

**Prügikogumissõidukid ja nendega ühendatud  
tõstemehhanismid. Põhi- ja ohutusnõuded. Osa 3:  
Eestlaadimisega prügikogumissõidukid**

Refuse collection vehicles and associated lifting device  
- General requirements and safety requirements - Part  
3: Front loaded refuse collection vehicles

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1501-3:2008 sisaldab Euroopa standardi EN 1501-3:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 19.05.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.03.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1501-3:2008 consists of the English text of the European standard EN 1501-3:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 19.05.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 19.03.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 43.160

Võtmesõnad:

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ICS 43.160

English Version

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

Bennes de collecte des déchets et leurs lève-conteneurs  
associés - Exigences générales et exigences de sécurité -  
Partie 3: Bennes à chargement frontal

Abfallsammelfahrzeuge und die dazugehörigen  
Schüttungen - Allgemeine Anforderungen und  
Sicherheitsanforderungen - Teil 3: Frontlader

This European Standard was approved by CEN on 12 January 2008.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

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## Foreword

This document (EN 1501-3:2008) 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 2008, and conflicting national standards shall be withdrawn at the latest by September 2009.

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

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 EC Directive(s).

For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are an integral part of this document.

The minimum essential criteria are considered to be of primary importance in providing safe, serviceable, economical, and practical front loaded refuse collection vehicles.

This European Standard is one part of the series of coordinated standards EN 1501 about "Refuse collection vehicles and their associated lifting devices - General requirements and safety requirements" comprising the following parts:

- *Part 1: Rear-end loaded refuse collection vehicles, as amended by A1: Footboards (under revision)*
- *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 (under preparation)*

This European Standard is the third one of a series of standards dealing with specification, design, safety and testing of refuse collection vehicles (RCVs) and their associated lifting devices.

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

## Introduction

This document is a type C standard as stated in EN ISO 12100-1.

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

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

The series of standards should be read in conjunction with the documents developed by CEN/TC 183/WG 1 for mobile waste containers (according to the series of standards EN 840), for stationary waste containers (according to the series of standards EN 12574) and for selective collection containers emptied by the top (Type B of EN 13071) that are compatible with some of the lifting devices specified in this standard (see Figure C.4).

While producing this standard it was assumed that:

- only persons who have been appropriately trained will operate the front loaded RCV;
- the guidelines issued by the chassis manufacturer have been taken into account;
- 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;
- harmful materials, such as asbestos, are not used as part of the machine;
- components are kept in good repair and working order, so that the characteristics, within the specified limits as stated in the maintenance manual, remain despite wear;
- by design of the load bearing elements, a safe operation of the machine is assured for loading ranging from zero to 100 % of the rated capacities;
- the equipment has been designed for operation with an ambient temperature between  $-25^{\circ}\text{C}$  and  $40^{\circ}\text{C}$ ;
- specific uses and operating conditions of the machinery are taken into account by negotiation between the manufacturer and the user (for example: type of waste, extended temperature range, type of driving conditions).

The standard is designed for careful consideration by designers, manufacturers, suppliers and users of the front loaded RCV.

## 1 Scope

This standard applies to front loaded refuse collection vehicles, as defined in 3.2, and specifies their technical requirements.

This standard deals with all significant hazards, hazardous situations and events relevant to the front loaded RCV, when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

This standard part 3 describes and gives the requirements of the front loaded RCV and the associated lifting device(s) and refers to part 4 of this series of standards for the noise test code.

Examples for standard types of front loaded refuse collection vehicles are given in Annex C.

This European Standard is not applicable to:

- operation in severe conditions (e.g. extreme environmental conditions such as: temperatures below  $-25^{\circ}\text{C}$  and above  $40^{\circ}\text{C}$ , corrosive environment, tropical environment, lightning, wind velocity in excess of 75 km/h);
- operation subject to special rules (e.g. potentially explosive atmospheres, contaminating environments);
- transportation of passengers, lifting of persons;
- loading by crane;
- loading by satellite vehicle;
- containers other than defined in EN 840-1 to -4, EN 12574-1 to -3 and type B of EN 13071;
- handling of loads the nature of which could lead to dangerous situations such as hot wastes, acids and bases, radioactive materials, especially fragile loads, explosives.

