PD ISO/TS 15311-1:2019

BSI Standards Publication

Graphic technology — Print quality requirements for printed matter

Part 1: Measurement methods and reporting schema

bsi.

National foreword

This Published Document is the UK implementation of ISO/TS 15311-1:2019. It supersedes PD ISO/TS 15311-1:2016, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PAI/43, Graphic technology.

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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TECHNICAL SPECIFICATION

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Second edition
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Graphic technology — Print quality requirements for printed matter —

Part 1: Measurement methods and reporting schema

Technologie graphique — Exigences de qualité d'impression pour les imprimés —

Partie 1: Méthodes de mesure et schémas de rapport

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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 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 130, *Graphic technology*.

This second edition of ISO/TS 15311-1 cancels and replaces the first edition (ISO/TS 15311-1:2016), which has been technically revised.

The main changes compared to the previous edition are as follows:

a) All references are now undated, unless reference is made to a specific element of the cited document.

b) 4.3.2.3 Absolute colour reproduction (process colours)

   1) Title changed to: Colour accuracy (absolute colour reproduction, process colours).

c) 4.3.2.4 Media relative colour reproduction (process colours)

   1) Title changed to: Colour accuracy (media relative colour reproduction, process colours).

d) Subclauses added:

   1) 4.3.2.5 Colour accuracy (media relative colour reproduction with BlackPoint compensation)

   2) 4.3.2.7 Colour accuracy (spot colours)

   3) 4.3.3.7 Print-through resistance

   4) 4.3.4.8 Registration

   5) 4.3.5.5 Water resistance

   6) 4.3.5.6 Scratch resistance

   7) 4.3.5.7 Abrasion resistance (transportation of sheets)

8) 4.3.6.1 Background extraneous marks and voids (monochrome)

e) Annex B added

1) Estimation of BlackPoint from control strip

f) Annex C added

1) Calculation of 95th percentile

g) 4.3.2.4 Colour accuracy (media relative colour reproduction, process colours) modified

1) Reference colour values are now adjusted instead of adjusting measurement values as in the published version of this standard. This was done to be consistent with the method used to assess media relative colour reproduction with BlackPoint compensation.

A list of all parts in the ISO/TS 15311 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

When producing a colour reproduction, it is important that the persons responsible for data creation, colour separation, proofing and printing operations have previously agreed a minimum set of parameters that define the visual characteristics and other technical properties of the planned print product. This document identifies a number of metrics that can be applied to printed sheets and that can be used as the basis for such communication. The range of metrics is large and it is not intended that all of these metrics are to be applied to any given printed product and for any given application, the range of metrics is to be carefully selected, for example based on subsequent parts of ISO/TS 15311.

The metrics described by this document can be applied to any type of print. They are likely most often to be applied to digitally printed prints.

When selecting the set of metrics, only those metrics that have a clear specification and that correlate well with human perception are included in this document. Since this is an area of significant research activity, new metrics are expected to emerge and existing metrics to be revised in the next few years. For this reason, we anticipate the need to revise this document within a very short time scale as new metrics are tested and found to be reliable.

Additional tests to those specified in this document, for example visual assessment of smoothness, images and other elements may be required when assessing print quality.

As with any parameter that is used as part of a product specification, it is important for readers to understand clearly what the metric means. For this reason, a reporting schema is to be followed when reporting measurements in conformance with this document.

TECHNICAL SPECIFICATION **ISO/TS 15311-1:2019**

Graphic technology — Print quality requirements for printed matter —

Part 1: Measurement methods and reporting schema

1 Scope

This document defines print quality metrics, measurement methods and reporting requirements for printed sheets that are suitable for all classes of printed products.

Guidance as to which of these metrics to apply to any given product category along with acceptable conformance criteria is provided in subsequent parts of ISO/TS 15311.

Although this document is expected to be used primarily to measure prints from digital printing systems, the metrics are general and may be applied to other kinds of print.

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 2813, *Paints and varnishes — Determination of gloss value at 20°, 60° and 85°*

ISO 8254-1, *Paper and board — Measurement of specular gloss — Part 1: 75° gloss with a converging beam, TAPPI method*

ISO 12642-2, *Graphic technology — Input data for characterization of 4-colour process printing — Part 2: Expanded data set*

ISO 12647-8, *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints — Part 8: Validation print processes working directly from digital data*

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

ISO 15184, *Paints and varnishes — Determination of film hardness by pencil test*

ISO 18619, *Image technology colour management — Black point compensation*

ISO 18924, *Imaging materials — Test method for Arrhenius-type predictions*

ISO 18930, *Imaging materials — Pictorial colour reflection prints — Methods for evaluating image stability under outdoor conditions*

ISO 18935, *Imaging materials — Colour images — Determination of water resistance of printed colour images*

ISO 18936, *Imaging materials — Processed colour photographs — Methods for measuring thermal stability*

ISO 18937:2014, *Imaging materials — Photographic reflection prints — Methods for measuring indoor light stability*