INTERNATIONAL STANDARD

ISO 105-B06

Second edition
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Textiles — Tests for colour fastness —

Part B06:
Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test

Textiles — Essais de solidité des teintures —

Partie B06: Solidité et vieillissement des teintures à la lumière artificielle à hautes températures: Essai avec lampe à arc au xénon

Reference number
ISO 105-B06:1998(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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

ISO 105 was previously published in thirteen “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.

This second edition cancels and replaces the first edition (ISO 105-B06:1992), which has been technically revised.

Annexes A to D form an integral part of this part of ISO 105.

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Textiles — Tests for colour fastness —

Part B06:
Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test

1 Scope

This part of ISO 105 specifies a method for determining the colour fastness and ageing properties of all kinds and forms of dyed and printed textiles and/or other organic substrates under the action of an artificial light source representative of natural daylight (D65), and under the simultaneous action of heat. Of the four different sets of exposure conditions specified (see 6.1), three use D65, and the fourth a somewhat lower cut-off wavelength. The test method gives special consideration to the light and heat conditions that occur in the interior of a motor vehicle.

The four different sets of conditions specified are known to give similar but not necessarily identical results.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 105. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 105 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC 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-A05:1996, *Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change in colour for determination of grey scale rating.*

ISO 105-B02:1994, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

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

3 Principle

3.1 Light fastness test

A specimen 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, or with the grey scale in accordance with ISO 105-A02, or by means of a colour measuring instrument in accordance with ISO 105-A05 after the specimen has been exposed to a specified amount of radiant energy.

3.2 Ageing test

A specimen to be tested, together with reference 6 (see ISO 105-B02), is exposed to artificial light under prescribed conditions. The change in colour of the specimen is evaluated on the grey scale in accordance with ISO 105-A02, or by means of a colour-measuring instrument in accordance with ISO 105-A05. Additional ageing criteria, such as mechanical properties, may also be evaluated.

NOTE Attention should be paid to the principles for specifying and carrying out the tests, and for evaluating the test results according to ISO 105-A01.

4 Reference materials and apparatus

4.1 Reference materials

Two different sets of blue wool references may be used. The two sets of references are not interchangeable.

4.1.1 References 1 to 8

Blue wool references developed and produced in Europe are identified by the numerical designations 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 (see Table 1).

Table 1 — Dyes for blue wool references 5 to 8

Reference	Dye (colour index designation)[a]
5	CI acid blue 47
6	CI acid blue 23
7	CI solubilized vat blue 5
8	CI solubilized vat blue 8
NOTE References 1 to 4 are not applicable to this test.	
[a] 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 Yorkshire, United Kingdom and by the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, North Carolina 27709, USA.	

4.1.2 References L2 and L4

Two blue wool references developed and produced in the United States are part of a series of eight references identified by the letter L followed by the numerical designation. These references are for the purpose of determining whether the xenon arc apparatus is operating within the desired range concerning set of conditions No. 5 (see D.4).

4.2 Apparatus

4.2.1 Exposure apparatus

The exposure apparatus consists essentially of a climatic test chamber made of a corrosion-resistant material and containing the optical light source, a filter system and holders for the test specimens.

4.2.2 Optical light source and filter system

One or more xenon arc lamps serve as the optical light source. The light for determining the hot light fastness shall be filtered. Optical light filter systems are used for this purpose. Both absorption filters and combinations of absorption and reflection filters are used (see annexes B and C). Irrespective of the type of filtration, the conditions listed in Table 2 on the spectral energy distribution at the surface of the specimen shall be met.