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Cinematography — Interchange of post-production sprocket-based materials

Cinématographie — Échange de matériaux post-production dentés

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

The committee responsible for this document is ISO/TC 36, *Cinematography.*

This second edition cancels and replaces the first edition (ISO 12612:1997), of which it constitutes a minor revision.

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Cinematography — Interchange of post-production sprocket-based materials

1 Scope

This International Standard specifies certain parameters and technical characteristics of post-production motion-picture materials used in the international exchange of 35 mm and 70 mm picture and sound elements.

This International Standard further specifies a method for the evaluation of picture-image quality based on a standardized test image contained in the post-production picture elements.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5-2, *Photography and graphic technology — Density measurements — Part 2: Geometric conditions for transmittance density*

ISO 5-3, *Photography and graphic technology — Density measurements — Part 3: Spectral conditions*

ISO 162, *Cinematography — Head gaps and sound records for three-, four-, or six-track magnetic sound records on 35 mm and single-track on 17,5 mm motion-picture film containing no picture — Positions and width dimensions*

ISO 491, *Cinematography — 35 mm motion-picture film and magnetic film — Cutting and perforating dimensions*

ISO 1039, *Cinematography — Cores for motion-picture and magnetic film rolls — Dimensions*

ISO 2467, *Cinematography — Image area produced by 65 mm/5 perforation motion-picture camera aperture and maximum projectable image area on 70 mm/5 perforation motion-picture prints — Positions and dimensions*

ISO 2906, *Cinematography — Image area produced by camera aperture on 35 mm motion-picture film — Position and dimensions*

ISO 2907, *Cinematography — Maximum projectable image area on 35 mm motion-picture film — Position and dimensions*

ISO 2910, *Cinematography — Screen luminance and chrominance for the projection of motion pictures*

ISO 3023, *Cinematography — 65 mm and 70 mm unexposed motion-picture film — Cutting and perforating dimensions*

ISO 4241, *Cinematography — Projection leader (time-based), trailer and cue marks — Specifications*

ISO 4834, *Cinematography — Magnetic sound test films excluding striped release prints — Basic technical characteristics*

ISO 5758, *Cinematography — Labelling of containers for motion-picture film and magnetic material — Minimum information for exchange of materials*

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ISO 6038, *Cinematography — Splices for use on 70 mm, 65 mm, 35 mm and 16 mm motion-picture films — Dimensions and locations*

ISO 9525, *Cinematography — Recording head gaps for two sound records on 17,5 mm magnetic film — Positions and width dimensions*

3 Requirements for post-production picture elements

3.1 Cutting and perforating dimensions

Cutting and perforating dimensions for photographic films shall be in accordance with ISO 491 and ISO 3023.

3.1.1 For 35 mm original negatives, master positives and duplicate negatives: ISO 491 (preferred Type N perforation and 4,74 mm perforation pitch).

3.1.2 For 35 mm projection prints: ISO 491 (Type P perforation and 4,75 mm perforation pitch).

3.1.3 For 65 mm original negatives, master positives and duplicate negatives and for 70 mm projection prints: ISO 3023.

3.2 Position and dimensions of picture areas

Position and dimensions of picture areas shall be in accordance with ISO 2906, ISO 2907, and ISO 2467.

3.2.1 For 35 mm: ISO 2906 and ISO 2907.

3.2.2 For 65 mm and 70 mm: ISO 2467.

3.3 Splices

Splices shall be in accordance with ISO 6038.

3.4 Requirements for photographic characteristics

The photographic characteristics of post-production picture materials to be interchanged shall be evaluated using densitometric measurements of a test image which is spliced into the original picture rolls and reproduced through the successive stages of duplication.

The control method is based upon the Laboratory Aim Density system (LAD system) (see A.1 for a reference concerning the implementation of this system), which assigns specific density values to a control patch in a test image which is spliced into the original camera film, and is then read at each stage throughout the sequence to the projection print. All scenes within the motion picture are graded (timed) relative to the test image which is considered as a "perfect" scene.

Density aim values are chosen so that the print-through equivalent neutral densities on each film in the post production sequence fall approximately at the mid-point of the straight line portion of that film's characteristic curves.

This achieves the following two objectives:

a) most significant picture information is placed on the linear portion of the duplicating film's characteristic curve, carrying a maximum of highlight and shadow information;

b) a neutral grey scale is maintained throughout the post-production, aiding, in colour grading (timing).

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