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Agricultural and forestry machinery - Safety of log splitters - Part 1: Wedge splitters

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Agricultural and forestry machinery - Safety of log splitters - Part 1: Wedge splitters

Matériel agricole et forestier - Sécurité des fendeuses de bûches - Partie 1 : Fendeuses à coin

Land- und Forstmaschinen - Sicherheit von Holzspaltmaschinen - Teil 1: Keilspaltmaschinen

This European Standard was approved by CEN on 2 October 2016.

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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 609-1:2017) has been prepared by Technical Committee CEN/TC 144 “Tractors and machinery for agriculture and forestry”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by June 2018.

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 supersedes EN 609-1:1999+A2:2009.

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 2006/42/EC, see informative Annex ZA, which is an integral part of this document.

EN 609, *Agricultural and forestry machinery — Safety of log splitters*, is currently composed with the following parts:

— *Part 1: Wedge splitters*;

— *Part 2: Screw splitters*.

The new edition of this standard proposes a new specific approach, which evaluates the dangers of specifically this type of machine. Machines have been divided into four categories, which are machines for short logs or long logs with splitting direction of horizontal or vertical to reflect the differences concerning safety issues.

The main changes in this new edition are the following:

— four (4) different machine categories, which all have machine specific safety requirements and options (Horizontal and Vertical – Long logs and Short logs);

— more specific interpretation of safety distances for these specific types of machines (EN 13857 and machine specific distances);

— specific requirements for log handling, which includes holding before, during and after the splitting, but also log lifting;

— improved ergonomic requirements, which consider the actual use of the machine;

— requirements for AOPD;

— requirements for hauling winches that can be, and often are, attached to the wedge splitters;

— new tests and verifications, how to interpret the standard.

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..

Introduction

The structure of safety standards in the field of machinery is as follows:

a) type-A standards (basic standards) giving basic concepts, principles for design, and general aspects that can be applied to machinery;

b) type-B standards (generic safety standards) dealing with one or more safety aspects or one or more types of safeguards that can be used across a wide range of machinery:

   1) type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

   2) type-B2 standards on safeguards (e.g. two-hand control device, interlocking devices, pressure-sensitive devices, guards);

c) type-C standards (machinery safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

This document is a type “C” standard as defined 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 and events are covered are indicated in the scope of this document.

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 other standards, for machines that have been designed and built in accordance with the requirements of the provisions of this type C standard.

1 Scope

This European Standard specifies the safety requirements, and their verification for the design and construction of horizontal and vertical wedge splitters, designed for splitting logs for firewood, irrespective of the nature of the power source used. This standard deals with wedge splitters that are designed so that the splitting operation is activated by one person only, however it is foreseeable that other operators may be working with the machine e.g. for loading or unloading. In addition, it specifies the type of information on safe working practices to be provided by the manufacturer.

This document deals with all the significant hazards, hazardous situations and hazardous events relevant to these machines when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Table 1).

This document is not applicable to machines that are designed for both cutting into length for splitting and splitting for firewood.

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

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 349:1993+A1:2008, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

EN 574:1996+A1:2008, *Safety of machinery - Two-hand control devices - Functional aspects - Principles for design*

EN 691-1:2012, *Safety of woodworking machines - Part 1: Common requirements*

EN 894-1:1997+A1:2008, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 1: General principles for human interactions with displays and control actuators*

EN 894-3:2000+A1:2008, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 3: Control actuators*

EN 12965:2003+A2:2009, *Tractors and machinery for agriculture and forestry - Power take-off (PTO) drive shafts and their guards - Safety*

EN 14492-1:2006+A1:2009, *Cranes - Power driven winches and hoists - Part 1: Power driven winches*

EN 60204-1:2006, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2006)*

EN 60529:1991[1)], *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 61496-1:2013, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:2012)*

1) EN 60529:1991 is impacted by the stand-alone amendments EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013 and the corrigendum EN 60529:1991/corrigendum May 1993.

EN 61496-2:2013, *Safety of machinery - Electro-sensitive protective equipment - Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2013)*

EN ISO 4254-1:2015, *Agricultural machinery - Safety - Part 1: General requirements (ISO 4254-1:2013)*

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

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)*

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

EN ISO 13855:2010, *Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

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 14119:2013, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection (ISO 14119:2013)*

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

IEC 60309 (all parts), *Plugs, socket-outlets and couplers for industrial purposes*

ISO 3767-1:1998 [2)], *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 3767-2:2016, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery*

ISO 11684, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

2) ISO 3767-1:1998 is impacted by the stand-alone amendments ISO 3767-1:1998/Amd 1 2008 and ISO 3767-1:1998/Amd 2 2012.