International Standard

ISO 20500-1

Mobile road construction machinery — Safety —

Part 1: Common requirements

Machines mobiles pour la construction de routes — Sécurité —

Partie 1: Prescriptions communes

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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

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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 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.

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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.

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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, 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).

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.

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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 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*

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

ISO 3457:2003, *Earth-moving machinery — Guards — Definitions and requirements*

ISO 3795:1989, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

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 3864-3:2024, *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 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 5006:2017, *Earth-moving machinery — Operator's field of view — Test method and performance criteria*

ISO 5010:2019, *Earth-moving machinery — Wheeled machines — Steering requirements*

ISO 5353:1995, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point*

ISO 5673-1:2005, *Agricultural tractors and machinery — Power take-off drive shafts and power-input connection — Part 1: General manufacturing and safety requirements*

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

ISO 6405-1:2017/AMD 1:2022, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols — Amendment 1: Additional symbols*

ISO 6682:1986+AMD 1:1989, *Earth-moving machinery — Zones of comfort and reach for controls*

ISO 6750-1:2019, *Earth-moving machinery — Operator's manual — Part 1: Contents and format*

ISO 7010:2019, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 7096:2020, *Earth-moving machinery — Laboratory evaluation of operator seat vibration*

ISO 7165:2017, *Fire fighting — Portable fire extinguishers — Performance and construction*

ISO 8643:2024, *Earth-moving machinery — Hydraulic excavator and backhoe loader lowering control device — Requirements and tests*

ISO 9244:2008+AMD 1:2016, *Earth-moving machinery — Machine safety labels — General principles*

ISO 9533:2010, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria*

ISO 10263-4:2009, *Earth-moving machinery — Operator enclosure environment — Part 4: Heating, ventilating and air conditioning (HVAC) test method and performance*

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ISO 10264:1990, *Earth-moving machinery — Key-locked starting systems*

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

ISO 10532:1995+AMD 1:2004, *Earth-moving machinery — Machine-mounted retrieval device — Performance requirements*

ISO 10570:2004, *Earth-moving machinery — Articulated frame lock — Performance requirements*

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

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

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 12509:2023, *Earth-moving machinery and rough-terrain trucks — Lighting, signalling and marking lights, and reflex reflectors*

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

ISO 13732-1:2006, *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 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

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

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 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14119:2024, *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 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 15817:2012, *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*

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

ISO 29463-5:2022, *High-efficiency filters and filter media for removing particles in air — Part 5: Test method for filter elements*

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

IEC 60364-4-41:2005+AMD1:2017, *CSV, Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock*

IEC 60364-5-55:2011+AMD1:2012, *CSV, Electrical installations of buildings — Part 5-55: Selection and erection of electrical equipment — Other equipment*

IEC 60529:1989+AMD1:1999, *CSV, Degrees of protection provided by enclosures (IP Code)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010 and the following apply.

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

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

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

3.1 General

3.1.1
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 1 to entry: The machines are listed in Table A.1.

3.1.1.1
compact machine
mobile road construction machinery (3.1.1), except for vibratory plates and rammers, having an *operating mass* (3.2.1) of 4 500 kg or less

Note 1 to entry: See ISO 20500-4 for vibratory plates and rammers.

3.1.1.2
direct-control machine
self-propelled *mobile road construction machinery* (3.1.1) where the machine is controlled by an operator in physical contact with the machine

[SOURCE: ISO 6165:2022, 3.1.2, modified — The term "earth-moving machinery" has been replaced by "mobile road construction machinery".]

3.1.1.3
ride-on machine
direct-control machine (3.1.1.2) where the control devices are located on the machine and the machine is controlled by a seated or standing operator on the machine

[SOURCE: ISO 6165:2022, 3.1.2.1]

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3.1.1.4
remote-control machine
self-propelled *mobile road construction machinery* (3.1.1) where the machine is controlled by the transmission of signals from a control box (transmitter) that is not located on the machine to a receiving unit (receiver) located on the machine

Note 1 to entry: The remote control can either be wireless or by wire.

