

BS EN ISO 105-A11:2012



BSI Standards Publication

Textiles — Tests for colour fastness

Part A11: Determination of colour fastness grades by digital imaging techniques

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National foreword

This British Standard is the UK implementation of EN ISO 105-A11:2012.

The UK participation in its preparation was entrusted to Technical Committee TCI/81, Colour fastness and colour measurement of textiles.

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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Amendments issued since publication

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English Version

Textiles - Tests for colour fastness - Part A11: Determination of
colour fastness grades by digital imaging techniques (ISO 105-
A11:2012)

Textiles - Essais de solidité des coloris - Partie A11:
Détermination des degrés de solidité des coloris par des
techniques d'imagerie numérique (ISO 105-A11:2012)

Textilien - Farbechtheitsprüfungen - Teil A11: Bestimmung
von Farbechtheitszahlen durch digitale
Bildgebungsverfahren (ISO 105-A11:2012)

This European Standard was approved by CEN on 14 September 2012.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 105-A11:2012) has been prepared by Technical Committee ISO/TC 38 "Textiles" in collaboration with Technical Committee CEN/TC 248 "Textiles and textile products" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 105-A11:2012 has been approved by CEN as a EN ISO 105-A11:2012 without any modification.

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Apparatus	2
4.1 General	2
4.2 Digital camera	2
4.3 Illumination cabinet	4
Annex A (normative) Assessment of the change in colour of a test specimen	6
Annex B (normative) Assessment of staining of a test specimen	9
Annex C (normative) Verification chart	12
Annex D (informative) Summary of report and conclusions of international trial for determination of colour fastness grades by digital imaging techniques	14
Bibliography	16

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.

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ISO 105-A11 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 1, *Tests for coloured textiles and colorants*.

ISO 105 consists of many parts designated by a part letter and a two-digit serial number (e.g. A01), under the general title *Textiles — Tests for colour fastness*. A complete list of these parts is given in ISO 105-A01.

Textiles — Tests for colour fastness —

Part A11: Determination of colour fastness grades by digital imaging techniques

1 Scope

This part of ISO 105 specifies the requirement for a digital imaging system for use in the methods specified in Annexes A and B for the determination of change in colour and staining by digital imaging techniques.

This method is not suitable for assessment of colour fastness to light as described in the ISO 105 B series, as these standards do not use grey scales to assess the specimen.

This part of ISO 105 describes apparatus, equipment settings and calibration for the assessment of

- change in colour, and
- staining.

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 105-A01, *Textiles — Tests for colour fastness — Part A01: General principles of testing*

CIE¹⁾ Publication S 012/E, *Standard method of assessing the spectral quality of daylight simulators for appraisal and measurement of colour*

CIE Publication 13.3, 1995, *Method of measuring and specifying the colour rendering properties of light sources*, 2nd edition

3 Terms and definitions

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

3.1

system grey

colour of the internal surfaces and apparatus that would normally be visible in a captured image

NOTE System grey shall be approximately between Munsell N5 and N7 and within CIELAB Lightness value of 50 or $70 \pm 2,0$ and CIELAB Chroma value not exceeding 2,5 in any hue direction under D65 and CIE 1964 standard colorimetric observer, respectively.

1) Commission Internationale d'Éclairage, Central Bureau, Kegelgasse 27, A-1030, Vienna, Austria

3.2
verification chart²⁾

chart consisting of a series of colour patches of known colorimetric values

See Annex C.

3.3
system software

software required to control and operate the digital camera

3.4
white tile

tile whose colour is certified and traceable to a national standard

EXAMPLE Standard provided by the National Physical Laboratory in the UK.

3.5
operator-selected area

assessment for either staining or change in colour where the system operator manually selects both the location and size of the specimen test area for the reference and tested pieces

3.6
automatic grading

assessment for either staining or change in colour where the system software selects both the location and size of the specimen test area for the reference and tested pieces

4 Apparatus

4.1 General

The test apparatus consists of a verified digital camera (4.2)³⁾, which is mounted on an illumination cabinet (4.3) that gives a controlled and consistent lighting environment. Specimens may be presented for grading individually, in multiples, or in one of a series of pre-defined templates depending on the type of test being carried out. The operator shall manually select the area to be assessed for grading.

Automatic grading (3.6) of specimens is permitted, provided that the grades produced by this method agree with those achieved by the Operator-Selected Area method (3.5).

The equipment shall be maintained and calibrated or verified, as appropriate, in accordance with the manufacturer's instructions.

4.2 Digital camera

4.2.1 Digital camera specification

4.2.1.1 Resolution

The digital camera shall have an effective resolution of not less than 3,0 M pixels.

2) A verification chart as described in 3.2 and Annex C is manufactured commercially as the DigiEye DigiTizer® series camera calibration chart and is available from VeriVide Limited, Quartz Close, Warrens Business Park, Enderby, Leicester, LE19 4SG, United Kingdom. Tel: +44 (0) 116 2847790; Email: enquiries@verivide.com This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of this product.

3) The apparatus as described in Clause 4 with software as described in Annexes A and B manufactured commercially as the DigiEye® is available from VeriVide Limited, Quartz Close, Warrens Business Park, Enderby, Leicester, LE19 4SG, United Kingdom. Tel: +44 (0) 116 2847790; Email: enquiries@verivide.com. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of this product.