

INTERNATIONAL STANDARD

ISO 1012

Third edition
1998-11-15

Photography — Films in sheets and rolls for general use — Dimensions

*Photographie — Films en feuilles et pellicules à usage général —
Dimensions*

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Reference number
ISO 1012:1998(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 1012 was prepared by Technical Committee ISO/TC 42, *Photography*.

This third edition cancels and replaces the second edition (ISO 1012:1991), of which it constitutes a technical revision. This revision features an expanded scope in order to include films in rolls for general use as well as films in sheets. The intent is to provide a standard for these film formats where they have not been specified in other International Standards. These films are used for portraits, school photography portraits, wedding photography, catalogue photography and the like. Core dimensions have been added to this International Standard, as have a number of new sheet film sizes. 46 mm core dimensions have not been specified. Recommendations on package marking have been added so as to encourage the provision of guidance as to the intended use of the product.

Annexes A and B of this International Standard are for information only.

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Introduction

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

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Photography — Films in sheets and rolls for general use — Dimensions

1 Scope

This International Standard specifies the nominal sizes and aim dimensions, with their cutting tolerances, of photographic films in rolls and sheets for use in general photographic applications. It also specifies perforating dimensions and selected core dimensions and includes a section on package marking.

NOTE Films used for specific photographic applications, such as radiography, graphic arts, micrography, aerial photography, documentary reproduction and on recording instruments, are specified in other International Standards.

2 Normative references

The following International 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 1:1975, *Standard reference temperature for industrial length measurements*.

ISO 554:1976, *Standard atmospheres for conditioning and/or testing — Specifications*.

3 Conditions for measurement of dimensions

3.1 Dimensions

The dimensions and tolerances specified in this International Standard shall apply at the time of manufacture (except where specifically stated otherwise), when measured under atmospheric conditions of $(23 \pm 2)^\circ\text{C}$ and $(50 \pm 5)\%$ relative humidity, as specified in ISO 554.

3.2 Calibration of measuring instruments

All measuring instrument calibrations shall be conducted at a temperature of 20°C (as specified in ISO 1) and a relative humidity of 50 %.

4 Film in rolls

4.1 Film dimensions

Preferred roll widths for 35 mm, 46 mm and 70 mm films, along with their cutting tolerances, shall conform to the values given in table 1. New film sizes shall conform to the cutting rules given in table 2.

NOTE For 35 mm films, the width and perforating dimensions are intended to be the same as those given in ISO 1007:—¹⁾, *Photography — 135-size film and magazine — Specifications*.

The preferred nominal film lengths shall conform to the values given in table 3. The actual film length shall be not less than that given, but additional length is left to the discretion of the manufacturer.

4.2 Perforating dimensions

Perforated roll films shall conform to the dimensions shown in figure 1 and given in table 4.

4.3 Winding configuration

Film shall be wound with the sensitized side inwards.

It is recognized that some traditional applications utilize rolls with the sensitized side wound outwards.

4.4 Splices

Film in rolls shall comprise a single, unspliced, length.

4.5 Cores

Core dimensions shall conform to those shown in figure 2 and given in table 5. Slots in cores may be provided for use in attaching the film being wound. One or both ends of the core may be rounded slightly to facilitate inserting the core in a wound roll of film.

Dimensions of cores for 46 mm films have not been specified.

5 Film in sheets

5.1 Preferred sizes

Nominal and aim dimensions, together with their tolerances, for preferred sheet film sizes shall conform to the values given in table 6.

5.2 Recognized sizes

Nominal and aim dimensions, together with their tolerances, for recognized sheet film sizes shall conform to the values given in table 7.

5.3 Cutting and tolerance rules

The cutting and tolerance rules for any new sizes shall conform to the values given in table 8.

5.4 Squareness and edge straightness

Squareness, edge straightness, shape and compliance with specified dimensions shall be checked at the same time by comparison of any given sheet with two perfect rectangles, independently located, one made according to the minimum dimensional tolerance specified in this International Standard, and the other according to the maximum tolerance. No point on the perimeter of the sheet shall fall within the smaller rectangle. No point shall fall outside the larger rectangle.

¹⁾ To be published. (Revision of ISO 1007:1995)

5.5 Identification of the sensitized side

Notches may be used to distinguish the sensitized side of the film. When a sheet of film is held with the longer edges in a vertical orientation, the notches shall be on a shorter edge, near the upper right-hand corner or the lower left-hand corner, when the sensitized side is facing the observer.

The shape and number of notches are left to the discretion of the manufacturer. They may also be used as a code to identify the type of film.

Notches shall not exceed 2,5 mm in depth.

6 Package marking

Sufficient data shall be provided on a product's packaging to inform the user of proper use and handling.

