ANSI/SMPTE 56-1984
Revision of ANSI PH22.56-1978

American National Standard for motion-picture film—nomenclature for studios and processing laboratories

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Sponsor: Society of Motion Picture and Television Engineers

1. General

1.1 *Motion Picture.* A series of images presented in rapid succession with objects represented in successive positions either unchanged or changed and producing, because of the persistence of vision, the optical effect of a continuous picture.

1.2 *Motion-Picture Film.* A thin flexible strip of plastic, complying with a dimensional standard as defined herein, whose use is specific to the process of manufacturing a motion picture.

Note: Motion-picture film, perforated or unperforated is usually described by a name relating to or designating that part of the system for which it was designed, i.e., the terms color negative, release positive, separation master positive, audio recording, electronic video recording, etc.

1.2.1 *Raw Stock.* Raw stock is film which has not been exposed or processed.

1.2.2 *Film Base.* Film base is the plastic material upon which a photographic emulsion or other material may be coated.

Note: All film base manufactured in the United States for motion-picture use since 1952 has been safety base.

1.2.2.1 *Safety Base.* Safety base is the slow-burning film support used for motion-picture films which complies with ANSI PH22.31M-1980.

1.3 *Magnetic Audio Film.* Magnetic audio film is a film base having film perforations along one or both edges and bearing a magnetic coating, either completely across the film or in stripes, the coating being capable of accepting and reproducing audio records.

Note: Unperforated materials usually are referred to as magnetic tape.

1.4 *Perforations.* Perforations are the regularly and accurately spaced holes that are punched throughout the length of motion-picture film. These holes are engaged by the teeth of various sprockets and pins by which the film is transported and positioned as it travels through cameras, processing machines, projectors, and other film-handling machinery.

1.4.1 *Perforation Pitch.* The perforation pitch is the distance from the bottom edge of one perforation to the bottom edge of the next perforation, measured along the length of the film.

Motion-picture film stock is perforated in two formats, short and long pitch. In general, motion-picture film with short perforation pitch is used for negative or intermediate images. Release print film is generally perforated with long pitch to minimize slippage when continuously printed over a sprocket in contact with a short-pitch negative film closer to the axis of the sprocket.

Note: Perforations are being identified currently by two-letter designations such as BH (Bell & Howell), KS (Kodak Standard), DH (Dubray-Howell), or CS (Cinema-Scope). A numeral, such as 1866, designates the pitch in ten thousandths of an inch. A designation, 1R, 2R, etc., used with films having 16-mm, 8-mm Type R or 8-mm Type S perforations, refers to the number of rows of perforations across the narrow dimension of the film.

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1.4.2 *35-mm Perforation, BH-1866.* The 35-mm negative perforation has sharp corners, curved sides, a nominal width of 0.110 in (2.79 mm), and a height of 0.073 in (1.85 mm) (ANSI PH22.93-1980).

1.4.3 *35-mm Perforation, BH-1870.* The 35-mm negative perforation has sharp corners, curved sides, a nominal width of 0.110 in (2.79 mm), and a height of 0.073 in (1.85 mm) (ANSI PH22.93-1980).

1.4.4 *35-mm Perforation, KS-1866.* The 35-mm positive perforation is rectangular in shape with a width of 0.110 in (2.79 mm), a height of 0.078 in (1.98 mm), a fillet in each corner with a radius of 0.020 in (0.51 mm), and a pitch of 0.1866 in (4.740 mm) (ANSI PH22.139-1980).

1.4.5 *35-mm Perforation, KS-1870.* The 35-mm positive perforation is rectangular in shape with a width of 0.110 in (2.79 mm), a height of 0.078 in (1.98 mm), a fillet in each corner with a radius of 0.020 in (0.51 mm), and a pitch of 0.1870 in (4.750 mm) (ANSI PH22.139-1980).

1.4.6 *35-mm Perforation, DH-1870.* This perforation is rectangular in shape with a height of 0.073 in (1.85 mm), a width of 0.110 in (2.79 mm), a fillet in each corner with a radius of 0.013 in (0.33 mm), and a pitch of 0.1870 in (4.750 mm) (ANSI PH22.1-1981).

1.4.7 *35-mm Perforation, CS-1870.* This perforation is rectangular in shape with a height of 0.073 in (1.85 mm), a width of 0.078 in (1.98 mm), a fillet in each corner with a radius of 0.013 in (0.33 mm), and a pitch of 0.1870 in (4.750 mm) (ANSI PH22.102-1980). The outer edge of this perforation is at a different distance from the edge of the film than the other 35-mm film perforations listed above.

1.4.8 *65-mm Motion-Picture Film, KS-1866.* The 65-mm negative perforation is rectangular in shape with a width of 0.110 in (2.79 mm), a height of 0.078 in (1.98 mm), a fillet in each corner with a radius of 0.020 in (0.51 mm), and a pitch of 0.1866 in (4.740 mm) (ANSI PH22.145-1981).

1.4.9 *65-mm Motion-Picture Film, KS-1870.* This 65-mm negative perforation is the same as for 65-mm motion-picture film, KS-1866, except for the perforation pitch (ANSI PH22.145-1981).

