

INTERNATIONAL STANDARD

ISO
128-20

First edition
1996-11-15

Technical drawings — General principles of presentation —

Part 20:

Basic conventions for lines

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*Dessins techniques — Principes généraux de représentation —
Partie 20: Conventions de base pour les traits*



Reference number
ISO 128-20:1996(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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 128-20 was prepared by Technical Committee ISO/TC 10, *Technical drawings, product definition and related documentation*, Subcommittee SC 1, *Basic conventions*.

This first edition is based on ISO 128:1982, clause 3, and it replaces the rules specified in that clause.

ISO 128 consists of the following parts, under the general title *Technical drawings — General principles of presentation*:

- Part 20: *Basic conventions for lines*
- Part 21: *Preparation of lines by CAD systems*
- Part 23: *Lines on construction drawings*

Further parts of ISO 128 are planned, covering other general principles of presentation including those for the application of lines within drawings of various technical fields.

Annex A of this part of ISO 128 is for information only.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Introduction

ISO 128-20 was prepared as ISO/DIS 12011-1.

ISO 128-20 contains generally applicable rules for the presentation of lines in all kinds of technical product documentation.

The application of lines within drawings of special technical fields varies considerably. Therefore rules of application are not given in this part of ISO 128.

Other International Standards containing rules for lines in specialized fields are listed in annex A.

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[ISO 128-20:1996](https://standards.iteh.ai/catalog/standards/sist/205aa83f-bd33-459b-93e2-f4a8452255e1/iso-128-20-1996)

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Technical drawings — General principles of presentation —

Part 20: Basic conventions for lines

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1 Scope

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This part of ISO 128 establishes the types of lines, their designations and their configurations, as well as general rules for draughting of lines used in technical drawings, e.g. diagrams, plans or maps.

2 Definitions

For the purposes of this part of ISO 128, the following definitions apply.

2.1 line: Geometrical object, the length of which is more than half of the line width and which connects an origin with an end in any way, e.g. straight, curved, without or with interruptions.

NOTES

- 1 The origin and the end may coincide with one another, e.g. in the case of a line forming a circle.
- 2 A line, the length of which is less than or equal to half of the line width, is called a dot.
- 3 A test should be made in order to check the appearance of drawings intended to be microcopied or transferred by fax.
















2.2 line element: Single part of a non-continuous line, e.g. dots, dashes, which vary in length, and gaps.

2.3 line segment: Group of two or more different line elements which form a non-continuous line, e.g. long dash/gap/dot/gap/dot/gap.

3 Types of lines

3.1 Basic types





Table 1

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
09		long dashed double-short dashed line
10		dashed dotted line
11		double-dashed dotted line
12		dashed double-dotted line
13		double-dashed double-dotted line
14		dashed triplicate-dotted line
15		double-dashed triplicate-dotted line

3.2 Variations of the basic types of lines

Possible variations of the basic types of lines in accordance with table 1 are given in table 2.

Table 2

Representation	Description
	uniform wavy continuous line
	uniform spiral continuous line
	uniform zigzag continuous line
	freehand continuous line
<p>NOTE — Table 2 contains only variations of the basic type of line No. 01. Variations of the basic types Nos. 02 to 15 are possible and are presented in the same way.</p>	

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3.3 Combinations of lines with the same length

3.3.1 Arrangement of two or more lines parallel to each other

For examples see figure 1.

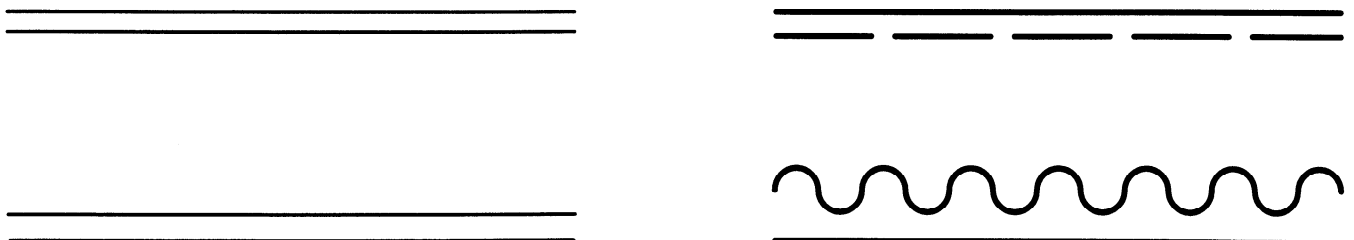


Figure 1

3.3.2 Arrangement of two different types of lines

a) With different line widths superimposed.

See figure 2 a) and b) for examples [figure 2 a): a continuous and a dotted line; figure 2 b): a continuous and a dashed spaced line].



Figure 2

b) Arranged next to each other.

See figure 3 for an example (two continuous lines either side of two dashed spaced lines).

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Figure 3

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3.3.3 Arrangement of two continuous lines parallel to each other with regularly recurring connecting elements between them

See figure 4 a) and b) for examples [figure 4 a): blackened circular elements; figure 4 b): blackened trapezoidal elements].



Figure 4

3.3.4 Arrangement of regularly recurring geometric pictorial elements in association with continuous lines

a) Without interruption of a continuous line.

See figure 5 for examples.

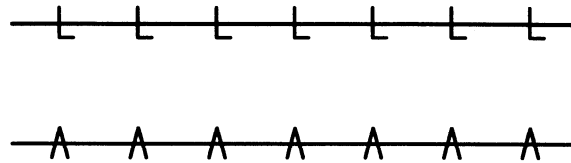


Figure 5

b) With interruption of a continuous line.

See figure 6 for examples.



Figure 6

4 Line dimensions

4.1 Line width

The width, d , of all types of lines shall be one of the following depending on the type and size of the drawing. This series is based on a common ratio $1:\sqrt{2}$ ($\approx 1:1,4$):

0,13 mm; 0,18 mm; 0,25 mm; 0,35 mm; 0,5 mm; 0,7 mm; 1 mm; 1,4 mm; 2 mm

The widths of extra wide, wide and narrow lines are in the ratio 4:2:1.

The line width of any one line shall be constant throughout the whole line.

4.2 Deviation in line width

Line widths may deviate from those specified in 4.1 providing that it is possible to differentiate unambiguously between two adjacent lines with different widths. If drawing equipment which produces constant line width is used, the deviation in line width between two such lines shall not be greater than $\pm 0,1d$.