

INTERNATIONAL
STANDARD

ISO
7519

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

*Dessins techniques — Dessins de construction — Principes généraux de
présentation pour des dessins d'ensemble et d'assemblage*



Reference number
ISO 7519:1991(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.

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International Standard ISO 7519 was prepared by Technical Committee ISO/TC 10, *Technical drawings, product definition and related documentation*, Sub-Committee SC 8, *Construction documentation*.

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Technical drawings — Construction drawings — General principles of presentation for general arrangement and assembly drawings

1 Scope

This International Standard is complementary to ISO 128 for construction drawings and establishes general principles of presentation to be applied to construction drawings for general arrangement and assembly, mainly within the field of building and architectural drawings.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 128:1982, *Technical drawings — General principles of presentation*.

ISO 129:1985, *Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications*.

ISO 9431:1990, *Construction drawings — Spaces for drawing and for text, and title blocks on drawing sheets*.

3 General

3.1 Building components which are detailed or specified in other documents (e.g. component range drawings, detail drawings and specifications) can be shown in a very simple manner on general arrangement and assembly drawings.

3.2 The degree of simplification depends on the kind of object represented, the scale of the drawing and the purpose of the documentation.

3.3 In a simplified representation only essential features shall be shown, if possible in outline only. The object shall be drawn to scale.

3.4 Figures in a simplified representation may be completed with graphical symbols, designations and text.

3.5 Reference shall be made, normally in the space for text on the drawing sheet, to the specified documentation for manufacturing, construction and assembly (see ISO 9431).

4 Lines

4.1 The types and description of lines shall be in accordance with ISO 128, with the addition of an extra-thick line.

4.2 An extra-thick line shall be used to stress certain parts.

4.3 The following thicknesses of lines shall be used:

thin line — relative thickness 1;

thick line — relative thickness 2;

extra-thick line — relative thickness 4.

4.4 On an individual drawing, two or three different line thicknesses may be used.

4.5 Outlines of parts in section are generally drawn with thicker lines than those in view (see figure 1).

For parts in section, either continuous thick lines (ISO 128, line type A) or continuous extra-thick lines shall be used.

For parts in view, either continuous thick or thin lines (ISO 128, line type A or B) shall be used depending on the line thickness used for sections (the ratio of line thicknesses shall be 1:2).

4.6 In order to distinguish parts in section from each other or parts in section from parts in view, different line thicknesses or hatching or shading of areas of parts in section may be used (see figure 1).

4.7 Boundaries of different materials in view shall be drawn with a continuous thin or thick line (ISO 128, line type B or A) (see figure 2).

Patterns of materials, e.g. marble and parquet flooring, are not normally shown; if necessary, they should be shown on separate drawings.

4.8 Inclined floors, roofs, etc. shall be drawn on plan drawings with a continuous thin line (ISO 128, line type B). If necessary, levels may be indicated by numerical values in accordance with ISO 129 and the slope may be indicated by an arrow pointing in the direction of fall together with the ratio of inclination (see figure 3).

