

Approved American Standards

On December 10, 1963, the American Standards Association approved as American Standards two proposals published here for your information. Copies of these standards may be purchased from the American Standards Association, 10 East 40th St., New York 10016.

American Standard Dimensions of Raw Stock Cores for 35mm Motion-Picture Film, PH22.37-1963, is a revision of a 1944 issue which was reaffirmed in 1953. The present document does not change the original dimensions, but has been enlarged to include not only positive and negative cores, but also two- and three-in. diameter cores.

American Standard Dimensions of Four-Track Magnetic Sound Records for 35mm Release Prints, PH22.137-1963, specifies the location and dimensions of the four magnetic stripes and of the recording heads used in conjunction with release prints made on film perforated with the CS-type perforation.

Proposed Recommended Practice

Proposed SMPTE Recommended Practice RP 17, A Photographic Recording Technique for Measuring High-Speed

Camera Image Unsteadiness, is published here for a trial period and public review. Comments should be addressed to Alex E. Alden, Staff Engineer, at Society Headquarters prior to February 26. If no adverse criticism is received by that date, the proposal will be submitted to the SMPTE Board of Governors for final approval.

Proposed Withdrawal of American Standard

The Film Projection Practice and Standards Committees have recommended the withdrawal of American Standard Projector Aperture for 35mm Anamorphic, 2.55:1 Prints with Squeeze Ratio of 2:1, PH22.104-1957 (published in the March 1957 Journal).

Although release prints of the aspect ratio described in this standard are still in existence, no new productions are being made for release in the 2.55:1 ratio. It should be pointed out that anamorphic prints are currently projected with the 2.35:1 aperture as a standard operating practice. This system is described in American Standard PH22.106 (published in the December 1957 Journal).

If no objections are received, ASA Sectional Committee PH22 will be requested to approve termination of this outdated document.—A.E.A.

ASA
Reg. U.S. Pat. Off.
PH22.137-1963
*UDC 778.534.425

American Standard Dimensions of Four-Track Magnetic Sound Records for 35mm Release Prints

1. Scope

1.1 This standard specifies the location and dimensions of the four magnetic sound stripes and of the recording heads to be used thereon for 35mm motion-picture prints.

1.2 This standard specifies the distance between the sound and corresponding picture.

2. Film Base

With the direction of travel as shown in the figure, the emulsion side of the film is up, the base is down, and the magnetic striping is on the base side.

3. Dimensions

3.1 The dimensions shall be as specified in the figure and table.

3.2 The cutting and perforating dimensions are specified by American Standard Dimensions for 35mm Motion-Picture Film, CS-1870 PH22.102-1956.

4. Sound Records

Track 1 shall be used for the left (as viewed from the auditorium) loudspeaker channel. Track 2 shall be used for the center loudspeaker channel. Track 3 shall be used for the right loudspeaker channel. Track 4 shall be used for the surround loudspeaker or control signals, or both.

5. Picture-Sound Separation

The sound record shall be separated on the film from the center of the corresponding picture by 28 frames = 1/2 frame in such a direction that, in normal film motion, the picture first passes a given reference point and then the corresponding sound passes at a later time.

| Dimensions | Inches | Millimeters |
|------------|---------------|--------------|
| A | 0.059 | 1.50 min |
| B | 0.063 ± 0.003 | 1.60 ± 0.08 |
| C | 0.036 ± 0.002 | 0.91 ± 0.05 |
| D | 0.038 ± 0.003 | 0.97 ± 0.08 |
| E | 0.171 ± 0.002 | 4.34 ± 0.05 |
| F | 1.148 ± 0.002 | 29.16 ± 0.05 |
| G | 1.298 ± 0.002 | 32.97 ± 0.05 |
| H | 0.040 ± 0.002 | 1.02 ± 0.05 |

NOTE: The dimensions given in this standard are predicated on the use of unshrunk film. It is recognized, however, that in practice, one may encounter some shrinkage when striping a processed print. Specific measurements should take into account the overall width of the film as specified by Dimension A in American Standard PH22.102-1956. Should the film width fall outside the permissible tolerance, all dimensions specified in this standard may be multiplied by the ratio of nominal dimensions determined as follows:

$$\frac{\text{Measured width}}{\text{Specified width}} = \text{Ratio of nominal dimensions}$$

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PH22.37-1963
Revision of
PH22.37-1944
UDC 771.332

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American Standard Dimensions of Raw Stock Cores for 35mm Motion-Picture Film

1. Scope
This standard specifies the dimensions of 2- and 3-in. raw stock cores for 35mm motion-picture film.

2. Dimensions

2.1 The dimensions of the 2-in. male and female cores shall be as given in the figures and table below.

2.2 The dimensions of the 3-in. male and female cores shall be identical to those of the 2-in. cores except for Dimension B, which shall be 3.055 ± 0.070 in. (77.60 ± 1.78 mm).

3. Concentricity Allowance
The concentricity of the inside and outside diameters of the core shall be within 0.020 in. (0.51 mm), one half of the total dial runout.

MALE CORE

FEMALE CORE

| Dimensions | Inches | Millimeters |
|------------|------------------------|------------------------|
| A | 1.375 max 1.338 min | 34.92 max 33.99 min |
| B | 1.968 ± 0.10 | 49.99 ± 0.25 |
| C | 1.020 ± 0.008* | 25.91 ± 0.20* |
| D | 1.177 ± 0.016 | 29.90 ± 0.41 |
| E | 0.157 ± 0.008 | 3.99 ± 0.20 |
| F | 0.669 min | 16.99 min |
| G | 0.088 ± 0.008 | 2.24 ± 0.20 |
| H | 0.088 ± 0.008 | 2.24 ± 0.20 |

* Bore C to fit freely to hub 1.000 in. +0.004 -0.000 (25.40mm +0.10 -0.00) diameter.

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APPENDIX

Dimensions of Raw Stock Cores for 35mm Motion-Picture Film, PH22.37-1963, but is included to facilitate its use.)

Two styles of nominally 2-in. (50mm) cores are in use for spooling 35mm motion-picture film. The male core is conventionally used for negative films, sound or picture, or for other films such as duplicating negative, any of which are used in camera magazines. The female core is conventionally used for films to be used on printers.

The key and the keyway are provided as a means of driving the core for take-up or a means of providing holdback tension on a feed spindle. The dimensions of the keyway shall be adequate to clear a square-ended key.

The 3-in. (76mm) core is recommended for use with raw stock rolls 2000 ft (610 meters) or longer. Experience has shown that the higher torque involved in handling these long rolls requires a female style core, since a key extending one-half the width of the core may not have sufficient shear strength.

When the 2-in. male core is used to spool raw stock, it should be so oriented that when the outside end of the film leaves the roll at the top and toward the right,

the key is on the side of the core toward the observer. The manufacturer may, at his discretion, provide a slot into which the film may be lapped in order to spool it snugly to the core. Such spooling is usually designated as "wound on." When the film is spooled on a collapsible mandrel and the core is inserted after spooling, it is usually designated as "core inserted." (This latter designation is not to be taken as referring to whether or not the end of the film is lapped into the core.)

In the spooling of film to be used in high-speed cameras, it is the usual practice to snub the film onto the core without lapping the end in a slot so that the end will not be crimped. Such a crimp passing through a camera mechanism at several thousand frames per second may seriously damage the mechanism.

The maximum value for Dimension A is 0.001 in. (0.025mm) less than the minimum width of 35mm film as described by related American Standards. The core should not be wider than the film in order to avoid difficulty with tight-winders, widely used in the industry, which have fixed flanges for guiding.