

Safety of machinery - Guidance for the application of ergonomics standards in the design of machinery

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NATIONAL FOREWORD

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English Version

Safety of machinery - Guidance for the application of
ergonomics standards in the design of machinery

Sécurité des machines - Guide pour l'application des
normes relatives à l'ergonomie dans la conception des
machines

Sicherheit von Maschinen - Leitfaden für die Anwendung
von Ergonomie-Normen bei der Gestaltung von Maschinen

This European Standard was approved by CEN on 11 September 2011.

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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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Foreword

This document (EN 13861:2011) has been prepared by Technical Committee CEN/TC 122 “Ergonomics”, 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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13861:2002.

This document is intended to provide guidance for standardisers and manufacturers seeking to deal with the ergonomic requirements defined in EN ISO 12100:2010, 6.2.8, 6.3.2 and 5.3.2.

During the development of this document the Technical Committee has referred to the recommendations made within CEN/CENELEC Guide 6 to address the specific needs of older persons and persons with disabilities.

Annex A is normative; Annexes B, C and D are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The designer of machinery is under an obligation to assess the risks during all phases of the life cycle of the machinery (see EN ISO 12100:2010, Clause 4). This includes knowledge and experience of the design, use, incidents, accidents and harm.

This European Standard elaborates EN ISO 12100:2010, Annex B as far as ergonomics are concerned. This standard refers to European and International ergonomics Standards in the various relevant fields.

The standards for ergonomic design of machinery, as referred to in this document, can help to avoid or reduce numerous hazards and risks, as assessed at the design stage, whilst considering the intended use, the expected use and the foreseeable misuse of the machinery.

1 Scope

This European Standard provides a methodology to achieve a coherent application of various ergonomics standards for the design of machinery. This standard presents a step model calling upon specific standards. To this end, Annex A shows a reference table with relation between hazards as described in EN ISO 12100:2010 and applicable B-standards related to ergonomics.

This European Standard can only be used in combination with other relevant ergonomics standards.

This European Standard provides guidance where no relevant or suitable ergonomics clauses in C-type standards are available.

This European Standard may also be used for incorporating ergonomics in the drafting of C-type standards (see Annex C for further information).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

EN 614-1, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 614-2, *Safety of machinery — Ergonomic design principles — Part 2: Interactions between the design of machinery and work tasks*

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

CEN Guide 414:2004, *Safety of machinery — Rules for the drafting and presentation of safety standards*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply:

3.1

ergonomics **human factors**

scientific discipline concerned with the understanding of the interactions among human and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance (IEA¹⁾, 2000)

NOTE Adapted from prEN ISO 26800:2011.

3.2

machinery

machine

assembly, fitted with or intended to be fitted with a drive system consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application

1) International Ergonomics Association.