Product packaging shall be marked so as to indicate

- a) product name and size,
- b) conditions of use (such as safelight), and
- c) conditions of shipping and storage.

To accomplish this, each of the packages which constitute the product's packaging should be marked so as to indicate one or more of the following: ²⁾

- product name or trade name — for unit packages this item shall be legible under recommended safelight conditions (other than total darkness);
- name or trade mark of the manufacturer;
- manufacturer's catalogue identification number;
- bar code information;
- information to assist recycling of waste packaging;
- quantity of units contained in the package;
- product name or trade name of sensitized material;
- nominal product dimensions, in metric units, with the smaller dimension first;
- batch number and/or parent roll number;
- expiration date or "develop before" date or inventory control code;
- manufacturer's recommended safelight conditions; ³⁾
- manufacturer's recommended storage conditions; ³⁾
- indication of winding, if applicable; ³⁾
- indication of attachment of film on core, if applicable; ³⁾
- indication of perforated film, if applicable. ³⁾

²⁾ There may be legal requirements in certain countries for additional data to be marked on the package.

³⁾ This may be indicated by wording or by a code.

Table 1 — Preferred widths of film in rolls

Dimensions in millimetres

Nominal width	Minimum	Aim	Maximum
35 ¹⁾	34,90	34,95	35,00
46	45,75	45,87	46,00
70	69,75	69,87	70,00

1) See 4.1.

Table 2 — Cutting rules for new roll width sizes

Nominal width cm	Slitting aim mm	Tolerance mm
Up to and including 12	Nominal width minus 1,5	$\pm 0,5$
Greater than 12, up to and including 65	Nominal width minus 2,0	$\pm 1,0$
Greater than 65	Nominal width minus 2,5	$\pm 1,5$

Table 3 — Preferred roll lengths

Nominal length m
30,5
61

Table 4 — Perforating dimensions for 35 mm and 70 mm films in rolls

Dimensions in millimetres

Symbol	Aim	Tolerances
<i>B</i>	4,75	$\pm 0,03$
<i>C</i>	2,80	$\pm 0,03$
<i>D</i>	1,98	$\pm 0,03$
<i>E</i>	2,00	$\pm 0,15$
<i>G</i> ¹⁾	—	0,10 maximum
<i>R</i>	0,50 nominal	—

1) Dimension *G* is the offset of any given side-to-side perforation pair.

