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# International Standard



# 4087

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

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## Microfilming of newspapers on 35 mm unperforated microfilm for archival purposes

*Micrographie des journaux sur film de 35 mm non perforé destiné à l'archivage*

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## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 4087 was developed by Technical Committee ISO/TC 171, *Micrographics*, and was circulated to the member bodies in February 1977.

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

Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Israel	Sweden
Canada	Italy	Turkey
Czechoslovakia	Japan	United Kingdom
Denmark	Mexico	USA
Finland	Norway	USSR
Germany, F. R.	Poland	Yugoslavia
Hungary	Romania	

The member body of the following country expressed disapproval of the document on technical grounds :

France

# Microfilming of newspapers on 35 mm unperforated microfilm for archival purposes

## 1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard applies to the microfilming of newspapers for preservation and distribution in libraries and other documentation services.

1.2 This International Standard covers only silver halide microfilms<sup>1)</sup> 35 mm wide, in rolls or strips, whether camera negatives, intermediates, or distribution copies.

1.3 This International Standard defines targets, to ensure proper bibliographic control and to provide verification that the film meets international standards required for archival microfilming.

## 2 REFERENCES

ISO 417, *Photography – Determination of thiosulphate and other residual chemicals in processed photographic films, plates and papers – Methylene blue photometric method and silver sulphide densitometric method.*

ISO 446, *Microcopying – ISO No. 1 Mire – Description and use in photographic documentary reproduction.*

ISO 2014, *Writing of calendar dates in all-numeric form.*

ISO 3334, *Microcopying – ISO Test chart No. 2 – Description and use in photographic documentary reproduction.*

ISO 4331, *Photography – Processed photographic film for archival records – Silver-gelatin type on cellulose ester base – Specifications.*

ISO 4332, *Photography – Processed photographic film for archival records – Silver-gelatin type on poly(ethylene terephthalate) base – Specifications.*

ISO 5466, *Photography – Practice for the storage of processed safety photographic film.*<sup>2)</sup>

ISO 6200, *Density of silver films.*<sup>2)</sup>

ISO 7000, *Graphic symbols – Index, survey and compilation of the single sheets.*<sup>2)</sup>

## 3 DEFINITIONS

3.1 **newspaper**: Serial publication appearing at very frequent intervals, giving up-to-date news of current events, with or without comments.

3.2 **target**:

– Any document or chart containing identification information, coding or test charts.

– An aid to technical or bibliographic control which is photographed on the film preceding or following the document.

## 4 IMAGE PLACEMENT AND REDUCTION RATIOS

4.1 The choice of reduction ratio is decided by the need for the smallest letters and characters used in a newspaper to be clearly legible in a reference copy viewed on a reader. The normal range for newspapers is 1 : 14 and 1 : 22.

4.2 The four usual types of image positions for 35 mm microfilm on reels or in strips are shown in figure 1. The maximum permissible width of the image area (dimension *A* in figure 1) is 33 mm for unperforated 35 mm film. Conversely, a minimum of 1 mm for dimension *D* is specified for unperforated film. Dimension *B* ordinarily shall be limited to the image area required by the material being filmed, taking into account dimension *A*. Dimension *C* shall be 2 mm or less, both for images and for coding information.

## 5 FILM STOCK

5.1 Only safety microfilm stock as defined by ISO 4331 and ISO 4332 shall be used.

5.2 Unperforated film shall be used.

1) Though non-silver halide microfilms are not yet covered by any standard, they may be used for intermediate or distribution copies.

2) At present at the stage of draft.

## 6 FILM THICKNESS

6.1 Thickness ranges of the film including support, emulsion, and any protective coating shall be :

Thickness range

- A, between 0,135 and 0,155 mm (cellulose ester base);
- B, between 0,091 and 0,122 mm (polyester base).

NOTE — The working equipment shall be compatible with the thickness of the film.

6.2 The film thickness of intermediate and distribution copies shall be consistent so that the length of microfilm does not vary from one reel to another.

