
International Standard



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**Building construction — Tolerances — Vocabulary —
Part 1 : General terms**

Construction immobilière — Tolérances — Vocabulaire — Partie 1 : Termes généraux

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1803/1 was prepared by Technical Committee ISO/TC 59, *Building construction*.

ISO 1803 was first published in 1973. This second edition consists of ISO 1803/1 and ISO 1803/2, which together cancel and replace the first edition, of which they are a technical revision.

Building construction — Tolerances — Vocabulary — Part 1 : General terms

0 Introduction

The terms and definitions given in this International Standard reflect continuing developments in the understanding of the problems posed by the presence of unavoidable variations in the dimensional characteristics of components and structures.

The terms and definitions given in this part of ISO 1803 constitute a basic vocabulary relating to the calculation of sizes, to specification and to control to achieve conformity with specifications.

Definitions of derived terms are given in ISO 1803/2.

1 Scope and field of application

This part of ISO 1803 defines general terms needed for the study, specification and use of dimensional tolerances for building.

NOTE — Terms printed in italics in the definitions are themselves defined in this part of ISO 1803.

2 Reference physical conditions

In principle, a statement of reference physical conditions should be associated with every quantified dimensional attribute.

3 Terms and definitions (see also the annex)

3.1 Terms concerning dimensions

3.1.1 dimension (physical quantity)¹⁾: Extent of a body or of a space in a given direction (for example, length, width, height, depth, diameter) or along a given line (for example, circumference).

3.1.2 size (numerical value): Magnitude of a *dimension* in terms of a defined unit.

3.1.3 reference size²⁾: *Size* specified in the design to which *deviations* are related.

3.1.4 target size: *Reference size* from which *deviations* would ideally be zero.

3.1.5 actual size: *Size* obtained by measurement (after correction of known measurement errors).

3.1.6 limits of size, upper and lower: Maximum and minimum *sizes* at or between which the *actual size* shall lie.

3.1.7 tolerance (physical quantity)³⁾: Permitted variation of *size*.

NOTE — Whenever tolerances are expressed by numerical values, the more specific term *tolerance width* should be used.

1) For physical quantity see ISO 31/0, *General principles concerning quantities, units and symbols*.

2) "Basic size" in ISO/R 286, *ISO System of limits and fits — Part 1 : General, tolerances and deviations* (and in ISO 1803-1973).

3) In accordance with the definition given in ISO Guide 2, *General terms and their definitions concerning standardization, certification and testing laboratory accreditation*: "The permissible variation of the specified value of a quantity." (See also the relevant notes in ISO Guide 2.)

3.1.8 tolerance width (numerical value) : Absolute value of the difference between the *limits of size*.

3.1.9 tolerance range : All sizes between the *limits of size*.

NOTE — The tolerance range can be indicated either by *limits of size*, or by *reference size* and the *permitted deviations*.

3.1.10 deviation : Algebraic difference between a *size* and the corresponding *reference size*.

3.1.11 permitted deviations, upper and lower : Algebraic differences between the *limits of size* and the corresponding *reference size*.

3.1.12 actual deviation : Algebraic difference between an *actual size* and the corresponding *reference size*.

3.2 Terms concerning positioning of a point

3.2.1 tolerance zone (of a point) : Volume or area, enveloping the reference position given in the design, and within which the corresponding actual point shall lie.

3.2.2 tolerance volume (of an element)¹⁾ : Volume enveloping the *tolerance zones* of all points on the surfaces of an element.

