

MAASTIKUSUUTLIKUD LAADURID. OHUTUSNÕUDED JA  
VASTAVUSKONTROLL. OSA 5: LISASEADME LIIDES

Rough-terrain trucks - Safety requirements and  
verification - Part 5: Attachment interface

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 1459-5:2020 sisaldab Euroopa standardi EN 1459-5:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 1459-5:2020 consists of the English text of the European standard EN 1459-5:2020.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.12.2020.	Date of Availability of the European standard is 23.12.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 53.060

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD

EN 1459-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2020

ICS 53.060

English Version

## Rough-terrain trucks - Safety requirements and verification - Part 5: Attachment interface

Chariots tout-terrain - Prescriptions de sécurité et vérification - Partie 5 : Interface de l'accessoire

Geländegängige Stapler - Sicherheitstechnische Anforderungen und Verifizierung - Teil 5: Zugehörige Schnittstellen

This European Standard was approved by CEN on 23 November 2020.

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.

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.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>3</b>
<b>Introduction</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>7</b>
<b>4 Requirements</b> .....	<b>8</b>
<b>4.1 Manual connection/disconnection</b> .....	<b>8</b>
<b>4.2 Unintentional detachment</b> .....	<b>8</b>
<b>4.3 Unintended movement of the attachment</b> .....	<b>8</b>
<b>4.4 Load-clamping attachment interface</b> .....	<b>9</b>
<b>4.5 Interface hydraulic system</b> .....	<b>9</b>
<b>4.6 Design</b> .....	<b>9</b>
<b>4.7 Mechanical connection of the attachment to the carriage</b> .....	<b>9</b>
<b>4.7.1 General</b> .....	<b>9</b>
<b>4.7.2 Fastening and locking</b> .....	<b>9</b>
<b>4.7.3 Control for powered release of the fastening</b> .....	<b>10</b>
<b>4.8 Fixing of the attachment on the forks</b> .....	<b>10</b>
<b>5 Verification of requirements and safety measures</b> .....	<b>10</b>
<b>6 Information for use</b> .....	<b>10</b>
<b>6.1 General</b> .....	<b>10</b>
<b>6.2 Instruction handbook</b> .....	<b>10</b>
<b>6.2.1 General</b> .....	<b>10</b>
<b>6.2.2 Operating and maintenance instructions</b> .....	<b>11</b>
<b>6.3 Marking</b> .....	<b>11</b>
<b>Annex A (informative) List of significant hazards</b> .....	<b>12</b>
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered</b> .....	<b>21</b>
<b>Bibliography</b> .....	<b>24</b>

## European foreword

This document (EN 1459-5:2020) 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 June 2021, and conflicting national standards shall be withdrawn at the latest by June 2021.

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 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 2006/42/EC.

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

EN 1459 consists of the following parts, under the general title *Rough-terrain trucks — Safety requirements and verification*:

- *Part 1: Variable-reach trucks;*
- *Part 2: Slewing variable-reach trucks;*
- *Part 3: Interface between the variable-reach truck and the work platform;*
- *Part 4: Additional requirements for variable-reach trucks handling freely suspended loads;*
- *Part 5: Attachment interface;*
- *Part 6: Application of EN ISO 13849-1 to slewing and non-slewing variable-reach rough-terrain trucks;*
- *Part 8: Variable-reach tractors.*

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.

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.

All quantities are in metric units.

### *Tools*

Being excluded from interchangeable equipment according to Directive 2006/42/EC (as amended) Article 2 b), tools as such are not subject to the Machinery Directive. Characteristics of tools which may be fitted to the machinery can be found in the instructions for use given by the truck manufacturer according to 1.7.4.2 (n) Directive 2006/42/EC.

### *Interchangeable equipment*

An interchangeable equipment is not part of the truck, according to Directive 2006/42/EC (as amended) Article 2 b), because it is assembled with the truck by the operator himself in order to change its function or attribute a new function. The instructions for machinery allow several uses intended by design depending on the equipment used and the instructions for the interchangeable equipment contain the information necessary for safe assembly and use of the basic machinery and the interchangeable equipment that can be fitted (see Directive 2006/42/EC, 3.6.3.2).