[SOURCE: ISO 6165:2022, 3.1.3, modified — The term "earth-moving machinery" has been replaced by "mobile road construction machinery".]

3.1.1.5
non-riding machine
direct-control machine (3.1.1.2) where the control devices are located on the machine and the machine is controlled by a pedestrian operator (not carried on the machine) or a *remote-control machine* (3.1.1.4)

3.1.2
cab
enclosed structure mounted to *mobile road construction machinery* (3.1.1) surrounding the operator, including glazing materials (e.g. glass, plastics) in the windows, doors and a windshield

Note 1 to entry: The cab can meet requirements for OPS (operator protective structures), for example, ROPS (roll-over protective structure), FOPS (falling object protective structure).

3.1.3
canopy
overhead structure mounted to *mobile road construction machinery* (3.1.1) that covers in part or in whole the operator station intended to protect the operator against weather conditions, e.g. rain or sun, UV radiation for all positions of the *operator's station* (3.1.7)

Note 1 to entry: The canopy can meet requirements for OPS (operator protective structures), for example, ROPS (roll-over protective structure), FOPS (falling object protective structure).

3.1.4
equipment
set of components mounted onto the mobile road construction machine that allows an *attachment* (3.1.5) to perform the primary design function of the machine

[SOURCE: ISO 6016:2008, 3.1.2, modified — Note 1 to entry has been removed.]

3.1.5
attachment
assembly of components that can be mounted onto the mobile road construction machine or *equipment* (3.1.4) for specific use

Note 1 to entry: A tool is considered as an attachment.

[SOURCE: ISO 6016:2008, 3.1.4, modified — Note 1 to entry has been replaced by a new one.]

3.1.6
interchangeable equipment
attachment (3.1.5) used as an *equipment* (3.1.4) which, after the putting into service of a machine, is assembled with the base machine by the operator in order to change its function or attribute a new function

Note 1 to entry: A tool is not considered as an interchangeable equipment.

Note 2 to entry: This definition is identical to the definition of "interchangeable equipment" as given in the European Machinery Directive 2006/42/EC. For further reference, see CECE guideline "CECE guidance on the classification of attachments to construction equipment for the machinery directive 2006/42/EC".

3.1.7
operator's station
area on a *ride-on machine* (3.1.1.3) from which an operator controls the functions of the machine

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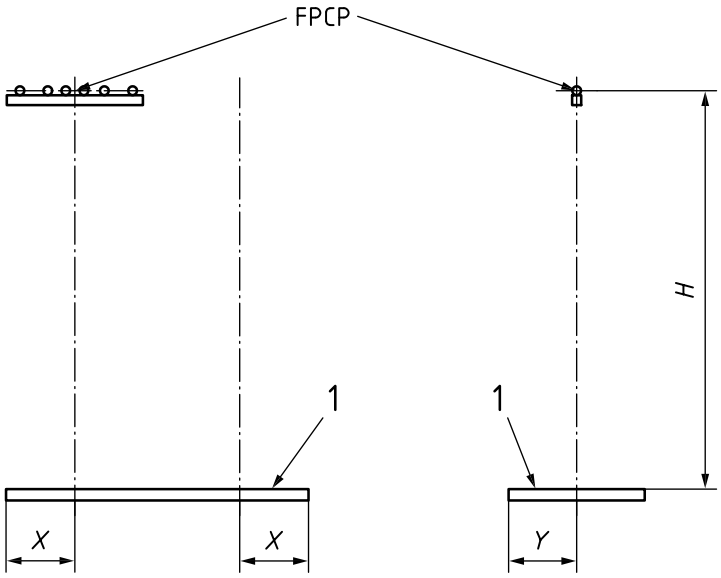
3.1.8
operator's place
area other than *operator's station* (3.1.7) as defined by the manufacturer from which an operator controls the functions of the machine (e.g. work, travel functions, etc.)

