ILNAS

Institut luxembourgeois de la normalisation
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des produits et services

ILNAS-EN 614-1:2006+A1:2009

Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles

Sécurité des machines - Principes ergonomiques de conception - Partie 1: Terminologie et principes généraux

Sicherheit von Maschinen - Ergonomische Gestaltungsgrundsätze - Teil 1: Begriffe und allgemeine Leitsätze

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National Foreword

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 614-1:2006+A1

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English Version

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This European Standard was approved by CEN on 13 December 2008.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 614-1:2006+A1:2009) 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of an identical text or by endorsement, at the latest by July 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-12-13.

This European Standard supersedes [A1] EN 614-1:2006 [A1].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

[A1] For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral parts of this European Standard.

EN 614 consists of the following Parts, under the general title Safety of machinery – Ergonomic design principles:

– Part 1: Terminology and general principles

– Part 2: Interactions between the design of machinery and work tasks. [A1]

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, 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 United Kingdom.

Introduction

Ergonomically designed work systems enhance safety, improve human working and living conditions and counteract adverse effects on human health. Also they usually improve the operator-machine system performance and reliability. In this European Standard the term "ergonomics" refers to a multidisciplinary field of science and its application. Applying ergonomics to the design of work systems, especially where the design of machinery is concerned, ensures that human capabilities, skills, limitations and needs are taken into account.

The work system includes operators, job design, work equipment (e.g. machinery), work space, work environment, work process and the interactions between them. It can vary in complexity from a workshop with a single operator using hand held equipment to a process plant and its operators. Good design takes into account how the operator is expected to interact with the work equipment and how the work equipment fits into the system as a whole. This is particularly important the more the work equipment is interdependent on other components of the system. In its whole complexity, the working system is described in generic standards (e.g. EN ISO 6385).

Compliance with harmonised standards prepared by CEN/CENELEC enables manufacturers and suppliers to meet requirements of European legislation. EN ISO 12100-1 and EN ISO 12100-2 contain the concepts and general principles to guide designers in achieving safety for machinery for occupational and private purposes. Ergonomic principles can be incorporated into the design process by following this standard. In this way both the technical design and ergonomic principles are considered at the same time. The aim to enhance the health, safety and well-being of workers is reached by systematically minimising the risks according to ⟨A1⟩ EN ISO 12100 ⟨A1⟩. EN 13861 provides information concerning applicable ergonomic B-type standards related to specific hazards.

This standard is one of the European Standards covering specific topics identified in EN ISO 12100-1 and EN ISO 12100-2 as important to the safety of machinery.

1 Scope

This European Standard establishes the ergonomic principles to be followed during the process of design of machinery.

This European Standard applies to the interactions between operators and machinery when installing, operating, adjusting, maintaining, cleaning, dismantling, repairing or transporting equipment, and outlines the principles to be followed in taking the health, safety and well-being of the operator into account. This European Standard provides a framework within which the range of more specific ergonomics standards and other related standards relevant to machinery design should be applied.

The ergonomic principles given in this European Standard apply to all ranges of human abilities and characteristics to ensure safety, health and well-being and overall system performance. Information will need to be interpreted to suit the intended use.

NOTE Although the principles in this European Standard are orientated towards machinery for occupational use, they are also applicable to equipment and machinery for private use.