## 7 FILMING PROCEDURES

7.1 Material shall be photographed in such a way that show-through from preceding and succeeding pages is minimized.

7.2 Material shall be placed on the copy board and illuminated so that all printing on the page (even when in bound volumes) is in focus and within the field of the lens.

7.3 Type lines shall be parallel with the edge of the film in positions 1B and 2B, or at right angles to the edge of the film in positions 1A and 2A (see figure 1).

7.4 The material shall be filmed in proper sequence, even if it has been mislabelled or arranged or bound with pages, sections, or issues out of sequence.

Appropriate ISO symbols shall be used to denote material filmed out of sequence for bibliographic or practical reasons.

## 8 ARRANGEMENT OF THE FILE

8.1 Newspapers shall be recorded in chronological order. The microfilming shall be divided so that library use reel includes material divided in a systematic and bibliographically acceptable way. Files which are too large to be contained within one reel of film shall be divided systematically, for example at the end of a week, or a month, or a year or at an appropriate break in the subject. Targets shall indicate "continued on reel number . . ." or "continued from reel number . . .".

Reference to the sequences shall appear in the bibliographical targets.

Examples of unacceptable reel division :

January 1 — February 15

January 1, 1956 — March 15, 1957 (unless publication ceases on that date).

Examples of acceptable reel division :

January 1 — February 28

January 1, 1956 — December 31, 1957.

8.2 Numbered or lettered sections shall be filmed in numerical or alphabetical order followed by unnumbered sections such as supplements, magazine sections, comics, etc.

Exceptions : Placards where included shall be filmed before the numbered or lettered sections. All pages and sections shall be filmed.

## 9 FILM TARGETS

### 9.1 Preparation of targets

A loose-letter system, which allows for changes and repeated use is recommended. The contrast between the letters and the background should be at least 0,7.

### 9.2 Lettering

Writing in targets legible to the naked eye should comply with the following requirements :

- clear lettering for example block lettering;
- contrast background;

— minimum letter height on the film : 2 mm. To achieve this, the lettering should have a minimum height

32 mm for reduction ratio 1 : 16

40 mm for reduction ratio 1 : 20

The commonly-used reduction ratio for newspapers varies between 1 : 14 and 1 : 22 and in such cases 40 mm high lettering could be used throughout.

### 9.3 Language

The language of the targets shall be the language of the newspaper to be microfilmed, and one of the ISO official languages, English, French or Russian.

### 9.4 Calendar dates in all-numeric form

Calendar dates in all-numeric forms shall be written in accordance with ISO 2014.

### 9.5 Sequence and contents of targets (see figure 2)

#### 9.5.1 "Beginning of reel" symbol

#### 9.5.2 Identification targets

These targets are intended to provide the reader with essential data concerning the newspaper as a whole. They should be legible to the naked eye. The first series shall contain the following information in the order given :

**9.5.2.1** Title of the newspaper, transliterated/transcribed according to ISO recommended transliteration/transcription tables into the latin alphabet.

**9.5.2.2** Language of the newspaper (optional).

**9.5.2.3** Country and place of publication, transliterated/transcribed according to ISO recommended transliteration/transcription tables into the latin alphabet.

**9.5.2.4** Date of first issue (and last issue if publication has ceased), expressed according to ISO 2014.

**9.5.2.5** Number of reels if publication has ceased and the series consist of more than one reel; if only one reel, state one reel only.

**9.5.2.6** Name of body responsible for microfilming.

**9.5.2.7** Year of filming.

**9.5.2.8** Summary of contents for roll film (optional).

**9.5.2.9** Reproduction of the title page of the document (optional).

**9.5.2.10** Where applicable, state restrictions on the further reproduction or use of the film.

Items 9.5.2.4 to 9.5.2.7 can be given in smaller lettering not necessarily readable with the naked eye.