3.1.9
nip point
point which occurs on the in-running side at the line of contact between the conveyor belt and rotating pulley and in certain cases between the belt and an idler

3.1.10
nip guard
fixed guard inserted at a *nip point* (3.1.9) to directly safeguard that point by volume occupation

3.1.11
filament position center-point
FPCP
midpoint of the line between the light-bulb filaments

Note 1 to entry: See Figure 1.



Key

X	distance of the FPCP to either side boundary of the standing platform
Y	distance to the front side of the standing platform
1	standing platform
H	height of the operator's eyes above standing platform
FPCP	filament position centre point

Figure 1 — Placement of the light source apparatus on the standing surface

[SOURCE: ISO 5006:2017, 3.2, modified — Note 1 to entry has been modified for standing operator.]

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3.2 Machine mass

3.2.1
operating mass
OM
mass of the base machine, with *equipment* (3.1.4) and empty *attachment* (3.1.5) in the most usual configuration as specified by the manufacturer, and with the operator (75 kg), full fuel tank and all fluid systems (i.e. hydraulic oil, transmission oil, engine oil, engine coolant) at the levels specified by the manufacturer and, when applicable, with half full material compartment (for example water, emulsion, powder binder)

Note 1 to entry: The mass of the operator is not included for *non-riding machines* (3.1.1.5).

Note 2 to entry: Ballast mass at delivery can be included if specified by the manufacturer.

[SOURCE: ISO 6016:2008, 3.2.1, modified — At the end of the definition, "sprinkler water tank(s) half full" has been replaced by "with half full material compartment (for example water, emulsion, powder binder)".]

3.2.2
gross machinery mass
GMM
maximum machine mass as approved by the manufacturer, which combines the *operating mass (OM)* (3.2.1) of the machine with the heaviest combination of *equipment* (3.1.4) and *attachments* (3.1.5), the heaviest combination of optional equipment, as specified by the manufacturer, the ballast mass and, when applicable, full material compartment (for example water, emulsion, powder binder)

[SOURCE: ISO 6016:2008, 3.2.4, modified — Mentioning of "the rated payload (PL)" has been removed; "rated ballast mass (BM)" has been replaced by "ballast mass"; "full sprinkler water tank(s)" has been replaced by "full material compartment (for example water, emulsion, powder binder)".]

3.3 Handle starting equipment

3.3.1
handle starting equipment
equipment (3.1.4) for starting an internal combustion engine by the use of a handle, such that the required torque for starting can be exercised upon the starting shaft by the operator

3.3.2
automatic disengagement device
device which automatically breaks the connection between the starting handle and the engine in the event of *kick-back* (3.3.5), thus preventing the handle from being turned by the engine

3.3.3
guide
part of the *handle starting equipment* (3.3.1) which guides the starting handle during starting but prevents its being thrown out accidentally after disengagement

3.3.4
kick-back limiter
part of the *handle starting equipment* (3.3.1) which, when used in accordance with the instructions and when maintained correctly, prevents or limits the *kick-back* (3.3.5) travel to such an extent as to avoid the risk of injury

3.3.5
kick-back
sudden change of direction of rotation of the starting handle, caused by compression or combustion pressure when starting

