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>
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Reaffirmed 2009

SMPTE STANDARD

SMPTE 149-2004
Revision of
SMPTE 149-1999

for Motion-Picture Film (8-mm Type S) — Perforated 1R

1 Scope

This standard specifies the cutting and perforating dimensions for 8-mm motion-picture film with 8-mm type S perforations along one edge and a perforation pitch of either 0.1664 in or 0.1667 in (4.227 mm or 4.234 mm).

2 Dimensions

2.1 The dimensions shall be as given in figure 1 and table 1.

2.2 The dimensions pertain to a safety film as defined in SMPTE 223M.

2.3 The dimensions apply at the time of cutting and perforating for film adjusted to a temperature of 23°C ± 1°C (nominally converted to 73°F ± 2°F) and a relative humidity of (50 ± 2)%. The manufacturer may indicate other nominal temperature and humidity conditions under which the dimensions apply.

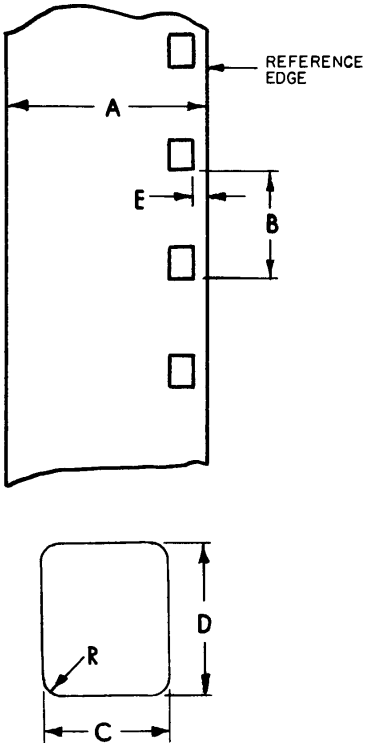

Figure 1 – 8-mm type S film

Approved
November 8, 2004

Table 1 – Specifications

Dimensions		Inches	Millimeters
A	Film width	0.3140 ± 0.0015	7.976 ± 0.038
B	Perforation pitch (long)	0.1667 ± 0.0004	4.234 ± 0.010
B´	Perforation pitch (short)	0.1664 ± 0.0004	4.227 ± 0.010
C	Perforation width	0.0360 ± 0.0004	0.914 ± 0.010
D	Perforation height	0.0450 ± 0.0004	1.143 ± 0.010
E	Edge to perforation	0.020 ± 0.002	0.51 ± 0.05
L	100 consecutive perforation pitches	16.670 ± 0.017	423.42 ± 0.43
L´	100 consecutive perforation pitches	16.640 ± 0.017	422.66 ± 0.43
R	Radius of perforation fillet	0.005 ± 0.001	0.13 ± 0.03

NOTE – The title of this standard was established by the application of a nomenclature system developed for all film dimension standards. Each title provides an indication of the film width, a code designation for the perforation shape (BH, KS, DH, or CS), or the number of rows of perforations (1R, 2R, etc.), depending upon which is the significant factor, or the perforation pitch without the decimal point.

Annex A (informative)
Additional data

A.1 The user is reminded that, as a plastic, film can change dimensions temporarily due to moisture or temperature, or permanently due to solvent loss or strain effect.

A.2 Film for positive use has a longitudinal pitch 0.2% longer than its companion unprocessed negative. Shrinkage of the negative during aging and processing prior to printing will generally not exceed 0.2%. Thus, the processed negative stock is expected to be 0.3% ± 0.1% shorter than the unprocessed positive. This difference will minimize slippage between the two on the 12-in (305-mm) circumference sprocket of the printer, assuming a film thickness of 0.0055 in to 0.0065 in (0.140 mm to 0.165 mm).

A.3 The uniformity of pitch, hole size, and margin (dimensions B, C, D, and E) is an important variable affecting steadiness. Variations in these dimensions, from roll to roll, are of little significance compared to variations from one perforation to the next within any small group of consecutive perforations. As an example, the uniformity of the margin is uniquely critical for optical printing. During the printing process, the placement of the image on the film is usually with respect to successive lateral pairs of perforations at one-frame intervals. During subsequent projection, however, the portion of the image projected is usually located, not by these perforations, but by the edge of the film. The lateral steadiness of the projected image is therefore directly related to the frame-to-frame uniformity of the margin.

A.4 For historical background on the development of this standard, refer to A. J. Miller and A. C. Robertson, "Motion-picture film — Its size and dimensional characteristics," Journal of the SMPTE 74: 3-11; January 1965.

Annex B (informative)
Bibliography

SMPTE 223M-2001, Motion-Picture Film — Safety Film