**9.5.3 Bibliographical target** (optional) (not readable with the naked eye)

**9.5.3.1** The purpose of the bibliographical target is to ensure that all bibliographic data necessary for the complete verification of the contents of the film, have been recorded.

**9.5.3.2** In accordance with ISO . . . , the recorded bibliographical data are given in the language of the newspaper text and in the appropriate form.

**9.5.3.3** This target, following the standard bibliographical description, shall consist of two parts :

1) Title entry, including the following elements :

- title of newspaper
- inclusive dates of issues microfilmed, and optionally volumes and numbers
- place of publication and publisher of the film and date of publication
- number of reels
- size of the film in millimetres.

2) The annotation :

- reduction ratio

- frequency and change of frequency
- changes of title
- publications absorbed
- minor variations in title
- issues with special titles
- issuing bodies — imprint
- editors
- variations in imprints
- owner of original material
- producer and sponsor of the newspaper film and the owner of the negative
- systematic omission(s)

*Example :*

The press Vol. 1, No. 2 — Vol. 11, No. 2417; 19 July 1889 — 30 Sept. 1899.

Pretoria, State Library, 1968,

21 reels, 35 mm microfilm.

Twice weekly : 19 July 1889 — 14 Febr. 1890

Daily : 17 Febr. 1890 — 30 Sept. 1899.

Irregular supplements.

Ceased publication from 24 — 26 March 1891.

Editors : 1889-1891, Baron Gluckstein;  
1891-1897, Leo Weinthal;  
1897-1899, William Bruce and William Mackay.

The press . . .

Imprint : Published by the editors.

Microfilmed at the State Library by the National Film Board, 1968.

Negative at the State Library.

Reel 1, 19 July 1889 — 31 Dec. 1889.

Reel 2, 1 Jan. 1890 — 30 June 1890.

Reel 3, 1 July 1890 — 31 Dec. 1890.

Reel 4, 1 Jan. 1891 — 30 June 1891.

Reel 5, 1 July 1891 — 31 Dec. 1891.

etc.

In the case of completed series, a complete listing of the dates of issues appearing on the reels should be given. Missing pages of issues shall also be noted.

Reel 1 : Date to date. (Missing issues between (date) and (date) : the latter in addition to general notes such as "Volumes (1890) (1821) incomplete etc." see below).

A general description of the condition of the newspaper may be included as a footnote, for example a list of missing pages, or general indications such as : "Certain numbers missing"; "Original partly damaged"; "Paper of original faded in some cases" or "Unique, very incomplete set".

#### 9.5.4 Historical target (optional)

A short, historical target, providing the historical background of the newspaper, is recommended. This target shall consist of one frame only, and should contain the following details :

- 1) Important dates in the history of the newspaper.
- 2) The names of the editors.
- 3) Names of outstanding correspondents, feature writers, cartoonists, scientists, etc.

#### 9.5.5 Technical target

The technical target ensures that correct standards are maintained and ISO specifications are used for this purpose.

##### 9.5.5.1 This target should state

- a) the reduction ratio used;
- b) a metric reference graduation;
- c) ISO test chart No. 1 or No. 2;
- d) whether the original document was in colour or in black and white.

##### 9.5.5.2 List of symbols and their meaning (figure 3)

The symbols shall be consistent with ISO 7000. They may either be included as part of the relevant exposure (9.5.5), or form a separate exposure. They shall be placed before the images concerned or take their place. The meanings shall be given in the language of the newspaper and in one of the ISO official languages, English, French or Russian.

#### 9.5.6 Film target

A film target indicating the contents of the specific reel shall precede the text on each reel.

##### 9.5.6.1 Title of newspaper (legible with the naked eye).

##### 9.5.6.2 Dates contained in specific reel (legible with the naked eye).

##### 9.5.6.3 In cases where the material filmed is very incomplete, this is noted.

##### 9.5.6.4 Where applicable, note change of title together with date.

9.5.6.5 Note specific number of reel (legible with naked eye) and total number of reels (if publication has ceased) for example reel 1 of 4 reels or, in the case of there being only one reel, the words "one reel only" are used.

