BS ISO 18930:2011

BSI Standards Publication

Imaging materials — Pictorial colour reflection prints — Methods for evaluating image stability under outdoor conditions

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National foreword

This British Standard is the UK implementation of ISO 18930:2011. It supersedes PD ISO/TR 18930:2001 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CPW/42, Photography.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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INTERNATIONAL STANDARD

ISO 18930

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Imaging materials — Pictorial colour reflection prints — Methods for evaluating image stability under outdoor conditions

Matériaux pour l'image — Impressions de couleurs de réflexion picturale — Méthodes d'évaluation de la stabilité d'image dans des conditions extérieures

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 18930 was prepared by Technical Committee ISO/TC 42, *Photography*.

This first edition of ISO 18930 cancels and replaces ISO/TR 18930:2001, which has been technically revised.

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Introduction

Printed digital images are used in many applications in which they are exposed to outdoor weathering. This International Standard provides standardized test procedures to evaluate image stability both in real-time outdoor weathering tests and in accelerated laboratory simulations of the weathering process.

Accelerated laboratory weathering tests have been developed as a result of the desire to obtain test results faster than would be obtained by actual outdoor exposure. However, accelerated weathering tests only have value if they can be correlated with actual outdoor performance. In outdoor testing, critical factors that cause image degradation include light, water, heat, ozone, and local and diurnal variations in climate. In accelerated testing, it is important that the most critical factors of light, water and heat are included. The use of xenon arc lamps with “daylight” filters has become an industry standard procedure for the most accurate simulation of the spectral power distribution of sunlight. The coupling of the xenon arc lamps and “daylight” filters with a water spray and elevated temperatures forms the basis for testing with accelerated laboratory weathering instruments. The accelerated weathering test procedure described in this test method is intended to provide a means for predicting the behaviour under actual outdoor exposure.

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INTERNATIONAL STANDARD ISO 18930:2011(E)

Imaging materials — Pictorial colour reflection prints — Methods for evaluating image stability under outdoor conditions

1 Scope

This International Standard describes test equipment and test procedures for determining the colour stability of photographic colour images when subjected to outdoor conditions. It does not specify limits of acceptability or failure criteria. Instead, it provides means for measuring image changes that take place during the aging of pictorial photographic images and indicates the critical image-change parameters that should be reported. Users of this International Standard should determine which test end-points best simulate the intended display application.

This International Standard is applicable to pictorial images made with digital printing media, for example:

— prints on coated papers, coated and uncoated clear and opaque films, vinyl, polyester, synthetic papers and other plastic substrates, laminated and not laminated;

— dye-based and pigment-based inkjet prints with aqueous, solvent, phase-change, or UV curing inks;

— thermal dye and mass transfer;

— dye sublimation prints;

— digitally-printed dye-diffusion-transfer prints;

— liquid- and dry-toner xerographic prints;

— liquid toner electrostatic prints;

— digitally printed images made with traditional chromogenic and silver dye-bleach photographic materials;

— colour direct thermal prints.

In these digital printing processes, the ink laydown is controlled by means of digital pixel information, and all of the settings and controls of the printing system can be documented and repeated. In contrast, for many analogue printing systems, the control over the ink film thickness can be subject to manual adjustment. Window graphics on the outside of windows are covered by this International Standard. Window graphics on the inside of windows, for which sunlight is filtered by a layer of glass, will be covered by ISO 18937.

This International Standard does not include test procedures for physical stability of images, supports or binder materials. However, it is recognized that in some instances physical degradation such as support embrittlement, image layer cracking, or delamination of an image layer from its support, rather than image stability, will determine the useful life of a print material.

NOTE Image print stability results determined for one printer model, ink set, printing mode, print resolution and media combination are not applicable to image prints produced through another printer model, ink set, printing mode, print resolution and media combination, even if the ink jet cartridges and/or media used in testing are the same.

2 Normative references

The following referenced documents are indispensable for the application 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 5-3, *Photography and graphic technology — Density measurements — Part 3: Spectral conditions*

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

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