tripack color processing machine in 1941. He has also been responsible for the design and construction of the first indigenous additive film printer and the first indigenous x-ray sheet film processor in 1978. He has been the recipient of a number of patents. He is Hon. Advisor to the Government of Assam on its film project and a Member of the Advisory Panel of the Hindustan Photo Film Mfg. Co. Ltd. since its inception. Gopal is a Fellow of the Royal Photographic Society of Great Britain and a Life Member of the Western India Cinematographic Association.

Norman T. Prisament, President, Magna-Tech Electronic Co., Inc., has been actively engaged in various aspects of the recording industry since 1941. Under his leadership, advanced and sophisticated technology has been applied to sound equipment in many of the major sound studios throughout the world, and recorders, dubbers, and projectors that would operate at high speed in interlock were manufactured and distributed. He was also instrumental in the introduction of the high speed electronic looping system, videotape recording to sprocket machine SMPTE interlock; electronic pulse driven high speed dubbers and recorders; electronic pulse driven high speed projectors and electronic pulse driven high speed interlock systems. Prisament received the Samuel L. Warner Memorial Award from SMPTE in 1979.

Robert J. Ringer, President, Image Transform, Inc., began his career as a cameraman on such shows as the original Dave Garroway Show and Kukla, Fran and Ollie, and in 1950 joined KTTV, Los Angeles, as a remote crew cameraman and later, Remote Supervisor. While at Glenn-Armistead he was introduced to black-and-white, tape-to-film transfers, and also collaborated on the development of the three-color separation system for videotape-to-film transfers. At Image Transform, Ringer supervised and developed techniques for processing pictures from the moon that utilized image enhancement and noise reduction. He was also involved in the processing of NASA pictures from Apollo 14 through Skylab and Apollo-Soyuz and was technically responsible for six motion pictures done on 655/24 system.

Joe Roizen, President, Telegen. Prior to founding Telegen, Roizen spent over 12 years with Ampex Corp. and four with Paramount Pictures, during which time he contributed to the development of color television and videotape recording equipment, particularly in the editing and color recording areas. Starting with the Rome Olympics in 1960, he has acted as a technical consultant for nine sets of games. He was the recipient of an Emmy Citation for recording the Nixon/Khrushchev debate in Moscow in 1958. His association with the SECAM process commenced in 1960. In 1974 he supervised a color television exhibit at the Exposition Palace in Peking and, later that year monitored the use of SECAM at the Asian Olympic Games. He is a Fellow of the Royal Television Society and Chairman of IEC/SC60B.

Koichi Sadashige, Director, Engineering Development, Matsushita Electric Industrial Co. and Manager of the Applied Research Laboratories. Mr. Sadashige is presently handling the coordination of specialized engineering and marketing efforts between Japan and the United States. He was Engineering Unit Manager, Electronic Recording Equipment at RCA Corp. from 1953 to December 1978. Sadashige was the recipient of the *SMPTE Journal* Honorable Mention Award in 1977 and is the author of numerous technical articles appearing in the *SMPTE Journal, Radio Electron Eng.* and *IEEE Trans. Broadcast*. He is a member of the IEEE and the Institute of Television Engineers of Japan.

Richard J. Stumpf, Director, Sound and Electronics Dept., Universal Studios, was a principal inventor and received a patent on Special Effects Generation and Control System for Motion Pictures, as well as being a co-inventor of an optical image focusing device with audible indication. Among his developments have been a crystal controlled camera motor for Arriflex cameras; procedures for high quality practical television, including an established basis of 24 frame video to eliminate shutter bar which is commonly used today, and also a demonstration of the first digitally controlled automated re-recording mixing system at RCA in 1966. He was the recipient of an Academy Class II award for the development of Sensurround.

Hartwell T. Sweeney, Director, Administration and Analysis, Motion Picture and Audiovisual Markets Division, Eastman Kodak Co. During his 15 years as a sales and engineering representative, and later in Chicago and Hollywood, he was noted for his valuable and high level engineering service to the motion picture laboratory and television industries. Sweeney is First Vice-President, Council on International Nontheatrical Events, Inc.

Standards & Recommended Practices

Proposed American National Standards

Two Proposed American National Standards are published here for a trial period and public review: PH22.17, Dimensions for 16-mm Motion-Picture Film Perforated 8-mm Type R, 2R; PH22.24, Dimensions of Transverse Cemented Splices on 16-mm and 8-mm Type R Motion-Picture Film. PH22.17 reflects the addition of short-pitch specifications (Dimensions B′ and L′). PH22.24 is a revision and consolidation of PH22.24-1975 and PH22.77-1975 since there are only three dimensions that are different.

