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Micrographics — Microfilming of newspapers for archival purposes on 35 mm microfilm

*Micrographie — Enregistrement des journaux sur microfilm de 35 mm
pour l'archivage*

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Reference number
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Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Rawstock microfilm	2
5 Reduction ratios and image placement	2
5.1 General	2
5.2 Reduction ratios for smaller pages and sectional filming	3
5.3 Image positions	3
5.4 Progression of text	4
6 Leader and trailer	5
6.1 Clear leader	5
6.2 Archival test area	5
7 Filming conditions	5
7.1 Show-through	5
7.2 Illumination	5
8 Arrangement of the file	5
8.1 Chronological divisions	5
8.2 Filming of editions and supplements	6
9 Film Targets	6
9.1 Lettering	6
9.2 Language	6
9.3 Calendar dates	6
9.4 Targets	6
9.5 Graphic symbols	6
9.6 Sequence and contents of targets	6
9.7 Additional targets	11
10 Processing camera negative	11
11 Quality	11
12 Correction procedures	12
12.1 Refilming	12
12.2 Splices	12
13 Intermediate copies	12
14 Distribution copies	12
14.1 General	12
14.2 Quality	12
14.3 Loading	12
14.4 Leader and trailer	13
14.5 Splices	13
14.6 Resolution	13
15 Storage	13
16 Packaging	13
16.1 Securing	13
16.2 Labelling	13

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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

ISO 4087 was prepared by Technical Committee ISO/TC 171, *Document management applications*, Subcommittee SC 2, *Application issues*.

This third edition cancels and replaces the second edition (ISO 4087:1991), which has been technically revised.

Micrographics — Microfilming of newspapers for archival purposes on 35 mm microfilm

1 Scope

This International Standard establishes general principles for microfilming printed newspapers for preservation and distribution to libraries and other documentation services. It includes requirements for targets to ensure proper bibliographic control and to verify that the film meets the requirements of International Standards applied to archival microfilming.

This International Standard is applicable only to unperforated silver microfilms that are 35 mm wide, in rolls or strips, whether first-generation (camera negatives), intermediate or distribution copies.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9:1995, *Information and documentation — Transliteration of Cyrillic characters into Latin characters — Slavic and non-Slavic languages*

ISO 233-2:1993, *Information and documentation — Transliteration of Arabic characters into Latin characters — Part 2: Arabic language — Simplified transliteration*

ISO 259-2:1994, *Information and documentation — Transliteration of Hebrew characters into Latin characters — Part 2: Simplified transliteration*

ISO 446:1991, *Micrographics — ISO character and ISO test chart No.1 — Description and use*

ISO 3334:1989, *Micrographics — ISO resolution test chart No.2 — Description and use*

ISO 3602:1989, *Documentation — Romanization of Japanese (kana script)*

ISO 6148:2001, *Photography — Micrographic films, spools and cores — Dimensions*

ISO 6196-1:1993, *Micrographics — Vocabulary — Part 1: General terms*

ISO 6196-2:1993, *Micrographics — Vocabulary — Part 2: Image positions and methods of recording*

ISO 6196-3:1997, *Micrographics — Vocabulary — Part 3: Film processing*

ISO 6196-4:1998, *Micrographics — Vocabulary — Part 4: Materials and packaging*

ISO 6196-5:1987, *Micrographics — Vocabulary — Part 5: Quality of images, legibility, inspection*

ISO 6196-6:1992, *Micrographics — Vocabulary — Part 6: Equipment*

ISO 4087:2005(E)

ISO 6199, *Micrographics — Microfilming of documents on 16 mm and 35 mm silver-gelatin type microfilm — Operating procedures*

ISO 6200:1999, *Micrographics — First generation silver-gelatin microforms of source documents — Density specifications and method of measurement*

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO 9878:1990, *Micrographics — Graphical symbols for use in microfilming*

ISO 10550:1994, *Micrographics — Planetary camera systems — Test target for checking performance*

ISO 18901:2002, *Imaging materials — Processed silver-gelatin type black-and-white film — Specifications for stability*

ISO 18905:2002, *Imaging materials — Ammonia-processed diazo photographic film — Specifications for stability*

ISO 18906:2000, *Imaging materials — Photographic films — Specifications for safety film*

ISO 18911:2000, *Imaging materials — Processed safety photographic films — Storage practices*

ISO 18912:2002, *Imaging materials — Processed vesicular photographic film — Specifications for stability*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6196, parts 1 to 6, and the following apply.

