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Principles for selecting and using test persons for testing anthropometric aspects of industrial products and designs (ISO 15537:2004)

Grundsätze für die Auswahl und den Einsatz von Prüfpersonen zur Prüfung anthropometrischer Aspekte von Industrieerzeugnissen und deren Gestaltung (ISO 15537:2004)

Principes de choix et d'utilisation de sujets d'essai pour l'essai des aspects anthropométriques des produits industriels et leur conception (ISO 15537:2004)

Ta slovenski standard je istoveten z: EN ISO 15537:2004

ICS:

13.110	Varnost strojev	Safety of machinery
13.180	Ergonomija	Ergonomics

SIST EN ISO 15537:2005

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 15537

November 2004

ICS 13.110; 13.180

English version

**Principles for selecting and using test persons for testing
anthropometric aspects of industrial products and designs (ISO
15537:2004)**

Principes de choix et d'utilisation de sujets d'essai pour
l'essai des aspects anthropométriques des produits
industriels et leur conception (ISO 15537:2004)

Grundsätze für die Auswahl und den Einsatz von
Prüfpersonen zur Prüfung anthropometrischer Aspekte von
Industrienerzeugnissen und deren Gestaltung (ISO
15537:2004)

This European Standard was approved by CEN on 14 November 2004.

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

EN ISO 15537:2004 (E)**Foreword**

This document (EN ISO 15537:2004) 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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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INTERNATIONAL STANDARD

**ISO
15537**

First edition
2004-11-15

Principles for selecting and using test persons for testing anthropometric aspects of industrial products and designs

*Principes de choix et d'utilisation de sujets d'essai pour l'essai des
aspects anthropométriques des produits industriels et leur conception*

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Reference number
ISO 15537:2004(E)

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Published in Switzerland

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ISO 15537:2004(E)**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 15537 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).

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Introduction

An investigation into how far ergonomic requirements are taken into consideration with regard to industrial products and designs is often performed using test equipment, giving possibilities to register only one parameter (for example only the body height) or perhaps a few parameters. With regard to the concurrent multifunctional testing and/or determination of product characteristics for which no technical testing procedures have been laid down, one or several persons are often designated as test persons and are observed and/or questioned while or after using the product under test.

The reliability of any findings established in this way is very much dependent on the extent to which the test persons represent the intended user group in different aspects. How well a product or design is adjusted to the anthropometrics of the intended user population is dealt with in this International Standard.

According to EN 614-1, work equipment, e.g. machinery, has to be designed with proper regard to the body dimensions of the intended user population. One means to verify that a product or a design fulfils this requirement is to set up a panel of test persons and let them test the product in different ways.

An example of the use of this International Standard is given in Annex A (informative).

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Principles for selecting and using test persons for testing anthropometric aspects of industrial products and designs

1 Scope

This International Standard establishes methods for determining the composition of groups of persons whose anthropometric characteristics are to be representative of the intended user population of any specific object under test.

This International Standard is applicable to the testing of anthropometric aspects of industrial products and designs having direct contact with the human body or dependent on human body measurements, e.g. machinery, work equipment, personal protective equipment (PPE), consumer goods, working spaces, architectural details or transportation equipment.

This International Standard is also applicable to the testing of such safety aspects of products that are dependent on human body measurements. It does not deal with other aspects of the task or other requirements, such as perception of information (except geometrical arrangement of the viewing targets) and the use of controls (except their geometrical placement).

Although this International Standard deals with selecting test persons from an anthropometric perspective, similar general principles could be applied for other test variables, e.g. biomechanical aspects.

2 Normative references

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The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7250:1996, *Basic human body measurements for technological design*

ISO 15534-3:2000, *Ergonomic design for the safety of machinery — Part 3: Anthropometric data*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

critical dimension of a product to be tested

dimension estimated to cause a major limitation for the usage from an anthropometrical point of view, for the whole body or body parts, depending on the function of the product in question

NOTE 1 Critical dimension is related to reach, clearance, posture, contact pressure or other factors which may result in difficulties of use, discomfort or health risks.

NOTE 2 A product to be tested can have more than one critical dimension, for example, a combination of a reach- and a clearance-dimension.

EXAMPLE The critical dimension for an access opening could be the width, or a combination of two dimensions, for example the width and the opening height.