



SLOVENSKI STANDARD
SIST EN 1459-1:2018/oprA1:2018
01-november-2018

Vozila za talni transport - Terenska vozila - Varnostne zahteve in preverjanje - 1. del: Vozila z mehanizmom za dviganje s spremenljivim dosegom - Dopnilo A1

Rough-terrain trucks - Safety requirements and verification - Part 1: Variable-reach trucks

Geländegängige Stapler - Sicherheitstechnische Anforderungen und Verifizierung - Teil 1: Stapler mit veränderlicher Reichweite

Chariots tout-terrain - Prescriptions de sécurité et vérification - Partie 1 : Chariots à portée variable

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ICS:

53.060 Industrijski tovornjaki Industrial trucks

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EUROPEAN STANDARD
NORME EUROPÉENNE
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prA1

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ICS 53.060

English Version

Rough-terrain trucks - Safety requirements and verification - Part 1: Variable-reach trucks

Chariots tout-terrain - Prescriptions de sécurité et vérification - Partie 1 : Chariots à portée variable

Geländegängige Stapler - Sicherheitstechnische Anforderungen und Verifizierung - Teil 1: Stapler mit veränderlicher Reichweite

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 150.

This draft amendment A1, if approved, will modify the European Standard EN 1459-1:2017. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 1459-1:2017/prA1:2018 (E)

European foreword

This document (EN 1459-1:2017/prA1:2018) has been prepared by Technical Committee CEN/TC 150 “Industrial Trucks - Safety”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

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1 Modification to Clause 2, Normative references

Delete reference EN 1175-2:1998+A1:2010.

2 Modification to Clause 3, Terms and definitions

Add new term and definition: "

3.21

technically permissible maximum operating mass

operating mass without the forks and including the heaviest permitted attachment without load".

3 Modifications to 4.4, Electrical and electronic systems

Replace 4.4.1, as follows: "

4.4.1 General

The truck shall comply with the following requirements.

4.4.1.1 Insulation

Any live parts of the battery not connected to the frame shall be insulated.

4.4.1.2 Disconnection

The truck shall be so designed and constructed that the battery can be electrically disconnected with the aid of an easily accessible device (e.g. a switch or connector). Disconnectable battery terminals satisfy this requirement providing the terminals are accessible without the use of a key or tool.

4.4.1.3 Protection of circuits

Control and auxiliary circuits shall be fuse protected against short circuit conditions and dangerous excess current. Several auxiliary circuits in parallel, with combined rated current not exceeding 12 A, may be protected by a single device. Certain circuits may remain connected after batteries disconnection. In this case, specific maintenance instructions shall be provided. The truck shall be so designed and constructed that the battery can be electrically disconnected with the aid of an easily accessible device e.g. a switch or connector. Disconnectable battery terminals satisfy this requirement providing the terminals are easily accessible.

4.4.1.4 Protection of wiring, conductors and electrical components

All conductors not connected to the truck frame shall be either effectively insulated and where necessary protected against thermal and mechanical damage or shall be so placed and safeguarded as to avoid danger when the truck is in its normal operating condition.

4.4.1.5 Cross-sectional area

The cross-sectional area of conductors shall be so selected that during operation of the truck the temperature does not exceed the temperature rating of insulation used.

4.4.1.6 Specification

Copper conductors external to enclosures (excluding short connections between electric or electronic components and wires that are an integral part of a proprietary component) shall be:

- a) flexible;
- b) of cross-sectional area not less than:
 - 1) for control wiring: 0,5 mm²;

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- 2) for signal wiring: 0,3 mm²;
- 3) for data communication wiring and for conductors of adequately supported copper multicore cables and wiring harnesses: 0,08 mm²;
- c) of cross-sectional area not less than 1,0 mm² for single wires not incorporated into a harness or extending from the harness more than 250 mm.

Conductors of other materials shall be selected and sized to give equivalent performance.

4.4.1.7 Protection of wiring and electrical components against fuel leakage

Wiring and electrical components shall be designed, placed or protected to minimize hazards arising from leakage from the fuel system, such as contamination and fire.

4.4.1.8 Mechanical protection

Where wiring passes through metal parts of the frame or enclosures, the holes shall be fitted with insulating bushes or the wiring protected by some other equivalent means.

4.4.1.9 Wiring that flexes

Wiring that flexes during normal operation of the truck functions shall be relieved of mechanical strain at their electrical termination.

Verification of requirements specified in 4.4.1 shall be made by design-check."

Replace 4.4.4 as follows: "

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4.4.4 Identification of wiring

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Wires, cables, terminals, etc. shall be identified by codings in accordance with the electrical diagram included in the service instructions.

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Verification by visual examination and design-check.

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This requirement does not apply to electrical circuits of anti-theft systems, when fitted."

Replace 4.4.5 as follows: "

4.4.5 Protection against electric shock

Exposed high tension ignition terminals on trucks shall be protected against direct contact by barriers or insulated caps.

Verification by design-check."

Replace 4.4.6 as follows: "

4.4.6 Batteries

Batteries shall be restrained to prevent displacement which may give rise to danger in a ventilated location that provides access for maintenance.

Verification by visual examination.

Batteries and/or battery locations shall be designed and built or covered to minimize any hazard to the operator caused by battery acid or acid vapours in the event of overturning the truck.

Verification by design-check.

For marking, see 6.2.10."

Delete 4.4.7 in its entirety.