1.4.10 *70-mm Motion-Picture Film Perforated 65-mm, KS-1870.* The 70-mm positive perforation is rectangular in shape with a width of 0.110 in (2.79 mm), a height of 0.078 in (1.98 mm), a fillet in each corner with a radius of 0.020 in (0.51 mm), and a pitch of 0.1870 in (4.750 mm). This film is intended to be printed from 65-mm motion-picture film, KS-1866, or from an optically enlarged 35-mm anamorphic negative image. The additional margin width is designed to accommodate magnetic audio records (ANSI PH22.119-1981).

Note: This 70-mm film perforated 65-mm, is used for motion pictures. It should be distinguished from two other types of perforated 70-mm film which are used for still pictures. These are described in ANSI/ASC PH1.10-1981.

1.4.11 *16-mm Perforation.* The 16-mm perforation is rectangular in shape with a height of 0.050 in (1.27 mm), a width of 0.072 in (1.83 mm), and a fillet in each corner with a radius of 0.010 in (0.25 mm). It is used on the following films:

1.4.11.1 *35-mm Motion-Picture Film Perforated 32-mm, 2R-2994.* This is a 35-mm film with 16-mm perforations so arranged that if 1½ mm are slit from each edge of the film and the film were slit down the middle, two 16-mm films would result, each having one row of perforations (ANSI PH22.73-1981).

1.4.11.2 *35-mm Motion-Picture Film Perforated 32-mm, 2R-3000.* This is a 35-mm film with 16-mm perforations so arranged that when 1½ mm are slit from each edge of the film and the film is slit down the middle, two 16-mm films result, each with one row of perforations (ANSI PH22.73-1981).

1.4.11.3 *35-mm Motion-Picture Film Perforated 16-mm, 3R-2994 (1-3-0).* This is a 35-mm film with 16-mm perforations (ANSI PH22.171-1980).

Note: Numerals (e.g., 1-3-0) are added to the title of some standards to specify how the rows of perforations are placed on the film. The perforation rows are numbered starting at the reference edge. The reference edge is the edge nearest to that row of perforations which is retained in one of the 16-mm strips that may be generated by appropriate slitting of the parent 35-mm film. A row of perforations which is discarded is always given the number 0.

1.4.11.4 *35-mm Motion-Picture Film Perforated 16-mm, 3R-3000 (1-3-0).* This is a 35-mm film with 16-mm perforations so arranged that if 3 mm are slit from the selvage edge of the film and the film were slit down the middle, two 16-mm films would result, each having one row of perforations (ANSI PH22.171-1980).

1.4.11.5 *16-mm Motion-Picture Film, 1R-2994.* This film is 16 mm in width, perforated along one edge only (ANSI PH22.109-1980).

Note: The formats referred to as super 16 as well as regular 16 may be exposed on this film (ANSI PH22.7-1983).

1.4.11.6 *16-mm Motion-Picture Film, 1R-3000.* This film is 16 mm in width, perforated along one edge only (ANSI PH22.109-1980).

1.4.11.7 *16-mm Motion-Picture Film, 2R-2994.* This film is 16 mm in width, perforated along both edges (ANSI PH22.110-1980).

1.4.11.8 *16-mm Motion-Picture Film, 2R-3000.* This film is 16 mm in width, perforated along both edges (ANSI PH22.110-1980).

1.4.12 *8-mm Type R Perforation.* The 8-mm Type R perforation is rectangular in shape with a height of 0.050 in (1.27 mm), a width of 0.072 in (1.83 mm), and a fillet in each corner with a radius of 0.010 in (0.25 mm). This perforation is identical to the 16-mm perforation described in 1.4.11 above but for 8-mm use has a pitch of 0.1500 or 0.1497 in (3.810 or 3.802 mm). It is used on the following films:

1.4.12.1 *35-mm Motion-Picture Film Perforated 8-mm Type R, 5R-1500.* This is a 35-mm film with 8-mm perforations so arranged that if 3 mm are slit from the selvage edge (identified by circular holes between perforations) and the film slit three times more, four 8-mm Type R films would result, each having one row of perforations.

1.4.12.2 *35-mm Motion-Picture Film Perforated 8-mm Type R, 2R-1497.* This is a 35-mm film with 8-mm Type R perforations along each edge.

1.4.12.3 *35-mm Motion-Picture Film Perforated 8-mm Type R, 4R-1500.* This is a 35-mm film with 8-mm perforations so arranged that when 1½ mm are slit from each edge and the film slit down the middle, two 16-mm films result which, when slit down the middle, produce four 8-mm Type R films, each having one row of perforations.

1.4.12.4 *16-mm Motion-Picture Film Perforated 8-mm Type R, 2R-1500.* This is a film 16 mm in width which when slit down the middle results in two 8-mm Type R films, each having one row of perforations (ANSI PH22.17-1982).

