


Approved American Standards

On January 13, 1964, the American Standards Association approved as American Standards three proposals. Two of those, PH22.38 and PH22.97, are in fact reaffirmations of the technical material in the earlier issues. The standards have been modified editorially to conform in style with more recently approved documents.

PH22.38-1964, American Standard Dimensions of Raw Stock Cores for 16mm Motion-Picture Film, specifies the dimensions of 2-, 3- and 4-in. cores normally used with raw stock. PH22.97-1964, American Standard Dimensions of 200-

mil Magnetic Sound Record on 16mm Film Base, Perforated 1R-3000, specifies the location, dimensions and recording speed of the 200-mil sound record normally used in studio work. PH22.56a-1964, American Standard Nomenclature for Motion-Picture Film Used in Studios and Processing Laboratories (Sections 5-7), is a supplement to the first issue, PH22.56-1961 and adds Section 5, photographic sound; Section 6, Magnetic Sound and Section 7, Release Prints.

Individual copies of these standards can be purchased from the American Standards Association, 10 East 40th Street, New York, 10016.—A.E.A.



Rev. U.S. Pat. Off.
PH22.38-1964
Revision of
PH22.38-1952
• UDC 771.332

**American Standard Dimensions of
Raw Stock Cores for 16mm Motion-Picture Film**

1. Scope

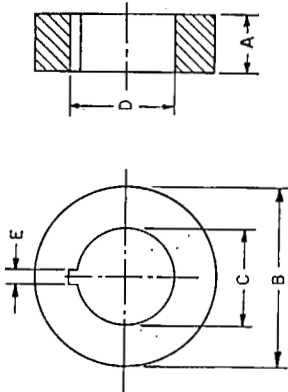
This standard specifies the dimensions of 2-, 3- and 4-in. raw stock cores for 16mm motion-picture film.

2. Dimensions

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

Dimen- sions	Inches	Millimeters
A	0.627 max 0.590 min	15.93 max 14.99 min
B	2 in. 1.968 ± 0.010	49.99 ± 0.25
3 in.	3.000 ± 0.016	76.20 ± 0.40
4 in.	4.000 ± 0.016	101.60 ± 0.40
C	1.020 ± 0.008*	25.91 ± 0.20*
D	1.177 ± 0.016	29.90 ± 0.40
E	0.157 ± 0.008	3.99 ± 0.20

* Core C to fit freely to hub with a 1.000 ± 0.004 - 0.000 in. (25.40 ± 0.1 - 0.0mm) diameter.



3. Concentricity Allowance

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

APPENDIX

(This Appendix is not a part of American Standard Dimensions of Raw Stock Cores for 16mm Motion-Picture Film, PH22.38-1964, but is included to facilitate its use.)

A nominal 4-in. core is manufactured, though not currently used as a raw stock core, which is used at present for film take-up on high-speed film printing and processing equipment. Such cores are used so as to minimize possible damage to film by reducing the initial starting torque necessary for windup. (This large core reduces the ratio of take-up tension from the outside of the roll to the inside of the roll, thus allowing greater film tension control.)

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

The manufacturer may, at his discretion, reduce the cross-sectional area of the core, so long as it does not interfere with the stated dimensions, and in addition may 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

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 the minimum width of 16mm 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. Except for the slot and keyway, the periphery and bore should present smooth, unbroken surfaces.

Approved January 13, 1964, by the American Standards Association, Incorporated
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* Universal Decimal Classification
Printed in U.S.A.
ASA1254/30