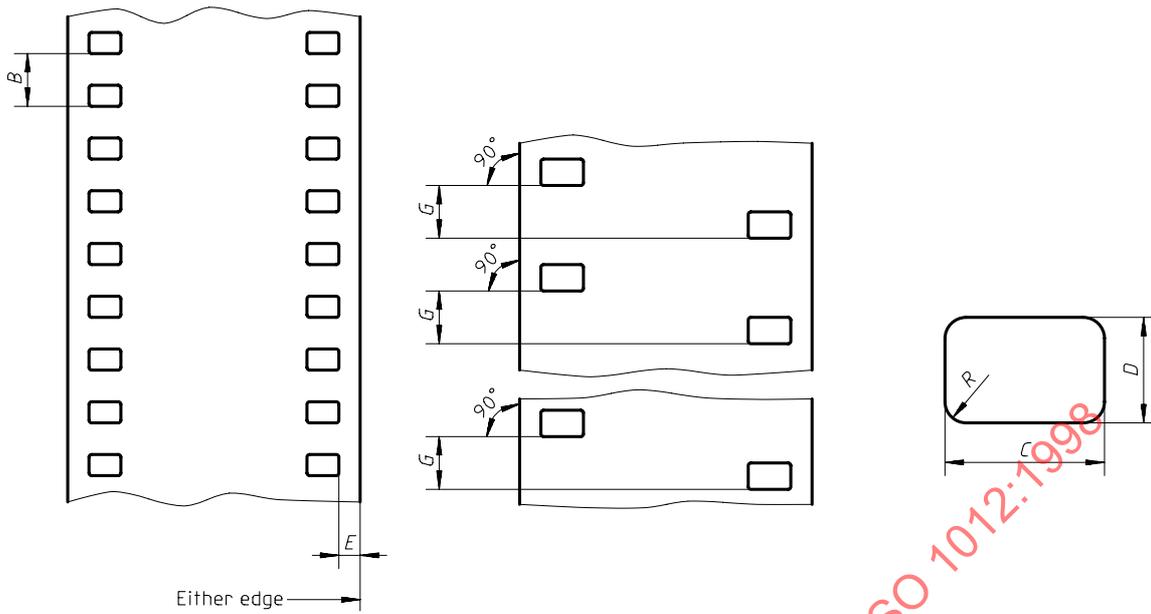


Figure 1 — Perforating dimensions for 35 mm and 70 mm films in rolls

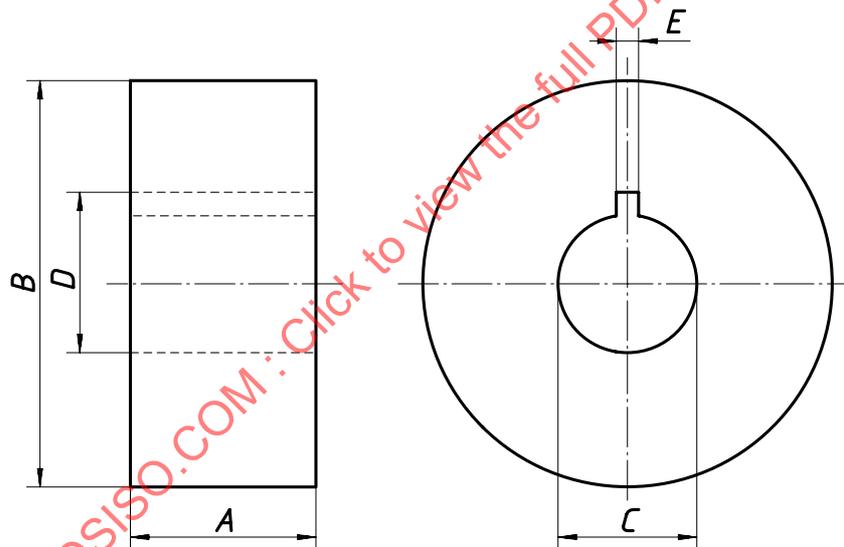


Figure 2 — Core dimensions

Table 5 — Core dimensions

Dimensions in millimetres

Nominal size	Symbol									
	A		B		C		D		E	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
35 × 50	33,9	34,9	49,5	50,5	25,7	26,1	29,5	30,4	3,8	4,2
35 × 76	33,9	34,9	74	77	25,7	26,1	29,5	30,4	3,8	4,2
70 × 50	68,9	69,9	49,5	50,5	25,7	26,1	29,5	30,4	3,8	4,2
70 × 76	68,9	69,9	74	77	25,7	26,1	29,5	30,4	3,8	4,2

Table 6 — Preferred sheet sizes

Nominal cm	Aim mm	Tolerances mm
9 × 12	88,5 × 118,5	± 0,5 ± 0,5
13 × 18	128 × 178	± 1,0 ± 1,0
18 × 24	178 × 238	± 1,0 ± 1,0
24 × 30	238 × 298	± 1,0 ± 1,0
30 × 40	298 × 398	± 1,0 ± 1,0

Table 7 — Recognized sheet sizes

Nominal cm	Aim mm	Tolerances mm
6 × 13	58,5 × 128	± 0,5 ± 1,0
6,5 × 9	63,5 × 88,5	± 0,5 ± 0,5
8,3 × 10,8	81 × 106,4	± 0,4 ± 0,4
10,2 × 12,7	99,6 × 125	± 0,4 ± 0,4
10 × 15	98 × 148	± 1,0 ± 1,0
12,1 × 16,5	118,3 × 163,5	± 0,4 ± 0,8
16,5 × 21,6	163,5 × 213,8	± 0,8 ± 0,8
17,8 × 43,2	176,4 × 427,6	± 0,8 ± 0,8
20,3 × 25,4	201,6 × 252,8	± 0,8 ± 0,8
25,4 × 30,5	252,8 × 303,2	± 0,8 ± 0,8
27,9 × 35,6	278,6 × 354,8	± 0,8 ± 0,8
30,5 × 50,8	303,2 × 507,2	± 0,8 ± 0,8
50,8 × 61	507,2 × 608,8	± 0,8 ± 0,8

Table 8 — Cutting and tolerance rules for new sheet sizes

Nominal cm	Aim mm	Tolerances mm
Up to and including 12	Nominal minus 1,5	± 0,5
Greater than 12, up to and including 65	Nominal minus 2,0	± 1,0
Greater than 65	Nominal minus 2,5	± 1,5

Annex A (informative)

Dimensional stability

The specified dimensions and tolerances apply to the film at the time of manufacture and when measured in equilibrium with the standard atmosphere of

temperature (23 ± 2) °C,

relative humidity (50 ± 5) %.

These dimensions may be altered by a permanent ageing shrinkage and by a temporary shrinkage or swell since they will change with the moisture content and the temperature of the atmosphere.

Normally, at the time of package opening and under the same atmospheric conditions, there should be no departure from the dimensions at the time of manufacture by more than

0,08 % greater than the maximum tolerance, 0,11 % less than the minimum tolerance, for films on cellulose ester base,

0,05 % greater than the maximum tolerance, 0,08 % less than the minimum tolerance, for films on polyester base.

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