AMERICAN STANDARDS ON MOTION PICTURES

FOREWORD

The six newly revised American Standards on Motion Pictures published here were recently approved by the American Standards Association and represent another forward step in the present program of motion picture standardization. All such existing standards within the scope of Sectional Committee Z22 of the ASA have been reviewed within the past year, and the first 20 revisions appeared in their new distinctive format in the April 1946 JOURNAL. The six following comprise the second group in this series, published first in the JOURNAL and then made available to the industry, on $8^1/_2 \times 11$-in. sheets, punched to fit the new SMPE Standards Binder.

Revision of the first three of these Standards, *Z22.28*, *Z22.29*, and *Z22.31*, consists of title changes required by current American Standards Association editorial policy. Revision of the other three Standards, *Z22.37*, *Z22.38*, and *Z22.39*, which were originally published in the August 1944 JOURNAL, had been at first thought unnecessary, but title inconsistencies between two printed versions of the three standards, together with a desire to have all *Z22* Standards fit the new binder, seemed to justify having them set in the new format.

Copies of these six Standards, and the twenty published in the April 1946 JOURNAL, may be secured from the General Office of the Society.

AMERICAN STANDARDS

Z22.28-1946 Projection Rooms and Lenses for Motion Picture Theaters
Z22.29-1946 Theater Projection Screens
Z22.31-1946 Motion Picture Safety Film
Z22.37-1944 Raw Stock Cores for 35-Mm Motion Picture Film
Z22.38-1944 Raw Stock Cores for 16-Mm Motion Picture Film
Z22.39-1944 Screen Brightness for 35-Mm Motion Pictures

American Standard Dimensions for

Projection Rooms and Lenses for Motion Picture Theaters

ASA
Reg. U. S. Pat. Off.
Z22.28-1946
First Edition
Z22.28-1941

1. Projection Lens Height

1.1 The standard height from the floor to the center of the projection lens of a motion picture projector should be 48 inches.

2. Projection Angle

2.1 The projection angle should not exceed 12 degrees.

3. Observation Port

3.1 The observation port should be 12 inches wide and 14 inches high, and the distance from the floor to the bottom of the openings shall be 48 inches. The bottom of the opening should be splayed 15 degrees downward. If the thickness of the projection room wall should exceed 12 inches, each side should be splayed 15 degrees.

4. Projection Lens Mounting

4.1 The projection lens should be so mounted that the light from all parts of the aperture shall traverse an uninterrupted part of the entire surface of the lens.

5. Projection Lens Focal Length

5.1 The focal length of motion picture projection lenses should increase in ¼-inch steps up to 8 inches, and in ½-inch steps from 8 to 9 inches.

6. Projection Objectives, Focal Markings

6.1 Projection objectives should have the equivalent focal length marked thereon in inches, quarters, and halves of an inch, or in decimals, with a plus (+) or minus (−) tolerance not to exceed 1 percent of the designated focal length also marked by proper sign following the figure.

NOTE: Complete plans for projection rooms are contained in the *Journal of the Society of Motion Picture Engineers*, p 484, November, 1938.

American Standard Dimensions for

Theater Projection Screens

ASA
Reg. U. S. Pat. Off.
Z22.29-1946
First Edition
Z22.29-1941

1. Screen Size

1.1 Sizes of screens shall be in accordance with the table below.

2. Grommet Spacing

2.1 The spacing of grommets shall be 6 inches. In rare instances, however, 12 inches will be permitted. The ratio of width to height of screens shall be 4 to 3.

3. Screen Placement

3.1 The width of the screen should be equal to approximately 1/6 the distance from the screen to the rear seats of the auditorium. The distance between the front row of seats and the screen should be not less than 0.87 foot for each foot of screen width.