<p style="text-align: center;">American Standard</p> <p style="text-align: center;">Nomenclature for Motion-Picture Film Used in Studios and Processing Laboratories (Sections 5-7)</p>	<p style="text-align: center;">ASA Reg. U.S. Pat. Off. PH22.56a-1964 Addenda to PH22.56-1961 • UDC 778.5001.4</p>
<p style="text-align: center;">5. Photographic Sound</p> <p>Note: All definitions in this section will be understood to be photographic unless the term "magnetic" is used.</p> <p>5.1 Photographic Sound. Photographic sound is a sound record in the form of a photographic image.</p> <p>5.2 Sound Negative. A sound negative is any film that, after exposure and subsequent processing, produces a negative sound record on the film. This sound record requires the steps of printing and processing of a second film in order to obtain a reasonably faithful reproduction of the original sound, by the conventional scanning system.</p> <p>Note: The negative image may be obtained by exposure through a positive sound image; by direct recording; or, by the reversal process, from another sound negative.</p> <p>5.2.1 Original Sound Negative. The original sound negative is the sound negative that is exposed in a film recorder and, after processing, produces a negative sound image on the film.</p> <p>5.2.2 Sound-Effects Negative. A sound-effects negative is a sound negative upon which sound effects have been recorded. It is ordinarily held in library stock.</p> <p>5.2.3 Music Negative. A music negative is a sound negative upon which music has been recorded. It is usually an original sound negative but may be a library negative.</p> <p>5.2.4 Sound Cut Negative. A sound cut negative is a sound negative that is composed of sections of original sound negatives spliced in sequence.</p> <p>Note: The sound cut negative is generally in exact conformity with the sound work print and produces a single sequentially spliced negative. The print of the sound cut negative provides all, or portions of, the re-recording print.</p> <p>5.2.5 Re-recorded Negative. A re-recorded negative is a sound negative which is exposed by re-recording and, when processed, produces a negative sound track image.</p> <p>5.2.6 Sound Release Negative. A sound release negative is a photographic sound negative in the form required for the final printing operation onto the release print raw stock.</p> <p>Note: The sound release negative may consist of re-recorded negatives, intercut original sound negatives, duplicate negatives of sound records, etc., depending upon the choice of available material or the intended use of the print.</p> <p>5.2.7 Special Sound Release Negative. A special sound release negative is a sound release negative made for the purpose of obtaining a sound track which has characteristics other than those obtained from the sound release negative.</p> <p>Note: Three common forms of special sound release negatives are these listed under 5.2.7.1, 5.2.7.2, and 5.2.7.3.</p> <p>5.2.7.1 Special Sound Release Negative for Use in 16mm Release of 35mm Print Material. The special sound release negative for 16mm release of 35mm original material is a photographic sound negative, either 35mm or 16mm, recorded with specific characteristics for reasonably faithful reproduction of the original sound on 16mm reproduction equipment. It may be re-recorded</p>	<p style="text-align: center;">Page 1 of 4 pages</p>
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from a print of the 35mm sound release negative or from the 35mm re-recording print.

5.2.7.2 Special Sound Release Negative, Foreign Release in English. The special sound release negative for use in English version for foreign release is re-recorded from the re-recording print, except that the dialogue track is modified to remove American colloquialisms.

5.2.7.3 Special Sound Release Negative, Foreign-Language Version. The special sound release negative for use in foreign-language-version release is usually re-recorded using all of the re-recording tracks, except the dialogue track, for which is substituted a special synchronized dialogue track in the foreign language for which the release is being made.

5.2.8 Sound Release Dupe Negative. A sound release dupe negative is a duplicate negative of the sound record prepared specifically for printing the sound track of release prints.

5.3 Sound Print. A sound print is any positive obtained by printing from a sound negative, or direct positive recording, or, by the reversal process, from another sound positive. A sound print provides a reasonably faithful reproduction of the original sound through the conventional scanning system.

5.3.1 Sound Daily Print. A sound daily print is the first sound print made from the original sound negative for checking sound quality, technique, etc.

5.3.2 Sound Work Print. A sound work print is a sound print that usually consists of intercut sound daily prints, but may also include other sound tracks of sound effects or music, or both, on the same or separate films, with synchronization constantly maintained with the corresponding picture work print.

5.3.3 Sound-Effects Print. A sound-effects print is a sound print made from a sound-effects negative, or from another sound-effects print by reversal processing.

5.3.4 Music Print. A music print is a sound print made from a music negative.

5.3.5 Re-recording Print. A re-recording print is a sound print prepared specifically for use in re-recording to produce a re-recorded negative.

Note: A re-recording print may be a print from a sound cut negative, a specially intercut print, or a combination of both. It usually consists of several sound records on separate films that include dialogue, sound effects, music, or any other required material. The term is used interchangeably to designate the entire group of associated films or any individual film that is part of the group.

5.3.6 Re-recorded Print. A re-recorded print is a sound print from a re-recorded sound-track negative.

5.3.7 Sound Check Print. A sound check print is a sound print made from the sound release negative for the purpose of checking negative cutting, printing lights, sound quality, etc.

Note: When a sound check print is required, it is usually made prior to the first trial composite print.

5.3.8 Sound Master Positive. A sound master positive is a sound print on special film stock that is usually made from a sound release negative for the purpose of producing duplicate negatives of the sound record for release printing.

5.4 Composite Print (See 3.2)

[3.2 Composite Print. A composite print is a positive film having both picture and corresponding sound on the same film, which may be in editorial or projection synchronization.]

5.4.1 Composite Daily Print (See 3.2.1)

[3.2.1 Composite Daily Print. A composite daily print is made from an original composite negative or original sound and picture negatives, and is used for checking photography, sound quality, action, etc. It is in projection synchronization.]

6. Magnetic Sound

6.1 Magnetic Sound Film (See 1.2)

[1.2 Magnetic Sound Film. Magnetic sound film is a film base having film perforations along one or both edges and bearing a ferro-magnetic coating, either completely across the film or in stripes, the coating capable of accepting and reproducing sound records. Note: Unperforated materials usually are referred to as magnetic tape.]

6.2 Full-Coat Magnetic Film. Full-coat magnetic film has the magnetic-coating compound applied across the film from edge to edge.

