

American National Standard dimensions for 35mm motion-picture film splices

Approved April 6, 1971

Sponsor: Society of Motion Picture and Television Engineers, Inc.

Page 1 of 3 pages

1. Scope

This standard specifies the dimensions for splices on processed 35mm motion-picture film with DH, BH, CS, or KS perforations intended for laboratory printing or projection.

2. Dimensions

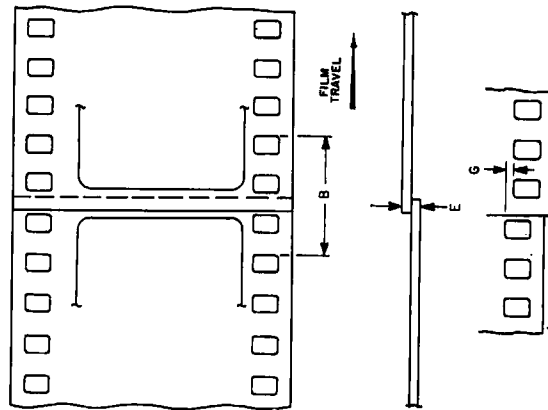
2.1 The dimensions shall be as given in the figure and table and shall apply to processed films and leaders.

2.2 The critical dimension requiring control during splicing is pitch (Dimension B). The direction of intended travel during use of the film determines the perforation edges used for this measurement. A value of 0.2 percent has been assumed for aging and processing shrinkage in the calculation of Dimension B.

2.3 The film width at the splice shall not exceed 1.379 in (35.03 mm). If the film has been widened during splicing, the extra material shall be removed.

2.4 In the plan view, the angle between the respective edges of the spliced films shall be $0^\circ \pm 4'$. (See Appendix A4.)

2.5 Tape material may be added to reinforce butt, taper, or overlap cement splices, provided the reinforcing tape does not extend beyond the edges of the film and the total thickness is within Dimension E. (See Appendix A5.)



Dimensions	Inches	Millimeters
B	0.559 ± 0.002	14.20 ± 0.05
E	0.013 max	0.33 max
G	0.002 max	0.05 max

2.6 If new perforation holes are punched into tape splices or reinforcing materials, after application to the film or if preperforated material is used, the film shall retain its perforation pitch in its intended direction of travel.

is a revision of the 1967 issue correcting the dimensions of the image width.

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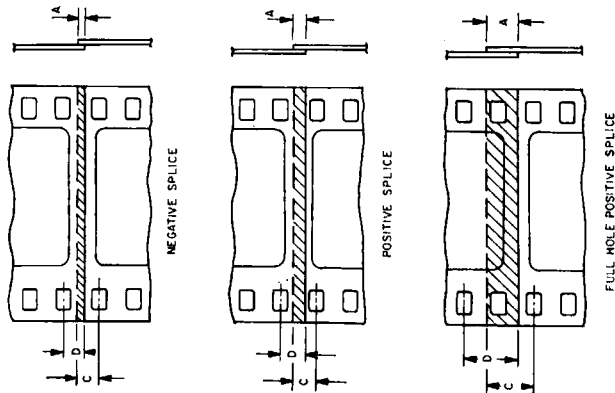
NOTE 1: When butt splices are joined by tape, cement or welding, the gap between the film ends at any point across the width of the film shall be less than 0.002 in (0.05 mm).

NOTE 2: Carefully made splices for laboratory print:

Appendix

(The Appendix is not a part of this American National Standard, but is included to facilitate its use.)

A1. There are several methods of forming the film overlap or joint for splices used by laboratories and film exchanges. The most common methods are usually referred to as negative splices, positive splices, full-hole positive splices, and butt splices. In addition, tape splices have been used for amateur films for projection purposes, but are currently used only on 35mm films for reinforcement of one of the types of splices mentioned above or to join film prior to processing. Splices made on an Automatic Kidde Machine are a positive type with a crescent-shaped cut and overlap. CinemaScope splices can be made with an overlap of as little as 0.030 in (0.76 mm). The usual dimensional specifications for the width of splices mentioned above, except butt and Kidde splices, are as follows:

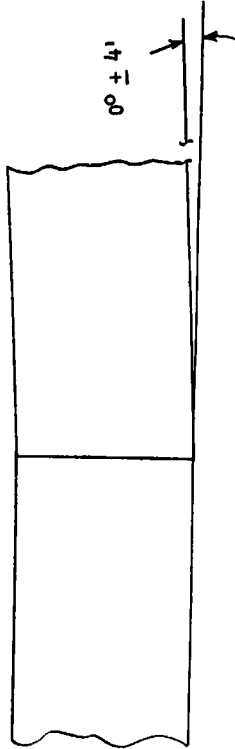


Dimensions*	Negative		Positive		Full-Hole Positive	
	In	Mm	In	Mm	In	Mm
A	0.050	1.27	0.072	1.83	0.156	3.96
C	0.118	3.00	0.114†	2.90	0.250	6.35
D	0.118	3.00	0.145†	3.68	0.280	7.11

* All dimensions are nominal.
 † Older combination splitters make non-symmetrical positive splices. Many laboratories use centered positive splices with Dimensions C and D equal to 0.129 in. Both shall be considered satisfactory within this standard.

This specification assumes only one splitter for negative, positive, and raw stock. In laboratories with step printers, this may not be acceptable. Where machines can be used for each individual purpose, Dimension B must bear the tighter tolerance:

Dimension B	Inches	Millimeters
Processed negative	0.559 ± 0.001	14.20 ± 0.03
Processed positive	0.560 ± 0.001	14.22 ± 0.03
Raw negative	0.560 ± 0.001	14.22 ± 0.03
Raw positive	0.561 ± 0.001	14.25 ± 0.03



A2. When cement splices are made, the usual recommended splicing techniques apply. This document does not cover all the steps necessary to achieve good splices; however, items requiring special attention are: The cement should be applied to the full width of the splice after all traces of emulsion have been removed. Cement should be applied sparingly, and any excess should be removed after joining.

A3. If moisture is used to remove the emulsion, the film ends must be dry before applying cement and making the splice.

A4. A simple, practical check of the alignment of the film can be made when one portion of the film is placed against a straight edge; the other portion should not deviate more than 0.006 inch in 5 in.

A5. If the splice consists of a tape material, it is recommended that consideration be given to transparency characteristics. All air bubbles should be removed, and the edges of the tape should make firm contact. The tape

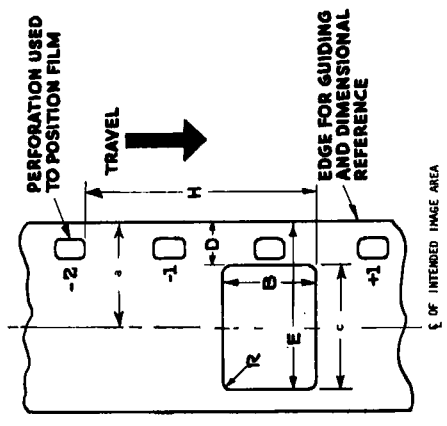
length should be selected to provide low visibility, which for some tapes may allow the tape edge to fall within the frame.

American National Standard dimensions of camera aperture image on super 8 motion-picture film

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1. Scope

This standard specifies the dimensions of the image area produced by the camera aperture on super 8 motion-picture film. It also specifies the position of the image relative to the reference edge of the film and the perforation used to position the film.



Film as seen from inside camera looking toward lens.

Dimensions	Inches	Millimeters
a	0.228 ref	5.79 ref
b	0.163 min	4.14 min
c	0.170 nom	4.32 nom
d	0.037 min	0.94 min
D	0.058 max	1.47 max
E	0.282 min	7.16 min
H	0.393 ± 0.005	9.98 ± 0.13
R	0.005 max	0.13 max

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the image and the reference edge shall be $90^\circ \pm 1/2^\circ$.

2.3 Dimension H is the distance from the bottom edge of the picture frame to the bottom of the perforation which is two pitches above the perforation adjacent to that picture frame.

2. Dimensions

2.1 The dimensions shall be as given in the figure and table and shall apply to measurements of the image as formed on freshly exposed and processed film.

2.2 The angle between the horizontal edges of

Appendix

(The Appendix is not a part of this American National Standard, but is included to facilitate its use.)

A1. If the aperture plate is not in the plane of the emulsion, the physical dimensions of the aperture in the camera will be slightly different from the dimensions given in the figure. The exact amount of this difference will depend upon the f / value and focal length of the camera lenses used and upon the distance between the emulsion and the physical aperture. This separation should be no greater than is necessary to prevent scratching of the film.

A3. The centerline of the image area is given for convenience in interpreting the standard, facilitating such applications as the optical design of equipment, and assisting in the understanding of suitable mechanical embodiments related to the camera aperture image area.

Note that the centerline of the image area is displaced from the centerline of the film by 0.013 in (0.33 mm) nominal.

A2. It is the intent of this standard to provide a camera image such that the exposed area will always be larger than the area of the projector aperture. Ob-