

INTERNATIONAL STANDARD

**ISO
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Cinematography — Test films for the reproduction of 70 mm motion-picture release prints with magnetic stripes — Specifications

*Cinématographie — Films étalons pour la reproduction sonore des tirages
cinématographiques sur films de 70 mm avec pistes magnétiques —
Spécifications*



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Foreword

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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 8395 was prepared by Technical Committee ISO/TC 36, *Cinematography*.

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

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International Organization for Standardization

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1 Scope

This International Standard specifies basic technical characteristics for magnetic sound test films used for checking, adjusting and measuring 70 mm motion-picture projector sound systems and sound reproduction channels of motion-picture installations.

This International Standard includes specifications for test films intended for checking, adjusting and measuring of:

- a) azimuth of the magnetic head gaps (azimuth alignment test film; see table 1);
- b) output level balance of several motion-picture projectors or systems and interchannel balance on each projector or system (signal level test film; see table 2);
- c) frequency response of the sound reproduction channels (multi-frequency test film; see tables 3 and 4);
- d) non-uniformity in velocity of film travel (flutter) (flutter test film; see table 5).

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 266:—¹⁾, *Acoustics — Preferred frequencies*.

ISO 2404:1986, *Cinematography — Six-track magnetic sound records on 70 mm striped release prints — Locations and dimensions*.

ISO 3023:1995, *Cinematography — 65 mm and 70 mm unexposed motion-picture film — Cutting and perforating dimensions*.

ISO 8590:1994, *Cinematography — Audio records on 70 mm motion-picture release prints with magnetic stripes — Recorded characteristic*.

ANSI S4.6:1982, *Recorded flux of magnetic sound records at medium wavelengths, methods of measuring*.

ANSI/IEEE 152:1992, *Audio Program Level Measurement*.

CCIR Report 79-2:1994, *Measurement of the characteristics of sound signals recorded on magnetic tape*.

DIN 45 520:1973, *Magnetic tape recorders; measurement of the absolute level of the magnetic flux and its frequency response on magnetic tapes*.

EBU Technical Document 3205-E, 1979, *The EBU standard peak-programme meter for the control of international transmissions*.

1) To be published. (Revision of ISO 266:1975)

IEC 386:1972, *Method of measurement of speed fluctuations in sound recording and reproducing equipment*.

3 Types of test film

It is recognized that two different types of magnetic test film are used for the evaluation and adjustment of magnetic film reproducers. These test films differ in the way their magnetic flux levels are measured, and in the detailed procedures of their application in system evaluation and adjustment. In this International Standard, both types of magnetic test film are specified, according to the following definitions.

a) Type 185

Magnetic flux levels are measured using the procedures specified in ANSI S4.6 and CCIR 79-2. The reference short-circuit flux level shall be 185 nWb/m. The test film signal output level shall be 6 dB below the reference flux level. These test films were developed for use generally in countries with a mains frequency of 60 Hz, and for measurement with VU meters conforming to ANSI/IEEE 152.

NOTE 1 The method for measuring magnetic flux level given in ANSI S4.6 uses a special reproducing head with two symmetrical gaps. The magnetic film to be measured is run in contact with the front gap and then in contact with the rear gap. The flux is calculated from the two EMF values and the head data.

b) Type 320

Magnetic flux levels are measured using the procedures specified in DIN 45 520. The reference short-circuit flux level shall be 320 nWb/m. The test film signal output level shall be 10 dB below the reference flux level. These test films were developed for use generally in countries with a mains frequency of 50 Hz, and for measurement with SPP meters conforming to EBU Technical Document 3205-E.

NOTE 2 The method for measuring magnetic flux level given in DIN 45 520 uses a search coil to sense the flux of a very long wavelength recording. The recording head is then fed with the same current, but at the reference frequency to produce a recording for calibrating a high-efficiency reproducing head.

The calibration of a magnetic film reproducer resulting from the use of a Type 320 magnetic test film will differ from that obtained from the use of a Type 185 magnetic test film, and will generally give a result about 1 dB higher for identical flux levels.

4 Specifications

4.1 Test films shall be made on motion-picture film, the cutting and perforating dimensions of which are in accordance with ISO 3023. (See also annex A).

4.2 Location and width dimensions of sound records shall be in accordance with ISO 2404.

4.3 Magnetic recording characteristics for multifrequency test film shall be in accordance with ISO 8590.

4.4 Test films shall be splice-free, except where joins are an essential part of the test film.

4.5 70 mm test films shall be recorded at a film velocity equivalent to 24 frames (120 perforations) per second [nominally 570 mm (22,4 in) per second]. All frequency and velocity tolerances shall relate to this stated velocity.

4.6 Each test film shall be provided with written identification on the outside of the container, including the following information:

- type of test film (Type 185 or Type 320),
- function of the film,
- base material (triacetate or polyester),
- date and place of recording, and
- a statement that the test film conforms to this International Standard.

4.7 Within multifrequency test films, each frequency shall be identified by voice announcements preceding that frequency segment. The peak level of voice announcements shall not exceed the peak level of modulation.

4.8 If multi-track test films are made on a fully magnetic coated motion-picture film, the individual records shall be made in accordance with this International Standard, including the specific International Standards referenced in clause 2.