



SLOVENSKI STANDARD SIST EN ISO 128-2:2023

01-januar-2023

Nadomešča:
SIST EN ISO 128-2:2020

Tehnična dokumentacija izdelkov - Splošna načela prikazovanja - 2. del: Osnovni dogovori za črte (ISO 128-2:2022)

Technical product documentation (TPD) - General principles of representation - Part 2: Basic conventions for lines (ISO 128-2:2022)

Technische Produktdokumentation (TPD) - Allgemeine Grundlagen der Darstellung - Teil 2: Linien, Grundregeln (ISO 128-2:2022)

Documentation technique de produits (TPD) - Principes généraux de représentation - Partie 2: Conventions de base pour les traits (ISO 128-2:2022)

Ta slovenski standard je istoveten z: EN ISO 128-2:2022

ICS:

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
--------	-----------------------------------	---------------------------------

SIST EN ISO 128-2:2023

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 128-2

November 2022

ICS 01.100.01

Supersedes EN ISO 128-2:2020

English Version

Technical product documentation (TPD) - General
principles of representation - Part 2: Basic conventions for
lines (ISO 128-2:2022)

Documentation technique de produits (TPD) -
Principes généraux de représentation - Partie 2:
Conventions de base pour les traits (ISO 128-2:2022)

Technische Produktdokumentation (TPD) - Allgemeine
Grundlagen der Darstellung - Teil 2: Linien,
Grundregeln (ISO 128-2:2022)

This European Standard was approved by CEN on 23 September 2022.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 128-2:2023
<https://standards.iteh.ai/catalog/standards/sist/fd8b3816-4469-4e92-890e-fbb518101039/sist-en-iso-128-2-2023>

European foreword

This document (EN ISO 128-2:2022) has been prepared by Technical Committee ISO/TC 10 "Technical product documentation" in collaboration with Technical Committee CEN/SS F01 "Technical drawings" the secretariat of which is held by CCMC.

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 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 128-2:2020.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 128-2:2022 has been approved by CEN as EN ISO 128-2:2022 without any modification.

INTERNATIONAL STANDARD

ISO
128-2

Second edition
2022-10

Technical product documentation (TPD) — General principles of representation —

Part 2: Basic conventions for lines

*Documentation technique de produits (TPD) — Principes généraux de
représentation —
Partie 2: Conventions de base pour les traits*

SIST EN ISO 128-2:2023

<https://standards.iteh.ai/catalog/standards/sist/fd8b3816-4469-4e92-890e-fbb518101039/sist-en-iso-128-2-2023>



Reference number
ISO 128-2:2022(E)

© ISO 2022

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 128-2:2023

<https://standards.iteh.ai/catalog/standards/sist/fd8b3816-4469-4e92-890e-fbb518101039/sist-en-iso-128-2-2023>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Types of lines	3
4.1 General	3
4.2 Basic types	3
4.3 Line subtypes	4
4.4 Variations of the basic types of lines	4
4.5 Combinations of lines with the same length	4
4.5.1 Arrangement of two or more lines parallel to each other	4
4.5.2 Arrangement of two different types of lines	5
4.5.3 Arrangement of two continuous lines parallel to each other with regularly recurring connecting elements between them	5
4.5.4 Arrangement of regularly recurring geometric pictorial elements in association with continuous lines	5
5 Line dimensions	6
5.1 Line width	6
5.2 Deviation in line width	6
5.3 Configuration of lines	6
6 Draughting of lines	7
6.1 Spacing	7
6.2 Junctions	7
6.2.1 Types	7
6.2.2 Representation	9
6.3 Location of a second line	10
6.4 Hierarchy of overlapping lines	10
7 Colours	11
8 Designation	11
9 Basic conventions and applications for leader lines and reference lines	11
9.1 Presentation of leader lines	11
9.2 Representation of reference lines	14
9.3 Indication of instructions	15
Annex A (informative) Preparation of lines by CAD systems	17
Annex B (normative) Lines in construction technical drawings	30
Annex C (informative) Examples of application in construction technical drawings	33
Annex D (normative) Types of lines and their application in mechanical engineering technical drawings	39
Annex E (informative) Examples of application in mechanical engineering technical drawings	43
Annex F (normative) Types of lines and their application on shipbuilding technical drawings	55
Annex G (informative) Application examples of the different types of lines on shipbuilding technical drawings	57
Bibliography	68

ISO 128-2:2022(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).

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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS F01, *Technical drawings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 128-2:2020), of which it constitutes a minor revision. The changes are as follows:

- the term “line element” changed to “graphical basic element” throughout;
- in [Annex C, Table C.1](#), the right-hand cell in the header has been changed from “Example” to “Figure no.” to be consistent with [Table E.1](#);
- in [Annex D, Table D.1](#), item 04.2.1, duplicate text removed;
- in [Annex G, Table G.1](#), the third header cell from the left has been changed from “Example” to “Application” to be consistent with [Table C.1](#) and [Table E.1](#);
- in [Annex E, Table E.1](#) and in [Annex G, Table G.1](#), the right-hand cell in the header has been changed from “Figure” to “Example” to be consistent with the rest of the document;
- minor editorial changes.

A list of all parts in the ISO 128 series can be found on the ISO website.

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

This document contains generally applicable rules for the presentation of lines in all kinds of technical product documentation.

All figures in this document have been drawn in first-angle projection. It should be understood that third-angle projection or other methods could have been used equally well without prejudice to the principles established.

