RP 79-1999
Revision of RP 79-1994

SMPTE RECOMMENDED PRACTICE

Specifications for Flutter Test Film for 35-mm Four-Track Striped Release Print Audio Reproducers, Magnetic Type

1 Scope

This practice specifies a test film for determining the presence of flutter in 35-mm motion-picture magnetic audio reproducers operating at 96 perforations per second or approximately 90 ft (27 m) per minute designed for four-track magnetic audio release prints.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

ANSI S4.3-1982 (R1992), Method for Measurement of Weighted Peak Flutter of Sound Recording and Reproducing Equipment

ANSI S4.6-1982 (R1992), Method of Measuring Recorded Flux of Magnetic Sound Records at Medium Wavelengths

ANSI/SMPTE 102-1997, Motion-Picture Film (35-mm) — Perforated CS-1870

ANSI/SMPTE 137-1994, Motion-Picture Film (35-mm) — Release Prints — Four Magnetic Audio Records

ANSI/SMPTE 177-1995, Motion-Picture Film (35-mm) — Four-Track Magnetic Audio Release Prints — Magnetic Striping

ANSI/SMPTE 223M-1996, Motion-Picture Film — Safety Film

3 Test film signal

3.1 Frequency

The audio record shall be an original recording which will reproduce at a frequency of 3150Hz ± 25Hz when the linear speed of the film is 96 perforations per second or approximately 90 ft (27 m) per minute (18 in or 46 cm per second).

3.2 Distortion

The total harmonic distortion of the recorded signal shall not exceed 0.2%.

3.3 Audio record

3.3.1 Full-coat

The audio record on full-coat material shall be recorded so that it extends from one edge of the film to the other.

3.3.2 Striped release print

For release prints that are striped in accordance with ANSI/SMPTE 177, the audio record shall be recorded in accordance with ANSI/SMPTE 137.

3.4 Recorded level

The flutter test tone shall be not less than 6 dB down from the equivalent reference level of 1 kHz at 185 nanowebers per meter after correct equalization of 35 μs and 3180 μs.

3.5 Flutter

The weighted peak flutter of the audio record shall not exceed ± 0.04% when measured in accordance with ANSI S4.3.

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3.6 Azimuth

The azimuth of the audio record shall be 90° ± 3′ to the reference edge of the film.

4 Film stock

4.1 The film stock shall be splice-free, safety type in compliance with ANSI/SMPTE 223M.

4.1.1 Test films made on low-shrinkage base shall be cut and perforated in accordance with dimensions specified in ANSI/SMPTE 102.

4.2 The film stock shall be conditioned for 10 days at 20°C ± 3°C (68°F ± 5.4°F) at a relative humidity of 50% ± 10% prior to recording.

4.3 The film shall be recorded and packaged within the temperature and humidity limits specified in 4.2. The recorded film shall be packaged in a metal can and sealed either with a low-moisture permeability plastic tape or a fabric tape having a moisture barrier.

5 Identification

Each test film shall be identified by a suitable identification marking.

6 Calibration

6.1 Flux

The short circuit flux on the test film shall be determined by means of the calibrated short-gap ferromagnetic core reproducer technique. This technique is described in ANSI S4.6.

6.2 Level

The signal level specified in 3.4 shall be measured with an rms voltmeter calibrated in decibels with an accuracy of ± 0.1 dB over the bandwidth 31.5 Hz to 16 kHz.

6.3 Method

The test film shall be calibrated on a reproducing head made in accordance with ANSI/SMPTE 137.