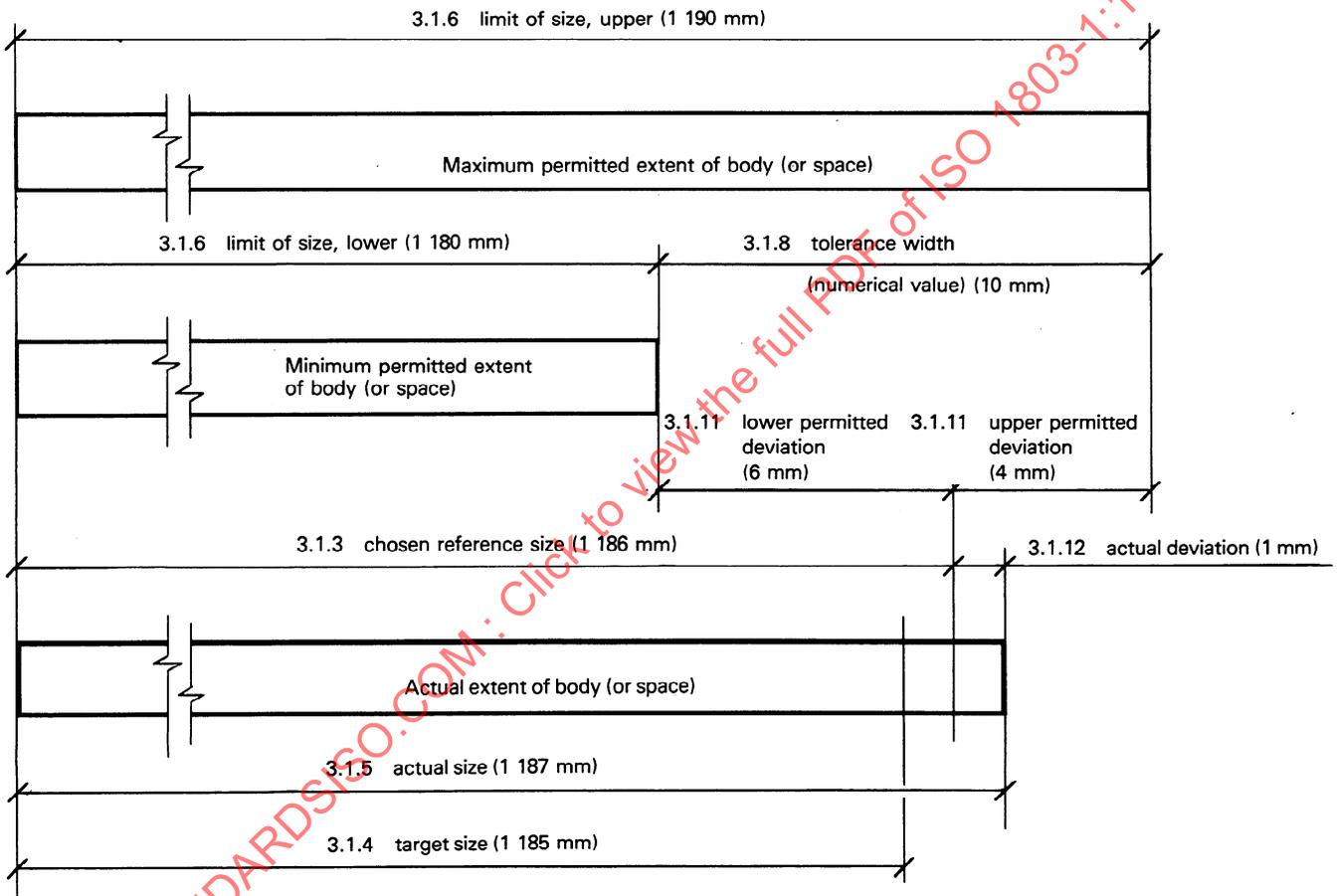
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1) An element may be a component, an item or a structure.

Annex

Illustration of use of terms

The figure shows an example of the way in which tolerances can be specified. It illustrates the use of some of the terms defined in this part of ISO 1803. Examples of sizes are given in brackets.



NOTE — In this example, which shows the general case, the permitted deviations are asymmetrical about the reference size. However, permitted deviations are very often symmetrical.

Bibliography

ISO 3443/1, *Tolerances for building — Part 1 : Basic principles for evaluation and specification.*

ISO 3443/2, *Tolerances for building — Part 2 : Statistical basis for predicting fit between components having a normal distribution of sizes.*

ISO 3443/5, *Building construction — Tolerances for building — Part 5 : Series of values to be used for specification of tolerances.*

ISO 4464, *Tolerances for building — Relationship between the different types of deviations and tolerances used for specification.*

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