#### 9.5.7 End of reel target

This target contains the newspaper title and the words "End of reel No. . . ." (specific number of the reel) of (total number of reels) if the newspaper ceased. In the case of there being only one reel it should be stated "end of one reel only". If the newspaper has not ceased yet it should be stated : "End of No. . . ." (specific reel number). These possibilities are followed by the work "end" in one of the ISO official languages, English, French or Russian. The lettering shall be legible to the naked eye.

#### 9.5.8 Symbol "End of reel"

### 9.6 Additional targets

#### 9.6.1 Dividing targets

A target in the language of the newspaper to clearly subdivide the contents, for example weekly, monthly or annual divisions. This target should contain, in clear lettering readable to the naked eye, the date used for the subdivision, for example :

— 1 January, 1968

ISO 4087:1979 1 January, 1969

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[e20f8bc3b8bc/iso-4087-1979](http://standards.iteh.ai/catalog/standards/sist/0fcf12f4-7015-4412-a298-e20f8bc3b8bc/iso-4087-1979)

#### 9.6.2 Missing sections

Missing sections from the original are normally indicated by means of a symbol as given in the list of symbols. However, the possibility exists that the film may be completed at a later stage. One frame may be used whenever a part is missing. This frame should include the ISO symbol for "missing pages and issues".

## 10 PROCESSING THE EXPOSED FILM

Exposed film must be processed to give an essentially black image in conformity with density requirements specified in ISO 6200. The residual thiosulphate content of the processed film, as determined by ISO 417, shall be less than 0,7 µg/cm<sup>2</sup>.

## 11 QUALITY

### 11.1 Legibility

When a microfilm is examined as described in ISO 446 or ISO 3334, the characters or the patterns form a mire or test chart and shall be legible on the microfilm if they have the character sizes or the pattern numbers indicated in table 1, for first and second generations or distribution copy; the latter is a microform from which a copy satisfying the quality requirements can be obtained.

### 11.2 Optical density and contrast

The film image shall have sufficient contrast to permit easy reading and reproduction, in accordance with ISO 6200. Unless a different background density is required to produce such contrast, the background density of the camera negative as measured by a densitometer shall fall within the range 1,0 to 1,4 with a maximum variation of 0,4 on any one frame, when the paper of the page is of the same reflectance overall. If the variation exceeds 0,4 because of stains or other causes of differential reflectance in the paper, the page shall be photographed twice, at different exposures on successive frames, so that the density requirement shall be satisfied for all text on each page on one frame or the other.

## 12 CORRECTING THE PROCESSED CAMERA NEGATIVE

12.1 Pages improperly filmed shall be refilmed, along with enough pages before and after each instance to allow space for splices to eliminate the possibility of defacing the images. The remade film shall be inspected and then spliced into the negative, thus replacing the faulty film.

12.2 Heat-weld splices are generally recommended. If cemented splices are used, the cement shall contain no acetic acid or other chemicals that will be injurious to the long-term keeping qualities of the film. Cellophane tape and tape of the pressure-sensitive type shall not be used for making splices unless the adhesive used is so formulated as to be not injurious to the long-term keeping qualities of the film.

12.3 Every effort shall be made to keep the number of splices to a minimum and these shall be made in the master negative before any duplicate copies are printed.

## 13 INTERMEDIATE COPIES

13.1 Intermediate copies are used only to print many distribution copies.

13.2 The background density of silver, second-generation negative shall conform to ISO 6200.

## 14 DISTRIBUTION COPIES

14.1 Microfilms intended for distribution (2N or 2P, 3N or 3P, etc.) shall be made on a film printer with film stock meeting the requirements of ISO 4331 and ISO 4332.

14.2 The exposed positive film shall be processed as indicated in clause 10 above, and meet the density requirements of ISO 6200.

