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First edition  
2019-08

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## **Permanence and durability of commercial prints —**

### **Part 1: Definition of use profiles and guiding principles for specifications**

*Permanence et durabilité des impressions commerciales —*

*Partie 1: Définition des profils d'utilisation et des principes directeurs  
pour les spécifications*



Reference number  
ISO/TS 21139-1:2019(E)

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Published in Switzerland

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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](http://www.iso.org/directives)).

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

A list of all parts in the ISO/TS 21139 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](http://www.iso.org/members.html).

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## Introduction

This Technical Specification ISO/TS 21139 (all parts) defines use profiles and test methods for permanence and durability testing of printed matter for use in the context of commercial applications, which resemble a wide range of product and usage classes (see e.g. ISO/TR 19300). Product classes included are 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.

A use profile describes typical environmental and other stresses characteristic for the conditions under which a printed sheet or object is typically used. Also certain (implicit) expectations for retained print properties under these conditions may be connected to a particular use profile. These need to be explicated and linked to observed failure modes and assessed as measurable changes of image parameters, including the various dimensions of image quality and physical integrity of the print.

For permanence testing either single or combined stress factors are applied in accelerated laboratory tests that aim to simulate the degradation observed in field use. ISO/TS 21139 (all parts) defines test methods that are appropriate to simulate exposure in use profiles of printed matter in a variety of uses. Furthermore, requirements for reporting of permanence test results are given as guidance for translation of test results into use profile performance, also addressing limitations of “year calculations” due to restrictions of accelerated testing and variability in actual display conditions.

In the context of service life testing of identification cards defined in ISO 24789-1 and ISO 24789-2, a matrix of stresses and evaluations has been defined to simulate various application profiles of such plastic cards. ISO/TS 21139 (all parts) may be developed in an analogous way in a future revision.