

International Standard



3027

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Cinematography — Magnetic stripes and recording head gaps for sound record on 8 mm Type S motion-picture films — Position and width dimensions

Cinématographie — Pistes magnétiques et entrefers de têtes d'enregistrement du son sur copies cinématographiques 8 mm type S — Emplacements et dimensions en largeur

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Descriptors : cinematography, motion-picture film, motion-picture film 8 mm, sound recording, magnetic recording, sound track, magnetic heads, air gaps, position (location), width.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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 3027 was developed by Technical Committee ISO/TC 36, *Cinematography*.

This second edition was submitted directly to the ISO Council, in accordance with clause 6.11.2 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 3027-1975), which had been approved by the member bodies of the following countries:

Australia	Germany, F.R.	Sweden
Austria	India	Switzerland
Belgium	Italy	Thailand
Bulgaria	Japan	United Kingdom
Canada	Netherlands	USA*
Czechoslovakia	Romania	USSR
Egypt, Arab Rep. of	South Africa, Rep. of	
France	Spain	

No member body expressed disapproval of the document.

* Did not approve sub-clause 4.2.

Cinematography — Magnetic stripes and recording head gaps for sound record on 8 mm Type S motion-picture films — Position and width dimensions

1 Scope and field of application

1.1 This International Standard specifies the location and width of the magnetic striping on 8 mm Type S motion-picture film, slit and perforated in accordance with ISO 1700.

1.2 This International Standard also specifies the location and width of the magnetic recording head gaps in systems using a magnetic stripe on 8 mm Type S motion-picture film and the reproducing speed of the sound record as well as the picture/sound displacement.

2 References

ISO 1700, *Cinematography — 8 mm Type S motion-picture raw stock film — Cutting and perforating dimensions*.

ISO 2968, *Cinematography — Recording characteristics for magnetic sound record on 8 mm Type S motion-picture prints and full-coat magnetic film perforated 8 mm Type S — Specifications*.

3 Location and width of magnetic striping

3.1 The location and width of the magnetic sound stripes and balance stripes shall be as shown in the figure.

3.2 If the magnetic sound stripe increases the thickness of the film by more than 0,005 mm (0,000 2 in), a balance stripe shall be applied to effectively equalize the thickness of the two edges of the film. The balance stripe should have the same thickness and shall have essentially the same composition as the sound record stripe.

3.3 The thickness of the magnetic sound stripe and of the balance stripe shall not exceed 0,020 mm (0,000 8 in).

3.4 The magnetic stripes shall be applied to the side of the film which will be towards the light source when used in a projection system arranged for direct front projection onto a reflection-type screen.

4 Location and width of magnetic head gaps

4.1 The location and widths of the magnetic recording and universal head gaps shall be as shown in the figure and as given in table 2.

4.2 The magnetic recording head gap shall be at an angle of $90^\circ \pm 10'$ to the longitudinal axis of the film travel.

5 Picture-sound displacement

The magnetic sound record on the film shall precede the centre of the corresponding picture by a distance of 18 ± 1 frames.

6 Projection film speeds

The nominal speed of film past the magnetic heads for reproduction shall be as specified in ISO 2968, and as given in the table.

Table 1

Application	cm/s	in/s	Frames (perforations) per second
A Primary standards			
1) Cinematography applications	10,2	4.0	24
2) Television applications			
— for 50 Hz supplies	10,6	4.2	25
— for 60 Hz supplies	10,2	4.0	24
B Secondary standard (non-professional use)	7,6	3.0	18

