



BSI Standards Publication

Imaging materials — Image permanence specification of reflection photographic prints for indoor applications

Part 1: Test methods

National foreword

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Part 1: Test methods

*Matériaux pour l'image — Spécification relative à la permanence de
l'image des tirages photographiques par réflexion pour applications
intérieures —*

Partie 1: Méthodes d'essai



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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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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 18940 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Test methods for measurement of image permanence for four important environmental stress factors for indoor use of photographs are described in the following International Standards:

- ISO 18936 for thermal stability;
- ISO 18937 (all parts) for light stability;
- ISO 18941 for ozone gas stability;
- ISO 18946 for humidity fastness.

Humidity testing according to ISO 18946 specifies high humidity test conditions to test for image fastness (resistance to colorant migration). Humidity testing according to ISO 18949 specifies low humidity test conditions, which can be observed in hot arid climates and during winter in continental climates. The importance of low humidity depends on the environmental conditions of the specific usage case. Testing according to ISO 18949 is optional.

NOTE It is acknowledged that other environmental stress factors can be present during indoor use of photographs than the four mentioned before. Examples are other atmospheric gases, including SO₂ and NO_x, the presence of which depends on local factors such as traffic, industry and heating. Mechanical stresses are also not considered here, as these are typically considered to be low in the context of indoor consumer use of photographs as compared to commercial applications (see ISO/TS 21139-1).

Each document includes variants of the test methods, test conditions and data analysis procedures to cover different purposes. For the purpose of an overall specification for indoor image permanence performance, it is necessary to specify which method, which condition and which data analysis procedure to select.

The ISO 18940 series specifies the test methods, the test conditions and details of the data analysis. The ISO 18940 series also specifies how to communicate the results obtained by these test methods.

This document specifies which test method, test conditions and data analysis procedure are selected from those listed in ISO 18936, ISO 18937 (all parts), ISO 18941, and ISO 18946.

In addition, this document also specifies the first level reporting of the results from aforementioned test methods in terms of data plots, which is the most generic reporting method. Graphical reporting addresses the needs of communication on various levels, including technical product information on datasheets, internet home pages, leaflets and posters distributed at trade shows. Graphic reporting is a key for this document, as it provides the foundation for defining end-point criteria and specifications of image permanence in other parts of this standard.

Additional parts of the ISO 18940 series are being envisaged as future work to define standardized evaluation point criteria on the one hand and typical environmental conditions on the other, so that 'typical' expectations for colour changes in the use profile 'consumer home' are taken into consideration. These additional parts acknowledge that the actual expectations, use conditions (display and/or storage, including a certain level of protection) as well as the actual environmental conditions in a specific instance of the use profile may vary.

More information on the image permanence issues of the consumer home environment can be found in ISO/TR 18942.