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Basic human body measurements for technological design —

Part 3: Worldwide and regional design ranges for use in product standards

Définitions des mesures de base du corps humain pour la conception technologique —

Partie 3: Gammes de conception régionales et mondiales pour utilisation dans les normes de produits

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 159, *Ergonomics*, Subcommittee SC 3, *Anthropometry and biomechanics.*

ISO 7250 consists of the following parts, under the general title *Basic human body measurements for technological design*:

— *Part 1: Body measurement definitions and landmarks*

— *Part 2: Statistical summaries of body measurements from national populations*

— *Part 3: Worldwide and regional design values for use in ISO equipment standards*

Basic human body measurements for technological design —

Part 3: Worldwide and regional design ranges for use in product standards

1 Scope

This part of ISO 7250 provides worldwide and regional tables of design ranges for use with product standards for equipment design and safety that require ISO 7250 body measurement data input.

Anthropometric data for technological design are used and presented in many standards. However, there is currently no systematic way to update and revise those values in a timely manner, as the body sizes and variation of member body populations change with time. Further, the schedule of member body anthropometric surveys varies widely. Many industrial products are developed for regional or worldwide markets without a clear presentation of regional and worldwide ISO 7250 design ranges. Users of standards require the most appropriate body measurement values for their intended applications.

Together with ISO/TR 7250-2, which serves as a continuously updated data source for most current anthropometric data from individual member bodies, this part of ISO 7250 provides a periodically updated data source for worldwide and regional design ranges, with guidance on sex differences. This part of ISO 7250 is intended as the single source of anthropometric data for equipment design guidance in standards.

While there are sources for individual member body data in ISO/TR 7250-2, most standards do not use individual member body data for technological specification. This part of ISO 7250 is to be used whenever worldwide or regional anthropometric data are needed. In cases when there are no suitable measurements in this part of ISO 7250, the methods and justifications used in arriving at regional and worldwide values from the body measurement data of individual populations can be used with suitable measurement data.

The scope of this part of ISO 7250 is limited to the presentation of univariate design ranges of the type currently utilized in product standards (e.g. P1, P5, P95, and P99) and does not address shortcomings of using those values in multivariate designs. A separate standard on multivariate design is in preparation. In addition, this part of ISO 7250 does not address body measurements used in product standards that are not defined in ISO 7250-1. The methods used in developing this part of ISO 7250 do not take into account the population size or sampling methodology of the member bodies, so statistical values from a sparsely populated member body could set regional or worldwide upper or lower limits. The reader is referred to ISO/TR 7250-2 for details on sampling methods used in national surveys.

2 Normative references

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

ISO 7250-1, *Basic human body measurements for technological design — Part 1: Body measurement definitions and landmarks*

ISO/TR 7250-2, *Basic human body measurements for technological design — Part 2: Statistical summaries of body measurements from national populations*