SLOVENSKI STANDARD
oSIST prEN 1501-1:2018

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Vozila za zbiranje odpadkov - Splošne in varnostne zahteve - 1. del: Vozila za zbiranje odpadkov z nakladanjem zadaj

Refuse collection vehicles - General requirements and safety requirements - Part 1: Rear loaded refuse collection vehicles

Abfallsammelfahrzeuge - Allgemeine Anforderungen und Sicherheitsanforderungen - Teil 1: Hecklader

Véhicules de collecte de déchets - Exigences générales et exigences de sécurité - Partie 1 : Véhicules de collecte de déchets à chargement arrière

Ta slovenski standard je istoveten z: **prEN 1501-1**

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13.030.40	Naprave in oprema za odstranjevanje in obdelavo odpadkov	Installations and equipment for waste disposal and treatment
43.160	Vozila za posebne namene	Special purpose vehicles

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English Version

Refuse collection vehicles - General requirements and safety requirements - Part 1: Rear loaded refuse collection vehicles

Véhicules de collecte de déchets - Exigences générales et exigences de sécurité - Partie 1 : Véhicules de collecte de déchets à chargement arrière

Abfallsammelfahrzeuge - Allgemeine Anforderungen und Sicherheitsanforderungen - Teil 1: Hecklader

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 183.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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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

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European foreword

This document (prEN 1501-1:2018) has been prepared by Technical Committee CEN/TC 183 “Waste management”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1501-1:2011+A1:2015.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The EN 1501 series consists of the following parts:

— *Refuse collection vehicles — General requirements and safety requirements — Part 1: Rear loaded refuse collection vehicles* (this part);

— *Refuse collection vehicles — General requirements and safety requirements — Part 2: Side loaded refuse collection vehicles*;

— *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 3: Front loaded refuse collection vehicles*;

— *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 4: Noise test code for refuse collection vehicles*;

— *Refuse collection vehicles — General requirements and safety requirements — Part 5: Lifting devices for refuse collection vehicles*.

It will be enforced at the same time as prEN 1501-5:2018 and applied whenever the rear loaded RCV is fitted with a lifting device.

Combinations of a rear loaded refuse collection vehicle with side and /or front loading capability will comply with the corresponding clauses of prEN 1501-2, prEN 1501-3 and prEN 1501-5.

Introduction

This European Standard is a type C standard as stated in EN ISO 12100:2010.

The machinery concerned and the extent to which hazards, hazardous situations and hazard events are covered, are indicated in the scope of this European Standard.

The user's attention is drawn to the possibility that for refuse collection vehicles described within prEN 1501-1, compliance with this European Standard may require the use of an invention covered by patent rights.

By publication of this part of EN 1501, no position is taken with respect to the validity of such claim or of any patent rights in connection therewith. However, each patent holder listed in this annex has filed with the CEN-European Committee for Standardization a statement of willingness to grant a licence under such rights that they hold on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain such a licence.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this C type standard take precedence over the provisions of the other standards.

This European Standard should be read in conjunction with prEN 1501-5 developed for lifting devices which are compatible with the rear loaded refuse collection vehicle specified in this standard.

While producing this European Standard it was assumed that:

— where national road regulations are in conflict with the provisions of this standard, the road regulations are complied with;

— the guidelines issued by the chassis-cab manufacturer have been taken into account;

— truck-chassis related safety items are handled by the chassis manufacturer according to their state of the art;

— the guidelines of the lifting device manufacturer have been taken into account;

— based on measurements of different types of RCV hand-arm vibrations are in general lower than 2,5 m/s^2;

— based on measurements on different types of RCV whole body vibrations are in general lower than 0,5 m/s^2;

— components without specific requirements are designed in accordance with the usual engineering practice and calculation codes, including all failure modes, of sound mechanical and electrical construction and made of materials of adequate strength and of suitable quality;

— components are kept in good repair and working order, so that the required characteristics remain despite wear and tear;

— harmful materials, such as asbestos, are not used as part of the rear loaded RCV;

— only persons who have been appropriately trained will operate the rear loaded RCV.

This European Standard is intended for careful consideration by designers, manufacturers, suppliers and users of rear loaded RCVs.

1 Scope

This document applies to rear loaded refuse collection vehicles (RCV), as defined in 3.2.

This document deals with all significant hazards, hazardous situations and events relevant to the rear loaded RCV, when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer, throughout its foreseeable lifetime, as defined in Clause 4.

