



SLOVENSKI STANDARD SIST EN ISO 105-B02:1999

01-november-1999

Nadomešča:

SIST EN 20105-B02:1996

Tekstilije - Preskušanje barvne obstojnosti - Del B02: Preskušanje barvne obstojnosti na umetni svetlobi (preskus s ksenonsko svetilko) (ISO 105-B02:1994, vključuje Dopolnilo 1:1998)

Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:1994, including amendment 1:1998)

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Textilien - Farbechtheitsprüfungen - Teil B02: Farbechtheit gegen künstliches Licht: Xenonbogenlicht (ISO 105-B02:1994, einschließlich Änderung 1:1998)

[SIST EN ISO 105-B02:1999](http://standards.iTeh.ai)

Textiles - Essais de solidité des teintures - Partie B02: Solidité des teintures a la lumiere artificielle: Lampe a arc au xénon (ISO 105-B02:1994, amendement 1:1998 inclus)

Ta slovenski standard je istoveten z: EN ISO 105-B02:1999

ICS:

59.080.01 Tekstilije na splošno Textiles in general

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 105-B02

July 1999

ICS 59.080.10

Supersedes EN 20105-B02:1992

English version

Textiles - Tests for colour fastness - Part B02: Colour fastness
to artificial light: Xenon arc fading lamp test (ISO 105-B02:1994,
including amendment 1:1998)

Textiles - Essais de solidité des teintures - Partie B02:
Solidité des teintures à la lumière artificielle: Lampe à arc
au xénon (ISO 105-B02:1994, amendement 1:1998 inclus)

Textilien - Farbechtheitsprüfungen - Teil B02: Farbechtheit
gegen künstliches Licht: Xenonbogenlicht (ISO 105-
B02:1994, einschließlich Änderung 1:1998)

This European Standard was approved by CEN on 25 June 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

The text of the International Standard from Technical Committee ISO/TC 38 "Textiles" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI.

This European Standard replaces EN 20105-B02:1992.

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 January 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 105-B02:1994, including amendment 1:1998, has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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Annex ZA (normative)
Normative references to international publications
with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 105-A01	1994	Textiles - Tests for colour fastness - Part A01: General principles of testing	EN ISO 105-A01	1995
ISO 105-A02	1993	Textiles - Tests for colour fastness - Part A02: Grey scale for assessing change in colour	EN 20105-A02	1994
ISO 105-A05	1996	Textiles - Tests for colour fastness - Part A05: Instrumental assessment of change in colour for determination of grey scale rating	EN ISO 105-A05	1997
ISO 105-B05	1993	Textiles - Tests for colour fastness - Part B05: Detection and assessment of photochromism	EN ISO 105-B05	1995
ISO 3696	1987	Water for analytical laboratory use - Specification and test methods	EN ISO 3696	1995

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INTERNATIONAL STANDARD

ISO 105-B02

Fourth edition
1994-09-15

Textiles — Tests for colour fastness —

Part B02:

Colour fastness to artificial light: Xenon arc
fading lamp test

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Textiles — Essais de solidité des teintures —

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



Reference number
ISO 105-B02:1994(E)

ISO 105-B02:1994(E)**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.

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.

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

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This fourth edition cancels and replaces the third edition (ISO 105-B02:1988), of which it constitutes a technical revision.

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 earlier alphanumeric designations. A complete list of these parts is given in ISO 105-A01.

Annexes A and B form an integral part of this part of ISO 105. Annex C is for information only.

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Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

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 resistance of 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.

NOTE 1 General information on colour fastness to light is given in annex C.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 105. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 105 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A01:1994, *Textiles — Tests for colour fastness — Part A01: General principles of testing*.

ISO 105-A02:1993, *Textiles — Tests for colour fast-*

ness — Part A02: Grey scale for assessing change in colour.

ISO 105-A05:—¹, *Textiles — Tests for colour fastness — Part A05: Method for the instrumental assessment of the change in colour of a test specimen.*

ISO 105-B01:—², *Textiles — Tests for colour fastness — Part B01: Colour fastness to light: Daylight.*

ISO 105-B05:1993, *Textiles — Tests for colour fastness — Part B05: Detection and assessment of photochromism.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

CIE 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 prescribed conditions, along with a set of blue wool references. The colour fastness is assessed by comparing the change in colour of the test specimen with that of the references used.

For white (bleached or optically brightened) textiles, the colour fastness is assessed by comparing the change in whiteness of the specimens with that of the reference used.

1) To be published.

2) To be published. (Revision of ISO 105-B01:1989)

4 Reference materials and apparatus

4.1 Reference materials

Either of two sets of blue wool references may be used. The results from the two sets of references are not interchangeable.

The colour fastness ratings mentioned in this part of ISO 105 are obtained by comparison with either blue wool references 1 to 8 (preferable in Europe) or blue wool references L2 to L9 (preferable in America).

4.1.1 References 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 cloths dyed with the dyes listed in table 1. They range from 1 (very low colour fastness) to 8 (very high fastness) so that each higher-numbered reference is approximately twice as fast as the preceding one.

4.1.2 References L2 to L9

Blue wool references developed and produced in the United States are identified by the letter L followed by the numerical designation 2 to 9. These eight references are specially prepared by blending varying

proportions of wool dyed with CI Mordant Blue 1 (Colour Index, third edition, 43830) and wool dyed with CI Solubilized Vat Blue 8 (Colour Index, third edition, 73801), so that each higher-numbered reference is approximately twice as fast as the preceding reference.