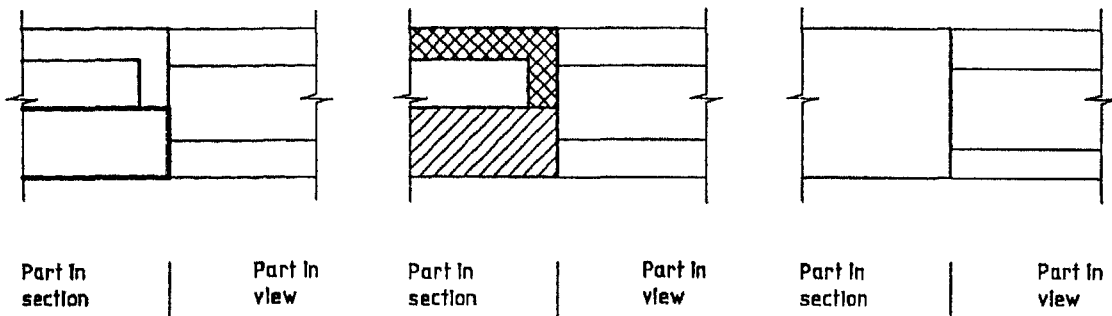


Figure 1 — Examples of outlines of parts in section and in view

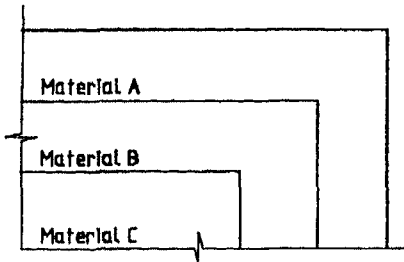


Figure 2 — Boundaries of different materials

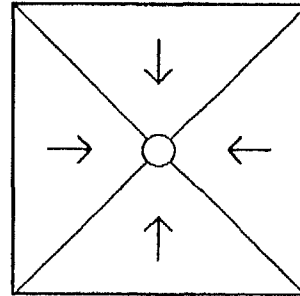


Figure 3 — Example showing a sloping floor

4.9 Stairs shall be shown on plan drawings as follows (see figure 4).

- a) Stairs shall be drawn with a continuous thin line (ISO 128, line type B).
- b) The direction arrow shall be located on the centre-line of the stairs and shall be drawn with a continuous thin line (ISO 128, line type B), with an open circle indicating the bottom riser and with an open arrowhead indicating the top riser.
- c) The cutting of a flight of stairs shall be shown symbolically by an oblique continuous thin line with zigzags (ISO 128, line type D) [see figure 4 b)]. In cases where the meaning cannot be misinterpreted, the zigzags may be omitted.
- d) If necessary, levels of landings may be indicated by numerical values and/or the steps may be numbered in the ascending direction, using "1" for the bottom step.

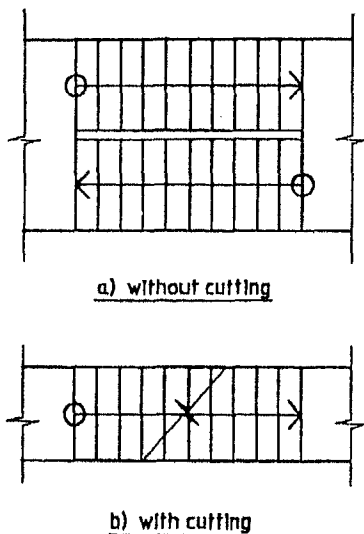


Figure 4 — Stairs

4.10 Ramps shall be shown on plan drawings as follows (see figure 5).

- a) Ramps shall be drawn with a continuous thin line (ISO 128, line type B).
- b) The direction arrow shall be located on the centre-line of the ramp and shall be drawn with a continuous thin line (ISO 128, line type B), with an open circle indicating the bottom level and with an open arrowhead indicating the top level.
- c) If necessary, the top and bottom levels may be indicated by numerical values in accordance with ISO 129 and/or the slope may be indicated by a ratio of inclination.

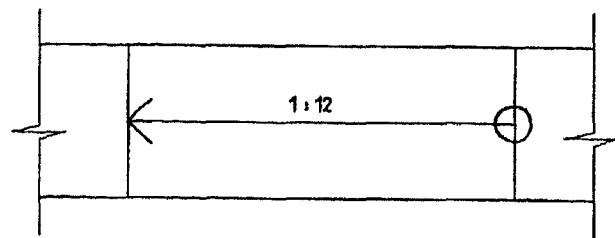


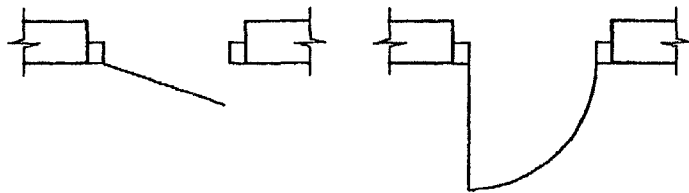
Figure 5 — Ramp

5 Simplified representation of doors and windows

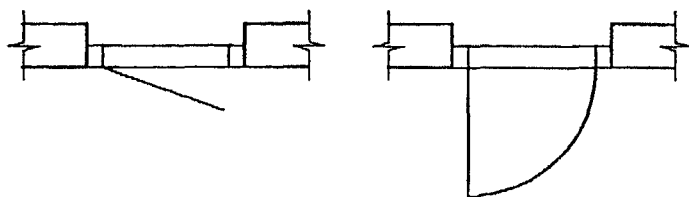
5.1 Doors and windows shall be drawn with a continuous thin or thick line (ISO 128, line type B or A).