1.4.13 *8-mm Type S Perforation.* The 8-mm Type S perforation is rectangular in shape, with a height of 0.045 in (1.14 mm), a width of 0.036 in (0.91 mm), and a fillet in each corner with a radius of 0.005 in (0.13 mm). It is used in the following films:

1.4.13.1 *35-mm Motion-Picture Film Perforated 8-mm Type S, 2R-1664 (1-0).* This is a 35-mm film with 8-mm Type S perforations on each edge (ANSI PH22.169-1980).

1.4.13.2 *35-mm Motion-Picture Film Perforated 8-mm Type S, 5R-1667 (1-3-5-7-0).* This is a 35-mm film with 8-mm Type S perforations so arranged that when 0.030 in (0.76 mm) is slit from one edge and 0.091 in (2.31 mm) is slit from the factory-marked selvage (discard) edge of the film and slit three more times, four 8-mm Type S films would result, each having one row of perforations (ANSI PH22.165-1981).

1.4.13.3 *16-mm Motion-Picture Film Perforated 8-mm Type S, 2R-1664 (1-4).* This is a 16-mm film with 8-mm Type S perforations on each edge of the film (ANSI PH22.168-1973).

1.4.13.4 *16-mm Motion-Picture Film Perforated 8-mm Type S, 2R-1667 (1-4).* This is a 16-mm film with 8-mm Type S perforations on each edge of the film so arranged that when the film is slit down the middle, two 8-mm Type S films result, each having one row of perforations (ANSI PH22.168-1973).

1.4.13.5 *16-mm Motion-Picture Film Perforated 8-mm Type S, 2R-1664 (1-3).* (ANSI PH22.151-1981).

1.4.13.6 *16-mm Motion-Picture Film Perforated 8-mm Type S, 2R-1667 (1-3).* This is a film 16 mm in width which when slit down the middle results in two 8-mm Type S films (ANSI PH22.151-1981).

1.4.13.7 *8-mm Motion-Picture Film Perforated 8-mm Type S, 1R-1664.* (ANSI PH22.149-1981).

1.4.13.8 *8-mm Motion-Picture Film Perforated 8-mm Type S, 1R-1667.* This film is 8 mm in width with a single row of 8-mm Type S perforations (ANSI PH22.149-1981).

1.4.13.9 *35-mm Motion-Picture Film Perforated 35-mm and 8-mm Type S, KS 2R-1866/S8 3R-1664.* This is a 35-mm film with 35-mm perforations down each edge and three rows of 8-mm Type S perforations arranged to produce three like 8-mm Type S images.

1.4.13.10 *35-mm Motion-Picture Film Perforated 35-mm and 8-mm Type S, KS 2R-1870/S8 3R-1667.* This is a 35-mm film with 35-mm perforations down each edge and three rows of 8-mm Type S perforations arranged so that when 0.218 in (5.54 mm) is slit from each edge and the remaining film slit twice more, three 8-mm Type S films would result, each having one row of perforations.

1.5 *Photographic Emulsion.* A photographic emulsion consists of dispersions of light-sensitive materials in a colloidal medium, usually gelatin, carried as a thin layer on film base.

Note: Photographic materials are usually designated as negative or positive types according to their light sensitivity (speed), or usage; negative emulsions, in general, being more sensitive than positive emulsions.

1.5.1 *Black-and-White Film.* Black-and-white film carries an emulsion in which, after processing, brightness values of a scene are reproduced only in tones of the gray scale.

Note: Color prints may also be made on black-and-white film by such methods as iron toning, color development, or imbibition (dye transfer).

1.5.2 *Color Film.* Color film carries one or more emulsions in which, after processing, brightness values of a scene are reproduced in terms of color scales.

1.5.3 *Reversal Film.* A reversal film is one which, after chemical reversal processing, produces an image having a scale of brightness values directly corresponding to that of the original exposure. Chemical reversal includes first development, bleaching, and redevelopment.

1.5.4 *Direct Reversal Film.* A direct reversal film is one which, processed in a developer and fixing bath, produces an image having a scale of brightness values directly corresponding to that of the original exposure. In this case, reversal is due to the emulsion rather than to the use of a chemical reversal process subsequent to exposure.

1.6 *Image (Photographic).* An image is any photographically obtained likeness in a processed photosensitive material.

1.6.1 *Latent Image.* A latent image is the invisible image registered on a photographic emulsion due to the reaction produced in the emulsion by exposure to radiant energy.

Note: This image becomes visible after development.

1.6.2 *Picture Image.* A picture image is a photographically obtained likeness of any object on photographic material.

1.6.3 *Audio Image.* An audio image is a photographically obtained audio record.

1.6.4 *Negative Image.* A negative image is a photographic image in which the brightness scale is approximately inverted with respect to the brightness scale of the original subject. In color negatives, the hue scale is usually, but not necessarily, complementary to the hue scale of the original subject and the brightness scale is inverted.

1.6.5 *Positive Image.* A positive image is a photographic replica in which the tones of the gray scale or color values of the originally photographed subject are represented in their natural order.

1.6.6 *Black-and-White Image.* A black-and-white image is an image produced on a black-and-white film.

1.6.7 *Color Image.* A color image is an image produced on a color film.

1.6.8 *Anamorphic Image.* An anamorphic image is an image which has been produced by an optical system having different horizontal and vertical magnifications.

