



SLOVENSKI STANDARD
SIST EN ISO 15536-1:2005

01-julij-2005

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Ergonomics - Computer manikins and body templates - Part 1: General requirements
(ISO 15536-1:2005)

Ergonomie - Computer-Manikins und Körperumriss-schablonen - Teil 1: Allgemeine
Anforderungen (ISO 15536-1:2005)

Ergonomie - Mannequins informatisés et gabarits humains - Partie 1: Exigences
générales (ISO 15536-1:2005)

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Ta slovenski standard je istoveten z: EN ISO 15536-1:2005

ICS:

13.180 Ergonomija Ergonomics

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ICS 13.180

English version

Ergonomics - Computer manikins and body templates - Part 1:
General requirements (ISO 15536-1:2005)

Ergonomie - Mannequins informatisés et gabarits humains
- Partie 1: Exigences générales (ISO 15536-1:2005)

Ergonomie - Computer-Manikins und
Körperumrisschablonen - Teil 1: Allgemeine
Anforderungen (ISO 15536-1:2005)

This European Standard was approved by CEN on 29 April 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN ISO 15536-1:2005) has been prepared by Technical Committee CEN/TC 122 "Ergonomics", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 159 "Ergonomics".

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 document 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 document.

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.

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Annex ZA (Informative)

Clauses of this European Standard addressing essential requirements or other provisions of EU Directives

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 98/37/EEC, amended by Directive 98/79/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the Clauses 4, 5 and 6 of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

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**Ergonomics — Computer manikins
and body templates —**

**Part 1:
General requirements**

*Ergonomie — Mannequins informatisés et gabarits humains —
Partie 1: Exigences générales*
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 15536-1 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 122, *Ergonomics*, in collaboration with Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 3, *Anthropometry and biomechanics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 15536 consists of the following parts, under the general title *Ergonomics — Computer manikins and body templates*:

- *Part 1: General requirements*
- [SIST EN ISO 15536-1:2005](https://standards.iteh.ai/catalog/standards/sist/24f7b439-0b7b-4c5a-ae1d-753dda6d2afb/sist-en-iso-15536-1-2005)
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The following parts are under preparation:

- *Part 2: Structures and dimensions*

Introduction

The structure of safety standards in the field of machinery is as follows.

- a) Type-A standards (basis standards) give basic concepts, principle for design, and general aspects that can be applied to machinery.
- b) Type-B standards (generic safety standards) dealing with one or more safety aspect(s) or one or more type(s) of safeguards that can be used across a wide range of machinery:
 - type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);
 - type-B2 standards on safeguards (e.g. two-hand controls, interlocking devices, pressure-sensitive devices, guards).
- c) Type-C standards (machinery safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

This part of ISO 15536 is a type-B standard as stated in ISO 12100-1.

When provisions of a type-C standard are different from those which are stated in type-A or type-B standards, the provisions of the type-C standard take precedence over the provisions of the other standards for machines that have been designed and built according to the provisions of the type-C standard.

This part of ISO 15536 concerns requirements which are, to a great extent, independent both of the state of the art in the currently rapidly developing field of computer manikins and body templates, and of the availability of up-to-date, detailed and representative anthropometric data.

The physical characteristics of the human body are one of the starting points in the design of spaces, furniture, machines and other equipment. Computer technology is advancing rapidly and allows the construction of computer manikins to model the human body and to simulate human activities. Anthropometrically accurate manikins or body templates can be used, for example, to visualize the geometric relationship between the human body and the physical environment. Various functions of evaluation can also be integrated into the manikin and manikin system, for example, indication of reach zones, visualization of viewing fields, biomechanical calculation of required strength, and simulation of movements.

Computer manikins are intended to reduce the need for real test persons and the evaluation of physical models and prototypes. However, real persons provide not only their true physical dimensions but also their differing functional and perceptual capabilities as well as their assessment of the ease of performance, comfort and other properties of the design (see ISO 15537).

The computer manikin permits quick, easy and early identification of possible dimensional shortcomings. Critical dimensions restricting operations, such as fitting into a confined space or reaching objects can be quickly assessed in relation to extreme body measurements. The dimensioning would otherwise require tests with a large number of test persons.

In the use of manikins, several ergonomic aspects (e.g. anthropometric, postural, visual, strength-related, dynamic) are addressed in one and the same test situation. As a universal design tool, the manikin is particularly useful for entirely novel designs, when no recommendations on the dimensions exist and no reference situations for full-scale evaluation are available. In the design process, the use of computer modelling with a manikin facilitates information exchange and collaboration between different specialists and users.