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**Photography — Paper dimensions —  
Paper for documentary reproduction**

**iTeh STANDARD PREVIEW**  
*Photographie — Dimensions des papiers — Papiers pour reproduction de documents*  
**(standards.iteh.ai)**

ISO 7272:1993

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## 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.

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International Standard ISO 7272 was prepared by Technical Committee ISO/TC 42, *Photography*.

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Annexes A and B form an integral part of this International Standard. Annexes C and D are for information only.

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# Photography — Paper dimensions — Paper for documentary reproduction

## 1 Scope

This International Standard specifies the nominal sizes and aim dimensions, with their tolerances, of photographic papers in sheets and rolls, used for documentary reproduction.

It also specifies the requirements for shape of sheets, core dimensions and winding for papers in rolls, and package marking.

It applies to silver-gelatin and diazo papers as well as to papers used in the silver complex diffusion transfer process.

The corresponding International Standard for films is ISO 7247.

In this International Standard, metric units are prime.

## 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 1:1975, *Standard reference temperature for industrial length measurements.*

ISO 216:1975, *Writing paper and certain classes of printed matter — Trimmed sizes — A and B series.*

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

ISO 7247:1993, *Photography — Film dimensions — Film for documentary reproduction.*

## 3 Definition

For the purposes of this International Standard, the following definition applies.

**3.1 documentary reproduction:** Photographic reproduction of line documents (drawings, diagrams, text, etc.) generally to the same scale, possibly to a slightly different one, for example between 0,75 and 1,25 to 1.

This definition excludes the other parts of reprography, even if the same photosensitive papers are used, photocomposition, electrostatic photography and offset printing. Other International Standards exist or are in preparation for most of these applications.

#### 4 Conditions for measurement of dimensions

The dimensions and tolerances specified in this International Standard apply at the time of manufacture, measured under atmospheric conditions of  $(23 \pm 2) ^\circ\text{C}$ , and  $(50 \pm 5) \%$ , relative humidity, as specified in ISO 554<sup>1)</sup> (see annex C).

#### 5 Papers in sheets

##### 5.1 Dimensions

##### 5.1.1 Preferred sizes

Nominal and aim dimensions for preferred sizes of sheets shall conform to the values given in table 1. Table 1 lists "A" sizes derived from writing paper sizes (see ISO 216) and which will be used increasingly in the future.

The "A + margin" series is described in annex A.

**Table 1 — Preferred sizes of papers in sheets**

Nominal cm	Aim <sup>1)</sup> mm
14,8 × 21 (A5)	148 × 210
21 × 29,7 (A4)	210 × 297
29,7 × 42 (A3)	297 × 420
42 × 59,4 (A2)	420 × 594
59,4 × 84,1 (A1)	594 × 841
84,1 × 118,9 (A0)	841 × 1 189

1) Aim dimensions used in paper manufacturing are larger than those used for film manufacturing.

**Table 2 — Cutting and tolerance rules for preferred sizes of papers in sheets**

Nominal, <i>N</i> cm	Aim	Tolerance mm
$N \leq 12$	<i>N</i>	$\pm 1,5$
$12 < N \leq 65$	<i>N</i>	$\pm 2$
$N > 65$	<i>N</i>	$\pm 2,5$

NOTE — These cutting rules recognize that aim dimensions of paper sheets are larger than those of film sheets of the same nominal size.

**Table 3 — Recognized sizes of papers in sheets**

Nominal cm <sup>1)</sup>	Aim mm	Tolerance mm
21,6 × 27,9	216 × 279	$\pm 1,6$
27,9 × 43,2	279 × 432	$\pm 1,6$
43,2 × 55,9	432 × 559	$\pm 2,4$
45,7 × 61	457 × 610	$\pm 2,4$
55,9 × 86,4	559 × 864	$\pm 2,4$
61 × 76,2	610 × 762	$\pm 2,4$
86,4 × 111,8	864 × 1 118	$\pm 2,4$

1) These sizes were originated in inches. This explains why aims and tolerances do not follow the rules in table 2. See annex B for full information concerning inch sizes and their correspondence with metric sizes.

##### 5.1.2 Cutting and tolerance rules for preferred sizes

The cutting and tolerance rules for preferred sizes of sheets shown in table 1 and for new metric sizes of sheets shall be as given in table 2.