Note: Equal horizontal and vertical magnification is assumed unless the term anamorphic is applied specifically.

1.7 *Aspect Ratio.* Aspect ratio is the ratio of width to height of a projected picture image.

Note: This is the more common usage, although the term is also applied to photographic images and to camera, printer, and projector apertures.

1.8 *Synchronism.* Synchronism is the relation between the picture and audio with respect either to the physical location on the film or films or to the time at which corresponding picture and audio are seen and heard.

1.8.1 *Projection Synchronism.* Projection synchronism is the time relation between picture and corresponding audio in a projection print.

Note: The audio record on a projection print is, in most cases, in advance of the corresponding picture. The displacement is specified in picture frames in the following American National Standards:

Audio Record	Standard
70-mm Magnetic*	ANSI PH22.185-1980
35-mm Photographic	ANSI PH22.40-1984
35-mm Magnetic*	ANSI PH22.137-1981
16-mm Photographic	ANSI PH22.41-1983
16-mm Magnetic	ANSI PH22.112-1983
8-mm Type R Magnetic	ANSI PH22.135-1982
8-mm Type S Photographic	ANSI PH22.182-1978
8-mm Type S Magnetic	ANSI PH22.164-1982

*In this case, the audio is behind the corresponding picture.

1.8.2 *Editorial Synchronism.* Editorial synchronism is the relationship between the picture and audio film during the editorial process.

Note: During the editorial process, the audio record and corresponding picture, whether on the same or separate films, are kept in alignment and not offset as for projection. Many composite release negatives are supplied in editorial synchronism.

1.8.3 *Camera Synchronism.* Camera synchronism is the relation between picture and audio record in a composite camera original.

Note: Camera synchronism is generally not the same as editorial synchronism. In 16-mm single systems, the two are normally in projection synchronism but this is not the case for most 35-mm single systems (i.e., where picture and audio are recorded on the same film).

1.9 *Exposure.* Exposure is the process of subjecting a photographic film to suitable intensity of radiant energy for a given time in such manner that it may produce a latent image on an emulsion.

Note: Exposure = intensity × time.

1.10 *Processing.* Processing is the generic term applied to the total operation necessary to produce a permanent visible image on exposed film.

1.10.1 *Development.* Development is that part of processing which makes visible the latent image of an exposed photographic emulsion.

1.10.2 *Fixing (Fixation).* Fixing (Fixation) is that part of processing which removes the residual sensitive silver salts from a developed film to render the developed image permanent.

Note: During the process of fixation, films are customarily treated to preserve and harden the developed image. Adequate washing or neutralizing treatment is necessary following fixation for image permanence.

1.10.3 *Bleaching.* Bleaching is that part of processing which converts a developed silver image into a soluble silver salt.

1.11 *Printing.* Printing is the operation of exposing raw stock by using the processed image of another film as the light modulator.

1.11.1 *Contact Printing.* Contact printing is that method of printing in which the raw stock is held in intimate contact with the film bearing the image to be copied. This printing is normally emulsion to emulsion.

1.11.1.1 *Step Contact Printing.* Step contact printing is that method of contact printing in which the film being copied and the raw stock are advanced intermittently frame by frame, being exposed to the printer light only when stationary.

1.11.1.2 *Continuous Contact Printing.* Continuous contact printing is that method of contact printing by which the light-modulating film and the raw stock move at the same constant speed past the printing aperture.

1.11.2 *Projection Printing (Optical Printing).* Projection printing (Optical printing) is printing by projecting the image to be copied through an optical system onto the raw stock.

Note: The printed image with respect to the projected image may be identical, an enlargement or a reduction, or an anamorphic image; or additional anamorphosis may be added or removed.

1.11.2.1 *Step Projection Printing.* Step projection printing is that method of optical printing in which the film being copied and the raw stock are advanced intermittently frame by frame, being exposed to the printer light only when stationary.

1.11.2.2 *Continuous Projection Printing.* Continuous projection printing is that method of optical printing in which the light-modulating film and the raw stock move at a continuous rate at each end of the optical system. The film rate will be the same in 1:1 printing and will differ in reduction or enlargement processes.

1.11.3 *A and B Printing.* A and B printing is a method of making composite images, such as fades, dissolves, or effects, in a release printer without requiring a duplicating process.

Note: The name comes from the fact that the films are edited into two separate rolls called A and B rolls. The sequences of pictures originally in one roll are in synchronization with the opaque leader in the other roll. When the two are printed in a separate operation onto a single roll of raw stock, an opportunity is afforded for the introduction of effects and for eliminating visible splices on the screen.

1.11.4 *Double-Rank Printing.* Double-rank printing is a method of producing prints on a wide film, two at a time, so that both are on the parent film before slitting.

1.12 *Projection.* Projection is the presentation of an enlarged image of the film on a screen for visual review. In addition, the audio may be reproduced for aural review.

1.13 *Production.* Production is the general term used to describe the processes involved in making all the original material that is the basis for the finished motion picture.