3.1 principal edition

edition of the newspaper which is either identified or recognized as the most important

3.2 target

documents containing bibliographic and technical information, including test charts, pertaining to the filmed newspaper and intended to be filmed

4 Rawstock microfilm

For the purpose of preservation, only black and white film on polyester base in accordance with ISO 6148 and ISO 18906 shall be used.

5 Reduction ratios and image placement

5.1 General

Reduction ratios shall be in accordance with ISO 6199.

NOTE The normal reduction ratio for newspapers is in the range 1:14 to 1:24.

5.2 Reduction ratios for smaller pages and sectional filming

Pages that are smaller than the normal spread of the newspaper, such as newspaper inserts and foldouts, shall be filmed at a reduction ratio that is the same as or, if necessary to achieve legibility, lower than the reduction ratio used for other parts of the newspaper. If inserts or foldouts are too large to be accommodated in position 1A (see Figure 2) without using a reduction ratio that is too high to provide a legible image, the material shall be filmed in sections. The sections shall be filmed from left to right and from top to bottom, as shown in Figure 1 (unless in oriental orientation), and shall provide an overlap with adjacent material on the original of at least 25 mm. The reduction ratio used shall provide the desired number of sections with the proper overlap.

A change of reduction ratio target with scale shall be microfilmed on the frame prior to any change of reduction and when reverting to the original reduction ratio.

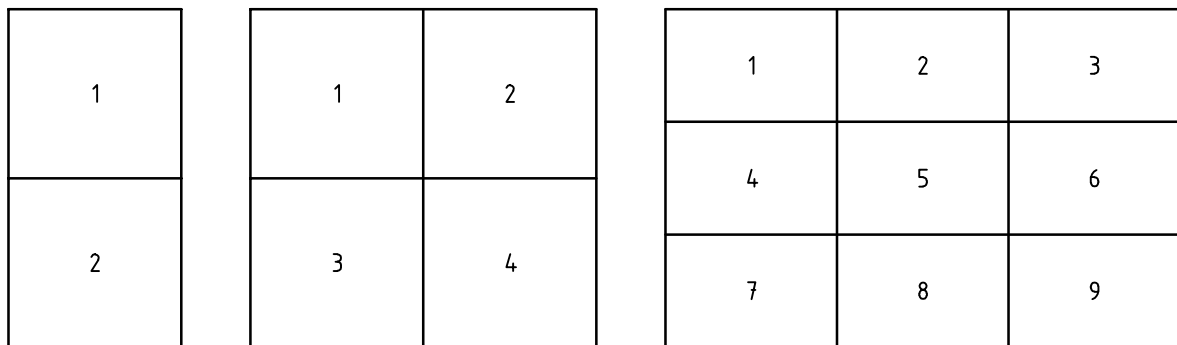


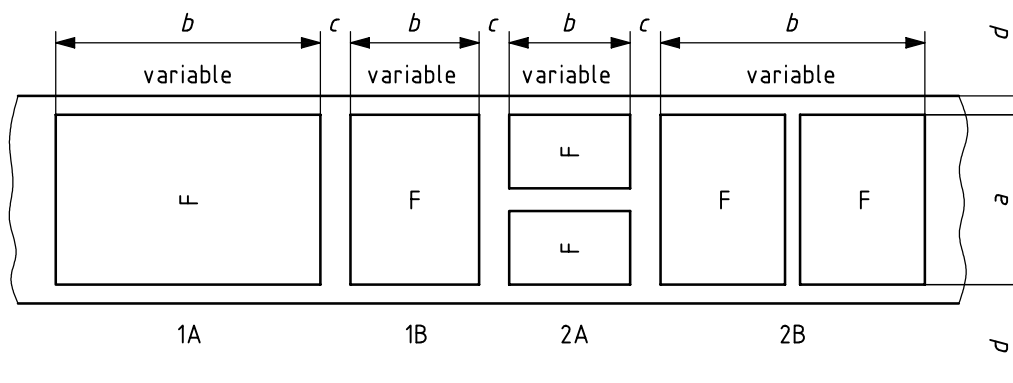
Figure 1 — Sectional sequences

5.3 Image positions

The four recommended image positions for 35 mm microfilm on reels or in strips are shown in Figure 2.