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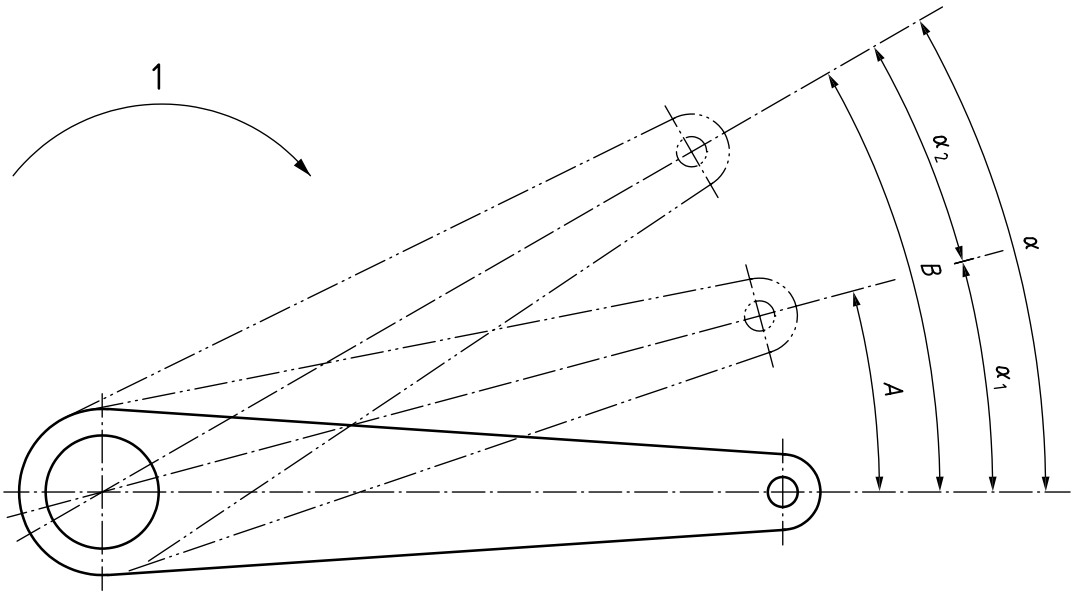
3.3.6
disengagement travel
distance which the grip of the handle travels from the moment of change of direction up to the disengagement of the handle from the starting shaft, measured at the centre of the grip

Note 1 to entry: See Figure B.1.

3.3.7
angle of disengagement
angle through which the shank of the starting handle turns from the moment of change of direction up to the disengagement of the handle from the starting shaft

Note 1 to entry: See Figure 2.



Key

1	starting direction	α_1	disengagement angle (area of energy absorption)
A	disengagement travel	α_2	angle of decrease in energy
B	kick-back travel	α	kick-back angle

Figure 2 — Direction of rotation of crank when starting engine

3.3.8
kick-back travel
distance which the grip of the handle travels from the moment of change of direction until it comes to rest, measured at the centre of the grip

3.3.9
kick-back angle
angle through which the shank of the starting handle turns from the moment of change of direction until it comes to rest

3.4 Liquid gas units

3.4.1
liquid gas
flammable gas of propane, propene (propylene), butane, butene (butylene) and mixtures thereof

3.4.2
liquid gas unit
supply unit (3.4.2.1) or *consumer unit* (3.4.2.2) for *liquid gas* (3.4.1)

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3.4.2.1
supply unit
equipment (3.1.4) consisting of all components, e.g. gas tanks, cylinders (bottles), propellant gas tanks, vaporizer units, that are necessary to supply *consumer units* (3.4.2.2), including the controls and the shut-off device

3.4.2.2
consumer unit
equipment (3.1.4) consisting of the *consumer devices* (3.4.3) for burning purposes, including the gas lines and the equipment components after the *main shut-off device* (3.4.4)

3.4.3
consumer device
burner for use with vaporized gas and infrared burners

3.4.4
main shut-off device
device by means of which the total *consumer unit* (3.4.2.2) can be cut off from the *supply unit* (3.4.2.1)

Note 1 to entry: This can also be a tank shut-off valve.

3.4.5
connection flow value
rated gas consumption of a *consumer unit* (3.4.2.2) at rated thermal load

Note 1 to entry: This value is expressed in kg/h or g/h.

3.4.6
flame monitor
device which detects the presence or absence or break-away of the flame and triggers a function

3.4.7
heater bank
consumer unit (3.4.2.2) for area-warming or pre-heating of road surfaces

Note 1 to entry: See C.2.5.

Note 2 to entry: Heater banks consist of numerous infrared heaters in close configuration arranged on one level.