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

## 2 Normative references

The following referenced documents are indispensable for the application 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 294, *Safety of machinery - Safety distance to prevent danger zones being reached by the upper limbs*

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

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

EN 811, *Safety of machinery - Safety distances to prevent danger zones being reached by the lower limbs*

EN 840-1, *Mobile waste containers - Part 1: Containers with 2 wheels with a capacity up to 400 l for comb lifting devices, dimensions and design*

EN 840-2, *Mobile waste containers - Part 2: Containers with 4 wheels with a capacity up to 1 300 l with flat lid(s), for trunnion and/or comb lifting devices - Dimensions and design*

EN 840-3, *Mobile waste containers - Part 3: Containers with 4 wheels with a capacity up to 1 300 l with dome lid(s), for trunnion and/or comb lifting devices - Dimensions and design*



- EN 840-4, *Mobile waste containers - Part 4: Containers with 4 wheels with a capacity up to 1 700 l with flat lid(s), for wide trunnion or BG- and/or wide comb lifting devices - Dimensions and design*
- EN 842, *Safety of machinery - Visual danger signals - General requirements, design and testing*
- EN 894-1, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 1: General principles for human interactions with displays and control actuators*
- EN 894-2, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 2: Displays*
- EN 894-3, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 3: Control actuators*
- EN 953, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards*
- EN 982, *Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulics*
- EN 983, *Safety of machinery - Safety requirements for fluid power systems and their components - Pneumatics*
- EN 1032, *Mechanical vibration - Testing of mobile machinery in order to determine the vibration emission value*
- EN 1037, *Safety of machinery - Prevention of unexpected start-up*
- EN 1050:1996, *Safety of machinery - Principles for risk assessment*
- EN 1088:1995, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection*
- EN 1501-4, *Refuse collection vehicles and their associated lifting devices - General requirements and safety requirements - Part 4: Noise test code for refuse collection vehicles*
- EN 1837, *Safety of machinery - Integral lighting of machines*
- EN 12574-1, *Stationary waste containers - Part 1: Containers with a capacity up to 10 000 l with flat or dome lid(s), for trunnion, double trunnion or pocket lifting device - Dimensions and design*
- EN 12574-2, *Stationary waste containers - Part 2: Performance requirements and test methods*
- EN 12574-3, *Stationary waste containers - Part 3: Safety and health requirements*
- EN 13071, *Selective waste collection containers - Above-ground mechanically-lifted containers with capacities from 80 l to 5000 l for selective collection of waste*
- EN 13309, *Construction machinery - Electromagnetic compatibility of machines with internal electrical power supply*
- EN 13478, *Safety of machinery - Fire prevention and protection*
- 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 60529:1989)*
- EN 61310-1, *Safety of machinery - Indication, marking and actuation - Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*
- EN ISO 7731, *Ergonomics - Danger signals for public and work areas - Auditory danger signals (ISO 7731:2003)*

EN ISO 11688-1, *Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100-1:2003, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2 *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)*

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 13732-1:2006)*

EN ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850, *Safety of machinery - Emergency stop - Principles for design (ISO 13850:2006)*

EN ISO 14122-2, *Safety of machinery - Permanent means of access to machinery - Part 2: Working platforms and walkways (ISO 14122-2:2001)*

IEC 60417, *Graphical symbols for use on equipment*

ISO 7000, *Graphical symbols for use on equipment - Index and synopsis*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

#### 3.1

##### **refuse collection vehicle (RCV)**

vehicle intended to be used for the collection and transportation of refuse based on loading via waste containers or by hand

NOTE It consists of a chassis with cab onto which the bodywork is mounted. The bodywork includes an integrated or interchangeable body. The bodywork also includes a lifting device and/or a compaction mechanism.

#### 3.2

##### **front loaded RCV**

RCV, as defined in 3.1, where refuse is loaded from the front via waste containers into the hopper/body

NOTE The trajectory of the waste container is over the top of the cab or the front axle, regardless where the waste container is picked up.

#### 3.3

##### **combination with other types of RCVs**

a combination of a front loaded RCV with a rear and/or side loaded RCV

#### 3.4

##### **cab**

enclosure mounted on the chassis in front of the bodywork where the operative drives and controls the front loaded RCV and other operative(s) can sit

#### 3.5

##### **body**

part of the bodywork in which the collected refuse is stored. It may be fixed, interchangeable or rotating