International Standard

ISO 18935

Imaging materials — Colour images — Determination of water resistance of printed colour images

Matériaux pour l'image — Images en couleurs sur impressions en papier — Détermination de la résistance interne de la couleur à l'eau

Fourth edition
2025-02

Reference number
ISO 18935:2025(en)

© ISO 2025



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Categories of water resistance ... **1**
4.1 General ... 1
4.2 Water resistant ... 1
4.3 Moderately water resistant ... 1
4.4 Not water resistant ... 2
5 Water resistance estimating procedures ... **2**
5.1 General considerations ... 2
5.2 Control sample ... 2
6 Test methods ... **2**
6.1 General ... 2
6.2 Method 1 — Standing water evaporation ... 3
6.3 Method 2 — Standing water plus wiping effects ... 3
6.4 Method 3 — Water soak ... 3
6.5 Method 4 — Edge immersion ... 3
7 Test pattern preparation ... **4**
7.1 General considerations ... 4
7.2 Example test patterns ... 4
8 Test report ... **5**
Annex A (informative) **Determination of resistance to other liquids** ... **6**
Annex B (informative) **Water emergency scenarios with inkjet prints** ... **7**
Bibliography ... **8**

© ISO 2025 – All rights reserved

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

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

This fourth edition cancels and replaces the third edition (ISO 18935:2018), of which it constitutes a minor revision.

The main changes are as follows:

— new informative annex on “Water emergency scenarios with inkjet prints”.

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.

© ISO 2025 – All rights reserved

Introduction

Water resistance is not an important consideration in the normal storage of colour prints. However, in a disaster situation, such as floods, earthquakes or water main breaks, this property can be of critical importance if the print is to be salvaged. A wide variety of materials are used for digital colour prints and the colorants used in some digital prints are water soluble. The degree of their water resistance varies depending upon the colorants used and if the print has a water-resistant overcoat. In addition, the paper or other substrate may be of equal importance. The same colorants may exhibit very good water resistance on one substrate but can be completely washed off from a different substrate. Even print systems that use water-insoluble colorants may be damaged by water exposure if the substrate is not also water resistant. This document provides a standardized method to evaluate the qualitative water resistance of colour prints.

© ISO 2025 – All rights reserved

Imaging materials — Colour images — Determination of water resistance of printed colour images

1 Scope

This document specifies tests to determine the relative water resistance of printed colour images. This document is applicable to both digital and analogue prints.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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

3.1
ambient conditions
environmental conditions of (23 ± 1) °C and (50 ± 5) % RH

3.2
mordant
substance that combines with a dye, used to fix it in a material

4 Categories of water resistance

4.1 General

The water resistance of a print is categorized into one of three categories, i.e. water resistant, moderately water resistant and not water resistant as defined in 4.2 to 4.4.

4.2 Water resistant

Water-resistant print is print that is not noticeably affected by exposure to liquid water.

NOTE No significant degradation of the colorant (bleeding, smearing, hue change), of the support (curl, cockle, delamination) or of the image surface (gloss changes, water rings, etc.) is found.

4.3 Moderately water resistant

A moderately water-resistant print is a print that exhibits some change or damage by water but is still considered usable for its intended application.

NOTE The damage can manifest itself as slight media curl, partial delamination along an edge, or ring-like watermarks due to gloss changes or a minor amount of colorant migration. This damage can be mitigated by the rapid removal of the water (careful blotting, shaking off the water, etc.).

© ISO 2025 – All rights reserved