SLOVENSKI STANDARD
SIST EN ISO 105-B02:2013

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Nadomešča:
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Tekstilije - Preskušanje barvne obstojnosti - Del B02: Preskušanje barvne obstojnosti na umetni svetlobi: preskus s ksenonsko svetilko (ISO 105-B02:2013

Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:2013)

Textilien - Farbechtheitsprüfungen - Teil B02: Farbechtheit gegen künstliches Licht: Xenonbogenlicht (ISO 105-B02:2013)

Textiles - Essais de solidité des teintures - Partie B02: Solidité des teintures à la lumière artificielle: Lampe à arc au xénon (ISO 105-B02:2013)

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English Version

Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:2013)

Textiles - Essais de solidité des teintures - Partie B02: Solidité des teintures à la lumière artificielle: Lampe à arc au xénon (ISO 105-B02:2013)

Textilien - Farbechtheitsprüfungen - Teil B02: Farbechtheit gegen künstliches Licht: Xenonbogenlicht (ISO 105-B02:2013)

This European Standard was approved by CEN on 8 May 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 105-B02:2013) 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.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.

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Endorsement notice

The text of ISO 105-B02:2013 has been approved by CEN as EN ISO 105-B02:2013 without any modification.

INTERNATIONAL STANDARD

ISO 105-B02

Fifth edition
2013-05-15

Textiles — Tests for colour fastness —

Part B02: Colour fastness to artificial light: Xenon arc fading lamp test

Textiles — Essais de solidité des teintures —

Partie B02: Solidité des teintures à la lumière artificielle: Lampe à arc au xénon

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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.

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.

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.

ISO 105-B02 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 1, *Tests for coloured textiles and colorants*.

This fifth edition cancels and replaces the fourth edition (ISO 105-B02:1994), which has been technically revised. It also incorporates ISO 105-B02:1994/Amd 1:1998 and ISO 105-B02:1994/Amd 2:2000.

ISO 105 was previously published in 13 "parts", each designated by a letter (e.g. "Part A"), with publication dates between 1978 and 1985. Each part contained a series of sections", each designated by the respective part letter and by a two-digit serial number (e.g. "Section A01"). These sections are now being republished as separate documents, themselves designated "parts" but retaining their alpha-numeric designations. A complete list of these parts is given in ISO 105-A01.

Textiles — Tests for colour fastness —

Part B02:
Colour fastness to artificial light: Xenon arc fading lamp test

1 Scope

This part of ISO 105 specifies a method intended for determining the effect on the colour of textiles of all kinds and in all forms to the action of an artificial light source representative of natural daylight (D65). The method is also applicable to white (bleached or optically brightened) textiles.

This method allows the use of two different sets of blue wool references. The results from the two different sets of references may not be identical.

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*

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-A05, *Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change of colour for determination of grey scale rating*

ISO 105-B01:1994, *Textiles — Tests for colour fastness — Part B01: Colour fastness to light: Daylight*

ISO 105-B05, *Textiles — Tests for colour fastness — Part B05: Detection and assessment of photochromism*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 9370, *Plastics — Instrumental determination of radiant exposure in weathering tests — General guidance and basic test method*

CIE[1)] Publication No. 51, *Method for assessing the quality of daylight simulators for colorimetry*

3 Principle

A specimen of the textile to be tested is exposed to artificial light under controlled conditions, together with a set of reference materials. The colour fastness is assessed by comparing the change in colour of the test specimen with that of the reference materials used.

NOTE General information on colour fastness to light is given in Annex D.

4 Terms and definitions

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

1) Commission Internationale de l'Éclairage, CIE Central Bureau, Kegelgasse 27, A-1030, Vienna, Austria www.cie.co.at.

4.1
test specimen
portions of the textile to be tested and which are representative parts of the item to be tested

Note 1 to entry: This is used for comparison between the exposed and the original (untested) state.

4.2
reference specimen
portion of a reference material that is to be exposed simultaneously with the test specimen

Note 1 to entry: Multiple reference specimens may be required to determine the test results.