##### 5.1.3 Recognized sizes

Nominal and aim dimensions for temporarily recognized sizes of sheets and their tolerances shall conform to the values given in table 3.

Equipment manufacturers are encouraged, however, to design future equipment to accept only the preferred sizes listed in table 1.

#### 5.2 Squareness and edge straightness

Squareness, edge straightness, shape and compliance with dimensions specified in this International Standard shall be checked at the same time by comparison of any given sheet with two perfect rectangles, independently located, one made to the minimum dimensional tolerance specified in this International Standard and the other to the maximum tolerance. No point on the perimeter of the sheet shall fall within the smaller rectangle nor shall any point fall outside the larger rectangle.

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

## 6 Papers in rolls

### 6.1 Width of rolls

#### 6.1.1 Preferred widths

Nominal and aim dimensions for preferred widths of rolls shall conform to the values given in table 4.

The "A + margin" series is described in annex A.

**Table 4 — Preferred widths of papers in rolls**

Nominal cm	Aim mm
21 (for A5 and A4)	210
29,7 (for A4 and A3)	297
42 (for A3 and A2)	420
84,1 (for A1 and A0)	841

#### 6.1.2 Slitting and tolerance rules for preferred widths

The slitting and tolerance rules for preferred widths of rolls shown in table 4, and for new metric widths of rolls, shall be as given in table 5.

**Table 5 — Slitting and tolerances rules for preferred widths of papers in rolls**

Nominal, <i>N</i> cm	Aim	Tolerance mm
$N \leq 12$	<i>N</i>	$\pm 1,5$
$12 < N \leq 65$	<i>N</i>	$\pm 2$
$N > 65$	<i>N</i>	$\pm 2,5$

NOTE — These slitting rules recognize that aim dimensions of paper rolls are larger than those of film rolls of the same nominal width.

#### 6.1.3 Recognized widths

Nominal and aim dimensions for temporarily recognized widths of rolls, and their tolerances shall conform to the values given in table 6.

**Table 6 — Recognized widths of papers in rolls**

Nominal <sup>1)</sup> cm	Aim mm	Tolerance mm
27,9	279	
61	610	
76,2	762	+ 2,4
86,4	864	- 1,6
91,4	914	
106,7	1 067	

1) These widths were originated in inches. This explains why aims and tolerances do not follow the rules in table 5. See annex B for full information concerning inch widths and their correspondance with metric widths.

Equipment manufacturers are encouraged, however, to design future equipment to accept only the preferred widths listed in table 4.

### 6.2 Length of rolls

Nominal length of rolls shall be:

10 m, 20 m, 30 m, 60 m, 80 m, 100 m, 175 m, 240 m or 350 m.

These lengths do not include either the length of an opaque spliced leader or trailer or the length of paper added by the manufacturer to facilitate loading and unloading.

Actual length, at the time of cutting, shall not be less than nominal length.

### 6.3 Splices

There shall be no splices in papers in rolls.

### 6.4 Core

#### 6.4.1 Core length

The aim length of the core shall equal the aim width of the paper minus 1 mm with a tolerance of  $\pm 1$  mm.

#### 6.4.2 Core internal diameter

The preferred internal diameter of the core is 76,1 mm  $\pm 0,3$  mm. The core internal diameter of 71,9 mm  $\pm 0,5$  mm is, however, recognized<sup>2)</sup>.

2) Manufacturers of equipment and sensitized goods should be aware of a possible future preference for an internal diameter and tolerance of 71,9 mm  $\pm 0,3$  mm.

## 6.5 Winding

It is preferred that the paper be wound on the core sensitized side in.

It is preferred that the paper not be attached to the core. It is preferred that the paper be wound on the core so that the position of the core be symmetrical with respect to the paper roll. In no case shall the core be recessed on one side while protruding from the other.

The overall roll width, which includes any widthwise winding deviation plus any protrusion of the core from the roll, should not exceed the maximum slitting width plus 1 mm.

## 7 Package marking

### 7.1 Data

Sufficient data shall be given on the package to ensure correct usage of the product.

Packages are marked for the purpose of identifying:

- a) product name and format;
- b) conditions of use (such as safelight);
- c) conditions for shipping and storage.

