New American Standards

ON THE FOLLOWING PAGES appear two recently approved American Standards for scanning beam uniformity test films, and one proposed standard for the sound transmission characteristics of theater screens.

The two test film standards were developed by the joint Society and Research Council Committee on Test Films, and are based on the old war standard Z52.7–1944. In these new standards a departure has been made from past practice in preparing test film specifications in that Appendixes have been included which indicate the methods of using these films and the methods of evaluating the results attained.

The group responsible for the development of these standards believe the Appendixes very desirable because American Standards receive wide circulation and are used by many people not fully experienced in the field of motion pictures.

The proposed standard covering the sound transmission characteristics of theater screens has been developed by the Society's Sound Committee and is also based on a war standard—Z52.44–1945. However, the transmission characteristics specified in this proposal have been met by many types of theater screens which have given satisfactory performance in theaters for over twenty years.

On occasion, screens which have excessive transmission loss have been installed in theaters. When this has occurred, it has been partially offset by raising the gain of theater sound system and changing the equalization. In cases where the power output of the amplifier is close to the upper limit, such a procedure has resulted in excessive distortion.

Therefore, this proposal is being published for a ninety-day trial period. If at the end of that time no adverse criticism has been received, it will be processed as a regular American Standard.

American Standard

Scanning-Beam Uniformity Test Film for 16-Millimeter Motion Picture Sound Reproducers (Laboratory Type)

ASA
Reg. U. S. Pat. Off.
Z22.80-1950
*UDC 778.534.4

1. Scope and Purpose

1.1 This standard describes a film which may be used for determining the uniformity of scanning-beam illumination in 16-mm motion picture sound reproducers. The recorded sound track shall be suitable for use in laboratories and factories.

2. Test Film

2.1 The film shall be a print from an original negative. It shall consist of a 1000-cycle, variable-area recording at full modulation of the 0.005-inch width and shall be approximately sinusoidal. The track shall move uniformly 0.067 inch from one edge of the scanned area to the other as shown in Fig. 1.

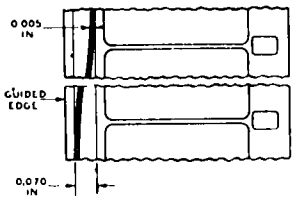

Fig. 1

2.2 The position of the sound track relative to the ends of the light beam at any instant shall be shown by a diagram appearing in the picture area, the size and location of which is shown in American Standard Location and Size of Picture Aperture of 16-Millimeter Motion Picture Cameras, Z22.7-1950, or any subsequent revision thereof approved by the American Standards Association, Incorporated.

2.3 The scanned area shall comply with the American Standard Sound Records and Scanning Area of 16-Mm Sound Motion Picture Prints, Z22.41-1946, and the film stock used shall be cut and perforated in accordance with American Standard Cutting and Perforating Dimensions for 16-Mm Sound Motion Picture Negative and Positive Raw Stock, Z22.12-1947, or any subsequent revisions thereof approved by the American Standards Association, Incorporated.

2.4 The length of this film shall be approximately 34 feet.

NOTE: A test film in accordance with this standard is available from the Motion Picture Research Council or the Society of Motion Picture and Television Engineers.

Appendix

(This Appendix is not a part of this American Standard.)

Before using the above test film it is recommended that correct placement of the scanning beam be determined by means of buzz-track test film as specified in American Standard Specification for Buzz-Track Test Film for 16-Mm Motion Picture Sound Reproducers, Z22.57-1947, or any subsequent revision thereof approved by the American Standards Association, Incorporated.

The uniformity of scanning beam illumination may be measured by means of a db meter connected to the output of the sound projector amplifier. The illumination of the scanning beam should be adjusted according to the instructions furnished by the manufacturer and the variation of the output as registered on the db meter should be observed. The illumination is considered satisfactorily uniform when the output reading as measured by the meter is within ±1½ db across the entire scanning slit.