1.14 *Editorial Process.* Editorial process is the term used to describe the combining, cutting, editing, and other preparation of material obtained from the original material to make the finished motion picture.

1.15 *Re-recording.* Re-recording is the electrical process of transferring audio records from one or more films, magnetic tapes, or discs to other films, tapes, or discs.

Note: Re-recording may be used to combine different audio records into a single record to adjust the frequency-response characteristic or to adjust the relative levels between different scenes and sequences.

1.16 *Release.* Release is a generic term used to designate films used for or intended for general distribution and exhibition.

1.16.1 *Release Negative.* A release negative is a complete negative prepared specifically for printing release prints.

Note: A release negative may consist of separate picture and audio negatives and may be in either projection or editorial synchronism, depending upon the film printing technique to be employed in making release prints.

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

2. Picture Negative Film, Black-and-White and Color

2.1 *Picture Negative.* A picture negative is any processed film that possesses a negative picture image of the subject or film image to which it was exposed. This term is sometimes erroneously used to refer to the raw film before processing, either with or without exposure.

2.1.1 *Original Picture Negative.* The original picture negative is the negative film that is exposed in a camera and processed to produce a negative image of the original subject.

2.1.2 *Background Plate Negative.* A background plate negative is a picture negative which is used for printing background plates.

2.1.3 *Picture Library Negative.* A picture library negative is a picture negative that is usually held in a film library for use in reproducing scenes which would otherwise have to be made as original material for each production.

2.1.4 *Title Negative.* A title negative is a negative that is exposed to a title card or to both a title card and background.

2.1.5 *Picture Duplicate Negative.* A picture duplicate (dupe) negative is a picture negative made from black-and-white, color, or separation master positive films or directly from a picture negative by a reversal process (see 1.5.3 Reversal Film).

Note: It may be used for making additional prints or it may be cut and edited to form a part of the picture release negative.

2.1.5.1 *Internegative.* An internegative film is a negative derived directly from a reversal original film.

Note: All other duplicating negatives derived from other than reversal film are known as duplicate negatives regardless of the generation.

2.1.6 *Picture Release Negative.* A picture release negative is a cut and edited picture negative used for printing the picture portion of release prints.

Note: It may consist of intercut original picture negatives, picture dupe negatives, etc., depending upon the choice of available material or the intended use of the release print.

2.1.7 *Foreign-Picture Release Negative.* A foreign-picture release negative is a picture release negative prepared specifically for printing foreign-version release prints.

Note: It is almost invariably a duplicate negative.

2.1.8 *16-mm-Picture Release Negative.* A 16-mm-picture release negative is a picture release negative on 16-mm film prepared specifically for printing 16-mm release prints.

3. Picture Positive Film, Black-and-White and Color

3.1 *Picture Print.* A picture print is a processed film that possesses a positive picture image of the subject or film image to which it was exposed.

3.1.1 *Picture Daily Print.* A picture daily print is the first picture print made from the original picture negative for use in checking photographic quality, camera technique, actions, etc.

3.1.2 *Picture Work Print.* A picture work print is a positive print which usually consists of intercut picture daily prints, picture library prints, prints of dissolves, montages, titles, etc., and has synchronism constantly maintained with the corresponding audio work print.

3.1.3 *Picture Library Print.* A picture library print is a picture print made from a picture library negative.

3.1.4 *Background Plate (Background Print Film).* A background plate (background print film) is a picture print made specifically for use in projection background or similar process work, and is a print of a background plate negative.

3.1.5 *Picture Master Positive.* A picture master positive is a print usually made on a special film, for the purpose of producing picture duplicate negatives.

3.1.5.1 *35-mm Separation Positive.* A 35-mm separation positive is a black-and-white film with a positive image of the red, green, or blue image component of a color negative. It is usually made by printing through suitable filters from a color negative onto a panchromatic black-and-white film.

3.1.5.2 *35-mm Protection Master Positive.* A 35-mm protection master positive film is a positive film made from the final cut and edited black-and-white or color release negative. In case of damage to the release negative, a duplicate negative could be made from this protection master positive. In the case of color, this protection master positive may be a set of three black-and-white separation master positives or a color master positive.

3.1.5.3 *35-mm Panchromatic Master Positive.* A 35-mm panchromatic master positive is a black-and-white print made on a panchromatic film from a color negative for the purpose of making a black-and-white duplicate negative.

3.2 *Composite Print.* A composite print is a positive film having both picture and corresponding audio on the same film, which may be in editorial or projection synchronism.

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

3.2.2 *First Trial Composite Print.* The first trial composite is the first composite print made from the picture and audio-release negatives for the purpose of checking and correcting picture and audio quality, negative cutting, and assembly, etc. It is in projection synchronism.

3.2.3 *Second, Third, Etc., Trial Composite Print.* The second, third, etc., trial composite print is similar to the first trial composite print, but has successive corrections incorporated as a result of viewing the previous trial composite prints.

3.2.4 *Final Trial Composite.* A final trial composite is a composite print, approved for release, in which all corrections found necessary in previous trial composite prints have been incorporated.

Note: The final trial composite may be any one of the various trial composite prints, depending upon the type and extent of corrections required.

