SLOVENSKI STANDARD
oSIST prEN 474-1:2017

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Stroji za zemeljska dela - Varnost - 1. del: Splošne zahteve

Earth-moving machinery - Safety - Part 1: General requirements

Engins de terrassement - Sécurité - Partie 1 : Prescriptions générales

Ta slovenski standard je istoveten z: **prEN 474-1**

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English Version

Earth-moving machinery - Safety - Part 1: General requirements

Engins de terrassement - Sécurité - Partie 1 : Prescriptions générales

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 151.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 474-1:2017) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 474-1:2006+A4:2013.

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 Annex ZA, which is an integral part of this document.

prEN 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

For specific machines covered by other parts of the standard, this European Standard is intended for use in combination with relevant other parts of the series.

Introduction

This part of prEN 474 is a type C standard as stated in EN ISO 12100.

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

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 general safety requirements for earth-moving machinery, hereinafter also referred to as machines, described in EN ISO 6165:2012, except horizontal directional drill.

NOTE 1 Horizontal directional drills are covered by the EN 16228 series.

This European Standard gives the common safety requirements for earth-moving machinery families (see EN ISO 6165:2012, 3.4) and is intended to be used in conjunction with relevant parts of prEN 474 parts 2 to 13. These machine specific parts (prEN 474-2 to -13) do not repeat the requirements from prEN 474-1:2017, but add or replace the requirements for the family in question.

NOTE 2 The requirements specified in this part of the standard are common to two or more families of earth-moving machinery.

This part gives specific requirements for demolition machinery.

Specific requirements in prEN 474 parts 2 to 13 take precedence over the respective requirements of prEN 474-1:2017.

For derivative machinery the parts of the standard that cover the specific functions and applications are applicable, e.g. a compact loader also used as a trencher the relevant requirements of prEN 474 parts 1, 3 and 10 are applicable.

The standard also covers general requirements for attachments intended to be used with earth-moving machinery families covered in the scope.

Except for part 12 this European Standard does not deal with the electrical hazards related to the main electrical circuits and drives of machinery when the primary source of energy is electrical.

This European Standard does not deal with towing of trailers.

This European Standard deals with all significant hazards, hazardous situations and events relevant to earth-moving machinery, when used as intended and under conditions foreseen but also taking into account any reasonably foreseeable misuse thereof (see Clause 4). This European Standard specifies the appropriate technical measures to reduce risks arising from the significant hazards, hazardous situations and events during the whole foreseeable lifecycle of the machinery.

This European Standard is not applicable to earth-moving machinery, which are manufactured before the date of publication of this European Standard by CEN.

NOTE 3 For travelling on public roads, national traffic regulations apply (e.g. braking, steering, lighting, towing etc.) until harmonised requirements are available.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 286-2:1992, *Simple unfired pressure vessels designed to contain air or nitrogen — Part 2: Pressure vessels for air braking and auxiliary systems for motor vehicles and their trailers*

prEN 474-11:2017, *Earth-moving machinery — Safety — Part 11: Requirements for earth and landfill compactors*

prEN 474-12:2017, *Earth-moving machinery — Safety — Part 12: Requirements for cable excavators*

EN 356:1999, *Glass in building — Security glazing — Testing and classification of resistance against manual attack*

EN 1677-2:2000+A1:2008, *Components for slings — Safety — Part 2: Forged steel lifting hooks with latch, Grade 8*

EN 12643:2014, *Earth-moving machinery — Rubber-tyred machines — Steering requirements (ISO 5010:1992 modified)*

EN 13309:2010, *Construction machinery — Electromagnetic compatibility of machines with internal power supply*

EN 60204-1:2006+A1:2009, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005+A1:2008, modified)*

EN 60529:1991+A2:2013, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989+A2:2013)*

EN 61310-1:2008, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)*

EN ISO 2860:2008, *Earth-moving machinery — Minimum access dimensions (ISO 2860:1992)*

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

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

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

EN ISO 3449:2008, *Earth-moving machinery — Falling-object protective structures — Laboratory tests and performance requirements (ISO 3449:2005)*

EN ISO 3450:2011, *Earth-moving machinery — Wheeled or high-speed rubber-tracked machines — Performance requirements and test procedures for brake systems (ISO 3450:2011)*

EN ISO 3457:2008, *Earth-moving machinery — Guards — Definitions and requirements (ISO 3457:2003)*

EN ISO 3471:2008, *Earth-moving machinery — Roll-over protective structures — Laboratory tests and performance requirements (ISO 3471:2008)*

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 5353:1998, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point (ISO 5353:1995)*

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 6683:2008, *Earth-moving machinery — Seat belts and seat belt anchorages — Performance requirements and tests (ISO 6683:2005)*

EN ISO 7096:2008, *Earth-moving machinery — Laboratory evaluation of operator seat vibration (ISO 7096:2000)*

EN ISO 9606-1:2013, *Qualification testing of welders — Fusion welding — Part 1: Steels (ISO 9606-1:2012 including Cor 1:2012)*

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

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

EN ISO 13732-1:2008, *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 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2015)*

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

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 14122-1:2016, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2016)*

EN ISO 14122-2:2016, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2016)*

EN ISO 14122-3:2016, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2016)*

EN ISO 14122-4:2016, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2016)*

ISO 3795:1989, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-2:2016, *Graphical symbols — Safety colours and safety signs — Part 2: Design principles for product safety labels*

ISO 3864-3:2012, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 3864-4:2011, *Graphical symbols — Safety colours and safety signs — Part 4: Colorimetric and photometric properties of safety sign materials*

ISO 4250-3:2011, *Earth-mover tyres and rims — Part 3: Rims*

ISO/FDIS 5006:2016, *Earth-moving machinery — Operator's field of view — Test method and performance criteria*

ISO 6011:2003, *Earth-moving machinery — Visual display of machine operation*

ISO 6014:1986, *Earth-moving machinery — Determination of ground speed*

ISO 6016:2008, *Earth-moving machinery — Methods of measuring the masses of whole machines, their equipment and components*

ISO 6395:2008, *Earth-moving machinery — Determination of sound power level — Dynamic test conditions*

ISO 6396:2008+Cor.1:2009, *Earth-moving machinery — Determination of emission sound pressure level at operator's position — Dynamic test conditions*

ISO 6405-1:2004+Amd 1:2011, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 6405-2:1993+Amd 2:2004, *Earth-moving machinery — Symbols for operator controls and other displays — Part 2: Specific symbols for machines, equipment and accessories*

ISO 6749:1984, *Earth-moving machinery — Preservation and storage*

ISO 6750:2005, *Earth-moving machinery — Operator's manual — Content and format*

EN ISO 7010:2012, *Graphical symbols — Safety colours and safety signs — Registered safety signs (ISO 7010:2011)*

ISO 8643:1997, *Earth-moving machinery — Hydraulic excavator and backhoe loader boom-lowering control device — Requirements and tests*

ISO 9244:2008+A1:2016, *Earth-moving machinery — Safety signs and hazard pictorials — General principles*

ISO 9533:2010, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria*

ISO 10261:1/Amd 1:2015, *Earth-moving machinery — Product identification numbering system / Amendment 1*

ISO 10262:1998+Cor 1:2009, *Earth-moving machinery — Hydraulic excavators — Laboratory tests and performance requirements for operator protective guards*