14.3 The reel shall not be overloaded, i.e. the diameter of the wound film on the reel shall not reach closer than 3 mm to the outer edge of the reel. Clinching the film must be avoided in complying with this requirement.

14.4 Distribution copies shall be without splices.

14.5 Distribution copies shall have a leader and trailer at least 450 mm in length.

## 15 STORAGE

Procedures and specifications for storage shall follow the indications shown in ISO 5466.

## 16 CONTAINER INSCRIPTION

The container shall adequately identify the contents.

The minimum information shall include :

- a) country and place of publication of newspaper;
- b) title;
- c) dates of issues microfilmed.

There shall be space on the container for internal information.

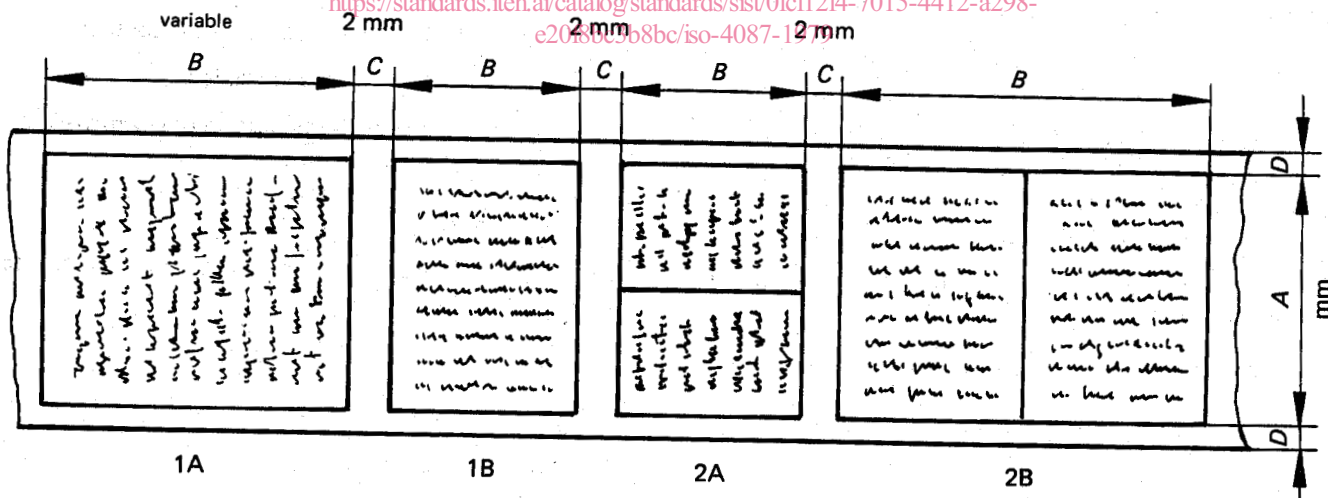
TABLE – Legibility or quality of microforms

Reduction scale	ISO No. 1 character size			ISO No. 2 pattern number		
	1st generation	2nd generation	Distribution	1st generation	2nd generation	Distribution
1 : 30	90	100	112	4,5	4,0	3,6
1 : 25,5	80	90	100	5,0	4,5	4,0
1 : 21,2	70	80	90	5,6	5,0	4,5
1 : 18	63	70	80	6,3	5,6	5,0
1 : 15	56	63	70	7,1	6,3	5,6
1 : 12,75; 1 : 10,6	45	50	56	9,0	8,0	7,1
1 : 9						

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<https://standards.iteh.ai/catalog/standards/sist/0fc12f4-7015-4412-a298-e2036c568bc/iso-4087-1979>

