



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 7499:2023**  
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**Tehnična dokumentacija izdelkov - Edinstveno celostno prepoznavanje lastnosti (ISO/DIS 7499:2023)**

Technical product documentation (TPD) - Unique integral feature identification (UIFI) (ISO/DIS 7499:2023)

Technische Produktdokumentation (TPD) - Eindeutige Identifikation integraler Geometriemerkmale (ISO/DIS 7499:2023)

Documentation technique de produits (DTP) - Identification unique des éléments intégraux (ISO/DIS 7499:2023)

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**ICS:**

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
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# DRAFT INTERNATIONAL STANDARD

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## Technical product documentation (TPD) — Unique integral feature identification (UIFI)

*Documentation technique de produits - Identification unique des éléments intégraux*

ICS: 01.110

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## ISO/DIS 7499:2023(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.

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](http://www.iso.org/directives)).

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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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 10, Technical Product documentation (TPD)/SC1, Basic conventions.

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](http://www.iso.org/members.html).

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## Introduction

This document is a Technical Product Documentation (TPD) standard and it is a complementary standard.

Modern CAD systems already provide built-in systems for the unambiguous identification of each integral feature of a model. This identifier will often vary between CAD systems, but it typically comprises a long and complex code, which is normally difficult to read by humans and is therefore impractical.

A datum feature identifier indicated in accordance with ISO 5459 on an integral feature of a part defined in a TPD is a unique integral feature identifier, a unique label, which can be used to reference that specific integral feature. However, all integral features of a part will not be indicated with a datum feature identifier, which complicates the identification of other integral features than datum features.

Drawings are used in a variety of situations, e.g. design, manufacturing, and verification (see ISO/TS 21619 Types of documents with GPS). In many cases, it can be difficult to unambiguously communicate a reference to a specific integral feature, either orally or in writing, in different documents when the part is not described in full detail in the drawing.

Depictions of the part are not always the most efficient way to communicate. Using a written identification that unambiguously identifies each integral feature on the part may be useful for the following purposes: (the list is non-exhaustive)

- Ease verbal communication between stakeholders, e.g. between a customer and a supplier, or between a designer and a manufacturer or a metrologist.
- Simplify the preparation of a nomenclature drawing of the part (human-readable naming of the integral features).
- Ease the kinematic description of the part by stating what function an integral feature will have in different product or part states, e.g. if it is a clearance or an interface surface.
- Referencing surfaces in documents, e.g.: standard operating procedures (SOPs), measurement descriptions, measurement reports, non-conformities, customer complaint descriptions, failure investigations, risk analyses, failure modes and effects analyses (FMEA), tolerance stack-up calculations, change requests, etc.

Furthermore, unique identifiers of integral features can be used to simplify a TPD, e.g. when a special requirement or subsequent machining, finishing or treatment shall apply to a group of different integral features.

Human-readable identifiers for integral features are needed to ease the communication between stakeholders and to clarify which integral feature a specification applies to, i.e. establish human-understandable traceability, and to provide traceability between the drawing and other TPD. CAD vendors are encouraged to implement a harmonised system of unique identifiers of integral features to support the implementation of the benefits described in this introduction and in the standard.





# Technical product documentation (TPD) — Unique integral feature identification (UIFI)

## 1 Scope

This document defines how to uniquely identify the integral features of a part by an alpha-numerical label and how indication in technical product documentation (TPD) is done, where needed to improve human readability.

The proportions and dimensions of the graphical symbols for simplified indication of repeated features are also specified.

## 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 129-1:2018, *Technical product documentation (TPD) — Presentation of dimensions and tolerances — Part 1: General principles*

ISO 1101:2017, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 5459:2011, *Geometrical product specifications (GPS) — Geometrical tolerancing — Datums and datum systems*

ISO 17450-1:2011, *Geometrical product specifications (GPS) — General concepts — Part 1: Model for geometrical specification and verification*

ISO 81714-1:2010, *Design of graphical symbols for use in the technical documentation of products — Part 1: Basic rules*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5459 and the following apply.

ISO and IEC maintain terminological 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

#### integral feature

geometrical feature belonging to the real surface of the workpiece or to a surface model

[SOURCE: ISO 17450-1:2011, definition 3.3.5]

Note 1 to entry: An integral feature is intrinsically defined, e.g. skin of the workpiece.

Note 2 to entry: For the statement of specifications, features obtained from partition of the surface model or of real surface of workpiece shall be defined. These features, called “integral features”, are models of the different physical parts of the workpiece that have specific functions, especially those in contact with the adjacent workpieces.

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Note 3 to entry: An integral feature can be identified, for example, by

- a partition of the surface model,
- a partition of another integral feature, or
- a collection of other integral features.

## 4 Graphical symbols

### 4.1 Graphical symbol for unique integral feature indication

The unique integral feature indication consists of a feature identifier, i.e. a leader line connected to a reference line with a unique label that identifies an integral feature unambiguously.

The label shall be indicated:

- separately on a reference line connected to a leader line, see [Figure 1](#), pointing on the integral feature, see [5.2](#) or
- together with one or more specifications attached on the integral feature, see [5.4](#)



Figure 1 — Indicator for the unique label identifier

### 4.2 Graphical symbol for repeated features

There are two basic complementary symbols for indication of the enumeration directions for simplified indication of repeated features, see [Figure 2](#) and [5.5.2](#).

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a) circular direction



b) multi linear (matrix) direction

Figure 2 — Graphical symbol for the indication of enumeration directions for repeated features

The symbols can be flipped horizontally and/or rotated according to the appropriate indication. For details of the symbol, see [Figures A.1](#) to [A.10](#).

## 5 Identification of integral features

### 5.1 General

If needed, the necessary single integral features on a part shall have its own unique label, called feature identifier.

Derived features shall not be identified with a feature identifier.