SLOVENSKI STANDARD
oSIST prEN ISO 6284:2023

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Tehnična dokumentacija izdelkov - Gradbena dokumentacija - Prikaz omejenih deviacij (ISO 6284:2023)

Technical product documentation - Construction documentation - Indication of limit deviations (ISO 6284:2023)

Documentation technique de produits - Documentation de construction - Indication des écarts limites (ISO 6284:2023)

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INTERNATIONAL STANDARD

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Technical product documentation — Construction documentation — Indication of limit deviations

Documentation technique de produits — Documentation de construction — Indication des écarts limites

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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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 8, *Construction documentation*.

This third edition cancels and replaces the second edition (ISO 6284:1996), which has been technically revised.

The main changes are as follows:

— validation of normative references;

— consideration of multiple categories of deviations;

— definitions of indications of limit deviations using building information modelling (BIM).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Deviations are a common part of the built environment which are often left to operatives on site to resolve. With the development of prefabrication, there is recognition that control of deviations is an essential requirement to improve the quality of building and infrastructure works. It is important for architectural designers, product manufacturers and constructors to indicate limit deviations and work to these, where they exist.

The previous edition, ISO 6284:1996, pointed out some basic principles and ways to indicate limit deviations. It focused on graphical presentations, generally drawings, as a method for delivering construction and product information. Technically, limit deviations are about not only geometric information but also the requirements, which shall be delivered objectively by parties to a project.

The digitization of construction requires both graphical and alphanumeric information to be presented in a formal way to achieve both human-readability and machine-readability.

Data templates are a formal representation method adopted widely to describe exchange information or product specifications for machine-readability. ISO 23387 has been developed to support digital processes using formats which are machine-interpretable, based upon standardized data structures, to exchange information about any type of construction object.

This document focuses on how to provide indication methods for limit deviations that are humanly recognizable, which is essential given that humans are ultimately the decision-makers, even though more and more tasks are carried out with the assistance of computers. Therefore, this document provides two ways to indicate limit deviations:

a) classical graphical or symbolic representations;

b) natural language property items for data templates.

The illustrations included in this document are intended to illustrate the text and/or to provide examples of the related technical drawing specification. These illustrations are not fully dimensioned and toleranced, showing only the relevant general principles.

Technical product documentation — Construction documentation — Indication of limit deviations

1 Scope

This document specifies methods for the indication of limit deviations on construction documents.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 286-1:2010, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 1: Basis of tolerances, deviations and fits*

ISO 6707-1:2020, *Buildings and civil engineering works — Vocabulary — Part 1: General terms*

ISO 9431, *Construction drawings — Spaces for drawing and for text, and title blocks on drawing sheets*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 286-1 and ISO 6707-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
construction document
document which specifies construction information

Note 1 to entry: A construction document can be a drawing or a document used to convey or record construction requirements.

Note 2 to entry: See ISO 5127:2017, 3.1.1.38 for more information about the term “document”.

3.2
data template
schema providing a data structure used to describe the properties of objects

[SOURCE: ISO 23387:2020, 3.3, modified — Definition revised, examples and notes to entry removed.]

3.3
limit deviation
upper limit deviation (3.4) or *lower limit deviation* (3.5) from *target size* (3.6)

Note 1 to entry: In this document, “target size” is used for applying deviations to comply with the conventions in the built environment sector, while “nominal size” is commonly used in engineering fields.

Note 2 to entry: See ISO 6707-1:2020, 3.7.2.6 for more information about the term “deviation”.

[SOURCE: ISO 286-1:2010, 3.2.5, modified — Definition modified and notes to entry added.]

3.4
upper limit deviation
upper limit of size minus *target size* (3.6)

Note 1 to entry: Upper limit deviation is a signed value and may be negative, zero or positive.

[SOURCE: ISO 286-1:2010, 3.2.5.1, modified — Symbols and figure removed, definition modified.]

3.5
lower limit deviation
lower limit of size minus *target size* (3.6)

Note 1 to entry: Lower limit deviation is a signed value and may be negative, zero or positive.

[SOURCE: ISO 286-1:2010, 3.2.5.2, modified — Symbols removed and definition modified.]

3.6
target size
reference size used in design and in practice in order to indicate the size desired and to which the deviations, which would ideally be zero, are to be related

[SOURCE: ISO 6707-1:2020, 3.7.2.12, modified — Note 1 to entry removed.]

4 General

4.1 Generality

4.1.1 A limit deviation shall be indicated on a construction document only when there is a functional requirement to control position, dimension, orientation or form.

4.1.2 Target size shall be the only reference to limit deviation in construction documents.

NOTE The term "deviation" is defined in relation to "nominal size" in ISO 286-1. However, this term is relevant to "desired value", associated with the term "target size" in ISO 6707-1, which specifies a vocabulary for the construction industry.

4.2 Application

Indication of limit deviations shall be applied using the following methods:

a) dimensions on construction drawings or figures within notes;

b) property items within data templates.

4.3 Designations of deviation types

An indication of limit deviations should clarify its type requirements with a designation, when applicable. Designations of popular deviation types may follow Table 1 or the conventions of the manufacturing industry.

Table 1 — Designations of popular deviation types

Deviation type	Designation
Length deviation	LD
Angular deviation	AD
Profile deviation of a line	PL
Straightness deviation of a line	SL