Proposed SMPTE Recommended Practices

Three Proposed SMPTE Recommended Practices are also published for trial and comment: RP 104, Cross-Modulation Tests for Variable-Area Photographic Sound Tracks; RP 105, Method of Determining the Degree of Jump and Weave in 70-mm, 35-mm and 16-mm Motion-Picture Projected Images; and RP 106, Film Tension in 35-mm Motion-Picture Systems Operating Under 0.9 m/s (180 ft/min).

Reaffirmed American National Standards

The American National Standards Institute approved reaffirmation of two American National Standards on 23 September 1980: ANSI PH22.108-1974 (R1980), Position, Dimensions and Reproducing Speed of Four 150-Mil Magnetic Sound Records on 35-mm Motion-Picture Film; and ANSI PH22.186-1974 (R1980), Position, Dimensions and Reproducing Speed of Six 100-Mil Magnetic Sound Records on 35-mm Motion-Picture Film. —*Alex E. Alden, Manager of Engineering Services*

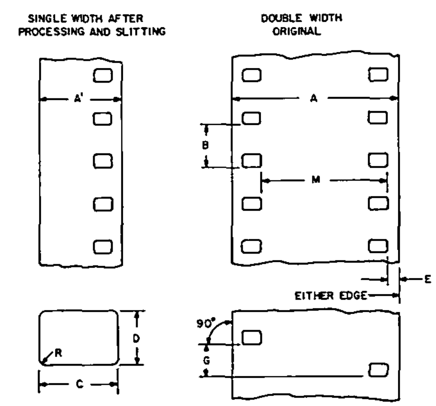
Proposed American National Standard

Dimensions for 16-mm Motion-Picture Film Perforated 8-mm Type R, 2R

PH22.17
Revision of PH22.17-1974

1. Scope

This standard specifies the cutting and perforating dimensions for 16-mm motion-picture film with two rows of 8-mm Type R perforations and a perforation pitch of either 0.1500 or 0.1497 in (3.810 or 3.802 mm). The width of the 8-mm strip after processing and slitting is also specified.



	Dimensions	Inches	Millimeters
A	Film width	0.628 ± 0.001	15.95 ± 0.03
A'	Film width after slitting	0.314 ± 0.002	7.98 ± 0.05
B	Perforation pitch (long)	0.1500 ± 0.0005	3.810 ± 0.013
B'	Perforation pitch (short)	0.1497 ± 0.0005	3.802 ± 0.013
C	Perforation width	0.0720 ± 0.0004	1.829 ± 0.010
D	Perforation height	0.0500 ± 0.0004	1.270 ± 0.010
E	Edge to perforation	0.0355 ± 0.0020	0.902 ± 0.051
G	Perforation misalignment	0.001 max	0.03 max
L	100 consecutive perforation pitches	15.000 ± 0.015	381.00 ± 0.38
L'	100 consecutive perforation pitches	14.970 ± 0.015	380.24 ± 0.38
M	Lateral perforation displacement	0.485 ± 0.001	12.32 ± 0.03
R	Radius of perforation fillet	0.010 ± 0.001	0.25 ± 0.03

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2. Dimensions

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

2.2 The dimensions pertain to a safety film as defined in American National Standard Specifications for Motion-Picture Safety Film, ANSI PH22.31-1967 (R1973).

2.3 Except for Dimension A', the dimensions apply at the time of cutting and perforating for film adjusted to a temperature of 23 ± 1°C (nominally converted to 72 ± 2°F) and a relative humidity of 50 ± 2 percent. The manufacturer may indicate other nominal temperature and humidity conditions under which the dimensions apply. Dimension A' applies immediately after slitting.

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.), depnding upon which is the significant factor, or the perforation pitch without the decimal point.

Appendix

(The Appendix is not a part of this American National Standard, but is included for information purposes only.)

A1. 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.

A2. 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.

A3. 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," Jour. SMPTE, 74: 3-11, Jan. 1965.

PH22.17

Proposed American National Standard

Dimensions of Transverse Cemented Splices on 16-mm and 8-mm Type R Motion-Picture Film

PH22.24

Revision and Consolidation of PH22.24-1975 and PH22.77-1975

1. Scope

1.1 Specifications. This standard specifies the dimensions of transverse cemented splices on 16-mm and 8-mm Type R motion-picture film.

