://standards.iteh.ai/catalog/standards/iso/d58f8294-d280-466b-a416-d8900380355c/iso-20500-1-2026>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2026

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	4
3.1 General	4
3.2 Machine mass	7
3.3 Handle starting equipment	7
3.4 Liquid gas units	8
3.5 Moveable operator's stations	9
3.6 Contamination protective systems	10
4 Safety requirements and/or protective/risk reduction measures	11
4.1 General	11
4.2 Visibility	11
4.2.1 Operator's field of view	11
4.2.2 Lighting, signalling and marking lights and reflex-reflector devices	12
4.2.3 Electric socket for lighting	12
4.3 Operation and handling	12
4.3.1 Uncontrolled motion	12
4.3.2 Towing away for recovery purposes, transportation and lifting	13
4.3.3 Non-riding machine	13
4.3.4 Steering system	14
4.3.5 Tyres and rims	14
4.3.6 Storage facilities	14
4.4 Operator stations	14
4.4.1 General	14
4.4.2 Operator's station with cab	16
4.4.3 Operator's station with canopy	17
4.4.4 Operator's places for additional operation	18
4.4.5 Road construction machinery providing a rear mounted operator's station for a standing operator	18
4.5 Operator's seat	18
4.5.1 General	18
4.5.2 Vibration	19
4.6 Controls and indicators	20
4.6.1 General	20
4.6.2 Controls	20
4.6.3 Safety and reliability of control systems	21
4.7 Starting/stopping	21
4.7.1 General	21
4.7.2 Emergency stop	22
4.7.3 Hold-to-run control	22
4.7.4 Braking systems	22
4.8 Conveyors	22
4.8.1 Belt conveyors	22
4.8.2 Screw conveyors	24
4.8.3 Removable conveyors	24
4.8.4 Moveable conveyors	24
4.9 Access systems to the operator's station and to maintenance points	24
4.10 Protection	25
4.10.1 General	25
4.10.2 Guards	25
4.10.3 Articulated frame lock	26
4.10.4 Height adjustable devices	26

4.11	Pressurized systems	26
4.11.1	General	26
4.11.2	Pipes, fittings and hoses	26
4.12	Tanks (e.g. fuel, hydraulic and pressure vessels)	27
4.12.1	Filler openings	27
4.12.2	Fuel tanks	27
4.12.3	Hydraulic tanks	27
4.13	Fire protection	27
4.14	Hot surfaces	27
4.15	Signal devices and warning signs	28
4.15.1	Audible warning device	28
4.15.2	Safety signs	28
4.16	Liquid gas units	28
4.17	Electrical and electronic systems	28
4.17.1	General	28
4.17.2	Degree of protection	28
4.17.3	Over-current protective devices	29
4.17.4	Starter batteries	29
4.17.5	Starter battery disconnection	29
4.17.6	Electric connectors	29
4.17.7	Electrically powered machines	30
4.18	Electro-magnetic compatibility (EMC)	30
4.19	Noise	30
4.19.1	General	30
4.19.2	Principles of noise reduction by design, at source and by protective devices	30
4.20	Vibration	31
4.20.1	General	31
4.20.2	Principles for reduction of vibration at source by design	31
5	Verification of the safety requirements and/or protective/risk reduction measures	31
6	Information for use	34
6.1	Warning signals and devices	34
6.2	Operator's manual	34
6.2.1	General	34
6.2.2	Information concerning airborne noise emission	35
6.2.3	Information concerning hand-arm and whole-body vibration emission	35
6.2.4	Instructions and information for use and maintenance of the machine	36
6.3	Marking	37
	Annex A (informative) List of mobile road construction machinery	38
	Annex B (normative) Handle starting equipment	39
	Annex C (normative) Liquid gas units on mobile road construction machinery	42
	Annex D (normative) Requirements for moveable operator's station	46
	Annex E (normative) Contamination protective systems	48
	Annex F (normative) Performance levels of the safety related parts of control systems (SRP/CS)	56
	Annex G (normative) Visibility test requirements for ride-on mobile road construction machinery with a standing operator	61
	Annex H (informative) Example of noise emission declaration	62
	Annex I (informative) List of significant hazards	63
	Bibliography	66

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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

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*.

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.

<https://standards.iteh.ai/catalog/standards/iso/d58f8294-d280-466b-a416-d8900380355c/iso-20500-1-2026>

Introduction

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

- a) Type-A standards (basis standards) give basic concepts, principles 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 document is a type-C 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 (small, medium and large enterprises);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

<https://standards.iteh.ai/catalog/standards/iso/d58f8294-d280-466b-a416-d8900380355c/iso-20500-1-2026>
The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

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

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.

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 significant hazards, hazardous situations and events relevant to mobile road construction machinery, when used as intended and under conditions foreseen, but also taking into account any reasonably foreseeable misuse thereof (see [Annex I](#)).

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

This document gives the common safety requirements for mobile road construction machinery and is intended to be used in conjunction with ISO 20500-2 to ISO 20500-7. These machine specific parts (ISO 20500-2 to ISO 20500-7) do not repeat the requirements from this document but supplement or modify the requirements for the family in question.

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

Lightning as a significant and relevant hazard is not covered in this document.

This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards as specified in [Annex I](#).

This document is not applicable to mobile road construction machinery manufactured before the date of its publication.

As a general principle, dimensions are used according to ISO 3411:2007 in order to cover 5 to 95 percentile of machine operators.

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 143:2021, *Respiratory protective devices — Particle filters — Requirements, testing, marking*

EN 12021:2014, *Respiratory equipment — Compressed gases for breathing apparatus*

ISO 2860:1992, *Earth-moving machinery — Minimum access dimensions*

ISO 2867:2011, *Earth-moving machinery — Access systems*

ISO 3411:2007, *Earth-moving machinery — Physical dimensions of operators and minimum operator space envelope*