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(ICS 43.160)

SINGAPORE STANDARD

Refuse collection vehicles – General requirements and safety requirements

– Part 5: Lifting devices for refuse collection vehicles

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National Foreword

This Singapore Standard was prepared by the Working Group on Waste Collection and Transportation Management set up by the Technical Committee on Circularity of Materials under the purview of the Environment and Resources Standards Committee.

This standard is a revision of SS EN 1501-5:2016. It is an identical adoption of EN 1501-5:2021, “Refuse collection vehicles – General requirements and safety requirements – Part 5: Lifting devices for refuse collection vehicles”, and it is adopted with permission of CEN, Rue de la Science 23 B - 1040 Brussels.

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EUROPEAN STANDARD
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English Version

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

Bennes de collecte de déchets - Exigences générales et
exigences de sécurité - Partie 5 : Lève-conteneurs pour
véhicules de collecte de déchets

Abfallsammelfahrzeuge - Allgemeine Anforderungen
und Sicherheitsanforderungen - Teil 5: Schüttungen für
Abfallsammelfahrzeuge

This European Standard was approved by CEN on 15 February 2021.

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This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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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 (EN 1501-5:2021) has been prepared by Technical Committee CEN/TC 183 “Waste management”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2021 and conflicting national standards shall be withdrawn at the latest by March 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1501-5:2011.

This document has been prepared under a standardization request 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 main changes compared to the previous edition are listed below:

- document has been completely revised and partly restructured;
- European foreword and Introduction have been updated;
- Clause 2, Normative references, have been updated;
- In Clause 3, new terms and definitions have been added and others revised;
- Table 1 has been updated;
- Table 2 “Speed and acceleration” has been added;
- requirements on “lifting devices mounted on rear loaded RCV’s” (5.3), “lifting devices mounted on side and front loaded RCV’s” (5.4), “control systems” (5.10), “field of vision” (5.11), maintenance (5.14), “instruction handbook” (7.2) and many more have been revised;
- Annex A, B and C have been revised.
- Annex ZA has been updated.

EN 1501 consists of the following parts under the general title *Refuse collection vehicles — General requirements and safety requirements*:

- *Part 1: Rear loaded refuse collection vehicles;*
- *Part 2: Side loaded refuse collection vehicles;*
- *Part 3: Front loaded refuse collection vehicles;*
- *Part 4: Noise test code for refuse collection vehicles;*

— *Part 5: Lifting devices for refuse collection vehicles (this part).*

This document will be enforced at the same time as EN 1501-1:2021, EN 1501-2:2021 and EN 1501-3:2021 and applied whenever the RCV is fitted with a lifting device.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document is a type-C standard as stated in EN ISO 12100:2010.

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 organizations, 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 (e.g. trade unions, organizations for people with special needs);
- 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.

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

This European Standard should be read in conjunction with:

- the documents developed for refuse collection vehicles (EN 1501-1:2021, EN 1501-2:2021 and EN 1501-3:2021) which are compatible with the refuse container lifting devices specified in this standard;
- the documents developed for mobile refuse containers according to EN 840:2020 (all parts), for stationary refuse containers according to EN 12574:2017 (all parts) and for selective collection containers according to EN 13071:2019 (all parts) which are compatible with the lifting devices specified in this European Standard.

While producing this standard it was assumed that:

- for RCV the requirements of road traffic regulations apply. Where road traffic regulations are in conflict with the provisions of this standard, the road regulations have priority;
- due to the European regulations on the approval of vehicles for use on public roads, the requirements of UN/ECE R10:2019 for an RCV with regard to EMC applies. Therefore, EMC is not further considered in this standard;
- the guidelines issued by the chassis manufacturer have been taken into account;
- the guidelines of the lifting device manufacturer have been taken into account;

- that based on measurements on different types of RCVs hand-arm vibrations are in general lower than $2,5 \text{ m/s}^2$;
- that based on measurements on different types of RCVs whole-body vibrations are lower than $0,5 \text{ m/s}^2$;
- 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 with 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 RCV's;
- only persons who have been appropriately trained will operate on RCV's.

1 Scope

This document deals with all significant hazards, hazardous situations and events relevant to lifting devices used for the emptying of designated refuse containers into RCVs and their fitting onto the RCVs when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer throughout their foreseeable lifetime as defined in Clause 4.

This document is applicable to the design and construction of the refuse container lifting devices and the mounting of other lifting devices so as to ensure that they are fitted for their function and can be operated, adjusted and maintained during their entire lifetime. It is not applicable to the end of life of the lifting devices.

This document describes and gives the safety requirements of the lifting devices for emptying refuse containers and their interfaces with the corresponding parts of the RCVs and will be used in conjunction with EN 1501-1:2021 for the rear, side and front loaded RCVs. It refers to EN 1501-4:2007 for the noise test code.

This document is not applicable to:

- operation in severe conditions e.g. extreme environmental conditions such as:
 - temperatures below $-20\text{ }^{\circ}\text{C}$ and above $+40\text{ }^{\circ}\text{C}$;
 - tropical environment;
 - wind velocity in excess of 75 km/h ;
- contaminating environment;
- corrosive environment;
- operation in potentially explosive atmospheres;
- lifting and transportation of persons;
- emptying refuse containers other than those manufactured according to EN 840:2020 (all parts), EN 12574:2017 (all parts), EN 13071:2019 (all parts), and those described as paladin, diamond, skip containers;
- loading bulky refuse by means of platform or forks;
- 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;
- fitting and operation on stationary compactors.

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