3.4.8
turbo gas furnace
furnace where the combustion air is supplied via a blower

3.5 Moveable operator´s stations

3.5.1
machine main frame
structure providing support to the machine main components (e.g. engine, hydraulic system) and on which, among other components [e.g. work *equipment* (3.1.4), drive train], the *operator's station* (3.1.7), including its supporting structure, is mounted

3.5.2
elevating operator's station
operator's station (3.1.7) which can move in a vertical direction relative to the *machine main frame* (3.5.1)

3.5.3
tilting operator's station
operator's station (3.1.7) which can rotate around a horizontal axis perpendicular to the longitudinal axis of the operator's station

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3.5.4
sliding operator's station
operator's station (3.1.7) which can move horizontally in either longitudinal and/or lateral direction relative to the *machine main frame* (3.5.1)

Note 1 to entry: The direction of movement can be a combination of vertical and horizontal motion.

3.6 Contamination protective systems

3.6.1
contamination protective system
system that provides *breathing air* (3.6.14) to *operator's stations* (3.1.7) on mobile road construction machines used in areas contaminated by dust particles

3.6.2
contaminated area
area where *hazardous substances* (3.6.3) or substances in concentrations over a non-hazardous to health essential exposure can occur

3.6.3
hazardous substance
substance such as dust, vapor, gas and aerosol which can expose an operator to a risk of harm

3.6.4
protective ventilation system
device to provide *breathing air* (3.6.14)

Note 1 to entry: A protective ventilation system can be:

— a dust filter system; or

— a breathing compressed air system

3.6.5
prefilter
device to reduce the amount of particle before entering the *dust filter unit* (3.6.6)

Note 1 to entry: The filter efficiency is lower than the dust filter efficiency. The prefilter can be conducted as a mechanical device, e. g. cyclone, or with a filter material.

3.6.6
dust filter unit
air handling device to provide air with a reduced amount of harmful, finely divided, airborne and sedimented solid particles to the operator's *cab* (3.1.2)

Note 1 to entry: The system contains the air *recirculation unit* (3.6.11), a control device and the dust filters.

3.6.7
breathing compressed air unit
air handling device supplying breathable air independent of the atmosphere outside the *cab* (3.1.2) and consisting of:

— compressed air bottles, lines and fittings; or

— lines and fittings providing *breathing air* (3.6.14) to the *operator's station* (3.1.7)

3.6.8
filter casing
casing where gas or dust filters are placed

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3.6.9
ambient air
air of the area where the machine is used

Note 1 to entry: It may contain harmful solids, liquid aerosols and/or gases.

3.6.10
monitoring device
device for monitoring and indicating the operating status and alarms of the protective ventilation unit

Note 1 to entry: It can be a stand-alone unit or an integrated part of the dash panel of the construction machine.

3.6.11
recirculation unit
air handling device which solely filters the air inside the *cab* (3.1.2) without taking fresh air

3.6.12
overpressure
pressure above the atmospheric pressure

3.6.13
filter element
folded pack of filtration media enclosed by a frame

3.6.14
breathing air
filtered *ambient air* (3.6.9) and filtered recirculating air or air from compressed air units

4 Safety requirements and/or protective/risk reduction measures

4.1 General

Mobile road construction machinery shall conform to the safety requirements and/or protective/risk reduction measures of this clause, unless modified by requirements of the relevant specific part of the ISO 20500 series. In addition, the machine shall be designed according to the principles of ISO 12100:2010 for relevant but not significant hazards which are not dealt with by this document.

4.2 Visibility

4.2.1 Operator's field of view

Mobile road construction machines shall be designed so that the operator has sufficient visibility from the operator’s station in relation to the travel and work areas of the machine that are necessary for the intended use of the machine.

Ride-on mobile road construction machines shall meet the following requirements:

— the visibility test shall follow the principles described in ISO 5006:2017;

— for the setup of the machine, see specific parts;

— for ride-on machines with a standing operator, Annex G shall apply additionally;

— for machines designed for multiple operator positions (e.g. standing, seated, centred, left, right, front, rear, up, down), it is sufficient to measure the most unfavourable operating position;

— for evaluation method and performance criteria, see specific parts;

— ISO 5006:2017, Table 1 and Table 2 do not apply.

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