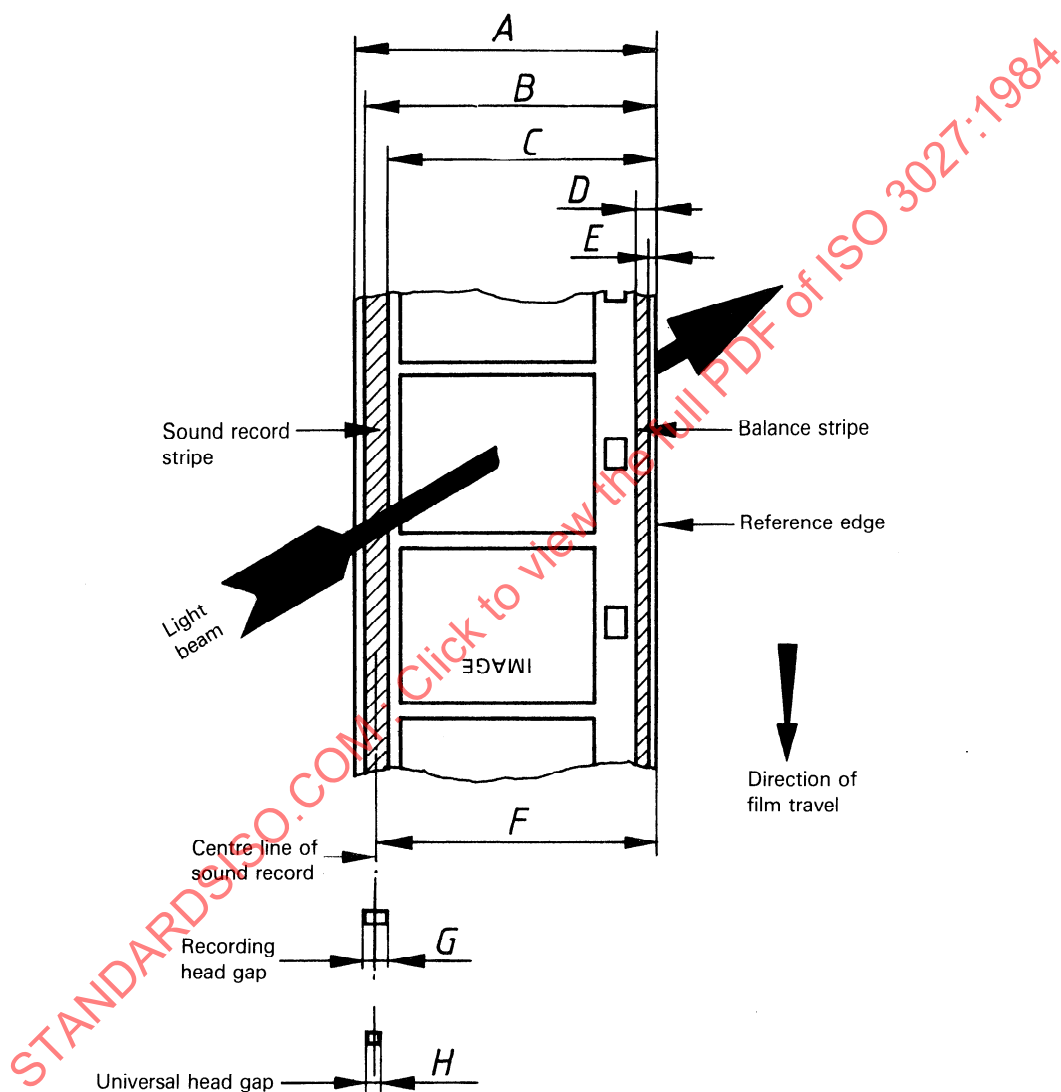


Figure — Location and width of magnetic striping, and recording head gaps

Table 2

Dimensions	mm	in
<i>A</i> ref.	7,98	0.314
<i>B</i> *	7,92 ± 0,08	0.312 ± 0.003
<i>C</i> *	7,24 ± 0,08	0.285 ± 0.003
<i>D</i>	0,38 ± 0,08	0.015 ± 0.003
<i>E</i>	0,08 ± 0,08	0.003 ± 0.003
<i>F</i> **	7,58 ± 0,05	0.298 ± 0.002
<i>G</i>	0,65 ± 0,05	0.026 ± 0.002
<i>H</i> _{min.} ***	0,48	0.019

* Notwithstanding the tolerances on *B* and *C* above, the difference between *B* and *C* shall not be smaller than 0,64 mm (0.025 in) minimum.

** It is important for film exchange and compatibility with playback equipment that dimension *F* is strictly maintained within the tolerances quoted.

*** When it is desired to employ a single head for the dual function of recording and reproducing, the universal head gap dimension shall apply.

NOTE — The tolerances for dimensions *B* and *C* are larger by 1/3 than the corresponding tolerances for the recording stripe on 16 mm and 35 mm width films because 8 mm film is commonly generated from such wide width films. The differences occurring in slitting should therefore be taken into account.

7 Bibliography

ISO 1781, *Cinematography — Projector usage of 8 mm Type S, motion-picture film for direct front projection.*

ISO 2967, *Cinematography — Magnetic stripes for sound records on 35 mm motion-picture film perforated 8 mm Type S-5R (1-3-5-7-0) — Positions and width dimensions.*

ISO 3068, *Cinematography — Magnetic stripes for sound records on 16 mm motion-picture film perforated 8 mm Type S-2R (1-4) and (1-3) — Positions and width dimensions.*

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