Ordinarily, dimension b shall be limited to the image area required by the material being filmed, taking into account dimension a , which shall not exceed 31,75 mm. Dimension c shall be at least 2 mm, both for images and for coding information.

The images should be centred between the edges of the film.



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.

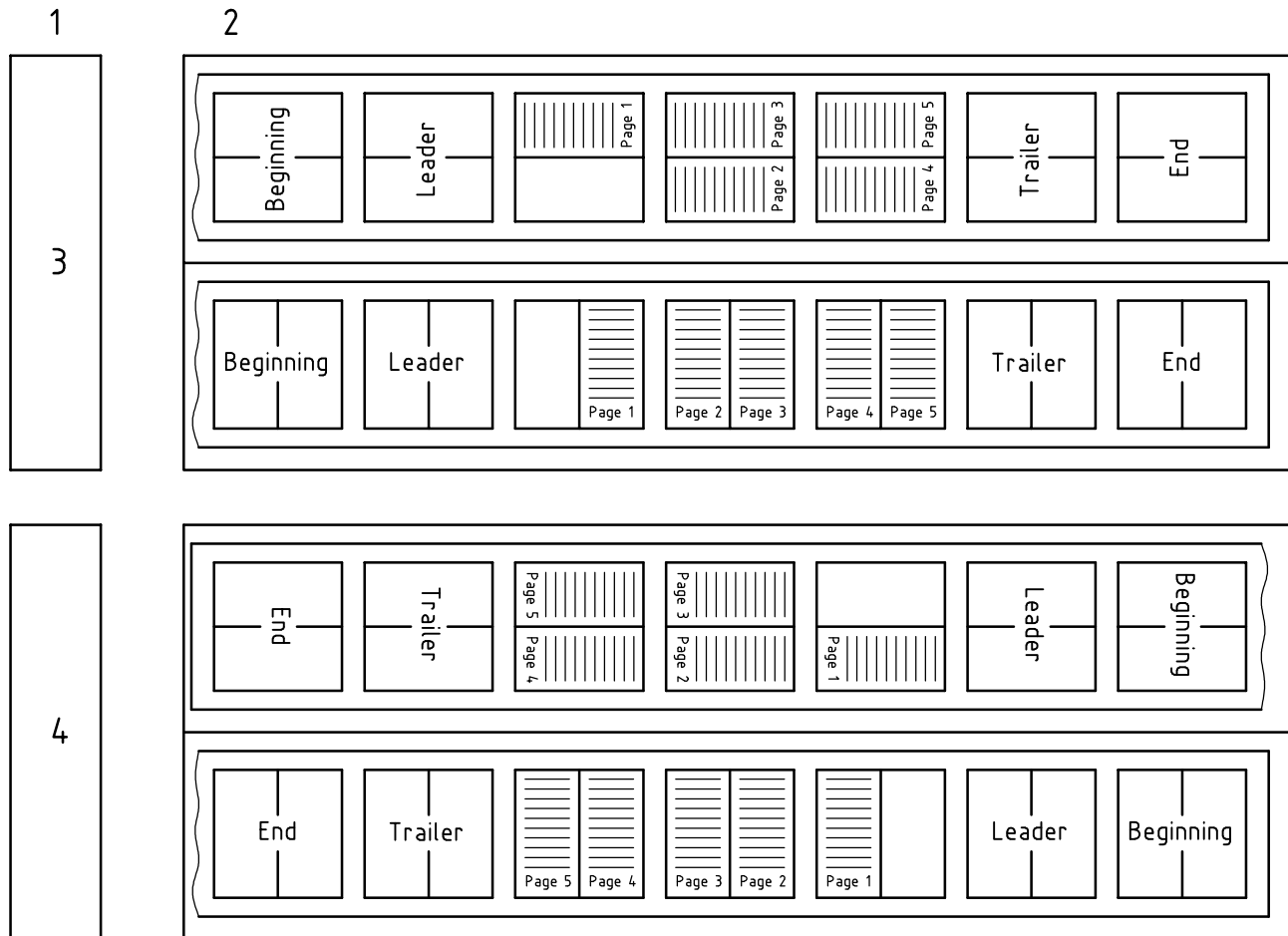
In positions 1B and 2B, the text is parallel to the long axis of the film.