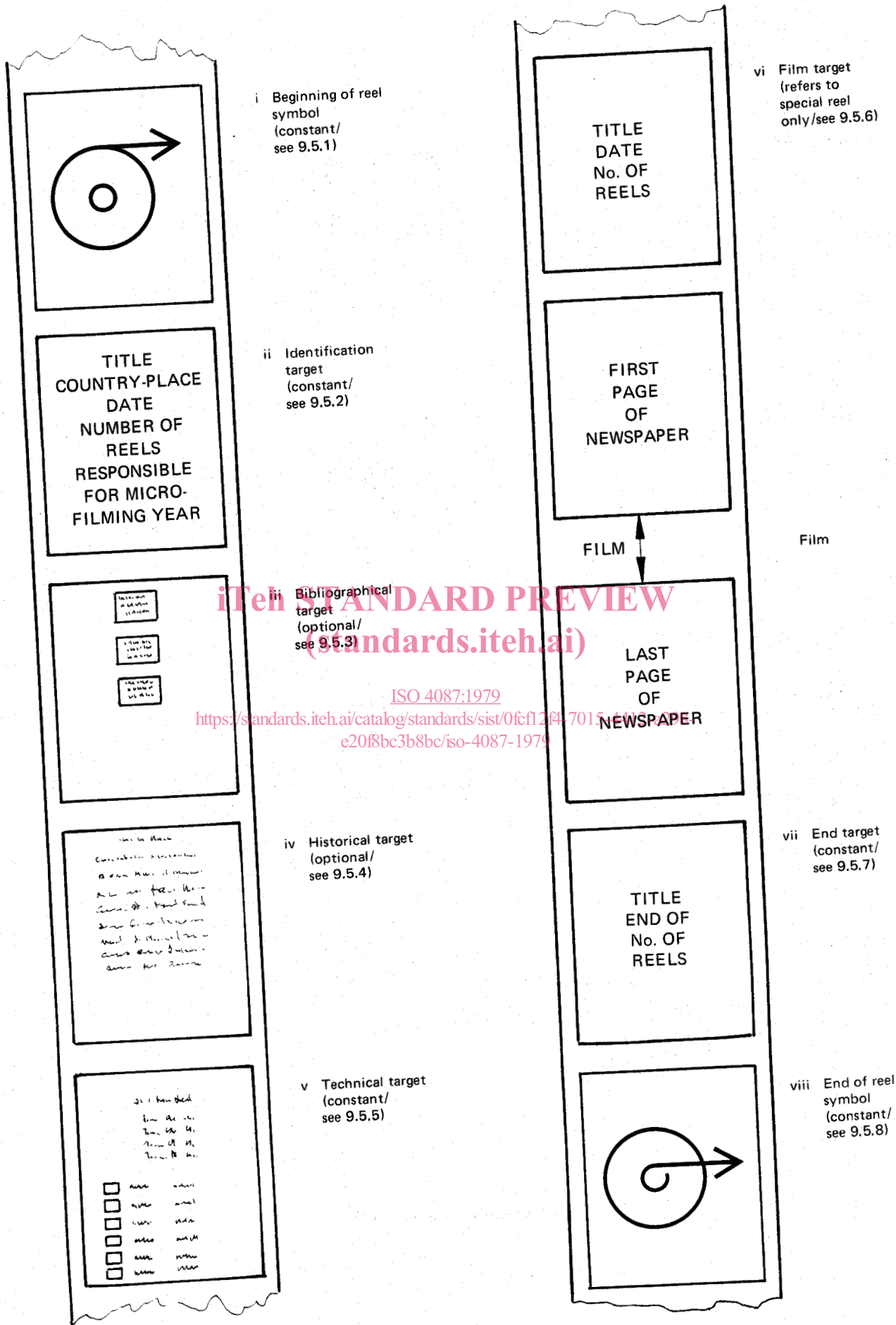


Positions 1A and 1B are single-page exposures; positions 2A and 2B are double-page exposures.

In positions 1A and 2A the text is perpendicular to the long axis of the film; in positions 1B and 2B the text is parallel to the long axis of the film.

FIGURE – Microfilm position chart





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<https://standards.iteh.ai/catalog/standards/sist/0fcf12f4-7015-474e-e20f8bc3b8bc/iso-4087-1979>

FIGURE 2