

MULLATÖÖMASINAD. OHUTUS. OSA 13: RULLIDELE  
ESITATAVAD NÕUDED

Earth-moving machinery - Safety - Part 13:  
Requirements for rollers

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 474-13:2022 sisaldab Euroopa standardi EN 474-13:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 474-13:2022 consists of the English text of the European standard EN 474-13:2022.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 30.03.2022.	Date of Availability of the European standard is 30.03.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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 53.100

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

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

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: 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 and Accreditation

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 and Accreditation.

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

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

ICS 53.100

English Version

## Earth-moving machinery - Safety - Part 13: Requirements for rollers

Engins de terrassement - Sécurité - Partie 13 :  
Prescriptions applicables aux compacteurs

Erdbaumaschinen - Sicherheit - Teil 13: Anforderungen  
für Walzen

This European Standard was approved by CEN on 14 February 2022.

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>5</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 Safety requirements and/or protective/risk reduction measures</b> .....	<b>8</b>
<b>4.1 General</b> .....	<b>8</b>
<b>4.2 Operator's station</b> .....	<b>9</b>
<b>4.3 Operator's controls and indicators</b> .....	<b>9</b>
<b>4.4 Brake systems for travelling</b> .....	<b>10</b>
<b>4.5 Visibility</b> .....	<b>10</b>
<b>4.6 Noise</b> .....	<b>10</b>
<b>4.7 Protective measures and devices</b> .....	<b>10</b>
<b>4.8 Fuel tanks, DEF/urea tanks, hydraulic tanks and pressure vessels</b> .....	<b>12</b>
<b>4.9 Maintenance</b> .....	<b>12</b>
<b>5 Verification of safety requirements and/or protective/risk reduction measures</b> .....	<b>12</b>
<b>6 Information for use</b> .....	<b>13</b>
<b>6.1 General</b> .....	<b>13</b>
<b>6.2 Machine safety labels</b> .....	<b>13</b>
<b>6.3 Operator's manual</b> .....	<b>14</b>
<b>Annex A (informative) List of significant hazards</b> .....	<b>16</b>
<b>Annex B (normative) Remote controls for pedestrian-controlled rollers</b> .....	<b>21</b>
<b>Annex C (normative) Measurement of the hand-arm vibration of hand-guided vibratory rollers</b> .....	<b>22</b>
<b>Annex D (normative) Noise test code for vibratory rollers</b> .....	<b>30</b>
<b>Annex E (normative) Noise test code for non-vibrating rollers</b> .....	<b>40</b>
<b>Annex F (informative) Illustrations</b> .....	<b>47</b>
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC machinery, and amending Directive 95/16/EC (recast) [2006 L157] aimed to be covered</b> .....	<b>50</b>
<b>Bibliography</b> .....	<b>55</b>

## European foreword

This document (EN 474-13:2022) has been prepared by Technical Committee CEN/TC 151 “Construction equipment and building material machines - Safety”, 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 2022, and conflicting national standards shall be withdrawn at the latest by March 2024.

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 partially supersedes EN 500-4:2011.<sup>1</sup>

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.

For bibliographic references, see EN 474-1:2022.

EN 474 “Earth-moving machinery — Safety” comprises the following parts:

- Part 1: General requirements
- Part 2: Requirements for tractor-dozers
- Part 3: Requirements for loaders
- Part 4: Requirements for backhoe-loaders
- Part 5: Requirements for hydraulic excavators
- Part 6: Requirements for dumpers
- Part 7: Requirements for scrapers
- Part 8: Requirements for graders
- Part 9: Requirements for pipelayers
- Part 10: Requirements for trenchers
- Part 11: Requirements for earth and landfill compactors
- Part 12: Requirements for cable excavators
- Part 13: Requirements for rollers

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

---

<sup>1</sup> This document supersedes EN 500-4 together with prEN ISO 20500-4. Stage at time of publication of this document: prEN ISO 20500-4:2022.

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.

This document is a preview generated by EVS

## 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 in 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.

## 1 Scope

This document together with EN 474-1:2022 deals with all significant hazards, hazardous situations and events relevant to rollers when used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Annex A) associated with the whole lifetime of the machine as described in EN ISO 12100:2010, 5.4.

The requirements of this document are complementary to the common requirements formulated in EN 474-1:2022. This document does not repeat the requirements of EN 474-1:2022 but supplements or modifies the requirements for rollers.

This document does not provide requirements for main electrical circuits and drives of machinery when the primary source of energy is an external electrical supply.

The following significant and relevant hazards are not covered in this document:

- Laser;
- Lightning.

This document does not provide performance requirements for safety related functions of control system(s).

This document does not deal with towing of trailers.

This part of EN 474:2022 is not applicable for seated ride-on operated rollers with a drum width less than nominal 0,8 m.

This document is not applicable to rollers which are manufactured before the date of publication of this document by CEN.

## 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 474-1:2022, *Earth-moving machinery — Safety — Part 1: General requirements*

EN ISO 3164:2013, *Earth-moving machinery — Laboratory evaluations of protective structures — Specifications for deflection-limiting volume (ISO 3164:2013)*

EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

EN ISO 6165:2012, *Earth-moving machinery — Basic types — Identification and terms and definitions (ISO 6165:2012)*

EN ISO 6682:2008, *Earth-moving machinery — Zones of comfort and reach for controls (ISO 6682:1986, including Amd 1:1989)*

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

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design (ISO 13850:2015)*

EN ISO 20643:2008, *Mechanical vibration — Hand-held and hand-guided machinery — Principles for evaluation of vibration emission (ISO 20643:2005)*

ISO 5006:2017, *Earth-moving machinery — Operator's field of view — Test method and performance criteria*

ISO 5353:1995, *Earth-moving machinery, and tractors and machinery for agriculture and forestry - Seat index point*

ISO 5805:1997, *Mechanical vibration and shock — Human exposure — Vocabulary*

ISO 10570:2004, *Earth-moving machinery — Articulated frame lock — Performance requirements*

ISO 15817:2012, *Earth-moving machinery — Safety requirements for remote operator control systems*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 474-1:2022, EN ISO 6165:2012, EN ISO 12100:2010 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

#### 3.1

##### **roller**

self-propelled or towed machine having a compaction device, consisting of one or more metallic cylindrical bodies (drums) or rubber tyres, which compacts material such as crushed rock, earth, asphalt or gravel through a rolling and/or vibrating action of the compaction device

[SOURCE: EN ISO 6165:2012, 4.10]

Note 1 to entry: The wheel bodies (metallic cylinders) can be rubber-coated or fitted with pads.

#### 3.1.1

##### **non-vibrating (static) roller**

roller that performs compaction by its static weight

#### 3.1.2

##### **vibrating roller**

roller that have a vibrating and/or oscillating mechanism in at least one drum

##### 3.1.2.1

##### **single-drum roller**

self-propelled roller with one vibrating metallic cylindrical body (drum) and two rubber tyres

##### 3.1.2.2

##### **tandem roller**

self-propelled roller with one metallic cylindrical body (drum) in the front and one in the rear

Note 1 to entry: They can be either static or vibrating and they can be split.