Approved June 12, 1950, by the American Standards Association, Incorporated
Sponsor: Society of Motion Picture and Television Engineers
*Universal Decimal Classification

American Standard

Scanning-Beam Uniformity Test Film for 16-Millimeter Motion Picture Sound Reproducers (Service Type)

ASA Reg. U. S. Pat. Off.
Z22.81-1950
*UDC 778.534.4

1. Scope and Purpose

1.1 This standard describes a film which may be used for determining the uniformity of scanning-beam illumination in 16-mm motion picture sound reproducers. The recorded sound track shall be suitable for use in the routine maintenance and servicing of the equipment.

2. Test Film

2.1 The film shall be a print from an original negative. It shall consist of a 1000-cycle, variable-area recording at full modulation of the 0.005-inch width and shall be approximately sinusoidal. The track shall move uniformly 0.067 inch from one edge of the scanned area to the other as shown in Fig. 1.

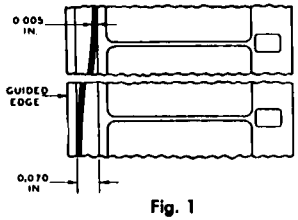

Fig. 1

2.2 The position of the sound track relative to the ends of the light beam at any instant shall be shown by a diagram appearing in the picture area, the size and location of which is shown in American Standard Location and Size of Picture Aperture of 16-Millimeter Motion Picture Cameras, Z22.7-1950, or any subsequent revision thereof approved by the American Standards Association, Incorporated.

2.3 The scanned area shall comply with American Standard Sound Records and Scanning Area of 16-Mm Sound Motion Picture Prints, Z22.41-1946, and the film stock used shall be cut and perforated in accordance with American Standard Cutting and Perforating Dimensions for 16-Mm Sound Motion Picture Negative and Positive Raw Stock, Z22.12-1947, or any subsequent revisions thereof approved by the American Standards Association, Incorporated.

2.4 The length of this film shall be approximately 3½ feet.

NOTE: A test film in accordance with this standard is available from the Motion Picture Research Council or the Society of Motion Picture and Television Engineers.

Appendix

(This Appendix is not a part of this American Standard.)

Before using the above test film it is recommended that correct placement of the scanning beam be determined by means of buzz-track test film as specified in American Standard Specification for Buzz-Track Test Film for 16-Mm Motion Picture Sound Reproducers, Z22.57-1947, or any subsequent revision thereof approved by the American Standards Association, Incorporated.

The uniformity of scanning beam illumination may be measured by means of a db meter connected to the output of the sound projector amplifier. The illumination of the scanning beam should be adjusted according to the instructions furnished by the manufacturer and the variation of the output as registered on the db meter should be observed. The illumination is considered satisfactorily uniform when the output reading as measured by the meter is within ±1½ db across the entire scanning slit.

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*Universal Decimal Classification

PROPOSED AMERICAN STANDARD

Sound Transmission of Theater Projection Screens

Z22.82

1. Sound Transmission Characteristics

1.1 The sound transmission characteristics of theater projection screens shall be such that the attenuation at 6000 cycles per second, with respect to 1000 cycles per second, is not more than 2½ db and the attenuation at 10,000 cycles per second, with respect to 1000 cycles per second, is not more than 4 db. The regularity of response shall be such that there is no variation greater than ± 2 db from a smooth curve at any frequency between 300 and 10,000 cycles per second. The general attenuation at and below 1000 cycles per second should not be greater than 1 db.

2. Method of Measurement

2.1 The sound transmission of the screen shall be measured by means of a loudspeaker, fed by an audio oscillator and amplifier, behind the screen, and a calibrated microphone, amplifier and output meter in front of the screen. The loudspeaker shall be of the type normally used in motion picture theaters for the size of screen being tested, and shall be placed so that no part of the loudspeaker is less than 2 feet from an edge of the screen with its mouth parallel to and separated from the screen by the recommended theater installation distance of from 4 to 8 inches (center cell in the case of a curved front multicellular horn). The microphone shall be located 10 to 12 feet in front of the screen and on the axis of the loudspeaker. The sound transmission of the screen at any frequency is then the difference in the sound level measured with the screen in place and with the screen removed.

2.2 Suitable precautions shall be taken to eliminate or minimize the effect of standing waves in the test room both in front of and behind the screen.