Screen Sizes

Size No. of Screen	Picture Width (Feet)	Picture Height, Feet	Picture Height, Inches	Size No. of Screen	Picture Width (Feet)	Picture Height, Feet	Picture Height, Inches
8	8	6	0	25	25	18	9
9	9	6	9	26	26	19	6
10	10	7	6	27	27	20	3
11	11	8	3	28	28	21	0
12	12	9	0	29	29	21	9
13	13	9	9	30	30	22	6
14	14	10	6	31	31	23	3
15	15	11	3	32	32	24	0
16	16	12	0	33	33	24	9
17	17	12	9	34	34	25	6
18	18	13	6	35	35	26	3
19	19	14	3	36	36	27	0
20	20	15	0	37	37	27	9
21	21	15	9	38	38	28	6
22	22	16	6	39	39	29	3
23	23	17	3	40	40	30	0
24	24	18	0				

American Standard Definition for

Motion Picture Safety Film

ASA
Reg. U. S. Pat. Off.
Z22.31-1946
First Edition
Z22.31-1941

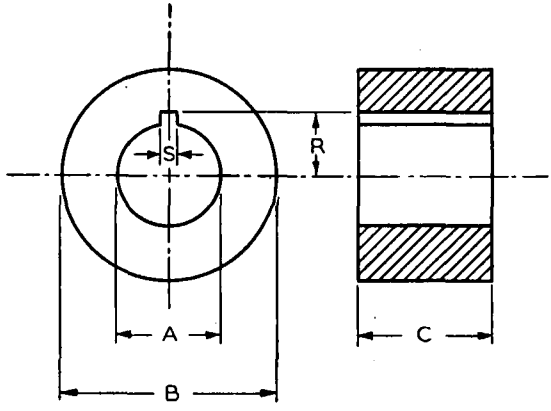
1. Safety Film

1.1 The term "Safety Film" as applied to motion picture materials shall comply with American Standard Definition of Safety Photographic Film Z38.3.1-1943. All 32-mm, 16-mm, and 8-mm film must be of the safety type.

American Standard

Raw Stock Cores For 35-Millimeter Motion Picture Film

ASA
Reg. U. S. Pat. Off.
Z22.37-1944



	Millimeters	Inches
A	25.90 ± 0.20	1.020 ± 0.008
B	50.00 ± 0.25	1.968 ± 0.010
C	34.50 ± 0.50	1.358 ± 0.020
Recommended Practice		
R	16.70 ± 0.30	0.657 ± 0.012
S	4.00 ± 0.20	0.157 ± 0.008

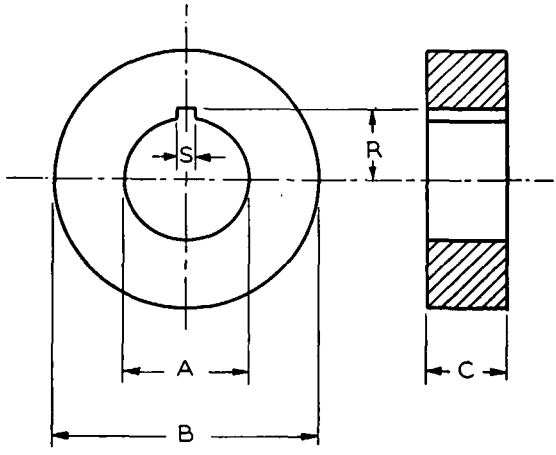
Bore A to fit freely to hub 25.40 ± 0.1 mm or 1.000 ± 0.004-inch diameter.

NOTE: *Reprinted August 1946, without change.*

American Standard

Raw Stock Cores For 16-Millimeter Motion Picture Film

ASA
Reg. U. S. Pat. Off.
Z22.38-1944



	Millimeters	Inches
A	25.90 + 0.20	1.020 ± 0.008
B	50.00 ± 0.25	1.968 + 0.010
C	15.50 + 0.50	0.610 ± 0.020
Recommended Practice		
R	16.70 ± 0.30	0.657 ± 0.012
S	4.00 + 0.20	0.157 ± 0.008

Bore A to fit freely to hub 25.40 ± 0.1 mm or 1.000 ± 0.004-inch diameter.

NOTE: Reprinted August 1946, without change.

American Standard

Screen Brightness For 35-Millimeter Motion Pictures

ASA
Reg. U. S. Pat. Off.
Z22.39-1944

1. Screen Brightness

1.1 The brightness at the center of a screen for viewing 35-mm motion pictures shall be 10 $\pm\frac{1}{4}$ foot-lamberts when the projector is running with no film in the gate.

NOTE: Reprinted August 1946, without change.