Figure 2 — Image positions on the microfilm

5.4 Progression of text

For newspapers in languages that read from right to left and for other variations from the usual occidental language arrangement, pages shall be positioned to allow for logical reading progression. This is accomplished by positioning the camera head so that the progression of exposed film shall reflect the progression of text.

The lines of text shall be parallel with the long axis of the film in positions 1B and 2B or perpendicular to the long axis of the film in positions 1A and 2A (see Figure 3).



Key

- 1 page numbering
- 2 succession of frames
- 3 languages reading from left to right (occidental mode)
- 4 languages reading from right to left (oriental mode)

Figure 3 — Layout of frames for microfilming newspapers in languages that read from left to right (upper diagram) and right to left (lower diagram)

6 Leader and trailer

6.1 Clear leader

In addition to any fogged film, which may be removed, each roll of exposed 35 mm microfilm shall have at the beginning and end (500^{+200}_0) mm of unexposed film.

NOTE The repetition of the information targets at the end, in reverse order, before the trailer allows the film to be wound up toward the shorter end. This procedure saves time and work and reduces damage to the working print.

6.2 Archival test area

If archival tests are required, at least 300 mm of microfilm with minimum density (clear) shall be left at the beginning and end of each roll in addition to that specified in 6.1.

7 Filming conditions

7.1 Show-through

Newspapers shall be filmed in such a way that show-through from the back of the page is minimized.

7.2 Illumination

Newspapers shall be placed on the copyboard and illuminated evenly, even when the newspapers are in bound volumes.

For bound volumes, an adjustable book carrier should be used.

Equipment manufacturers' instructions should be followed to enable checking and adjusting of the evenness of illumination.

8 Arrangement of the file

8.1 Chronological divisions

Newspapers shall be microfilmed in chronological order. The divisions between rolls shall be systematic and bibliographically acceptable. Micro-images of a single copy of a newspaper shall not be divided between two rolls of film.

Usually, roll divisions covering the following periods of publication are used:

- a half or whole month;
- two, three, four or six months;
- one year or several years.

Examples of acceptable divisions of rolls include:

- March 1 – March 15;
- September 1 – October 31;
- January 1, 1956 – December 31, 1957 (if several years are filmed together).

8.2 Filming of editions and supplements

The principal edition, including all sections and supplements, or an edition that is considered representative, shall be microfilmed in full. When, in addition, other editions are microfilmed, they shall be filmed immediately following the principal edition each day or in a chronological series of their own.

Numbered or lettered sections shall be filmed in order, followed by unnumbered sections and supplements. Supplemental pages forming an integral part of the newspaper shall be filmed in their original places.

9 Film Targets

9.1 Lettering

Information targets intended to be read without magnification shall comply with the following requirements:

- black lettering on a white background or vice versa;
- upper-case letters;
- characters of minimum height 2 mm on the film.

9.2 Language

The language of the targets shall be the language of the newspaper to be microfilmed. Additional languages are permitted if required.

9.3 Calendar dates

Calendar dates in all-numeric forms shall be written in accordance with ISO 8601.

9.4 Targets

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

9.5 Graphic symbols

Symbols shall be used, in accordance with ISO 9878, to give information concerning the condition of the original document and the production and use of microforms.

9.6 Sequence and contents of targets

9.6.1 General

The sequence of targets shall be as shown in Figure 4.

9.6.2 "Beginning of roll" symbol

The first target shall contain the "Beginning of roll" symbol (ISO 9878:1990, Ref. No. 0076) or the word START. The number of the roll in the series should be added.

9.6.3 Identification target(s)

9.6.3.1 General

The identification target is intended to provide the reader with essential data concerning the newspaper as a whole and the microfilming. It shall contain, where appropriate, the information given in 9.6.3.2 to 9.6.3.10, in the order given. With the exception of those in 9.6.3.5 and 9.6.3.8, items in the micro-image target shall be legible without magnification.