The application of lines within drawings of special technical fields varies considerably. Therefore, rules of application specific to technical fields are given in [Annexes B](#) to [G](#).

[Annex A](#) provides information for the calculation of the most important basic types of non-continuous lines according to types of lines and their graphical basic elements.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 128-2:2023

<https://standards.iteh.ai/catalog/standards/sist/fd8b3816-4469-4e92-890e-fbb518101039/sist-en-iso-128-2-2023>

Technical product documentation (TPD) — General principles of representation —

Part 2: Basic conventions for lines

1 Scope

This document establishes the types of lines used in technical drawings (e.g. diagrams, plans or maps), their designations and their configurations, as well as general rules for the draughting of lines. In addition, this document specifies general rules for the representation of leader and reference lines and their components as well as for the arrangement of instructions on or at leader lines in technical documents. Annexes have been provided for specific information on mechanical, construction and shipbuilding technical drawings.

For the purposes of this document the term “technical drawing” is interpreted in the broadest possible sense, encompassing the total package of documentation specifying the product (workpiece, subassembly, assembly).

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 128-3, *Technical product documentation (TPD) — General principles of representation — Part 3: Views, sections and cuts*

ISO 128-15, *Technical product documentation (TPD) — General principles of presentation — Part 15: Presentation of shipbuilding drawings*

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

ISO 129-5, *Technical product documentation — Indication of dimensions and tolerances — Part 5: Dimensioning of structural metal work*

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

ISO 2203, *Technical drawings — Conventional representation of gears*

ISO 2538-2, *Geometrical product specifications (GPS) — Wedges — Part 2: Dimensioning and tolerancing*

ISO 2553, *Welding and allied processes — Symbolic representation on drawings — Welded joints*

ISO 3040, *Geometrical product specifications (GPS) — Dimensioning and tolerancing — Cones*

ISO 3766, *Construction drawings — Simplified representation of concrete reinforcement*

ISO 4463-1, *Measurement methods for building — Setting-out and measurement — Part 1: Planning and organization, measuring procedures, acceptance criteria*

ISO 4463-3, *Measurement methods for building — Setting-out and measurement — Part 3: Check-lists for the procurement of surveys and measurement services*

ISO 128-2:2022(E)

ISO 5261, *Technical drawings — Simplified representation of bars and profile sections*

ISO 5455, *Technical drawings — Scales*

ISO 5456-4, *Technical drawings — Projection methods — Part 4: Central projection*

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

ISO 6410-1, *Technical drawings — Screw threads and threaded parts — Part 1: General conventions*

ISO 6428, *Technical drawings — Requirements for microcopying*

ISO 7437, *Technical drawings — Construction drawings — General rules for execution of production drawings for prefabricated structural components*

ISO 7519, *Technical drawings — Construction drawings — General principles of presentation for general arrangement and assembly drawings*

ISO 8560, *Technical drawings — Construction drawings — Representation of modular sizes, lines and grids*

ISO 10110-1, *Optics and photonics — Preparation of drawings for optical elements and systems — Part 1: General*

ISO 10135, *Geometrical product specifications (GPS) — Drawing indications for moulded parts in technical product documentation (TPD)*

ISO 10209, *Technical product documentation — Vocabulary — Terms relating to technical drawings, product definition and related documentation*

ISO 11091, *Construction drawings — Landscape drawing practice*

ISO 12671, *Thermal spraying — Thermally sprayed coatings — Symbolic representation on drawings*

ISO 15785, *Technical drawings — Symbolic presentation and indication of adhesive, fold and pressed joints*

ISO 15787, *Technical product documentation — Heat-treated ferrous parts — Presentation and indications*

ISO 16792, *Technical product documentation — Digital product definition data practices*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10209 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

graphical basic element

continuous graphical object with rounded or squared end shape which is represented in any way (e.g. straight, curved), which has a length and a width

Note 1 to entry: See [Figure A.1](#).

3.2

dot

graphical basic element ([3.1](#)) having a length equal to the width, *d*

Note 1 to entry: See [Figure A.2](#).

3.3 line

set of one or more *graphical basic elements* (3.1) having a length of more than the width

Note 1 to entry: See [Figure A.3](#).

3.4 technical drawing

drawing showing a technical installation, process or product with a view to clarifying its structure and enabling its construction

[SOURCE: ISO 5127:2017, 3.4.7.54, modified — Note 1 to entry removed.]

4 Types of lines

4.1 General

The line type designation consists of a combination of a basic line type and a subtype, depending on the line width, see [4.2](#).

For the purposes of this document a line type application number is used to number the application examples for the line types.



For applying line types to construction technical drawings, [Annex B](#) shall be applied. For applying line types to mechanical engineering technical drawings, [Annex D](#) shall be applied. For applying line types to ship building technical drawings, [Annex F](#) shall be applied.

4.2 Basic types

The basic line types are given in [Table 1](#).

Table 1 — Basic line types

No.	Representation	Description
01	—————	Continuous line
02	- - - - -	Dashed line
03	- - - - - - - - -	Dashed spaced line
04	— · — · — · — · — · — · — · — ·	Long-dashed dotted line
05	— · · — · · — · · — · · — · · — · · — · · — · ·	Long-dashed double-dotted line
06	— · · · — · · · — · · · — · · · — · · · — · · · — · · · — · · ·	Long-dashed triplicate-dotted line
07	Dotted line
08	- - - - -	Long-dashed short-dashed line