



National Standards Authority of Ireland

IRISH STANDARD

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ICS 25.100.20

**MILLING CUTTERS FOR HIGH SPEED
MACHINING - SAFETY REQUIREMENTS
(ISO 15641:2001)**

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English version

Milling cutters for high speed machining - Safety requirements
(ISO 15641:2001)

Fraises pour usinage à grande vitesse - Prescriptions de
sécurité (ISO 15641:2001)

Fräswerkzeuge für die Hochgeschwindigkeitsbearbeitung -
Sicherheitstechnische Anforderungen (ISO 15641:2001)

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Foreword

The text of EN ISO 15641:2001 has been prepared by Technical Committee CEN/TC 143 "Machine tools – Safety", the secretariat of which is held by SNV, in collaboration with Technical Committee ISO/TC 29 "Small tools".

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of an identical text or by endorsement, at the latest by March 2002, and conflicting national standards shall be withdrawn at the latest by March 2002.

The annexes A and B 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This standard is intended to assist designers, manufacturers and suppliers of milling cutters to satisfy their obligations in respect of high speed machining applications. It defines requirements for design, confirmation testing and information for use that manufacturers and suppliers are to provide.

The prime objective is to ensure that milling cutters, employed for high speed machining, will be able to safely withstand the quadratic increase in centrifugal force resulting from their application at increased rotational speed.

It is based upon a collaborative German research project established to investigate the suitability of milling cutters for use in high speed machining operations.

This standard deals only with the tool and is not sufficient alone to ensure the safety. The safety of machinery is dealt with by other specific safety standards.

This standard takes account of cutting conditions only by requiring the manufacturer to provide application information.

Informative annex A provides guidance for reduction of hazards by design and informative annex B explains the scope limits.

1 Scope

This standard deals with the principle hazards arising from use of milling cutters, e.g. milling cutters according to ISO 3855, used for high speed machining (chip removal machining at increased peripheral speeds) on metal working machine tools and prescribes safety requirements.

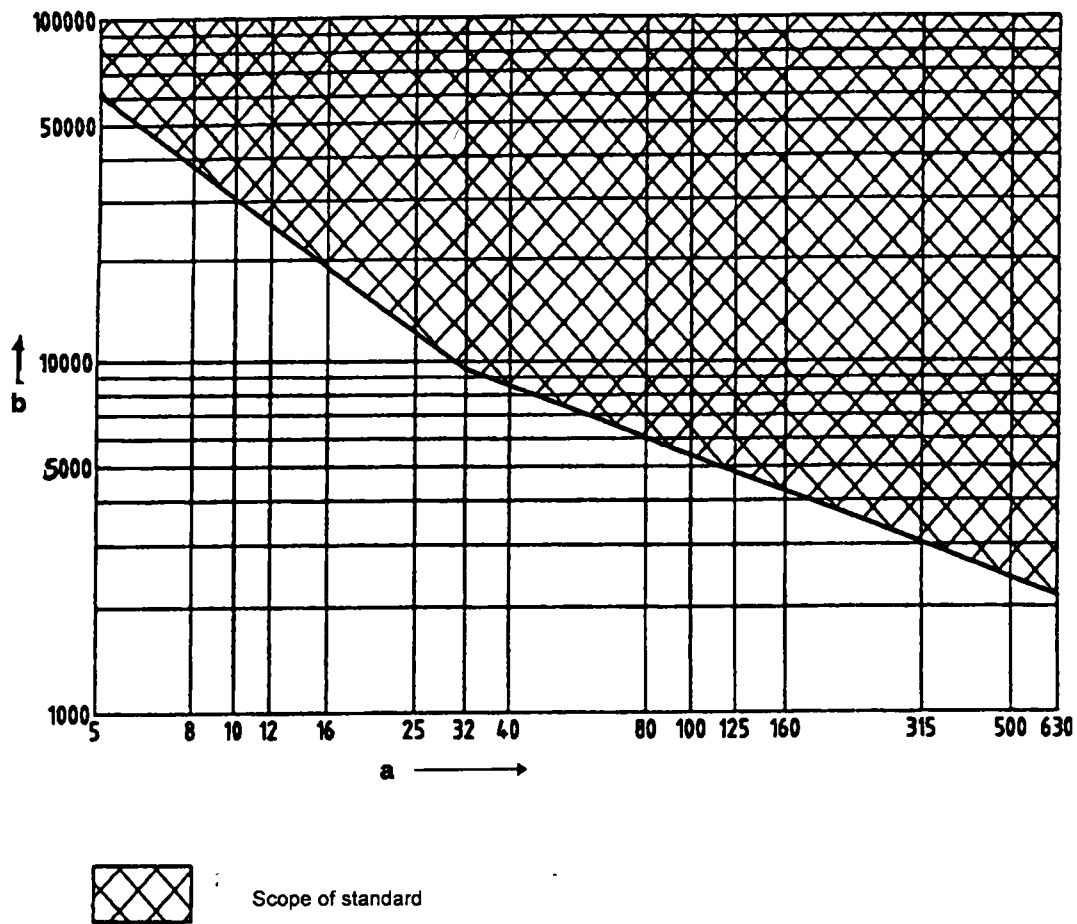
It specifies design methods, centrifugal force test procedures, operational limits and the provision of information that will lead to minimisation or elimination of these hazards.

The standard is applicable to milling cutters which are intended for operation at speeds in accordance with figures 1 and 2.

These figures respectively define the rotational speed limits and peripheral speed limits for specific cutter diameters.

NOTE A detailed explanation is provided in annex B.

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- a Maximum diameter of tool D in mm
 b Rotational speed n in min^{-1}

Figure 1 - Rotational speed n vs maximum diameter of tool D

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