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Permanence and durability of commercial prints —

Part 21: In-window display — Light and ozone stability

Permanence et durabilité des impressions commerciales —

Partie 21: Fenêtre de visualisation — Stabilité à la lumière et à l'ozone

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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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 42, *Photography*.

A list of all parts in the ISO 21139 series can be found on the ISO website.

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Introduction

In commercial application of colour prints, displaying the prints under ambient light or artificial illumination is one of the typical use cases. These prints may fade or otherwise change in appearance due to various environmental stresses, such as light, heat, humidity, pollutant gas, or biological weathering, and the combination of these factors. One of the most critical degradations is light fading caused by bright light which includes some UV components. A typical example of such a case is where prints are displayed in a display window (see Annex A) and are illuminated with bright light, especially daylight through window glass.

A test method for light stability of prints by simulating daylight through window glass directly falling on a print displayed in a window is described in of ISO 18937. The test method described in ISO 18937 has broader application (for example covers a broad range of temperatures) than is required for this document and so requires some modification. A test method for ozone stability is described in ISO 18941.

In addition, ISO 18937 and ISO 18941 focus on test method itself, and do not cover translation of test results into performance in specific use profile which is one of the aims of this document.

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Permanence and durability of commercial prints —

Part 21:
In-window display — Light and ozone stability

1 Scope

This document describes the test method for light stability and ozone stability for commercial prints, which are displayed in indoor bright places in or near to windows, especially in display windows with air conditioning.

This document also provides guidelines for data analysis.

This document is applicable to the various product classes of "commercial prints" that, following the terminology of ISO/TR 19300, include commercial production prints (flyers, brochures), transactional and stationary prints, signage, newspapers and periodical prints, book printing as well as packaging printing. These commercial prints often contain combinations of text, pictorial images and/or artwork. Prints for non-commercial use, including prints used and displayed in consumer home environments and prints exhibited or stored in museum context, are outside the scope of this document.

This document is applicable to both analogue and digitally printed matter. Methods and principles apply to both, colour and monochrome prints.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12647-7, *Graphic technology — Process control for the production of halftone colour separations, proof and production prints — Part 7: Proofing processes working directly from digital data*

ISO 13655, *Graphic technology — Spectral measurement and colorimetric computation for graphic arts images*

ISO 18937:—[1)], *Imaging materials — Photographic reflection prints — Methods for measuring indoor light stability*

ISO 18941:2017, *Imaging materials — Colour reflection prints — Test method for ozone gas fading stability*

ISO/TS 21139-1, *Permanence and durability of commercial prints — Definition of use cases and guiding principles for specifications*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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