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# INTERNATIONAL STANDARD



# 5455

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

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## Technical drawings — Scales

*Dessins techniques — Échelles*

First edition — 1979-02-15

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UDC 744.4

Ref. No. ISO 5455-1979 (E)

**Descriptors** : scale (ratio), designation, engineering drawings.

## FOREWORD

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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.

International Standard ISO 5455 was developed by Technical Committee ISO/TC 10, *Technical drawings*, and was circulated to the member bodies in May 1977.

It has been approved by the member bodies of the following countries :

|           |                |                       |
|-----------|----------------|-----------------------|
| Australia | Germany, R. F. | Philippines           |
| Austria   | Hungary        | Romania               |
| Belgium   | India          | South Africa, Rep. of |
| Brazil    | Ireland        | Spain                 |
| Bulgaria  | Italy          | Switzerland           |
| Canada    | Japan          | Turkey                |
| Chile     | Mexico         | United Kingdom        |
| Denmark   | Netherlands    | U.S.A.                |
| Finland   | New Zealand    | U.S.S.R.              |
| France    | Norway         | Yugoslavia            |

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Czechoslovakia  
Poland  
Sweden

# Technical drawings – Scales

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies recommended scales and their designation for use on all technical drawings in any field of engineering.

## 2 DEFINITIONS

**2.1 scale :** Ratio of the linear dimension of an element of an object as represented in the original drawing to the real linear dimension of the same element of the object itself.

NOTE – The scale of a print may be different from that of the original drawing.

**2.2 full size :** A scale with the ratio 1 : 1.

**2.3 enlargement scale :** A scale where the ratio is larger than 1 : 1. It is said to be larger as its ratio increases.

**2.4 reduction scale :** A scale where the ratio is smaller than 1 : 1. It is said to be smaller as its ratio decreases.

## 3 DESIGNATION

The complete designation of a scale shall consist of the word "SCALE" (or its equivalent in the language used on the drawing) followed by the indication of its ratio, as follows :

- SCALE 1 : 1 for full size;
- SCALE X : 1 for enlargement scales;
- SCALE 1 : X for reduction scales.

If there is no likelihood of misunderstanding, the word "SCALE" may be omitted.

## 4 INSCRIPTION

**4.1** The designation of the scale used on the drawing shall be inscribed in the title block of the drawing.

**4.2** Where it is necessary to use more than one scale on a drawing, the main scale only shall be inscribed in the title block, and all other scales adjacent to the item reference number of the part concerned, or adjacent to the reference letter of a detail view (or section).

## 5 SCALES

**5.1** The recommended scales for use on technical drawings are specified in the following table.

| Category           | Recommended scales |           |            |
|--------------------|--------------------|-----------|------------|
| Enlargement scales | 50 : 1             | 20 : 1    | 10 : 1     |
|                    | 5 : 1              | 2 : 1     |            |
| Full size          |                    |           | 1 : 1      |
| Reduction scales   | 1 : 2              | 1 : 5     | 1 : 10     |
|                    | 1 : 20             | 1 : 50    | 1 : 100    |
|                    | 1 : 200            | 1 : 500   | 1 : 1 000  |
|                    | 1 : 2 000          | 1 : 5 000 | 1 : 10 000 |

NOTE – If, for special applications, there is need for a larger enlargement scale or a smaller reduction scale than those shown in the table, the recommended range of scales may be extended in either direction, provided that the required scale be derived from a recommended scale by multiplying by whole number powers of 10. In exceptional cases where for functional reasons the recommended scales cannot be applied, intermediate scales may be chosen.

**5.2** The scale to be chosen for a drawing will depend upon the complexity of the object to be depicted and the purpose of the representation.

In all cases, the selected scale shall be large enough to permit easy and clear interpretation of the information depicted.

The scale and the size of the object, in turn, will decide the size of the drawing.

**5.3** Details that are too small for complete dimensioning in the main representation shall be shown adjacent to the main representation in a separate detail view (or section) which is drawn to a larger scale.

## 6 LARGE SCALE DRAWINGS

It is recommended that, for information, a full size view be added to the large scale representation of a small object.

In this case the full size view may be simplified by showing the outlines of the object only.