SLOVENSKI STANDARD
SIST ISO 129:1995

01-junij-1995

Tehniļ ne risbe - Kotiranje - Splońna naļ ela, definicije, naļ ini izdelave in posebne oznake

Technical drawings -- Dimensioning -- General principles, definitions, methods of execution and special indications

Dessins techniques -- Cotation -- Principes généraux, définitions, méthodes d'exécution et indications spéciales

Ta slovenski standard je istoveten z: **ISO 129:1985**

ICS:

01.100.01	Tehniļ no risanje na splońno	Technical drawings in general

SIST ISO 129:1995 **en**

International Standard 129

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications

Dessins techniques — Cotation — Principes généraux, définitions, méthodes d'exécution et indications spéciales

First edition — 1985-09-01

UDC 744.43 **Ref. No. ISO 129-1985 (E)**

Descriptors : drawings, technical drawings, dimensioning, generalities.

Price based on 12 pages

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 129 was prepared by Technical Committee ISO/TC 10, *Technical drawings.*

It cancels and replaces ISO Recommendation R 129-1959 and ISO 2595-1973, of which it constitutes a technical revision.

Printed in Switzerland

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Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications

1 Scope and field of application

This International Standard establishes the general principles of dimensioning applicable in all fields (i.e., mechanical, electrical, civil engineering, architecture, etc.). It is possible that in some specific technical areas, the general rules and conventions will not cover all the needs of specialized practices adequately. In such cases additional rules may be laid down in standards specific to these areas. However, the general principles of this International Standard shall be followed to facilitate the international exchange of drawings and to ensure the coherence of drawings in a comprehensive system relating to several technical fields.

The figures, as shown in this International Standard, merely illustrate the text and are not intended to reflect actual usage. The figures are consequently simplified to indicate only the relevant general principles applicable in any technical area.

2 References

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

ISO 406, *Technical drawings — Linear and angular tolerancing — Indications on drawings.*

ISO 1660, *Technical drawings — Dimensioning and tolerancing of profiles.*

ISO 2595, *Building drawings — Dimensioning of production drawings — Representation of manufacturing and work sizes.*

ISO 3040, *Technical drawings — Dimensioning and tolerancing cones.*

ISO 3098/1, *Technical drawings — Lettering — Part 1: Currently used characters.*

ISO 6428, *Technical drawings — Requirements for microcopying.*

3 General principles

3.1 Definitions

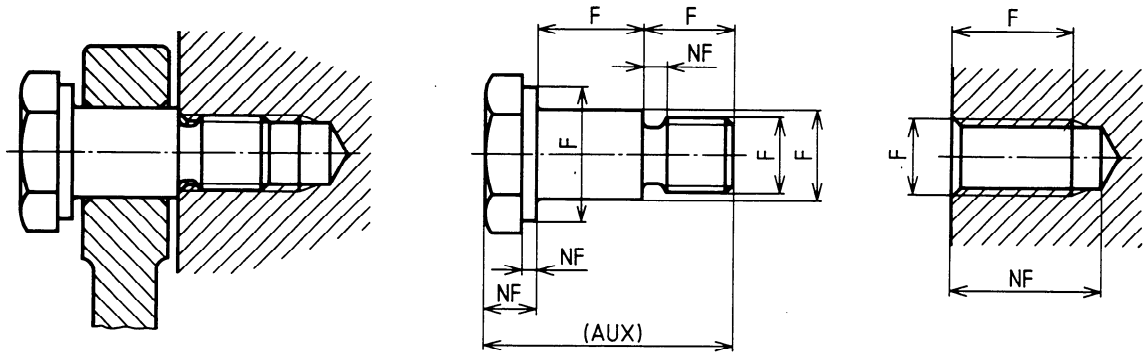
For the purposes of this International Standard, the following definitions apply.

3.1.1 dimension: A numerical value expressed in appropriate units of measurement and indicated graphically on technical drawings with lines, symbols and notes.

Dimensions are classified according to the following types:

3.1.1.1 functional dimension: A dimension that is essential to the function of the piece or space. (See "F" in figure 1.)

3.1.1.2 non-functional dimension: A dimension that is not essential to the function of the piece or space. (See "NF" in figure 1.)



a) Design requirement b) Shoulder screw c) Threaded hole

Figure 1 — Functional, non-functional and auxiliary dimensions

3.1.1.3 auxiliary dimension: A dimension given for information purposes only. It does not govern production or inspection operations and is derived from other values shown on the drawing or in related documents. An auxiliary dimension is given in parentheses and no tolerance applies to it. (See "AUX" in figure 1.)

3.1.2 feature: An individual characteristic such as a flat surface, a cylindrical surface, two parallel surfaces, a shoulder, a screw thread, a slot, a profile, etc.

3.1.3 end product: The complete part ready for assembly or service or a configuration produced from a drawing specification. An end product may also be a part ready for further processing (for example, the product of a foundry or forge) or a configuration needing further processing.

3.2 Application

3.2.1 All dimensional information necessary to define a part or component clearly and completely shall be shown directly on a drawing unless this information is specified in associated documentation.

3.2.2 Each feature shall be dimensioned once only on a drawing.

3.2.3 Dimensions shall be placed on the view or section that most clearly shows the corresponding features.

3.2.4 Each drawing shall use the same unit (for example, millimetres) for all dimensions but without showing the unit symbol. In order to avoid misinterpretation, the predominant unit symbol on a drawing may be specified in a note.

Where other units have to be shown as part of the drawing specification (for example, N · m for torque or kPa for pressure), the appropriate unit symbol shall be shown with the value.

