INTERNATIONAL STANDARD

ISO 1009

Second edition
1992-01-15

Photography — Paper dimensions — Rolls for printers

Photographie — Dimensions des papiers — Rouleaux pour tireuses

Reference number
ISO 1009:1992(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 1009 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 1009:1973) together with ISO 1011:1973, which have been technically revised and consolidated.

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

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

This International Standard is a revision and consolidation of ISO 1009:1973 dealing with dimensions of black-and-white papers in rolls, and ISO 1011:1973 dealing with dimensions of colour papers in rolls for use in paper printers.

This page intentionally left blank

Photography — Paper dimensions — Rolls for printers

1 Scope

This International Standard specifies the nominal and aim slitting widths, and tolerances, for black-and-white and colour photographic paper in rolls intended to be used in paper printers.

It also specifies splicing, core dimensions, winding and package marking.

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

3 Conditions for measurement of widths

The widths and tolerances specified in this International Standard apply at the time of manufacture, measured under atmospheric conditions of (23 ± 2) °C and (50 ± 5) % relative humidity, as specified in ISO 554[1] (see annex A).

4 Paper width

4.1 Preferred widths

Slitting widths for preferred widths, and their tolerances, shall conform to the values given in table 1.

Table 1 — Preferred widths for rolls

Nominal		Aim	Tolerance
cm	in	mm	mm
8,9	3,50	88,7	± 0,2
10,2	4	101,4	± 0,2
12,7	5	126,6	± 0,4
15,2	6	151,6[1)]	± 0,4
20,3	8	202,8	± 0,4
25,4	10	253,6	± 0,4
27,9	11	278,6	± 0,8

1) This aim width is not in accordance with the rule described in note 1) of table 3.

4.2 Recognized widths

Slitting widths for temporarily recognized widths, and their tolerances, shall conform to the values given in table 2.

Table 2 — Recognized widths for rolls

Nominal		Aim	Tolerance
cm	in	mm	mm
8,2	3,25	82,3	± 0,2
9,5	3,75	95,0	± 0,2

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 %.

Printer manufacturers are, however, strongly encouraged to design their future equipment to accept only the preferred widths given in table 1.

4.3 Slitting and tolerance rules

The slitting and tolerance rules for widths of rolls not given in tables 1 and 2 shall conform to the values given in table 3.

Table 3 — Slitting and tolerance rules for rolls

Nominal (N) cm	Aim mm	Tolerance mm
$N \leqslant 12$	N [1] $- 0,2$	$\pm 0,2$
$12 < N \leqslant 26$	N [1] $- 0,4$	$\pm 0,4$
$26 < N \leqslant 65$	N [1] $- 0,8$	$\pm 0,8$
$N > 65$	N [1] $- 1,2$	$\pm 1,2$

1) For nominal widths originated in inch units, the following value should be used (expressed to 0,1 mm units): (nominal value in inch units) × 25,4.

5 Length of rolls

The actual usable length of a roll shall not be less than the nominal length.

Nominal paper lengths are not specified.

6 Splices

6.1 Number of splices

A maximum of one splice per roll is preferred, regardless of length; however, up to two splices are recognized in rolls longer than 100 m, and up to three in rolls longer than 250 m.

6.2 Splicing material requirements

The splicing material shall be chemically inert to all processing solutions and conditions. It shall retain its physical qualities unimpaired throughout these processes.

6.3 Splice thickness

For tape splices, the splice thickness shall not exceed twice the paper thickness.

For overlapping tapeless splices, an additional 0,1 mm of thickness is permissible.

The thickness shall be measured with a thickness gauge which has a probe diameter of more than 5 mm, preferably 10 mm.

The overlapping length shall not exceed 13 mm and the paper shall be welded on all of its width, without raised edges.

6.4 Splice detection

The means of detecting each splice shall be provided in the form of a long hole or slot in the centre of the paper width. The location of the slot is shown in figure 1.