The following items should be taken into account:

- a) identification of a specific point on the truck for the installation of the interchangeable equipment, i.e. truck-related side of the interface (hereafter referred to as “interface”): the carriage;
- b) interface safety-related design and coupling performances:

- avoidance of unintentional displacements: locking (normal operation condition and truck power supply failure condition);
  - strength requirements: calculation and static and dynamic test;
  - controls;
  - information.
- c) interchangeable equipment compatibility in order to be installable on the truck, i.e. choice of approved types of interchangeable equipment, correct usage in combination with the truck, minimum safety requirements.

Guide to application of the Machinery Directive 2006/42/EC states that “The manufacturer of the interchangeable equipment must ensure that the combination of the interchangeable equipment and the basic machinery with which it is intended to be assembled fulfils all the relevant essential health and safety requirements of Annex I and must carry out the appropriate conformity assessment procedure”.

This document considers primary function of the truck the load handling, stacking and lifting function, e.g. with forks.

## 1 Scope

This document specifies requirements for the truck side of the attachment interface of rough-terrain non-slewing and slewing variable reach trucks (hereafter referred to as “trucks”) dealt with in EN 1459-1:2017+A1:2020, EN 1459-2:2015+A1:2018 and EN 1459-4:2020.

This document covers the interface for the attachments fitted to the telescopic boom carriage or mounted on the forks when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer. This document does not cover:

- interface for interchangeable equipment designed for lifting person(s) (covered by EN 1459-3:2015);
- interface for equipment for container handling (e.g. spreader);
- interface for equipment permanently installed on the machine and not intended to be removed by the user.

NOTE In this case, equipment becomes part of the truck.

This document does not give requirements for the completed assembly of a truck fitted with an attachment. This document does not address risks to parts of the truck other than the interface with the attachment.

This document is not applicable to interfaces manufactured before the date of its publication.

## 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 1459-1:2017+A1:2020, *Rough-terrain trucks - Safety requirements and verification - Part 1: Variable-reach trucks*

EN 1459-2:2015+A1:2018, *Rough-terrain trucks - Safety requirements and verification - Part 2: Slewing variable-reach trucks*

EN 1459-3:2015, *Rough-terrain trucks - Safety requirements and verification - Part 3: Interface between the variable-reach truck and the work platform*

EN 1459-4:2020, *Rough terrain trucks - Safety requirements and verification - Part 4: Additional requirements for variable reach trucks handling suspended loads*

EN 62061:2005/A2:2015<sup>1</sup> *Safety of machinery - Functional safety of safety-related electrical, Electronic and programmable electronic control systems*

EN ISO 2867:2011, *Earth-moving machinery - Access systems (ISO 2867:2011)*

EN ISO 3411:2007, *Earth-moving machinery - Physical dimensions of operators and minimum operator space envelope (ISO 3411:2007)*

---

<sup>1</sup> As impacted by EN 62061:2005/A1:2013 and EN 62061:2005/A2:2015.



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

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

ISO 5053-1:2020, *Industrial trucks - Terminology and classification - Part 1: Types of industrial trucks*

ISO 7000:2019, *Graphical symbols for use on equipment - Registered symbols*

ISO 15870:2000, *Powered industrial trucks - Safety signs and hazard pictorials - General principles*

### **3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 1459-1:2017+A1:2020, EN 1459-2:2015+A1:2018, EN 1459-4:2020, ISO 5053-1:2020 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 <https://www.iso.org/obp>

#### **3.1 tool**

attachment which does not change the primary function of the truck

#### **3.2 interchangeable equipment**

device assembled with the truck by the operator which changes the primary function of the truck or attributes a new function to the truck

Note 1 to entry: Interchangeable equipment when assembled does not change the designation of the machinery as variable-reach rough-terrain truck.

#### **3.3 interface**

devices and method to mechanically assemble and, if needed, hydraulically and/or electrically connect the attachment to the truck

#### **3.4 attachment**

tool or interchangeable equipment

#### **3.5 carriage**

specific part of the boom for mounting attachments to the truck