3.2.5 *Composite Master Positive.* A composite master positive is a composite print usually made for the purpose of producing composite or picture and audio duplicate negatives which would be used for printing release prints.

Note: It is usually made on duplicating positive film and may be in either editorial or projection synchronism.

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.

3.2.7 *Foreign-Version Trial Composite Prints.* Foreign-version trial composite prints are similar to trial composite prints made during release, except that they are made for checking the release of the particular language version involved.

4. Reversal Film, Black-and-White and Color

4.1 *Reversal Original.* A reversal original is the film that is originally exposed in a camera or recorder and is processed by reversal to produce a positive image.

Note: The positive image obtained by the reversal process is not the same as a print from a negative. When viewed by projection on an opaque screen, the emulsion side of the print from a negative must face the light source and the emulsion side of a reversal original must face the lens in order for the screen image to have the same lateral orientation as the original scene.

4.1.1 *Composite Reversal Original.* A composite reversal original is a reversal original which has both picture and corresponding audio on the same film.

4.1.2 *Reversal Duplicate Negative.* A reversal duplicate negative is reversal-type film that has been exposed to a negative film image, usually an original picture negative, and developed by the reversal process.

4.2 *Reversal Print.* A reversal print is a reversal-type film that has been exposed to a positive film image, usually a reversal original film, and developed by the reversal process.

4.2.1 *Reversal Master Print, 16-mm.* A reversal master print is a 16-mm reversal print made specifically for use in producing other prints.

Note: It is sometimes referred to as a first-generation duplicate; prints from it are referred to as second-generation duplicates.

4.2.2 *Reduction Reversal Print, 16-mm.* A reduction reversal print is a reversal print made on 16-mm reversal film from a 35-mm positive by reduction printing and development by the reversal process.

5. Photographic Sound

Note: All definitions in this section are understood to be "photographic" unless the term "magnetic" is used. The term "photographic" replaced the term "optical" because the latter describes the method of reproduction and not the audio record itself.

5.1 *Photographic Audio.* Photographic audio is an audio record in the form of a photographic image.

5.2 *Audio Negative.* An audio negative is any film that, after exposure and subsequent processing, produces a negative audio record on the film. This audio record requires the printing and processing of a second film in order to obtain a reasonably faithful reproduction of the original audio, by the conventional scanning system. The negative image may be obtained by direct recording, by exposure through a positive audio image or by the reversal process from another audio negative.

5.2.1 *Original Audio Negative.* The original audio negative is the audio negative that is exposed in a film recorder and, after processing, yields a negative audio image on the film.

5.2.2 *Audio-Effects Negative.* An audio-effects negative is an audio negative upon which audio effects have been recorded. It is ordinarily held in library stock.

5.2.3 *Music Negative.* A music negative is an audio negative upon which music has been recorded. It is usually an original audio negative but may be a library negative.

5.2.4 *Audio Cut Negative.* An audio cut negative is an audio negative that is composed of sections of original audio negatives spliced in sequence.

Note: The audio cut negative is generally in exact conformity with the audio work print and produces a single sequentially spliced negative. The print of the audio cut negative provides all, or portions of, the re-recording print.

5.2.5 *Re-recorded Negative.* A re-recorded negative is an audio negative which is exposed by re-recording and, when processed, yields a negative audio record image on the film.

5.2.6 *Audio Release Negative.* An audio release negative is a photographic audio negative in the form required for the final printing operation onto the release print raw stock.

Note: The audio release negative may consist of re-recorded negatives, intercut original audio negatives, duplicate negatives of audio records, etc., depending upon the choice of available material of the intended use of the print.

5.2.7 *Special Audio Release Negative.* A special audio release negative is an audio release negative made for the purpose of obtaining an audio record which has characteristics other than those obtained from the audio release negative.

Note: Three common forms of special audio release negatives are those listed under 5.2.7.1, 5.2.7.2 and 5.2.7.3.

5.2.7.1 *Special Audio Release Negative for Use in 16-mm Release of 35-mm Preprint Material.* The special audio release negative for 16-mm release of 35-mm original material is a photographic audio negative, either 35- or 16-mm, recorded with specific characteristics for reasonably faithful reproduction of the original audio on 16-mm reproduction equipment. It may be re-recorded from a print of the 35-mm audio release negative or from the 35-mm re-recording print.

5.2.7.2 *Special Audio Release Negative, Foreign Release in English.* The special audio 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 Audio Release Negative, Foreign-Language Version.* The special audio release negative for use in foreign-language version releases is usually re-recorded using all 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 *Audio Release Dupe Negative.* An audio release dupe negative is a duplicate negative of the audio record prepared specifically for printing the audio track of release prints.

5.3 *Audio Print.* An audio print is a positive audio record that provides a reasonably faithful reproduction of the original audio when running through the conventional scanning system. It is any positive obtained by printing from an audio negative or by direct positive recording or, by the reversal process, from another audio positive.

5.3.1 *Audio Daily Print.* An audio daily print is the first audio print made from the original audio negative for checking audio quality, technique, etc.