4.1.3 Humidity test control

Effective humidity is defined as the combination of air and surface temperatures and air relative humidity which governs the moisture content of the surface of the test specimen during exposure. The effective humidity can be measured only by determining the colour fastness of a specific humidity test control.

For the purposes of this part of ISO 105, the humidity test control is a red azoic dyed cotton cloth.

This control has been calibrated by exposing it facing south in several Western European locations at different times of the year, the exposures being made together with the references in sealed vessels containing air maintained at constant humidities between 0 and 100 %; the results did not vary greatly and the mean values are shown in figure 1.

When this control was exposed under the conditions specified in ISO 105-B01 in temperate zones, its colour fastness was found to be, on average, 5.

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Table 1 — Dyes for blue wool references 1 to 8

Reference	Dye (Colour Index designation) ¹⁾
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 Solubilized Vat Blue 5
8	CI Solubilized Vat Blue 8

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

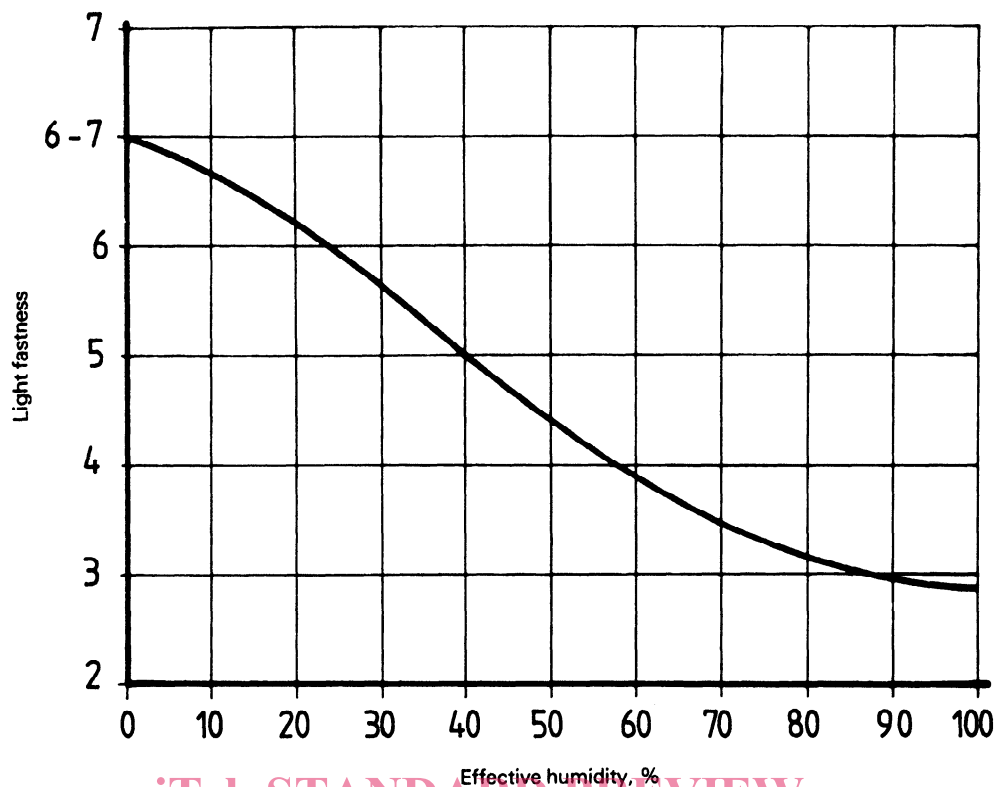


Figure 1 — Mean values obtained from humidity test control exposures

4.2 Apparatus

4.2.1 Xenon arc lamp apparatus, either air-cooled or water-cooled.

The specimens and the references are exposed in one of the two types of apparatus (see 4.2.1.1 and 4.2.1.2). The variation in light intensity over the area covered by the specimens and references shall not exceed $\pm 10\%$ of the mean. The recommended level of irradiance (radiant power per unit area) measured by a radiometer (4.2.6) is $42 \text{ W/m}^2 \times \text{wavelength}$, in nanometres, at 300 nm to 400 nm, equivalent in cases of water-cooled xenon arc apparatus to $1,1 \text{ W/m}^2 \times \text{wavelength}$, in nanometres, at 420 nm.

The distances from the surface of the specimen and from the surfaces of the references to the lamp shall be the same.

4.2.1.1 Air-cooled xenon arc lamp apparatus (see annex A), consisting of the following elements:

NOTE 2 For exposure conditions preferable for use in Europe, see 6.1.

a) **Light source**, in a well-ventilated exposure chamber.

The light source shall consist of a xenon arc lamp of correlated colour temperature 5 500 K to 6 500 K, the size of which will depend on the type of apparatus used.

b) **Light filter**, placed between the light source and the specimens and references so that the ultra-violet spectrum is steadily reduced.

The transmission of the filter system used shall be at least 90 % between 380 nm and 750 nm, falling to 0 between 310 nm and 320 nm.

c) **Heat filter**, placed between the light source and the specimens and references so that the amount of infrared (IR) radiation contained in the xenon arc spectrum is steadily reduced (see A.1.1 and A.2.2).

If a glass or water filter is used to eliminate excess infrared radiation so as to meet the temperature conditions specified in 4.2, frequent cleaning shall be carried out to avoid unwanted filtering caused by dirt (see B.1.4).