



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 1005-4:2005

ICS 13.110

13.180

**SAFETY OF MACHINERY - HUMAN PHYSICAL
PERFORMANCE - PART 4: EVALUATION OF
WORKING POSTURES AND MOVEMENTS IN
RELATION TO MACHINERY**

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*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland and comes into
effect on:
July 15, 2005*

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1005-4

May 2005

ICS 13.110; 13.180

English version

**Safety of machinery - Human physical performance - Part 4:
Evaluation of working postures and movements in relation to
machinery**

Sécurité des machines - Performance physique humaine -
Partie 4: Evaluation des postures et mouvements lors du
travail en relation avec les machines

Sicherheit von Maschinen - Menschliche körperliche
Leistung - Teil 4: Bewertung von Körperhaltungen und
Bewegungen bei der Arbeit an Maschinen

This European Standard was approved by CEN on 17 February 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This European Standard (EN 1005-4:2005) 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of an identical text or by endorsement, at the latest by November 2005, and conflicting national standards shall be withdrawn at the latest by November 2005.

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 EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

EN 1005 consists of the following Parts, under the general title *Safety of machinery - Human physical performance*:

- *Part 1: Terms and definitions;*
- *Part 2: Manual handling of machinery and component parts of machinery;*
- *Part 3: Recommended force limits for machinery operation;*
- *Part 4: Evaluation of working postures and movements in relation to machinery;*
- *Part 5¹: Risk assessment for repetitive handling at high frequency.*

This European Standard includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

¹ This European Standard is under preparation by CEN/TC 122/WG 4 "Biomechanics".

Introduction

About one third of all workers in the European Union are involved in painful or tiring postures for more than half of their working day, and close to 50 % of all workers are exposed to short repetitive tasks, which are mostly accompanied by painful and tiring movements [2]. Pain and fatigue may lead to musculoskeletal disorder, reduced productivity, and deteriorated posture and movement control. The latter can increase the risk of errors and may result in reduced quality and hazardous situations. Within the life cycle of a machine, from construction to dismantling, all machine-related actions require certain postures and movements. The role of the machinery designer should be to avoid painful and tiring postures and movements.

The requirements in this European Standard aim to reduce the health risks associated with machine-related actions and could also have a positive effect on the quality, efficiency and profitability of those actions.

The requirements in this European Standard are based on current ergonomic knowledge and expert opinions, and will be subject to changes in accordance with future research [1].

This document is a type B standard as stated in EN ISO 12100-1.

The provisions of this European Standard can be supplemented or modified by a type C standard.

For machines which are covered by the scope of a type C standard and which have been designed and built according to the provisions of that standard, the provisions of that type C standard take precedence over the provisions of this type B standard.

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