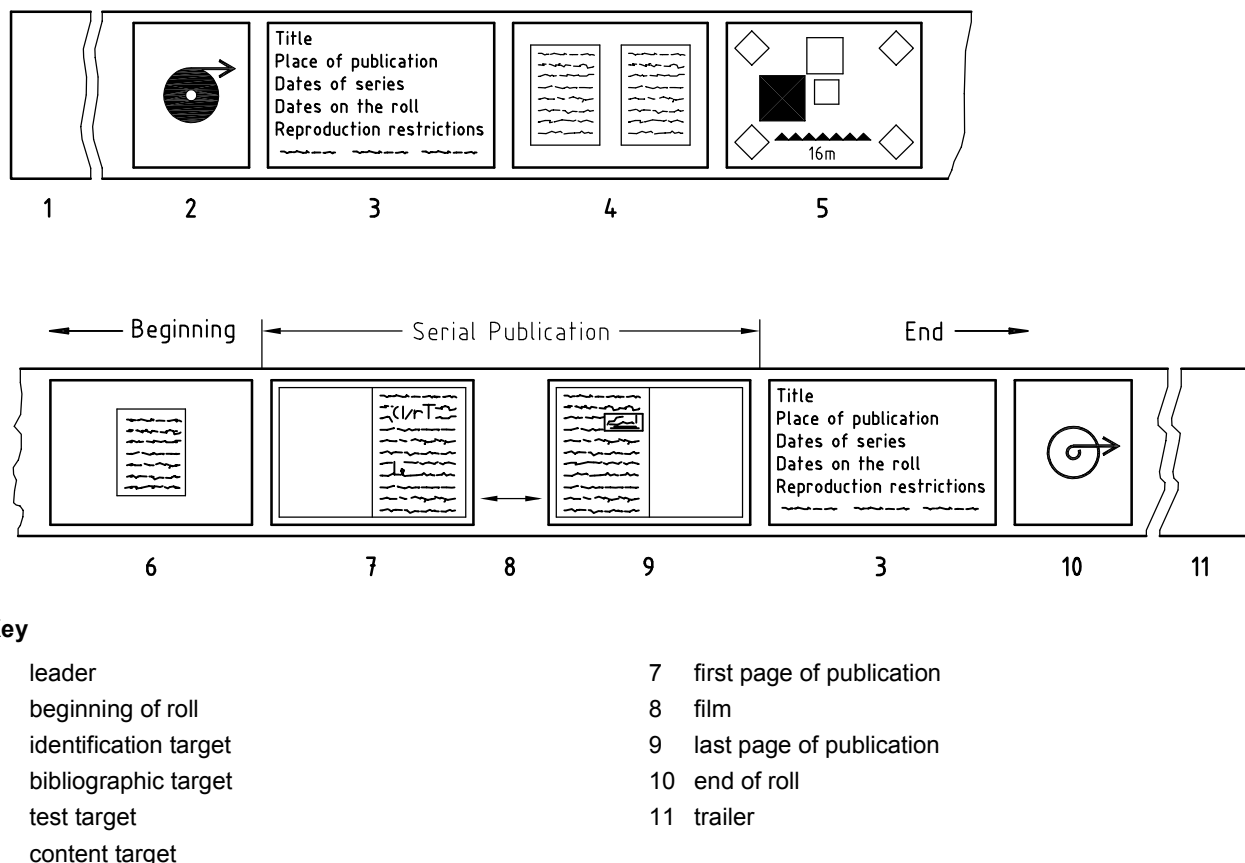


Figure 4 — Sequence of the targets

9.6.3.2 Title

The title of the newspaper shall be given in the same form as the title of the original or, when necessary, shall be converted into the Latin alphabet according to standardized transliteration/transcription tables (see ISO 9, ISO 233-2, ISO 259-2, and ISO 3602). It is permissible to add other languages if required.

The title shall be the principal one of the newspaper e.g. *New York Times* or a collective title e.g. *Early English Newspapers*.

9.6.3.3 Language of the newspaper (optional)

The language of the newspaper may be included on the identification target.

9.6.3.4 Country and place of publication

The country and place of publication shall be included and converted, if necessary, into the Latin alphabet according to the standardized transliteration/transcription tables (see ISO 9, ISO 233-2, ISO 259-2, and ISO 3602).

ISO 4087:2005(E)

9.6.3.5 Issue date

The date of the first issue of the newspaper (and last issue, if the publication has been discontinued) shall be included on the identification target, expressed in accordance with ISO 8601.

Gaps in the sequence should be noted.

9.6.3.6 Number of rolls indicator

If the publication has been discontinued and the series consists of more than one roll, the number of rolls shall be indicated on the final roll; if there is only one roll, the identification target shall contain the statement, "one roll only."

9.6.3.7 Producer

The name of the organization responsible for microfilming (the microfilming firm and client, if required) shall be included on the identification target.

