SLOVENSKI STANDARD
SIST EN ISO 105-B01:1999

01-november-1999

Tekstilije - Preiskuġanje barvne obstojnosti - del B01: Barvna obstojnost na svetlobi: Dnevna svetloba (ISO 105-B01:1994, vkljuļ no s Popravkom 1:1998)

Textiles - Tests for colour fastness - Part B01: Colour fastness to light: Daylight (ISO 105 -B01:1994, including Technical Corrigendum 1:1998)

Farbechtheitsprüfung - Teil B01: Farbechtheit gegen Licht: Tageslicht (ISO 105-B01:1994, einschließlich Änderung 1: 1998)

Textiles - Essais de solidité des teintures - Partie B01: Solidité des teintures a la lumiere: Lumiere du jour (ISO 105-B01:1994, amendement 1:1998 inclus)

Ta slovenski standard je istoveten z: **EN ISO 105-B01:1999**

ICS:

59.080.01	Tekstilije na splošno	Textiles in general

SIST EN ISO 105-B01:1999 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 105-B01

July 1999

ICS 59.080.01

English version

Textiles - Tests for colour fastness - Part B01: Colour fastness to light: Daylight (ISO 105-B01:1994, including amendment 1:1998)

Textiles - Essais de solidité des teintures - Partie B01: Solidité des teintures à la lumière: Lumière du jour (ISO 105-B01:1994, amendement 1:1998 inclus)

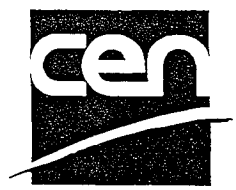
Farbechtheitsprüfung - Teil B01: Farbechtheit gegen Licht: Tageslicht (ISO 105-B01:1994, einschließlich Änderung 1:1998)

This European Standard was approved by CEN on 1 April 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.



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

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

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 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-B01:1994, including Technical Corrigendum 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).

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.

Publication	Year	Title	EN	Year
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 ISO 105-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

INTERNATIONAL STANDARD

ISO 105-B01

Fifth edition
1994-11-15

Textiles — Tests for colour fastness —

Part B01:
Colour fastness to light: Daylight

Textiles — Essais de solidité des teintures —

Partie B01: Solidité des teintures à la lumière: Lumière du jour

Reference number
ISO 105-B01:1994(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-B01 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-B01:1989), 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 of this part of ISO 105 are for information only.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Textiles — Tests for colour fastness —

Part B01:
Colour fastness to light: Daylight

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 daylight.

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 A.

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

3 Principle

A specimen of the textile to be tested is exposed to daylight under prescribed conditions, including protection from rain, along with eight dyed blue wool references. The colour fastness is assessed by comparing the change in colour of the test specimen with that of the references used.

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 correlation between the two sets of blue wool references, illustrated in figure 1, shall not be used to convert ratings obtained from exposure based on one set of references to the other.

1) To be published.

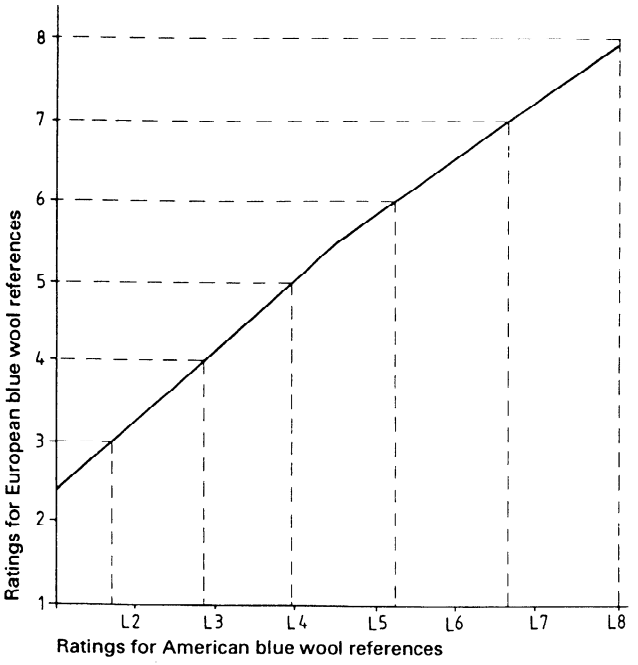


Figure 1 — Correlation of blue wool references for exposure to daylight

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 colour fastness) so that each higher-numbered reference is approximately twice as fast as the preceding one.

The colour fastness references 1 to 8 are specially dyed to match a master set of references in colour and in fading behaviour. It has been found that, when repeated dyeings of the blue dyed references are made, the amount of dye required to match the previous lot is often different from that originally used. The dyeing strengths would, therefore, be misleading and they are intentionally omitted from the listing in table 1.

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 (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.

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, USA.

In the colour fastness references L2 to L9, the two primaries are specially dyed and the blending proportions adjusted so that repeat productions of the references have the same fading characteristics. It has been found in repeat production of the references that the amount of each dye and the proportion of the fugitive and fast-dyed primaries need to be adjusted to obtain the same fading behaviour in the various references. The dyeing strengths of the two primaries and the blending proportions are intentionally omitted.