5.2 The openings of doors shall be shown. Openings of side-hung doors shall be shown by drawing the door leaf at an angle of 30° without an arc, or at an angle of 90° with an arc (see figure 6).

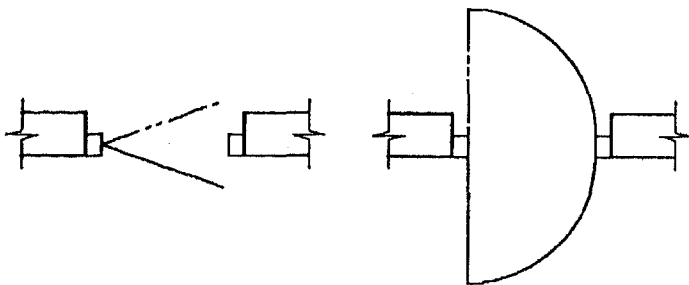
5.3 On drawings to large scales (1:50 and larger) doors and windows shall be drawn to show the type, placement, threshold, etc. (see figure 6).



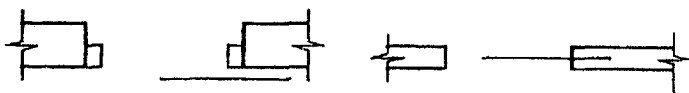
a) Side-hung doors without threshold



b) Side-hung doors with threshold



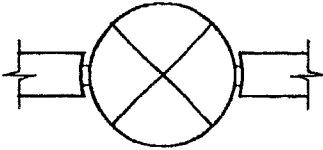
c) Swing doors



On face

Sliding door, with recess

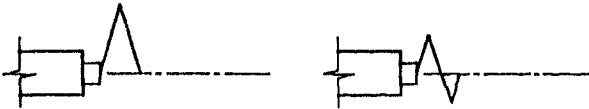
d) Sliding doors



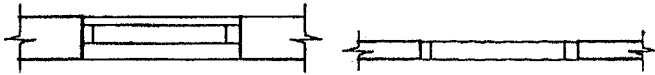
e) Revolving door



f) Overhead door



g) Sliding-folding doors



NOTE - If necessary, the panes may be shown with a continuous thin line (ISO 128, line type B).

h) Windows

Figure 6 — Examples of doors and windows on plan drawings to large scales

5.4 On drawings to small scales and also on drawings used in early stages of design work, doors and windows may be drawn in a simpler way than indicated in 5.2 and 5.3 (see figure 7).

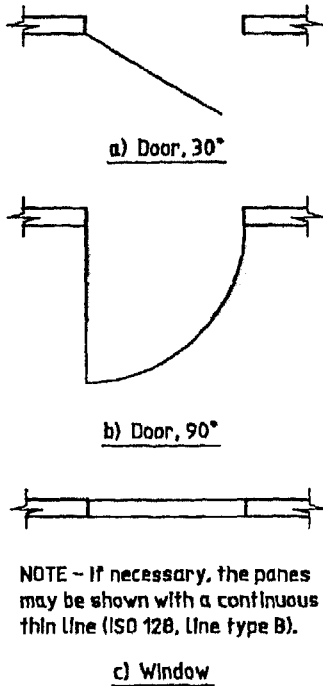


Figure 7 — Examples of doors and windows on drawings to small scales

6 Conventional representation

6.1 Suspended ceilings

A suspended ceiling shall be shown on a plan drawing by a diagonal, drawn using a chain thin double-dashed line (ISO 128, line type K). The level of the underside of the suspended ceiling should be indicated by its numerical value or by the room height (see figure 8).