This document is applicable to the design and construction of the rear loaded RCV so as to ensure that it is fit for its function and can be operated, adjusted and maintained during its entire lifetime. It is not applicable to the end of life of the rear loaded RCV.

This document describes and defines the safety requirements of rear loaded RCVs excluding the interface tailgate/discharge door with the lifting device(s) and the lifting device(s) as illustrated in Figure A.1.

Safety requirements for the lifting device(s) and the interface with the tailgate/discharge door are defined in prEN 1501-5. Safety requirements for loader cranes are defined in EN 12999.

This European Standard is not applicable to:

— operation in severe conditions, e.g. extreme environmental conditions such as:

  — below –25 °C and above +40 °C temperatures;

  — tropical environment;

  — wind velocity in excess of 75 km/h;

— contaminating environment;

— corrosive environment;

— operation in potentially explosive atmospheres;

— handling of loads the nature of which could lead to dangerous situations (e.g. hot refuses, acids and bases, radioactive materials, contaminated refuse, especially fragile loads, explosives);

— operation on ships.

This document is not applicable to machinery which is manufactured before the date of publication of this document by CEN.

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 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 547-1, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 547-2, *Safety of machinery — Human body measurements — Part 2: Principles for determining the dimensions required for access openings*

EN 574, *Safety of machinery — Two-hand control devices — Functional aspects — Principles for design*

EN 894 (all parts), *Safety of machinery — Ergonomics requirements for the design of displays and control actuators*

EN 1037, *Safety of machinery — Prevention of unexpected start-up*

EN 1501-4:2007, *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 4: Noise test code for refuse collection vehicles*

prEN 1501-5:2018, *Refuse collection vehicles — General requirements and safety requirements — Part 5: Lifting devices for refuse collection vehicles*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61310-1, *Safety of machinery - Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1)*

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

EN ISO 374-1, *Protective gloves against dangerous chemicals and micro-organisms — Part 1: Terminology and performance requirements for chemical risks (ISO 374-1)*

EN ISO 4413, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413)*

EN ISO 4414, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414)*

EN ISO 6743-4, *Lubricants, industrial oils and related products (class L) — Classification — Part 4: Family H (Hydraulic systems) (ISO 6743-4)*

EN ISO 7731, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731)*

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

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

EN ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13849-2, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2)*

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

EN ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

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

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

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

IEC 60417 [online database], *Graphical symbols for use on equipment*

ISO 7000 [online database], *Graphical symbols for use on equipment*

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

UN/ECE R-10, *Regulation No. 10 — Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility*

UN/ECE R-65, *Regulation No. 65 — Uniform provisions concerning the approval of special warning lamps for power-driven vehicles and their trailers*

3 Terms and definitions

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

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
refuse collection vehicle
RCV
vehicle used for the collection and transportation of refuse (e.g. household refuse, bulky refuse, recyclable materials) based on loading via refuse containers or by hand

Note 1 to entry: It consists of a chassis-cab onto which a bodywork is mounted.

3.2
rear loaded RCV
RCV, in which refuse is loaded into the body from the rear

3.3
cab
enclosure mounted on the chassis in front of the bodywork where the operator drives and controls the RCV and where other potential operator(s) can sit

3.4
bodywork
assembly of all components fitted on the chassis-cab of the RCV which includes the body itself

Note 1 to entry: The bodywork can be fixed or interchangeable. The bodywork also includes either a compaction mechanism, a lifting device or (a) footboard(s) or any combination of the three.

3.5
body
part of the bodywork in which the collected refuse is transported

Note 1 to entry: It may be fixed or interchangeable or rotate as part of the compaction mechanism.

Note 2 to entry: To discharge the collected refuse, the body is either tilted or rotated or an ejection system is used.

Note 3 to entry: See 3 in Figure A.1 and 1 in Figure A.2.

3.6
semi-automatic discharge mode
sequence of opening the tailgate and emptying the body with the same hold to run control

3.7
tailgate
rear part of the bodywork connected to the body incorporating a compaction mechanism

Note 1 to entry: It is designed to be opened to discharge the collected refuse from the body

3.8
discharge door
part of the bodywork, connected to the body without compaction mechanism

Note 1 to entry: It is designed to be opened to discharge the collected refuse or recyclable materials.

