



**NSAI**  
Standards

Irish Standard  
I.S. EN 13128:2001+A2:2009

# Safety of machine tools - Milling machines (including boring machines)

## I.S. EN 13128:2001+A2:2009

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN 13128:2001/A1:2006

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English version  
Version Française  
Deutsche Fassung

Safety of machine tools - Milling machines (including boring machines)

Sécurité des machines-outils - Fraiseuses  
(comprenant les aléseuses)

Sicherheit von Werkzeugmaschinen -  
Fräsmaschinen (einschließlich Bohr-  
Fräsmaschinen)

This corrigendum becomes effective on 10 March 2010 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 10 mars 2010 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 10.März 2010 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## 1 Modification to 7.3

*Replace the 3rd and 4th paragraphs with the following one:*

"For example, for a sound power level  $L_{WA} = 93$  dB (measured value) uncertainty  $K = 4$  dB for measurements made in accordance with EN ISO 3746:1995."

## 2 Modifications to Annex C

*Title of Figure C.11 (b), replace "Figure C.11 (b)" with "Figure C.10 (b)".*

*Title of Figure C.12 (c), replace "Figure C.12 (c)" with "Figure C.10 (c)".*

*Title of Figure C.13 (d), replace "Figure C.13 (d)" with "Figure C.10 (d)".*

English Version

## Safety of machine tools - Milling machines (including boring machines)

Sécurité des machines-outils - Fraiseuses (comprenant les aléseuses)

Sicherheit von Werkzeugmaschinen - Fräs- und Bohr-Fräsmaschinen

This European Standard was approved by CEN on 7 March 2001 and includes Amendment 1 approved by CEN on 3 February 2006 and Amendment 2 approved by CEN on 24 February 2009.

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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 Management Centre has the same status as the official versions.

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## Foreword

This document (EN 13128:2001+A2:2009) has been prepared by Technical Committee CEN/TC 143 "Machine tools - Safety", the secretariat of which is held by SNV.

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 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2006-02-03 and Amendment 2, approved by CEN on 2009-02-24.

This document supersedes EN 13128:2001.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1**, **A1** and **A2**, **A2**.

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).

This standard has been prepared to provide one means of conforming with the essential requirements of the Machinery Directive and associated EFTA regulations.

Annex A is normative. Annexes B, C, D, ZA and ZB are informative. This Standard also contains a Bibliography.

**A2** For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A2**

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

This European standard is a type C standard as stated in EN 292–1.

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.

Milling machines present a wide range of hazards, not least from their wide application as rotating tool, 'stationary' workpiece machine tools, for general purpose cutting of cold metal work material.

Protection of operators and other persons from contact with moving cutting tools, especially when being rapidly rotated in the spindle or from contact with fast–moving workpieces, is of great importance.

When power–operated mechanisms are provided for workpiece transfer, they can also create hazardous situations during loading/unloading and workpiece alignment or clamping.

On automatic milling machines, total enclosure of the work zone using guards during cutting is the preferred method of safeguarding. Where this is not practicable (e.g. due to size of the workpiece, its geometry, or its special characteristics), operators may be safeguarded by other means (e.g. perimeter fencing, protective devices at the operating position). Operators may also benefit from pendant controls which enable them to move about the machine.

The significant hazards covered by this standard are those listed in table 1. The safety requirements and/or protective measures to prevent or minimize those hazards identified in table 1 and procedures for verification of these requirements or measures are found in clause 5 (tables 2, 3, 4 and 5).

The figures in annex C are examples only and are not intended to illustrate the only interpretation of the text.

## 1 Scope

**1.1** This standard specifies the technical safety requirements and measures to be adopted by persons undertaking the design, construction and supply (including installation and dismantling, with arrangements for transport and maintenance) of milling machines (see 3.1) including machines capable of performing boring operations (see 3.5).

Machines covered by this standard include but are not limited to:

- knee and column type milling machines (see figures C.1, C.2);
- bed–type milling machines (see figure C.3);
- multi–spindle milling machines (see figures C.4 and C.5);
- plano–milling machines (see figures C.4 and C.5);
- profile and contouring milling machines (see figure C.6),
- milling and boring machines (see figure C.7).



**1.2** This standard takes account of intended use including reasonably foreseeable misuse, maintenance, cleaning, and setting operations. It presumes access to the machine from all directions. It describes means to reduce risks to operators and other exposed persons.

**1.3** This standard also applies to workpiece transfer devices when they form an integral part of the machine.

**1.4** This standard deals with significant hazards relevant to milling machines when they are used as intended and under the conditions foreseen by the manufacturer (see clause 4).

**1.5** Hazards arising from other metal working processes (e.g. grinding, turning, forming, EDM, laser processing) are covered by other standards (see Bibliography).

**1.6** Milling machines with automatic tool changing capabilities are not covered by this standard (see prEN 12417:1996).

**1.7** This standard is not applicable to milling machines which were manufactured before the date of publication by CEN of this standard.

## 2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1:1991, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology*

EN 292-2:1991 and EN 292-2/A1:1995, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications*

EN 294:1992, *Safety of machinery – Safety distances to prevent danger zones being reached by the upper limbs*

EN 349, *Safety of machinery – Minimum gaps to avoid crushing of parts of the human body*

EN 457, *Safety of machinery - Auditory danger signals - General requirements, design and testing (ISO 7731:1986 modified)*

EN 574, *Safety of machinery - Two hand control devices – Functional aspects – Principles for design*

EN 614, *Safety of machinery - Ergonomic design principles – Part 1: Terminology and general principles  
Part 2: Interaction between machinery design and work tasks*

EN 626, *Safety of machinery – Reduction of risks to health from hazardous substances emitted by machinery*

EN 811, *Safety of machinery – Safety distances to prevent danger zones being reached by the lower limbs*

EN 894, *Safety of machinery – Ergonomics requirements and data for the design of displays and control actuators*

*Part 1:1997, Human interactions*

*Part 2:1997, Displays*

*Part 3:2000, Control actuators*

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