

Energy efficiency of industrial trucks - Test methods -  
Part 4: Variable-reach rough-terrain trucks

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

|                                                                                                                     |                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| See Eesti standard EVS-EN 16796-4:2019 sisaldab Euroopa standardi EN 16796-4:2019 ingliskeelset teksti.             | This Estonian standard EVS-EN 16796-4:2019 consists of the English text of the European standard EN 16796-4:2019.                  |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas                                                   | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. |
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ICS 53.060

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English Version

## Energy efficiency of Industrial trucks - Test methods - Part 4: Variable-reach rough-terrain trucks

Efficacité énergétique des chariots de manutention -  
Méthodes d'essai - Partie 4 : Chariots tout-terrain à  
portée-variable

Energieeffizienz von Flurförderzeugen - Testmethoden  
- Teil 4: Geländegängige Flurförderzeuge mit  
veränderlicher Reichweite

This European Standard was approved by CEN on 30 December 2018.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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

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## European foreword

This document (EN 16796-4:2019) has been prepared by Technical Committee CEN/TC 150 “Industrial Trucks - Safety”, the secretariat of which is held by BSI.

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 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

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.

EN 16796 consists of the following parts, under the general title *'Energy efficiency of Industrial trucks — Test methods'*:

- *Part 1: General*
- *Part 2: Operator controlled self-propelled trucks, towing tractors and burden-carrier trucks*
- *Part 3: Container handling lift trucks*
- *Part 4: Variable-reach rough-terrain trucks*
- *Part 5: Trucks with elevating operator position and trucks specifically designed to travel with elevated loads*

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This document specifies the method of fuel consumption measurement for rough-terrain variable-reach trucks as defined in ISO 5053-1, hereinafter referred to as trucks. It does not apply to slewing trucks having a movement of more than 5° either side of the longitudinal axis.

This part is intended to be used in conjunction with EN 16796-1. Where the requirements of this part differ from that in part 1, requirements in this part 4 will take precedence.

## 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 1459-1, *Rough-terrain trucks - Safety requirements and verification - Part 1: Variable-reach trucks*

EN 16796-1:2016, *Energy efficiency of Industrial trucks - Test methods - Part 1: General*

ISO 5053-1, *Industrial trucks - Terminology and classification - Part 1: Types of industrial trucks*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5053-1, EN 1459-1 and EN 16796-1 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

#### **eco-mode**

system designed to improve fuel consumption and/or efficiency

## 4 Test conditions

The test conditions are given in Clause 4 of EN 16796-1:2016.

## 5 Measurement procedure

### 5.1 General

EN 16796-1 applies together with the following clauses that are describing specific information for the trucks.

Where fuel usage cannot be accurately measured directly from the fuel tank as per EN 16796-1:2016, 5.4, the manufacturer may choose to indirectly measure fuel usage by the introduction of a secondary removable fuel tank to calculate fuel usage by mass after the tests are performed.

Where trucks are fitted with an eco-mode operated by the user and intended to reduce fuel consumption, a comparative test shall be carried out showing with and without eco-mode operation.