9.6.3.8 Date of filming

The date of filming shall be included on the identification target.

9.6.3.9 Masthead

Reproduction of the masthead of the document is optional.

9.6.3.10 Copyright

Where applicable, indicate copyright or other restrictions on the further reproduction or use of the film.

9.6.4 Bibliographic target

9.6.4.1 General

The purpose of the bibliographic target, legible under magnification, is to ensure that all bibliographic data necessary for the complete verification of the contents of the film have been recorded. The bibliographic target shall contain the information listed within 9.6.4.2, 9.6.4.3 and 9.6.4.4.

9.6.4.2 Targets

To facilitate bibliographic verification and description of the microfilm, the target shall contain all or part of the following information:

a) Identification:

- identification title, including the year or date of first issue;
- place of publication;
- described period.

b) Bibliographic description:

- complete title;
- title variations (with indication of period);

- complete edition titles;
- recording of the imprint.

c) Publishing pattern:

- period of publication;
- frequency;
- pattern of editions;
- periodical supplements;
- placards;
- closely related newspapers.

d) Annotations:

- publisher and place of publication;
- composing site (if it differs from the printing site);
- printing site;
- editors;
- main editorial site (if it differs from the place of publication);
- political tendency;
- circulation;
- type area in print;
- typeface;
- number of colours;
- assimilations;
- predecessors and successors;
- literature.

e) Microfilming:

- division in series and contents of series;
- notes concerning the microfilming;
- owner of the camera negative, if other than the microfilm publisher.

Further information may be added if needed and may be repeated in the trailer targets if required.

9.6.4.3 Issue date

In the case of a completed series, a complete listing of the dates of issues contained on the rolls shall be given. Missing pages or issues shall also be noted.

EXAMPLE Roll 1: 1889-01-01 to 1889-12-31. Missing: 1889-03
 Roll 2: 1890-01-01 to 1890-06-30. No. 122 follows No. 123
 Roll 3: 1890-07-01 to 1890-12-31. Missing: No. 86

General notes (e.g., "Volume 1890 incomplete") should be avoided.

9.6.4.4 Condition

A condition at the time of filming the target may be included. It may contain a list of missing pages or concise statements, such as: "numbers missing", "original partly damaged", "some originals faded", or "unique, incomplete set". These general statements are not intended to replace the notes listing missing issues (see 9.6.4.3).

Material noted as missing at the time of filming, if located and filmed at a later date, should be spliced into the correct position in the roll, but may be placed at the end of the appropriate roll or on one or more supplementary rolls if necessary.

9.6.5 Historical target (optional)

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

- important dates in the history of the newspaper;
- the names of the editors and other significant contributors to the editions (optional).

9.6.6 Test target

The test target is used to ensure that correct standards are maintained. In accordance with ISO 10550, ISO specifications that are used for this purpose shall include:

- reflectance targets;
- the reduction ratio used;
- a metric reference graduation;
- ISO test chart(s) No. 1 or No. 2;
- the appropriate symbol to indicate whether the original document was in colour or black and white.

9.6.7 List of symbols and their meanings (optional)

The historical target may contain a list of symbols and their meanings.

9.6.8 Content target for each roll

9.6.8.1 General

A target indicating the contents of the specific roll shall precede the text on each roll. It shall contain the information listed in 9.6.8.2 to 9.6.8.6, in the order given.

9.6.8.2 Title of newspaper

The title of the newspaper shall be included and shall be legible without magnification.

9.6.8.3 Inclusive period

The inclusive range of date and/or number of issues contained in each roll shall be included and shall be legible without magnification.

9.6.8.4 Notation that material is incomplete

If appropriate, the target shall include a note stating that the material filmed is incomplete.

9.6.8.5 Title change

If applicable, the target shall include a note of change of title, together with the date of the change.

9.6.8.6 Roll number

A note stating the specific number of each roll shall be included and shall be legible without magnification (see 9.6.2 and 9.6.9). If the publication has been discontinued and the series consists of more than one roll, the number of rolls shall be indicated on the final roll. If there is only one roll, the words "one roll only" are used.

9.6.9 "End of roll" symbol

The last target shall contain the "end of roll" symbol (ISO 9878:1990, Ref. No. 0075) or the word END. The number of the roll in the series should be added.