3.9
hopper
part of the bodywork into which the refuse is loaded either manually or mechanically

3.10
capacity of the hopper
volume of non-compacted refuse the hopper contains up, measured in cubic metres rounded off to one decimal place, when the compaction mechanism is in its fully retracted position

Note 1 to entry: See V2 in Figure A.2.

Note 2 to entry: The additional volume created by the guide flap is V3 of Figure A.2.

3.11
loading edge
perimeter of the loading opening

Note 1 to entry: See Figure A.2 and Figures B.1, B.2 and B.3.

3.12
rave rail
lowest fixed limit of the loading edge or nearest edge in relation to position of the operator

Note 1 to entry: See Figures B.1, B.2 and B.3.

3.13
guide flap
removable or foldable extension to the rave rail

Note 1 to entry: See Figure A.2 and Figure B.2–1.

3.14
manual mode
mechanism achieving either each movement or each sequence of movements by a hold-to-run command

Note 1 to entry: Each sequence of movements means two or more movements in one sequence.

3.15
semi-automatic mode
mechanism achieving either each movement or each sequence of movements by a manual pulse start command

Note 1 to entry: A sequence of movements means two or more movements in one sequence.

3.16
automatic mode
mechanism achieving a sequence of movements by a pulse start command

3.17
compaction mechanism
mechanism used to compact and/or transfer refuse and recyclable materials from the hopper into the body

Note 1 to entry: See for example Figures A.2 and A.3.

3.18
open and closed systems
distinct configurations of the compaction mechanism in relation to its accessibility for the operator

3.18.1
open system
configuration where the operator can reach the hazardous area of the compaction mechanism from the level on which the operator is standing

Note 1 to entry: See Figures B.1 and B.2–1 ground or footboard(s) when fitted.

3.18.2
closed system
configuration where the operator cannot reach the hazardous area of the compaction mechanism from the level on which the operator is standing

Note 1 to entry: See Figures B.2 and B.3 ground or footboard(s) when fitted.

3.19
discharge system
mechanism and movement for emptying the body

EXAMPLE Ejection plate, rotating drum, tipping system, walking floor.

3.19.1
ejection plate
means of emptying the body by moving the ejection plate to the rear after opening the tailgate or the discharge door if needed

3.19.2
rotating drum
means of emptying of the body by rotation of the drum after opening the tailgate or the discharge door if needed

3.19.3
tipping
means of emptying of the body by tilting the body after opening the tailgate or the discharge door if needed

3.20
designated refuse container
refuse container compatible with the lifting device

[SOURCE: prEN 1501-5:2018, 3.15]

3.21
lifting device
mechanism fitted onto the RCV for loading refuse into its body

[SOURCE: prEN 1501-5:2018, 3.2]

3.22
interchangeable refuse container lifting device
refuse container lifting device designed to be capable of being fitted on different designated RCVs provided with one standard interface

Note 1 to entry: Standard interfaces can have mechanical, pneumatic, hydraulic, electrical, dimensional and functional aspects.

[SOURCE: prEN 1501-5:2018, 3.2.1.5]

3.23
interface
connections between two parts and/or systems of the RCV

3.23.1
interface with the lifting device(s)
provisions for power supply, controls and mechanical devices to ensure safe connections between the tailgate or discharge door and its lifting device(s)

Note 1 to entry: See 8 in Figure A.1.

3.23.2
interface chassis-bodywork
provisions for power supply, controls and mechanical devices to ensure safe connections between the bodywork and the chassis

Note 1 to entry: See 7 in Figure A.1.

3.24
danger zone
zone within and/or around machinery in which a person may be exposed to a potential risk to his health or safety

Note 1 to entry: See Annex C.

3.25
operator
person trained to operate the RCV

3.26
working station
location where the RCV is operated during normal use

Note 1 to entry: Inspection, cleaning and maintenance are excluded.

[SOURCE: prEN 1501-5:2018, 3.25]

3.27
footboard
platform situated at the rear of the rear loaded RCV on which the operator(s) can stand for riding

Note 1 to entry: See Figure A.3 and Figure B.4.

3.28
travel movement
unrestricted motorized movement of the RCV

3.29
satellite vehicle
designated refuse collection vehicle that can discharge its collected refuse directly into a RCV

3.30
adaptation frame
framework onto which the refuse container lifting device is fitted

Note 1 to entry: It can be hinged or fixed to the tailgate or to the discharge door.

3.31
transport position
designated position of the equipment during travel movement and all elements of the vehicle are in a position as defined by the manufacturer