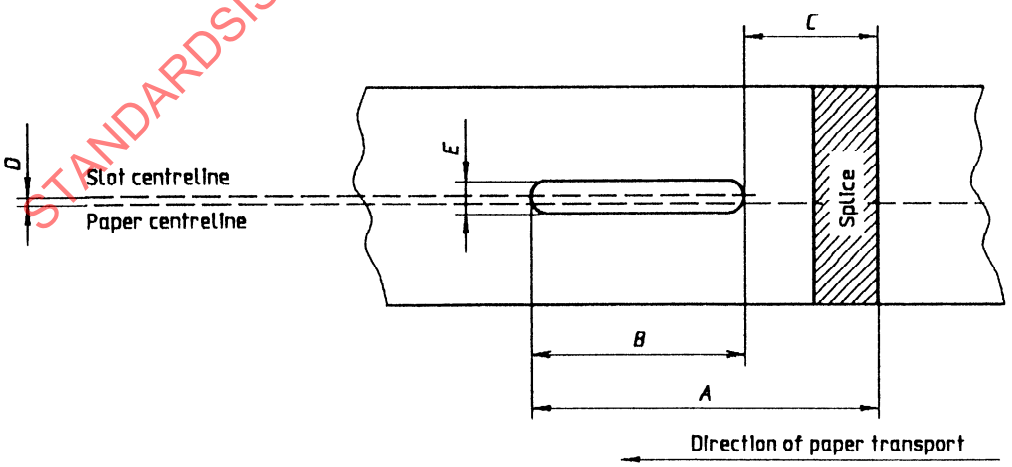

Figure 1 — Splice detection slot

The dimensions A, B, C et D shall fulfil simultaneously the following conditions:

A: from 55 mm to 185 mm

B: from 55 mm to 95 mm

C: 90 mm max. (C can be negative by 40 mm)

D: 3 mm max. on each side of the centreline of the paper

E: 16 mm $\pm$ 1 mm

6.5 Length allowance

In rolls containing splices, an additional length at least equal to the dimension A plus 300 mm, shall be provided for each splice.

7 Core

7.1 Core length

7.1.1 Preferred length

It is preferred that the core length be shorter than the paper width.

7.1.2 Recognized length

It is recognized that some applications require a core longer than the paper width, but any protrusion shall not exceed 1 mm.

7.2 Core internal diameter

The internal diameter of the core shall be 76,1 mm $\pm$ 0,3 mm.

8 Winding

It is preferred that the paper be wound on the core sensitized side out, for rolls less than 50,8 cm wide, and sensitized side in for rolls 50,8 cm and above.

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 recede on one side and protrude from the other by more than 1 mm.

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

9 Package marking

9.1 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 size;

b) conditions of use (such as safelight);

c) conditions of 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[2]:

— product name or trade name;[3]

— name or trade mark of the manufacturer;

— manufacturer's catalogue identification number;

— bar code information, if applicable;

— quantity of units contained in the package;

— nominal width and length, in metric units, showing the width first;

— batch number and/or parent roll number;

— expiration date or "develop before" date or inventory control code;

— manufacturer's recommended safelight conditions[3][4]

— manufacturer's recommended storage conditions[3][4]

— indication of non-preferred winding, if applicable.[3][4]

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

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

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

9.2 Compliance

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

"COMPLYING WITH ISO 1009"

Annex A
(informative)

Dimensional stability

The dimensions and tolerances specified apply to the paper at the time of slitting and when in equilibrium with the standard atmosphere specified in ISO 554:1976, temperature (23 ± 2) °C, relative humidity (50 ± 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.

Nevertheless, at the time of package opening within the warranty period of the paper, dimensions measured under atmospheric conditions of temperature (23 ± 2) °C and relative humidity (50 ± 5) % should not depart from those at the time of manufacture by more than ± 0,20 %.

The conditioning of a sample of paper cut from a roll needs a minimum of 8 h for non resin-coated paper and 14 days for resin-coated papers, as in ISO 6221.[5)]

Annex B
(informative)

Paper thickness

Paper thickness is not specified in this International Standard. Medium-weight paper (0,21 mm to 0,28 mm thick) is normally used.

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