Figures 2 and 3 illustrate mounting of the blue wool references, but do not show any numerical or performance relationship between the two sets of references.

4.2 Apparatus

4.2.1 Exposure rack, facing south in the Northern hemisphere, north in the Southern hemisphere and sloping at an angle from the horizontal approximately equal to the latitude of the place where the exposure is made. The rack shall be sited preferably in a non-residential, non-industrial area free from dust and automobile exhaust fumes.

The rack shall be placed so that shadows of surrounding objects, including any framing, will not fall on the exposed materials and constructed so that the latter are firmly held. There shall be adequate ventilation behind the mounted specimens and the rack shall be covered with window glass to protect the

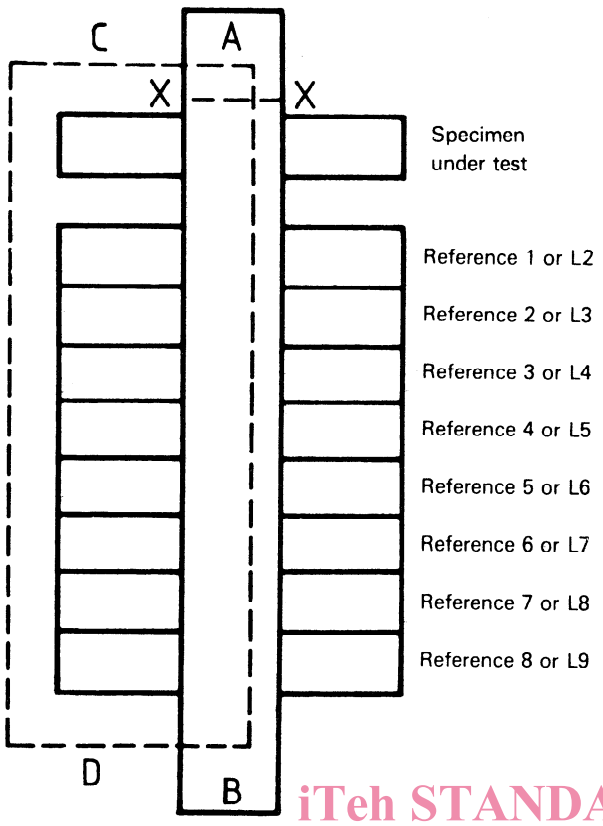


Figure 2 — Mounting of specimen and references for exposure method 1

specimens from rain and other elements of the weather. The glass cover shall be a clear flat drawn sheet, 5,0 mm to 10,0 mm thick. It shall be single-strength and free of bubbles or other imperfections. The transparency of the glass used shall be less than 1 % between wavelengths 300 nm and 320 nm, rising to at least 90 % between wavelengths 380 nm and 750 nm, measured from a light source simulating CIE, illuminant C.

The minimum permissible distance between the glass and the surface of the specimens is 50 mm. In order to minimize shadows due to the varying angle of the sun, the usable exposure area under the glass is limited to that of the glass cover, reduced on each side by twice the distance from the glass cover to the specimen.

4.2.2 Opaque cardboard, or other thin opaque material, for example thin sheet aluminium, or cardboard covered with aluminium foil, or, in the case of pile fabrics, a cover that avoids surface compression.

4.2.3 Grey scale for assessing change in colour, in accordance with ISO 105-A02.

4.2.4 When requested, instruments for determining climatological data during the exposure, operated inside the cabinet and in the immediate area of the exposure cabinets.

Data obtained shall be reported as part of the results of the test. To characterize the conditions within the test frame, these instruments should be capable of recording black body temperature sensed under glass, total radiant energy and ultraviolet radiant energy (either broad or narrow bandpass), and relative humidity (daily minimum and maximum) at the same angle of exposure as the test specimens. To characterize the conditions outside the test frame, these instruments should be capable of recording ambient temperature (daily minimum and maximum), relative humidity (daily minimum and maximum), hours of precipitation (rain), and total hours of wetness (rain and dew).

5 Test specimen

5.1 An area of the material not less than 10 mm × 60 mm is used for method 1 (see 6.1) or 10 mm × 100 mm for method 2 (see 6.2) so that each exposed portion is not less than 10 mm × 20 mm. The specimen may be a strip of cloth, yarns wound close together on a card or laid parallel and fastened on a card, or a mat of fibres combed and compressed to give a uniform surface and fastened on a card.

5.2 To facilitate handling, the specimen or specimens to be tested and the similar strips of the references may be mounted on a card in an arrangement as indicated in figure 2 or figure 3 (see 6.1 or 6.2).

5.3 The specimens to be tested and the blue strips of the references shall be of equal size and shape in order to avoid errors in assessment due to over-rating the visual contrast between exposed and unexposed parts on a larger pattern as against narrower references.

6 Exposure methods

Expose the specimen (or group of specimens) and the references simultaneously for 24 h per day under the conditions described in 4.2.1, in such a manner and for such times as are necessary to evaluate fully the colour fastness of each specimen relative to that of the references, by successively covering the specimens and exposed references throughout the duration of the test. Five suggested methods follow.