9.7 Additional targets**9.7.1 Dividing targets**

A target may be used to clearly subdivide the contents of the roll; e.g. the target may show weekly, monthly or annual divisions. The target shall contain, in clear lettering that is legible without magnification, the date used for the subdivision, e.g.:

— 1 January 1968

— 1 January 1969

9.7.2 Missing sections

Sections that are missing from a newspaper shall be indicated by means of a symbol, as shown in the list of symbols. One frame may be filmed whenever a part is missing, and shall include the ISO symbol for "missing pages and/or issues" (see ISO 9878:1990, Ref. No. 0081).

10 Processing camera negative

Film shall be processed, as appropriate, in accordance with ISO 18901.

11 Quality

The camera master micro-images shall have a background density in accordance with ISO 6200.

NOTE Dependent on the colour of the paper and print density of the newspaper, visual diffuse transmission density may vary between 0,7 and 1,5.

12 Correction procedures

12.1 Refilming

Pages that have been unsatisfactorily filmed shall be refilmed along with at least three pages before and after any one or series of unsatisfactory pages and processed, as appropriate, in accordance with ISO 18901. The remade film shall be inspected and, if found satisfactory, spliced into the main film in a manner that avoids defacing any required micro-image.

12.2 Splices

Ultrasonic splices shall be used.

Every effort should be made to keep the number of splices to a minimum, a maximum of six is recommended. Splices shall be made in the first-generation microfilm before any duplicates are printed.

NOTE Cemented splices are not recommended since they may contain chemicals that will be injurious to the long-term keeping properties of the film.

13 Intermediate copies

The first-generation microfilm (camera microfilm) should not be used for routine purposes or for making distribution copies. Only intermediates should be used for making distribution copies.

NOTE Non-silver halide microfilms, without splices, may be used for intermediate copies.

14 Distribution copies

14.1 General

The distribution copy is a microform intended for the end user, from which an acceptable hard copy or another microfilm copy can be obtained.

NOTE Non-silver halide microfilms may be used for distribution copies.

14.2 Quality

Silver gelatin copies shall comply with the requirements of ISO 18901.

Diazo copies shall comply with the requirements of ISO 18905.

Vesicular copies shall comply with the requirements of ISO 18912.

Resolution shall be as specified in Table 1.

14.3 Loading

Film wound on a reel shall be no closer than 3 mm to the outer edge of a flange and free from cinching.

14.4 Leader and trailer

Each roll of film shall have a leader and trailer of unexposed film, each at least 500 mm in length.

14.5 Splices

Distribution copies shall be without splices.

14.6 Resolution

To determine the quality of the micro-images, the test target on the microfilm shall be examined as described in ISO 446 or ISO 3334. The minimum quality requirements for the first and second generations and the distribution copy shall comply with the values given in Table 1.

Table 1 — Minimum quality requirements

Nominal reduction	Reduction range		ISO No.1 test chart			ISO No.2 test chart		
			Character size			Pattern number		
			Generations			Generations		
1st	2nd	Distribution copy	1st	2nd	Distribution copy			
1:10	$\geq 1:9$	$< 1:11$	45	50	56	9,0	8,0	7,1
1:12	$\geq 1:11$	$< 1:14$	50	56	63	8,0	7,1	6,3
1:16	$\geq 1:14$	$< 1:17$	56	63	71	7,1	6,3	5,6
1:18	$\geq 1:17$	$< 1:20$	63	71	80	6,3	5,6	5,0
1:22	$\geq 1:20$	$< 1:23$	71	80	90	5,6	5,0	4,5
1:24	$\geq 1:23$	$< 1:28$	80	90	100	5,0	4,5	4,0
1:30	$\geq 1:28$	$< 1:33$	90	100	112	4,5	4,0	3,6

15 Storage

Materials and procedures for storage shall be as specified in ISO 18911.

16 Packaging

16.1 Securing

Film shall be contained on the reel using a thin card band, free from acid, sulfur and lignin, secured by hemp string. It is recommended that metal eyes not be used, but if they are, they shall be of a rust-proof material. Elastic bands shall not be used.

16.2 Labelling

The packaging labelling shall adequately identify the contents. The minimum information shall include the following:

— identification title;

ISO 4087:2005(E)

- place of publication of the microfilm (including country);
- series on the roll;
- inclusive range of date and/or number of issues on the roll;
- roll number (if applicable);
- other information as necessary.

11

ICS 01.140.20; 37.080

Price based on 14 pages