5.3.2 *Audio Work Print.* An audio work print is an audio print that usually consists of intercut audio daily prints, but may also include other audio tracks of audio effects or music, or both, on the same or separate films, with synchronism constantly maintained with the corresponding picture work print.

5.3.3 *Audio-Effects Print.* An audio-effects print is an audio print made from an audio-effects negative, or from another audio-effects print by reversal processing.

5.3.4 *Music Print.* A music print is an audio print made from a music negative.

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

Note: A re-recording print may be a print from an audio cut negative, a specially intercut print, or a combination of both. It usually consists of several audio records on separate films that include dialogue, audio 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 an audio print from a re-recorded audio track negative.

5.3.7 *Audio Check Print.* An audio check print is an audio print made from the audio release negative for the purpose of checking negative cutting, printing lights, audio quality, etc.

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

5.3.8 *Audio Master Positive.* An audio master positive is an audio print on special film stock that is usually made from an audio release negative for the purpose of producing duplicate negatives of the audio record for release printing.

5.4 *Composite Print*

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

5.4.1 *Composite Daily Print*

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

6. Magnetic Sound

6.1 *Magnetic Audio Film*

[**1.3** *Magnetic Audio Film.* Magnetic audio film is a film base having film perforations along one or both edges and bearing a magnetic coating, either completely across the film or in stripes, the coating capable of accepting and reproducing audio 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 edge of the film, opposite the stripe used for recording. 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 audio or control records.

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

6.6 *Magnetic Transfer.* A magnetic transfer is a magnetic audio 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 audio record used for transfer to a magnetic release print or for transfer to a photographic audio negative to be used for manufacturing prints with photographic audio records.

6.8 *Magoptical Release Print.* (See 7.4.)

7. Release Prints

7.1 *Release Print.*

[**1.16.2** *Release Print.* A release print is a print made for general distribution and exhibition. It may be on films of 8-, 16-, 35- or 70-mm width. Some release prints are composed of two or more 35-mm-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 audio records in projection synchronism on the same film.

Note: The audio 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 have a magnetic audio record or records on a separate film.

7.1.3 *Foreign-Version Release Print.*

[**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 1.33:1.

Note: Some prints are made from negatives exposed in a camera aperture having an aspect ratio of 1.33:1, but which have been composed for projection to yield a projected picture having an aspect ratio greater than 1.33:1. 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) audio records.

8. Reference Standards

The following American National Standards are intended to be used in conjunction with this standard:

ANSI/ASC PH1.10-1981, Dimensions for Unperforated and Perforated Photographic Film in Rolls, Including Leaders and Trailers, for Aerial and Related Uses

ANSI PH22.1-1981, Dimensions for 35-mm Motion-Picture Film, DH-1870

ANSI PH22.7-1983, Motion-Picture Film (16-mm)—Camera Aperture Image

ANSI PH22.17-1982, Dimensions for 16-mm Motion-Picture Film Perforated 8-mm Type R, 2R

ANSI PH22.31M-1980, Specifications for Motion-Picture Safety Film

ANSI PH22.40-1984, Motion-Picture Film (35-mm)—Photographic Audio Records—Release Prints

ANSI PH22.41-1983, Motion-Picture Film (16-mm)—Prints—Photographic Sound Records

ANSI PH22.73-1981, Dimensions for 35-mm Motion-Picture Film Perforated 32-mm, 2R

ANSI PH22.93-1980, Dimensions for 35-mm Motion-Picture Film Perforated BH

ANSI PH22.102-1980, Dimensions for 35-mm Motion-Picture Film, CS-1870

ANSI PH22.109-1980, Dimensions for 16-mm Motion-Picture Film Perforated 1R

ANSI PH22.110-1980, Dimensions for 16-mm Motion-Picture Film Perforated 2R

ANSI PH22.112-1983, Motion-Picture Film (16-mm)—100-Mil Magnetic Audio Record

ANSI PH22.119-1981, Dimensions for 70-mm Motion-Picture Film Perforated 65-mm, KS-1870

ANSI PH22.135-1982, Position, Dimensions and Reproducing Speed of Magnetic Sound Record on 8-mm Type R Motion-Picture Film

ANSI PH22.137-1981, Position, Dimensions and Reproducing Speed of Four Magnetic Sound Records on 35-mm Motion-Picture Release Prints

ANSI PH22.139-1980, Dimensions for 35-mm Motion-Picture Film Perforated KS

ANSI PH22.145-1981, Dimensions for 65-mm Motion-Picture Film Perforated KS

ANSI PH22.149-1981, Dimensions for 8-mm Motion-Picture Film Perforated 8-mm Type S, 1R

ANSI PH22.151-1981, Dimensions for 16-mm Motion-Picture Film Perforated 8-mm Type S, (1-3)

ANSI PH22.164-1982, Position, Dimensions and Reproducing Speed of Magnetic Sound Record on 8-mm Type S Motion-Picture Film

ANSI PH22.165-1981, Dimensions for 35-mm Motion-Picture Film Perforated 8-mm Type S, 5R (1-3-5-7-0)

