INTERNATIONAL STANDARD

ISO 8126

Second edition
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Micrographics — Duplicating film, silver, diazo and vesicular — Visual density — Specifications and measurement

Micrographie — Films de duplication argentiques, diazoïques et vésiculaires — Densité visuelle — Spécifications et mesurage

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 8126 was prepared by Technical Committee ISO/TC 171, *Document imaging applications*, Subcommittee SC 1, *Quality*.

This second edition cancels and replaces the first edition (ISO 8126:1986) which has been technically revised.

Introduction

Microforms should be of such quality that the information contained is clearly legible, and suitable for its intended end use. It is therefore important that documents for microfilming conform to microfilming criteria.

Controlling microimage density helps to ensure that good results are obtained. The overall quality of the master directly affects duplicate quality.

Since first generation silver film densities can be measured using regular densitometers, a method had to be found for measuring diazo and vesicular film duplicating films in addition to silver-gelatin films. In the current state of the art, only a method for visual density has been developed.

Visual density should not be confused with printing density. The former is a measurement taking account of the eye's spectral sensitivity whereas the latter is a measurement limited to the spectral sensitivity of the receiving material and the spectral energy distribution of the printing illumination.

Micrographics — Duplicating film, silver, diazo and vesicular — Visual density — Specifications and measurement

1 Scope

This International Standard specifies visual diffuse transmission densities for second generation silver-gelatin and diazo microforms and projection densities for second generation vesicular microforms. It also specifies methods of measurement.

It does not apply to duplicates of microforms of technical drawings and other drawing office documents.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5-1:1984, *Photography — Density measurements — Part 1: Terms, symbols and notations.*

ISO 5-2:1991, *Photography — Density measurements — Part 2: Geometric conditions for transmission density.*

ISO 5-3:1995, *Photography — Density measurements — Part 3: Spectral conditions.*

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

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

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 5 and ISO 6196 apply.

4 Measurement of density

4.1 Method of measurement of silver-gelatin and diazo duplicates

Density shall be measured with a densitometer in conformance with the requirements of ISO 5-2 and ISO 5-3 for measurement of ISO standard diffuse visual density and having a sampling aperture of diameter 0,5 mm to 3,0 mm.

4.2 Method of measurement of vesicular duplicates

Density shall be measured with a densitometer in conformance with the requirements of ISO 5-2 and ISO 5-3 for measurement of ISO standard projection density f/4,5 type and having a sampling aperture of diameter 0,5 mm to 3,0 mm.

4.3 Measurement areas

4.3.1 Sampling aperture

Each area measured should be of even density and completely cover the sampling aperture of the densitometer.

4.3.2 Use of density patches

Density is generally measured on a single area. However, if densities of the images do not appear uniform throughout the microform, it is recommended to carry out measurements on different image areas throughout the microform, with particular attention being paid to lowest density areas.

Minimum density of direct positive silver and negative-appearing diazo duplicates, and maximum density of (positive-appearing diazo) and vesicular duplicates should preferably be measured on an image, in compliance with ISO 6200, of a 6% reflectance patch comprising part of a test target filmed on the original microform.

In the absence of a reflective patch, measurements may be made between images although these may differ slightly from those obtained from a 6% patch.

A target area may be provided for this purpose when making first generation microforms.

5 Visual diffuse transmission density of duplicate microforms from source documents and COM

5.1 Silver-gelatin duplicates

5.1.1 Positive-appearing duplicates

Silver-gelatin duplicates of correctly exposed and processed first generation microforms shall have background visual diffuse transmission density in the range 0,05 to 0,15.

High quality/contrast documents should have background visual diffuse transmission density in the low end of this range and low quality/contrast documents should have background visual diffuse transmission density in the high end of this range.

Positive appearing duplicates are normally used only for distribution copies.

5.1.2 Negative-appearing duplicates

Direct negative duplicates shall have a minimum visual diffuse transmission density in the range from inherent D_{min} to 0,18 and should be above the inherent D_{min} of the duplicating film. The density is measured either on an image of a 6% reflectance target provided for the purpose or in the clear areas between the frames.

5.1.3 Direct positive duplicates

5.1.3.1 Direct positive distribution copies

Direct positive duplicates shall have minimum visual diffuse transmission density not greater than 0,18 and should be above the inherent D_{min} of the duplicate film.

5.1.3.2 Direct positive intermediates

Direct positive intermediates shall have minimum visual diffuse transmission density not greater than 0,25 and should be above the inherent D_{min} of the duplicate film.

5.2 Diazo duplicates

All negative-appearing diazo duplicate microforms should have maximum density at or near to that of the unexposed, fully developed film. Duplicates on black or dark blue line film should have background density not less than 1,30. Minimum density of the duplicate should be above the inherent D_{min} of the diazo film and shall be not greater than 0,15, and for low contrast tonal diazo film, not greater than 0,90.

6 Projection density of vesicular duplicates

6.1 Vesicular duplicates of source document microforms

6.1.1 Positive-appearing vesicular duplicates of source document microforms

Positive-appearing vesicular duplicates of source document microforms shall have maximum background projection density not greater than 0,25.

6.1.2 Negative-appearing vesicular duplicates of source document microforms

Negative-appearing vesicular duplicates of source document microforms shall have minimum background projection density not less than 1,20, and should be below the inherent D_{max} of the duplicate film.

6.2 Vesicular duplicates of COM microforms

Vesicular duplicates of positive appearing COM microforms shall have minimum background projection density not less than 1,80, and should be below the inherent D_{max} of the duplicate film.