The outline of a suspended ceiling free from the walls should be drawn with a chain thin double-dashed line (ISO 128, line type K) (see figure 8).

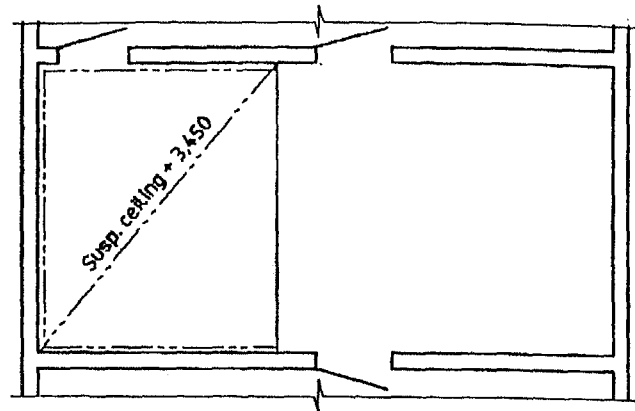


Figure 8 — Suspended ceiling

6.2 Openings, holes and recesses

6.2.1 If necessary, openings and holes in view and in section shall be indicated by two diagonals drawn using a continuous thin line (ISO 128, line type B). The diagonals may be omitted where the meaning of the marking is clear from the context (see figure 9).

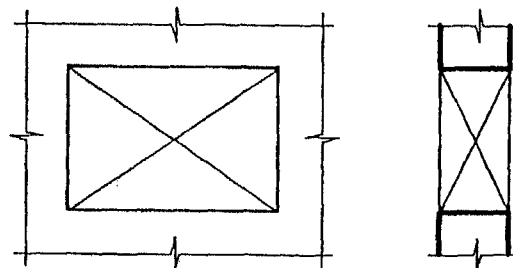


Figure 9 — Openings and holes

6.2.2 If necessary, recesses in view and in section shall be indicated by one diagonal, drawn using a continuous thin line (ISO 128, line type B). The diagonal may be omitted where the meaning of the marking is clear from the context (see figure 10).

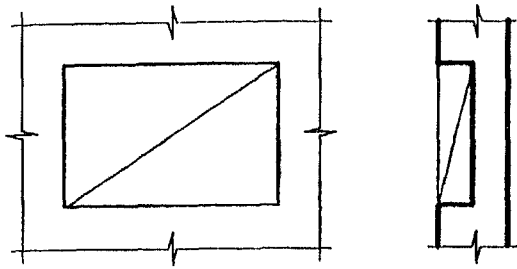


Figure 10 — Recesses

7 Arrow symbols

7.1 Arrow symbols may be used to convey different necessary information.

7.2 Arrow symbols may be drawn using continuous thin, thick or extra-thick lines, depending on the importance of the symbol in its intended usage (see figure 11).

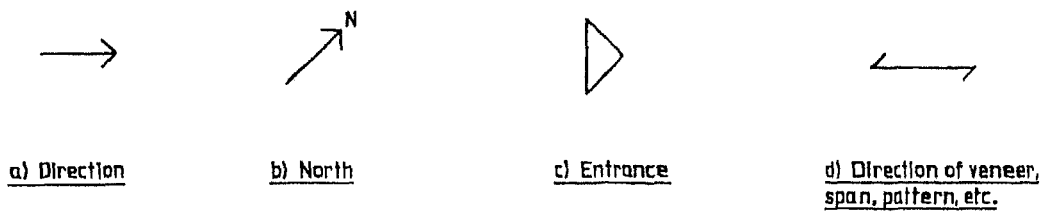


Figure 11 — Examples of arrow symbols

Annex A
(informative)

Bibliography

- [1] ISO 4069:1977, *Building and civil engineering drawings — Representation of areas on sections and views — General principles.*
- [2] ISO 4157-1:1980, *Building drawings — Part 1: Designation of buildings and parts of buildings.*
- [3] ISO 5455:1979, *Technical drawings — Scales.*

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Descriptors: drawings, technical drawings, architectural drawings, construction, graphic methods, specifications.

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