INTERNATIONAL STANDARD

ISO 105-D02

Fourth edition
1993-11-01

Textiles — Tests for colour fastness —

Part D02:
Colour fastness to rubbing: Organic solvents

Textiles — Essais de solidité des teintures —

Partie D02: Solidité des teintures au frottement: Solvants organiques

Reference number
ISO 105-D02:1993(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-D02 was prepared by Technical Committee ISO/TC 38, *Textiles*, Sub-Committee SC 1, *Tests for coloured textiles and colorants*.

This fourth edition cancels and replaces the third edition (ISO 105-D02:1987), of which it constitutes a minor revision.

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.

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

Printed in Switzerland

Textiles — Tests for colour fastness —

Part D02:
Colour fastness to rubbing: Organic solvents

1 Scope

This part of ISO 105 specifies a method for determining the resistance of the colour of textiles of all kinds and in all forms, except loose fibre, to the combined action of rubbing and of organic solvents used in spot-cleaning, i.e. localized "spotting" carried out by hand.

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-A01:1989, *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-A03:1993, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining.*

ISO 105-F:1985, *Textiles — Tests for colour fastness — Part F: Standard adjacent fabrics.*

3 Principle

A specimen of the textile is rubbed with rubbing cotton cloth impregnated with solvent. The change in colour of the specimen and the staining of the rubbing cotton cloth are assessed with the grey scales.

4 Apparatus and materials

4.1 Suitable testing device for determining the colour fastness to rubbing with organic solvents. Such a device shall be equipped with a finger of 16 mm diameter moving to and fro in a straight line along a track 100 mm on the specimen, with a downward force of 9 N.

NOTE 1 A suitable apparatus is described in the *Technical Manual of the American Association of Textile Chemists and Colorists,* Test Method 8-1972 (Vol. 50, 1974, p. 112). Other devices can be used, provided that the same results are obtained as with the apparatus described above.

The finger of the apparatus can be replaced by a moving hollow tube ending in a grille at its base. A plug of cotton is placed in this tube. The outside of the grille is covered with a sample of wool flannel.

With apparatus modified in this way, it is no longer necessary to immerse the rubbing cotton in the solvent (see 6.1); the dry rubbing cotton cloth is placed on the wool flannel at the end of the tube and 3 ml of the solvent are dropped on to the plug of cotton on the inside of the hollow tube. Then proceed as described, starting from the second paragraph of 6.2.

4.2 Rubbing cotton cloth, complying with section F09 of ISO 105-F:1985 and cut into squares measuring 50 mm × 50 mm.

4.3 Grating, of stainless steel wire of 1 mm diameter and a width of mesh of about 20 mm.

4.4 Solvents:

perchloroethylene;

white spirit (Solvent F) (or other petroleum hydrocarbon).

4.5 Grey scale for assessing change in colour, complying with ISO 105-A02, and **grey scale for assessing staining**, complying with ISO 105-A03.

5 Test specimens

5.1 If the textile to be tested is fabric, use two specimens measuring at least 50 mm × 140 mm (for each of the solvents). One specimen of each pair should have the long direction parallel to the warp yarns, the other parallel to the weft yarns.

5.2 If the textile to be tested is yarn, knit it into a fabric to provide specimens measuring at least 50 mm × 140 mm, or form a layer of parallel lengths by wrapping it lengthways on a glass plate of suitable dimensions.

6 Procedure

6.1 Wet the rubbing cotton cloth (4.2) by placing it on the grating (4.3) and dropping uniformly on to it its own mass of appropriate solvent (see 4.4).

6.2 Place the rubbing cotton cloth soaked with solvent at the end of the finger of the apparatus (4.1) and rub it to and fro in a straight line, along a track 100 mm long on the specimen, 10 times in 10 s, with a downward force on the finger of 9 N.

Test warp and weft directions separately for each of the solvents (4.4).

6.3 Dry the rubbing cotton cloth by hanging it in air at a temperature not exceeding 60 °C.

6.4 Assess the change in colour of the specimen and the staining of the rubbing cotton cloth with the grey scales (4.5).

When assessing the staining of the rubbing cotton cloth, it is necessary to eliminate dyed fibres pulled out during rubbing and retained on the surface of the rubbing cotton cloth; consider only the coloration due to staining by the dyestuffs.

7 Test report

The test report shall include the following particulars:

a) the number and date of publication of this part of ISO 105 (i.e. ISO 105-D02:1993);

b) all details necessary for the identification of the sample tested;

c) the numerical ratings for the change in colour of the test specimens and the staining of the rubbing cotton cloths, for the direction (warp or weft) showing heavier staining.

This page intentionally left blank

This page intentionally left blank

This page intentionally left blank

UDC 677.016.474:677.027.625.113

Descriptors: textiles, dyes, tests, friction tests, determination, colour fastness, organic solvents.

Price based on 2 pages