4.3
blue wool reference material
one of a series of blue dyed wool textile materials with a known reaction to light

4.4
test chamber
area within the apparatus capable of meeting and maintaining the requirements for temperature, light and humidity

4.5
chamber relative humidity
ratio of the actual water vapour pressure in the test chamber to the saturation water vapour pressure of water at the same temperature, expressed as a percentage

4.6
effective humidity
combination of air and surface temperatures and air relative humidity which governs the moisture content at the surface of the test specimen during exposure

4.7
humidity-test control fabric
a red azoic dyed cotton fabric of known sensitivity to humidity and light

Note 1 to entry: This red azoic dyed fabric is used as a reference material to ensure that the effective humidity requirements are met.

4.8
photochromism
change in colour of a substrate after brief exposure to light, which is substantially returned to its original shade after storage in the dark

4.9
flip-flop mode
mode of operation whereby the specimen holders revolve around the central light source and on alternate rotations the specimen holders are automatically rotated 180° about their vertical axis so that the test specimens face towards the light source only every alternate revolution

5 Materials and apparatus

5.1 Reference materials

5.1.1 General

Either of two sets of blue wool reference may be used. The colour fastness ratings mentioned in this part of ISO 105 are obtained by comparison with either blue wool references 1 to 8 (*preferred* in Europe) or blue wool references L2 to L9 (*preferred* in America). The results from the two sets of references are not interchangeable. Information on the relationship between the two sets of blue wool reference materials can be found in ISO 105-B01:1994, 4.1.

5.1.2 Blue wool reference materials 1 to 8

Blue wool references developed and produced in Europe are identified by the numerical designation 1 to 8. These references are blue wool materials dyed with the dyes listed in Table 1. They range from 1 (very low colour fastness to light) to 8 (very high colour fastness to light) so that each higher-numbered reference is approximately twice as fast as the preceding one.

Table 1 — Dyes for blue wool references 1 to 8

Reference	**Dye** (Colour Index designation)[a]
1	CI Acid Blue 104
2	CI Acid Blue 109
3	CI Acid Blue 83
4	CI Acid Blue 121
5	CI Acid Blue 47
6	CI Acid Blue 23
7	CI Solubilised Vat Blue 5
8	CI Solubilised Vat Blue 8

[a] The Colour Index (fourth edition) is published by the Society of Dyers and Colourists, P.O. Box 244, Perkin House, 82 Grattan Road, Bradford BD1 2JB, West Yorkshire, UK, and by the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215, USA.

5.1.3 Blue wool reference materials L2 to L9

Blue wool references developed and produced in America are identified by the letter L followed by the numerical designation 2 to 9. These eight references are prepared by blending varying proportions of wool dyed with CI Mordant Blue 1 (Colour Index, fourth edition, CI Constitution Number 43830) and wool dyed with CI Solubilised Vat Blue 8 (Colour Index, fourth edition, CI Constitution Number 73801), so that each higher-numbered reference is approximately twice as fast as the preceding reference.

Data in Annex C are presented to illustrate the relationship of each of the blue wool references on exposure to fixed amounts of radiant energy.

5.1.4 Humidity-test control

The effective humidity can **only** be measured by determining the colour fastness to light of a specific humidity-test control fabric (see 4.7).

5.2 Laboratory exposure devices

5.2.1 Light source

5.2.1.1 The exposure device shall provide for placement of specimens and any designated sensing devices in positions that allow uniform irradiance from the light source

NOTE The spectral irradiance produced in an artificial accelerated light and weathering device is very important. Ideally, the relative spectral irradiance produced by the device should be a very close match to that of solar radiation, especially in the short wavelength UV region. Annex A provides information about important benchmark solar spectra that can be used for comparing the spectral irradiance produced in the artificial accelerated exposure to that for solar radiation.

5.2.1.2 Exposure devices shall be designed such that the variation in irradiance at any location in the area used for specimen exposure shall not exceed ± 10 % of the mean. Procedures for measuring irradiance uniformity are found in Annex B.