1.2 Types. Two types of splices are specified: a laboratory splice for professional applications and a projection splice for release prints and reversal films.

1.3 Excepted Splicers. It is not intended that this standard be prejudicial to diagonal, scarf, or tape splicers.

2. Dimensions

2.1 Specifications. The dimensions shall be as given in the figures and tables.

2.2 Film Width at Splice. Film width at the splice shall not exceed 0.317 in (8.05 mm) for 8-mm Type R film and 0.630 in (16.00 mm) for 16-mm film. If the film has been widened during *scraping, the extra width shall be removed.*

2.3 Lateral Offset for Perforation Overlap. *Perforation overlapping shall not be offset* laterally by more than 0.002 in (0.05 mm).

2.4 Lateral Offset for Film Edges. Edges of the two spliced films shall not be offset laterally by more than 0.002 in (0.05 mm) unless a difference in the lateral shrinkage of the two strips makes it impossible to maintain the tolerance. Shoulders formed by such misalignment shall be beveled after the cement has dried.

2.5 Angle between Edges. In the plan view, the angle between the respective edges of the spliced films shall be 180° ± 4′. Thus, the *spliced film shall be aligned to the extent that,* when one portion of the film is placed against a straightedge, the other portion will not deviate more than *0.006 in (0.15 mm), which is the approximate film thickness, in 6 in (152 mm).*

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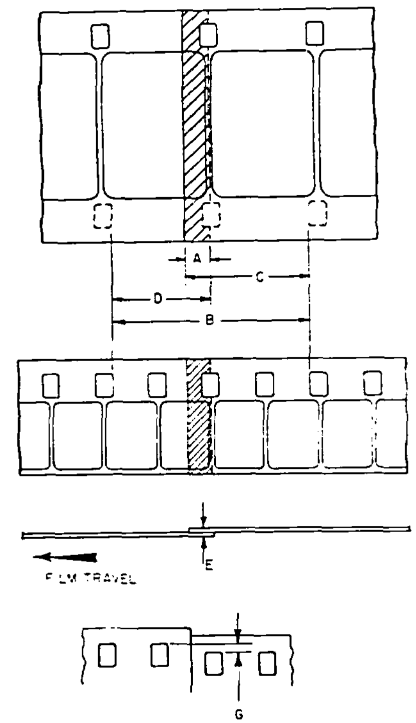

Fig. 1
Laboratory Splices

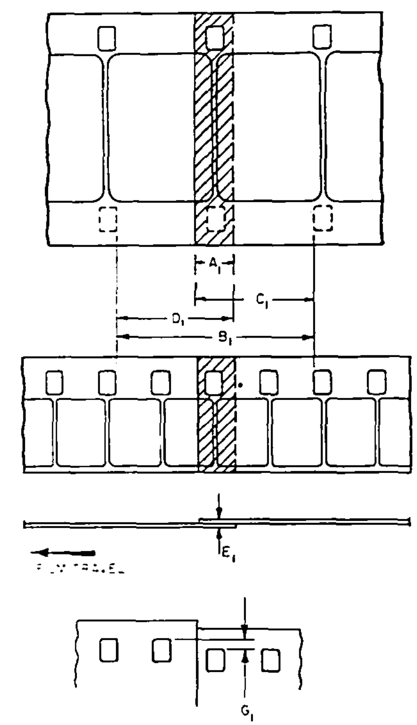

Fig. 2
Projection Splices

Table 1

Dimensions	Inches	Millimeters
A	0.070 ± 0.003	1.78 ± 0.08
B	0.548 ± 0.001	13.92 ± 0.03
C	0.344 ± 0.003	8.74 ± 0.08
D	$0.274^{+0.000}_{-0.003}$	$6.96^{+0.00}_{-0.08}$
E	0.012 max	0.30 max
G	0.002 max	0.05 max

Tolerances shown are not to be cumulative.

Table 2

Dimensions	Inches	Millimeters
A_1	$0.100^{+0.000}_{-0.005}$	$2.54^{+0.00}_{-0.13}$
B_1	0.548 ± 0.001	13.92 ± 0.03
C_1	$0.324^{+0.000}_{-0.003}$	$8.23^{+0.00}_{-0.08}$
D_1	$0.324^{+0.000}_{-0.003}$	$8.23^{+0.00}_{-0.08}$
E_1	0.012 max	0.30 max
G_1	0.002 max	0.05 max

Tolerances shown are not to be cumulative.