4 Modification to 4.5.3.3, Failure of power supply

Replace 4.5.3.3 as follows: "

4.5.3.3 Failure of power supply

In the event of an interruption of the power supplied to the steering system (including a dead engine), trucks shall be capable of steering a path. The trucks shall be tested according to the following conditions and shall meet the following requirements:

- the truck shall be loaded to its technically permissible maximum operating mass; tyre pressures and mass distribution between the axles shall conform to the manufacturer's instructions;
- interrupt the power supply to the steering system before starting the spiral movement;
- the truck shall describe a spiral movement at a speed of 10 km/h, starting from the straight ahead position, on a dry, flat road surface offering good tyre adhesion;
- the steering effort on the steering control shall be measured until it reaches the position corresponding to the truck entering a turning circle of 12 m radius (considering the outermost part of the steering wheels);
- the duration of the manoeuvre (time between the moment when the steering control is first operated and the moment when it reaches the position where the measurements are taken) shall not exceed 8 s;
- one manoeuvre shall be made to the left and one to the right;
- the emergency steering effort required to achieve a turning circle of 12 m radius, starting from the straight ahead position, shall not exceed 600 N. Spikes of less than 0,5 s are permitted.

Verification by test.

NOTE For the purpose of this clause, ISO 5010 gives guidance.

4.5.3.4 Air pressure vessels

Simple pressure vessels shall comply with ISO 16528-1 and ISO 16528-2 or similar standards.

NOTE Air pressure vessels are covered by Directive 2014/68/EU.

Verification by design-check and test."

5 Modification to 4.9.2.1, Hydraulic circuit

Replace 4.9.2.1 as follows: "

4.9.2.1 Hydraulic circuit

Hydraulic circuit shall comply with EN ISO 4413:2010 except the following:

- 5.3.2.3,
- 5.3.2.5.2,
- 5.4.6.2,
- 5.4.7.4.3,

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- 7.4.2.1,
- 7.4.5.

Verification by design check.

Hoses, piping and connections subject to internal pressure shall be capable of withstanding, without bursting or permanent deformation, a pressure equal to at least three times of the maximum working pressure. Pipes and hoses shall be so located and restrained to minimize deterioration, sharp edges, and other damage-causing sources. The hydraulic system shall be designed and installed such that its performance and reliability are not reduced or its components damaged as a result of external stresses, vibration or movements of the RTVR truck or its components.

Each component and hose assembly in the hydraulic system shall be identified.

Verification by type-test, design check, measurements and visual examination."

6 Modification to 5.3.3.2, Test procedure

Replace the text of 5.3.3.2 with the following:

"Trucks shall be tested at 100 % of each of these three capacities Q1, Q2, Q3 at maximum engine speed as specified by the manufacturer, from a stationary position with a fully retracted and lowered boom to the relevant position given hereafter and vice versa.

At maximum engine speed as specified by the manufacturer:

- bring Q1 to fully retracted and maximum lifted position;
- bring Q2 to maximum height;
- bring Q3 to maximum reach."

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7 Modification to 5.4, Load holding verification

Add the following NOTE at the end of 5.4: "

NOTE It's not required to modify the truck to simulate a failure to perform the test described in 5.4."

8 Modifications to 6.2.8, Graphical symbol for stored energy components

In the sub title replace "symbol" with "symbols".

Replace the text with: "

A warning label and the method for removing the stored energy from such devices shall be affixed to the component. The symbol as follows shall be used.

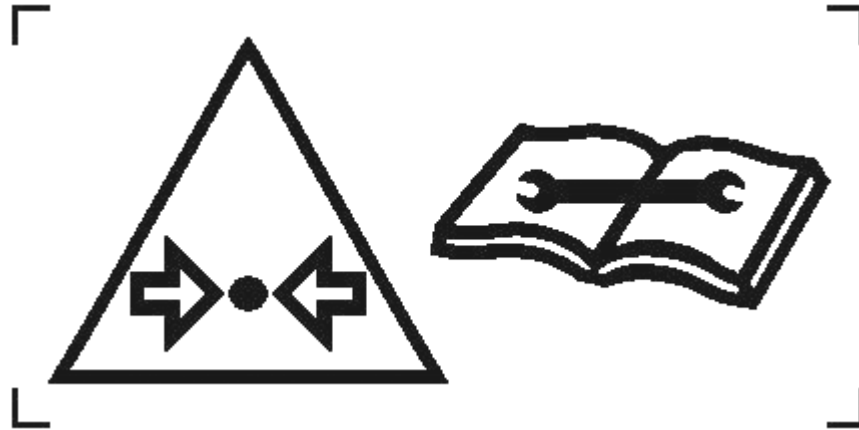


Figure 11 — Sored energy components

Symbol 3317 of ISO 7000 may also be used for pressurized accumulators.

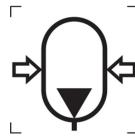


Figure 12 — Pressurized accumulators

Renumber the following figures.

9 Modification to 6.2.10, Graphical symbol for battery disconnection

Replace Figure 13 (now Figure 14) with the following new figure:



10 Modification to 6.3.2.2, Information on routine maintenance of the machine

Replace 6.3.2.2, list j) as follows: "

j) information regarding electric equipment as follows:

- 1) electrical diagram (which shall include nominal battery voltage and, where applicable, frame polarity) with indication of connection points for auxiliary lighting;
- 2) methods and intervals for checking safety systems;
- 3) if the truck, after the commissioning, can be equipped with devices (e.g. radio transmitter, RFID reader, data collection system) that are likely to emit non-ionising radiation which can cause harm to persons, in particular persons with active or non-active implantable medical devices, a warning shall be given in the operating and maintenance instructions. If those auxiliary devices are installed by the user, the user himself shall ensure that the supplier instructions are