6.2.1 Full-Coat Between Perforations Magnetic Film. Full-coat between perforations magnetic film has the magnetic-coating compound across the film from perforation to perforation.

6.3 Magnetic Striping. Magnetic striping is a process by which a magnetic-coating compound is applied in the form of single or multiple stripes, having specific widths and placements, to either surface of a film base which may or may not have a photographic emulsion.

6.4 Balance Stripe. A balance stripe is a magnetic coating or coating of another material that is equal in thickness to, but may be narrower than, the stripe used for recording. It is applied along the opposite edge of the film. Its primary purpose is to equalize the effective thickness of the two edges of the striped film in order to obtain uniform winding. The stripe is sometimes used for the recording of additional sound or control records.

6.5 Magnetic Original. A magnetic original is the original or first sound record on a magnetic film.

6.6 Magnetic Transfer. A magnetic transfer is a magnetic sound record obtained by electrical re-recording of a magnetic original onto another magnetic film.

6.7 Magnetic Master. A magnetic master is a final edited or re-recorded magnetic sound record used for transfer to a magnetic release print or for transfer to a photographic print negative to be used for manufacturing prints with photographic sound tracks.

6.8 Magoptical Release Print. (See 7.4)

7. Release Prints

7.1 Release Print. (See 1.15.2)

[1.15.2 Release Print. A release print is a print made for general distribution and exhibition. It may be on films of 8mm, 16mm, 35mm or 70mm width. Some release prints are composed of two or more 35mm-width films which are projected simultaneously in lateral alignment.]

7.1.1 Composite Release Print. A composite release print is a print having both picture and sound records in projection synchronism on the same film.

Note: The sound record may be photographic, magnetic, or both.

7.1.2 Domestic Release Print. A domestic release print is a release print intended for distribution within the country where the print was manufactured and having dialogue in the language of that country. It may be a composite print or may have magnetic sound track or tracks on a separate film.

7.1.3 Foreign-Version Release Print. (See 3.2.6)

[3.2.6 Foreign-Version Release Print. A foreign-version release print is a composite print in projection synchronism with dialogue made specifically for the particular language involved. Note: Sometimes superimposed titles in a different language are used on the print. A superimposed title consists of printed words (usually transparent) overlaying the picture image.]

7.2 Anamorphic Release Print. An anamorphic release print is a release print in which the picture image is compressed laterally, requiring a deanamorphosing lens on the projector to cause objects in the projected picture to have correct proportions.

7.3 Wide-Screen Release Print. A wide-screen release print is a print which has no anamorphosis but, when projected, produces a screen image having an aspect ratio greater than 1.33 to 1.

Note: Some prints are made from negatives exposed in a camera aperture having an aspect ratio of 1.33 to 1, but which have been composed for projection to yield a projected picture having an aspect ratio greater than 1.33 to 1. A wide-screen print may also be obtained from an anamorphic negative by deanamorphosing in the printing process.

7.4 Magoptical Release Print. A magoptical release print is a composite release print which has both magnetic and photographic (optical) sound tracks.

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American Standard Dimensions for
200-Mil Magnetic Sound Record
 on 16mm Film Base, Perforated 1R-3000

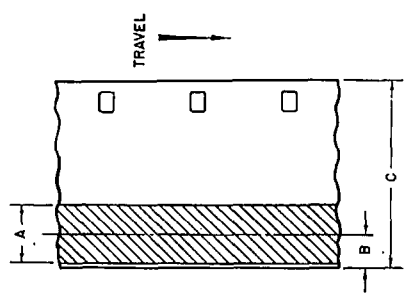
ASA
 Inc. U.S. Pat. Off.
PH22-97-1964
 Revision of
 PH22-97-1956
 * UDC 778.534.425

1. Scope

- 1.1 This standard specifies the location, dimensions and recording speed of a 200-mil magnetic sound record on 16mm film base with perforations along one edge.
- 1.2 The film is normally used for sound without picture.
- 1.3 The dimensions of the magnetic coating are not specified here but are assumed to be wide enough to permit the placement of a sound record in accordance with this standard.

2. Sound Record

- 2.1 The location and dimensions of the sound record shall be as given in the figure and table.
- 2.2 The recording speed shall be 24 perforations per second (approximately 36 ft per minute).
- 2.3 With the direction of travel as shown in the figure, the magnetic coating is on the upper side of the film base.



Dimensions	Inches	Millimeters
A	0.200 ± 0.002	5.08 ± 0.05
B	0.103 ± 0.002	2.62 ± 0.05
C	0.628 nom	15.95 nom

3. Film Base

The film base used shall be of the low-shrinkage safety type, cut and perforated in accordance with American Standard Dimensions for 16mm Film, Perforated One Edge, PH22.12-1953.

Approved January 13, 1964, by the American Standards Association, Incorporated
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 Printed in U.S.A.
 ASAM264/50