Any given level of packaging fulfils one or more of these functions and shall be identified accordingly, using the appropriate entries from the following list<sup>3)</sup>:

- product name or tradename<sup>4)</sup>;
- name or trademark 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;
- nominal size or nominal width and length, in metric units, showing 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<sup>5)</sup>;
- manufacturer's recommended storage conditions<sup>5)</sup>;
- indication of non-preferred winding, if applicable <sup>4)</sup> and 5).

### 7.2 Compliance

If it is desired to indicate compliance of the product with this International Standard, the following wording shall be used:

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3) There can be legal requirements in certain countries for other data to be marked on the packages.

4) For unit packages, this item should be legible under recommended safelight conditions (other than total darkness).

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

## Annex A (normative)

### “A + Margin” series of papers in sheets and rolls

The “A + margin” series of sizes and widths is made to provide trimming and working margins for printing any register mark and working symbols, or as gutter between two documents reproduced on the same sheet.

#### A.1 Papers in sheets

The “A + margin” sizes of sheets shall conform to the values given in table A.1.

**Table A.1 — “A + Margin” sizes of papers in sheets**

Nominal cm	Aim mm
18 × 24	180 × 240
24 × 33	240 × 330
33 × 46	330 × 460
46 × 64	460 × 640

The cutting and tolerance rules for “A + margin” sizes of sheets shall be as given in table 2.

#### A.2 Papers in rolls

The “A + margin” widths of rolls shall conform to the values given in table A.2.

**Table A.2 — “A + margin” widths of papers in rolls**

Nominal cm	Aim mm
24	240
46	460
88	880

The slitting and tolerance rules for “A + margin” widths of rolls shall be as given in table 5.

## Annex B (normative)

### Recognized sizes and widths of papers (originated in inches)

#### B.1 Recognized sizes of papers in sheets

Nominal and aim dimensions for temporarily recognized sizes, originated in inches, and their tolerances shall conform to the values given in table B.1.

#### B.2 Recognized widths of papers in rolls

Nominal and aim dimensions for temporarily recognized widths, originated in inches, and their tolerances shall conform to the values given in table B.2.

**Table B.1 — Recognized sizes, originated in inches, of papers in sheets**

Nominal		Aim		Tolerance	
in	cm	in	mm	in	mm
8,5 × 11	21,6 × 27,9	8,5 × 11	216 × 279	± 0,06	± 1,6
11 × 17	27,9 × 43,2	11 × 17	279 × 432	± 0,06	± 1,6
17 × 22	43,2 × 55,9	17 × 22	432 × 559	± 0,09	± 2,4
18 × 24	45,7 × 61	18 × 24	457 × 610	± 0,09	± 2,4
22 × 34	55,9 × 86,4	22 × 34	559 × 864	± 0,09	± 2,4
24 × 30	61 × 76,2	24 × 30	610 × 762	± 0,09	± 2,4
34 × 44	86,4 × 111,8	34 × 44	864 × 1 118	± 0,09	± 2,4

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**Table B.2 — Recognized widths, originated in inches, of papers in rolls**

Nominal		Aim		Tolerance	
in	cm	in	mm	in	mm
11	27,9	11	279		
24	61	24	610		
30	76,2	30	762	+ 0,09	+ 2,4
34	86,4	34	864	- 0,06	- 1,6
36	91,4	36	914		
42	106,7	42	1 067		



## Annex C (informative)

### Dimensional stability

The dimensions and tolerances specified apply to the paper at the time of manufacture and when measured in equilibrium with the standard atmosphere specified in ISO 554, i.e. temperature  $(23 \pm 2)$  °C, relative humidity  $(50 \pm 5)$  %.

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

For non-resin-coated paper, the dimensional variations can reach as much as 0,3 % for a 10 % change in relative humidity.

Nevertheless, at the time of package opening within the warranty period of the paper, dimensions measured under atmospheric conditions of temperature  $(23 \pm 2)$  °C and relative humidity  $(50 \pm 5)$  % should not depart from those at the time of manufacture by more than  $\pm 0,50$  % (resin-coated and non-resin-coated papers).

The conditioning of a sample of paper cut from a roll requires a minimum of 8 h for non-resin-coated paper and 14 d for resin-coated paper (see ISO 6221:1991, subclause 5.3.2<sup>6)</sup>).

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6) ISO 6221:1991, *Photography — Films and papers — Determination of dimensional change*.