ANSI PH22.168-1973 (R1980), Dimensions for 16-mm Motion-Picture Film Perforated Super 8, (1-4)

ANSI PH22.169-1980, Dimensions for 35-mm Motion-Picture Film Perforated 8-mm Type S, 2R-1664 (1-0)

ANSI PH22.171-1980, Dimensions for 35-mm Motion-Picture Film Perforated 16-mm, 3R (1-3-0)

ANSI PH22.182-1978 (R1984), Dimensions for Photographic Sound Record on 8-mm Type S (Super 8) Motion-Picture Prints

ANSI PH22.185-1980, Position, Dimensions and Reproducing Speed of Six Magnetic Sound Records on 70-mm Motion-Picture Release Prints

Index

ANSI/SMPTE 148-1984
Revision and Redesignation of
ANSI PH22.148-1967

American National Standard
for motion-picture film—film image area for review room viewing—35- and 16-mm prints for television transmission

Approved November 2, 1984 Sponsor: Society of Motion Picture and Television Engineers

1. Scope

This standard specifies the dimensions of that part of the film image area used for review room viewing of 35- and 16-mm motion-picture prints intended for television transmission, and the placement of this area.

2. Reference Documents

The following documents are intended to be used in conjunction with this standard:

ANSI PH22.8-1981, Dimensions of Projectable Image Area on 16-mm Motion-Picture Film

ANSI PH22.95-1984, Motion-Picture Film (35-mm)—Television Image Area

ANSI PH22.96-1982, Dimensions for Television Image Area on 16-mm Motion-Picture Film

ANSI PH22.195-1984, Motion-Picture Film (35-mm)—Projectable Image Area—Motion-Picture Prints

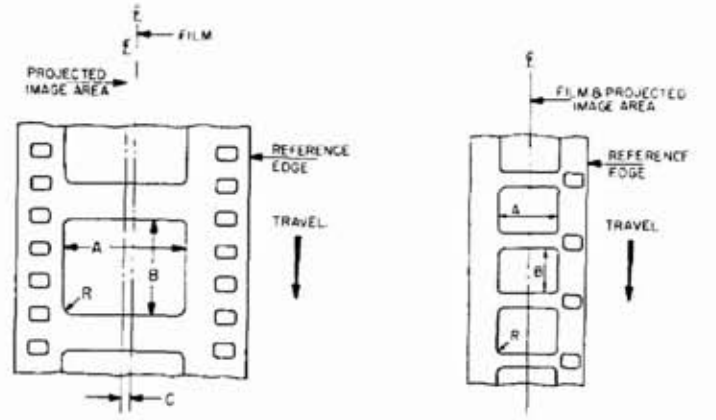
SMPTE RP 27.3-1983, Specifications for Safe Action and Safe Title Area Test Pattern for Television Systems

3. Dimensions

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

3.2 Dimensions A, B, and R are in conformity with the safe action area specified in SMPTE RP 27.3-1983, but do not define the printed area.

American National Standards Institute, 1430 Broadway, New York, N.Y. 10018



35-mm Inches	35-mm Millimeters	Dimensions	16-mm Inches	16-mm Milimeters
0.713 max	18.11 max	A	0.331 max	8.41 max
0.535 max	13.59 max	B	0.248 max	6.30 max
0.050	1.27	C		
0.143	3.63	R	0.066	1.68

Appendix

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

A1. Viewing Conditions

During preparation of motion pictures, the producer, the motion-picture film laboratory personnel, and others examine the film many times from the original test shots through many stages to the final release prints. The films are projected in a specialized theater known as a review room. These installations are designed to permit judgments of projected picture quality and determinations of the suitability and acceptability of release prints, daily and work prints, production tests, printer and processing tests, etc. The rooms are constructed to accommodate a small reviewing group of usually 10 to 20 people. The actual picture size may be large or small, depending upon the space available, but the viewing conditions are chosen to duplicate as nearly as possible actual conditions whether the print is intended for theatrical viewing or television transmission. All viewing conditions are capable of being precisely controlled and should be held to a minimum tolerance.

A2. Action Area

This standard specifies a film area within which all significant picture action should take place, with the intent of ensuring visibility of that action on a properly adjusted home receiver. Projectors used primarily for inspection of prints rather than for reviewing action expected to show in a typical home TV receiver should have apertures at least as large as required to project an image area of 0.792 in by 0.594 in from a 35-mm motion-picture film (PH22.95) and of 0.368 in by 0.276 in from a 16-mm film (PH22.96). (These are the areas actually scanned during television broadcasting and, therefore, are available for reception by sets adjusted to this extreme.) For review room purposes, the dimensions of the safe action area should be indicated at the screen and appropriate steps should be taken to ensure that the projected image on the screen is aligned properly so that only that part of the picture image area intended to fall within the safe action area actually does so. Whatever the choice of image area to be projected, the need remains for assurance that projection conditions are maintained so that all action intended to fall within the safe action area reaches the projection screen and can be reliably recognized as such, relative to any additional picture information reaching the screen. Consequently, during a screening, a fixed vertical position relationship must be maintained between the film image area and its associated perforations to avoid the need for further framing adjustments.