

**Prügikogumissõidukid ja nendega  
ühendatud tõstemehhanismid. Põhi- ja  
ohutusnõuded. Osa 4:  
Prügikogumissõidukite müra mõõtmise  
protokoll**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1501-4:2007 sisaldab Euroopa standardi EN 1501-4:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 22.11.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1501-4:2007 consists of the English text of the European standard EN 1501-4:2007.</p> <p>This document is endorsed on 22.11.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b></p> <p>This European Standard specifies the method for measuring the noise emission which is a significant hazard of refuse collection vehicles (RCVs). Its goal is to obtain, on one hand, the emission sound pressure level at the operator's position(s) and, on the other hand, the sound power level of the RCV during waste collection. It specifies a standardized procedure for measurement and later comparison of RCVs noise emission, consisting of four operating conditions: chassis operation, compaction operation, lifting, tilting and lowering operation of a container and dumping of specified waste into the RCV. Together with information concerning other parameters, the test results obtained in accordance with this standard are also applicable to the evaluation of the hazards generated by noise from RCVs. This standard addresses the uncertainties due to measurement procedures. This standard deals with the noise measurement conditions for the types of RCVs defined and described in the standards of the EN 1501 series.</p>	<p><b>Scope:</b></p> <p>This European Standard specifies the method for measuring the noise emission which is a significant hazard of refuse collection vehicles (RCVs). Its goal is to obtain, on one hand, the emission sound pressure level at the operator's position(s) and, on the other hand, the sound power level of the RCV during waste collection. It specifies a standardized procedure for measurement and later comparison of RCVs noise emission, consisting of four operating conditions: chassis operation, compaction operation, lifting, tilting and lowering operation of a container and dumping of specified waste into the RCV. Together with information concerning other parameters, the test results obtained in accordance with this standard are also applicable to the evaluation of the hazards generated by noise from RCVs. This standard addresses the uncertainties due to measurement procedures. This standard deals with the noise measurement conditions for the types of RCVs defined and described in the standards of the EN 1501 series.</p>
---	---

ICS 17.140.30, 43.160

**Võtmesõnad:**

ICS 17.140.30; 43.160

English Version

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

Bennes de collecte des déchets et leurs lève-conteneurs  
associés - Exigences générales et exigences de sécurité -  
Partie 4 - Code d'essai acoustique des bennes de collecte  
des déchets

Abfallsammelfahrzeuge und die dazugehörigen  
Schüttungen - Allgemeine Anforderungen und  
Sicherheitsanforderungen - Teil 4: Geräuschprüfverfahren  
für Abfallsammelfahrzeuge

This European Standard was approved by CEN on 8 September 2007.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

# Contents

Page

Foreword.....	3
Introduction .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	6
4 Preparation of the RCV for measurements .....	6
4.1 Test environment .....	6
4.2 Choice of the RCV .....	6
4.3 Position of the RCV during measurement .....	6
5 Operating conditions (before and) during measurement .....	6
5.1 RCV conditions .....	6
5.2 Presetting the engine speed .....	6
5.3 Fan speed .....	7
5.4 Selection of operations .....	7
5.5 Chassis operation .....	8
5.6 Compaction system operation .....	8
5.7 Lifting, tilting and lowering of a container operation .....	8
5.8 Dumping of specified waste into the hopper .....	8
6 Noise measurement .....	9
6.1 General .....	9
6.2 Microphone positions .....	9
6.3 Measurement durations .....	9
6.4 Measurements .....	10
7 Determination of the averaged sound power level for a combination of operating conditions .....	11
8 Uncertainties .....	12
8.1 Measurement uncertainties .....	12
8.2 Production uncertainties .....	12
9 Information to be reported .....	12
10 Declaration, labelling and information for use .....	13
Annex A (normative) Information to be reported .....	14
Annex B (normative) Microphone positions .....	15
Annex C (informative) Proposed classification of RCVs for noise measurement purposes (Valid for rear/side/front loaded) .....	17
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC, amended by 98/79/EC .....	18
Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC .....	19

## Foreword

This document (EN 1501-4:2007) 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 April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

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 Annexes ZA and ZB, which are an integral part of this document.

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

- *Part 1: Rear-end loaded refuse collection vehicles*
- *Part 2: Side loaded refuse collection vehicles*
- *Part 3: Front loaded refuse collection vehicles (under preparation)*
- *Part 5: Lifting devices for refuse collection vehicles (under preparation).*

It augments the above mentioned type C standards.

Its purpose is to provide a means for the determination and declaration of noise emission by RCVs falling within the scope of the standards of the EN 1501 series. The determination of noise emission values is a prerequisite for a manufacturer to assess the noise reduction obtained at the design stage.

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

EU Directive 2000/14/EC "Noise Emission in the Environment by Equipment for Use Outdoor" requires manufacturers within the EU and importers from outside the EU to mark and certify RCVs with a guaranteed sound power level.

This European Standard provides a procedure for the measurement and calculation of sound power emitted by RCVs thus enabling manufacturers and importers to mark and certify all three types of RCV in compliance with the above mentioned EU Directive.

This standard also covers the noise information requirements of EU Directive 98/37/EC relating to Machinery for the measurement of the sound pressure levels at the operator's positions.

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

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

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.

## 1 Scope

This European Standard specifies the method for measuring the noise emission, which is a significant hazard of refuse collection vehicles (RCVs).

Its goal is to obtain, on one hand, the emission sound pressure level at the operator's position(s) and, on the other hand, the sound power level of the RCV during waste collection. It specifies a standardized procedure for measurement and later comparison of RCVs noise emission, consisting of four operating conditions: chassis operation, compaction operation, lifting, tilting and lowering operation of a container and dumping of specified waste into the RCV.

Together with information concerning other parameters, the test results obtained in accordance with this standard are also applicable to the evaluation of the hazards generated by noise from RCVs.

This standard addresses the uncertainties due to measurement procedures.

This standard deals with the noise measurement conditions for the types of RCVs defined and described in the standards of the EN 1501 series.

## 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 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 1452-2, *Plastics piping systems for water supply — Unplasticized poly (vinyl chloride) (PVC-U) — Part 2: Pipes*

EN 1501-1, *Refuse collection vehicles and their associated lifting devices - General requirements and safety requirements - Part 1: Rear-end loaded refuse collection vehicles*

EN 1501-2, *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 2: Side loaded refuse collection vehicles*

prEN 1501-3, *Refuse collection vehicles and their associated lifting devices — General requirements and safety requirements — Part 3: Front loaded refuse collection vehicles*

EN ISO 3744:1995, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)*

EN ISO 4871:1996, *Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201:1995, *Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at a work station and at other specified positions - Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*

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