3.2.5 No more dimensions than are necessary to define a part or an end product shall be shown on a drawing. No feature of a part or an end product shall be defined by more than one dimension in any one direction. Exception may, however, be made

a) where it is necessary to give additional dimensions at intermediate stages of production (for example, the size of a feature prior to carburizing and finishing);

b) where the addition of an auxiliary dimension would be advantageous.

3.2.6 Production processes or inspection methods should not be specified unless they are essential to ensure satisfactory functioning or interchangeability.

3.2.7 Functional dimensions should be shown directly on the drawing wherever possible (see figure 2).

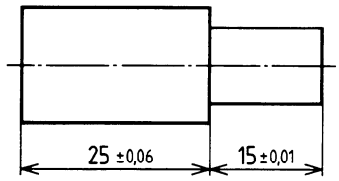


Figure 2 — Functional dimensioning

Occasionally indirect functional dimensioning is justified or necessary. In such cases, care shall be exercised so that the effect of directly shown functional dimensioning is maintained. Figure 3 shows the effect of acceptable indirect functional dimensioning that maintains the dimensional requirements established by figure 2.

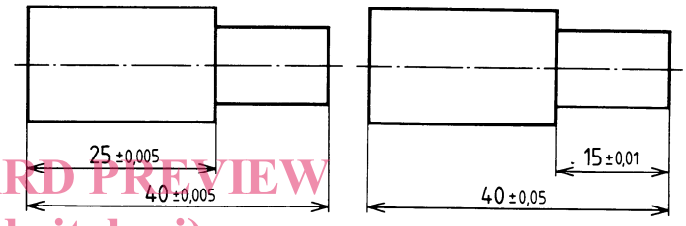


Figure 3 — Indirect functional dimensioning

3.2.8 The non-functional dimensions should be placed in a way which is most convenient for production and inspection.

4 Method of dimensioning

4.1 Elements of dimensioning

The elements of dimensioning include the projection line, dimension line, leader line, dimension line termination, the origin indication, and the dimension itself. The various elements of dimensioning are illustrated in figures 4 and 5. (See ISO 128.)

4.2 Projection lines, dimension lines and leader lines

Projection lines, dimension lines and leader lines are drawn as thin continuous lines as shown in ISO 128 and as illustrated in figures 4 and 5.

4.2.1 Projection lines shall extend slightly beyond the respective dimension line (see figures 4 and 5).

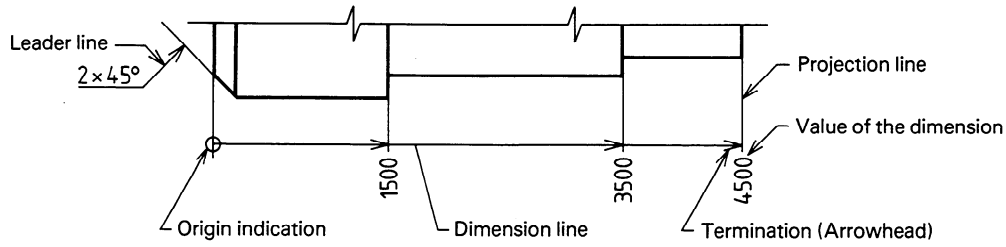


Figure 4

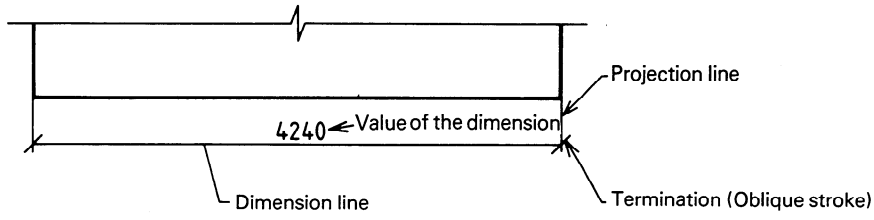


Figure 5

4.2.2 Projection lines should be drawn perpendicular to the feature being dimensioned. Where necessary, however, they may be drawn obliquely, but parallel to each other (see figure 6).

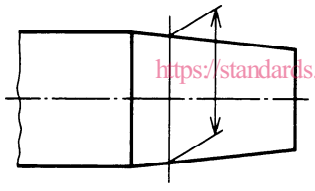


Figure 6

4.2.3 Intersecting construction and projection lines shall extend slightly beyond their point of intersection (see figure 7).

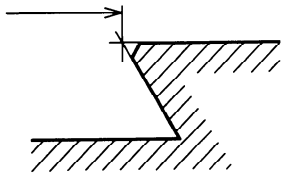


Figure 7

4.2.4 In general, projection lines and dimension lines should not cross other lines unless this is unavoidable (see figure 8).

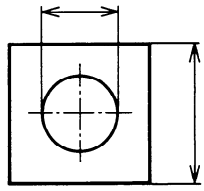


Figure 8

4.2.5 A dimension line shall be shown unbroken where the feature to which it refers is shown broken (see figure 9), except as indicated in 4.4.1, method 2.

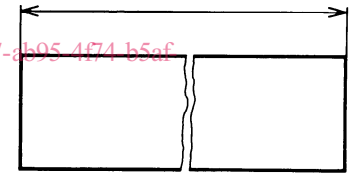


Figure 9

4.2.6 Intersecting projection and dimension lines should be avoided. Where unavoidable, however, neither line shall be shown with a break (see figure 10).

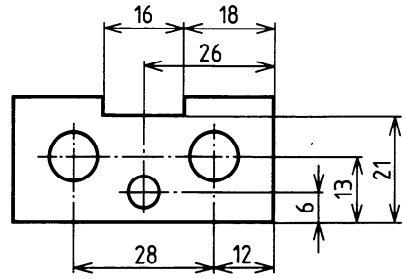


Figure 10

4.2.7 A centreline or the outline of a part shall not be used as a dimension line but may be used in place of a projection line (see figure 10).