

INTERNATIONAL STANDARD

ISO
105-P01

Second edition
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Textiles — Tests for colour fastness —

Part P01:

Colour fastness to dry heat (excluding pressing)

Textiles — Essais de solidité des teintures —

Partie P01: Solidité des teintures à la chaleur sèche (à l'exclusion du repassage)



Reference number
ISO 105-P01:1993(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-P01 was prepared by Technical Committee ISO/TC 38, *Textiles*, Sub-Committee SC 1, *Tests for coloured textiles and colorants*.

This second edition cancels and replaces the first edition (included in ISO 105-P:1978), 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.

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Textiles — Tests for colour fastness —

Part P01:

Colour fastness to dry heat (excluding pressing)

1 Scope

1.1 This part of ISO 105 specifies a method for determining the resistance of the colour of textiles of all kinds and in all forms to the action of dry heat, excluding pressing, as it is used to stabilize the size and form of textiles.

1.2 Three tests differing in temperature are provided; one or more of them may be used, depending on the requirements and the stability of the fibres.

1.3 This method is not intended for the assessment of colour change during crease-resist or dyeing processes.

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.*

ISO 105-F10:1989, *Textiles — Tests for colour fastness — Part F10: Specification for adjacent fabric: Multifibre.*

ISO 139:1973, *Textiles — Standard atmospheres for conditioning and testing.*

3 Principle

A specimen of the textile in contact with either one or two specified adjacent fabrics is heated by close contact with a medium which is heated to the required temperature. The change in colour of the specimen, and the staining of the adjacent fabric(s), are assessed with the grey scales.

4 Apparatus and materials

4.1 Heating device, equipped with two plates heated by an electrical heating system, accurately controllable, which allows the composite specimen to be set in a flat position under a pressure of

4 kPa $\pm$ 1 kPa at a pre-selected and uniformly distributed temperature.

A suitable apparatus is one of the following:

- a) a heating press, as described in *Zeitschrift für die gesamte Textilindustrie*, **60** (1958), p. 1017;
- b) a molten metal bath in which a holder containing the composite specimen is immersed, as described in *The Journal of the Society of Dyers and Colourists*, **76**, March 1960, p. 158.

For information on sources of supply of commercially available apparatus, see ISO 105-A01:1989, subclause 8.1.

Other devices can be used provided that the same results are obtained as with the apparatus described above.

4.2 Adjacent fabrics (see ISO 105-A01:1989, subclause 8.3).

Either:

4.2.1 A multifibre adjacent fabric, complying with ISO 105-F10.

Or:

4.2.2 Two single-fibre adjacent fabrics, complying with the relevant sections of F01 to F08 of ISO 105-F:1985, each of a size matching that of the heating device (4.1), one piece being made of the same kind of fibre as that of the textile to be tested, or that predominating in the case of blends, the second piece being made of polyester fibre unless otherwise specified.

4.3 If required, a **non-dyeable fabric**.

4.4 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 specimen

5.1 If the textile to be tested is fabric,

- a) attach a specimen of a size matching that of the heating device (4.1) to a piece of the multifibre adjacent fabric (4.2.1) of the same size by sewing along one of the shorter sides, with the multifibre fabric next to the face of the specimen;

or

- b) attach a specimen of a size matching that of the heating device between the two single-fibre ad-

jacent fabrics (4.2.2) of the same size by sewing along one of the shorter sides.

5.2 Where yarn or loose fibre is to be tested, take a mass of the yarn or loose fibre approximately equal to one-half of the combined mass of the adjacent fabrics and

- a) place it between a piece of the multifibre adjacent fabric of a size matching that of the heating device and a piece of the non-dyeable fabric (4.3) of the same size and sew them along all four sides (see ISO 105-A01:1989, subclause 9.6);

or

- b) place it between a piece of each of the two specified single-fibre fabrics of a size matching that of the heating device and sew along all four sides.

6 Procedure

6.1 Place the composite specimen in the heating device (4.1) and leave it there for 30 s at one of the following temperatures:

150 °C $\pm$ 2 °C

180 °C $\pm$ 2 °C

210 °C $\pm$ 2 °C

When desired, other temperatures may be used, provided that they are specially noted in the test report. The pressure on the specimen shall be 4 kPa $\pm$ 1 kPa.

6.2 Remove the composite specimen and leave it for 4 h in air in the standard temperate atmosphere for testing as defined in ISO 139, i.e. a temperature of 20 °C $\pm$ 2 °C and relative humidity of (65 $\pm$ 2) %. In tropical countries, the standard tropical atmosphere for testing as defined in ISO 139 may be used, i.e. a temperature of 27 °C $\pm$ 2 °C and relative humidity of (65 $\pm$ 2) %.

6.3 Assess, using the grey scales (4.4), the change in colour of the specimen and the staining of the adjacent fabric against pieces of the adjacent fabrics (4.2) similarly treated in the absence of a specimen.

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-P01:1993;

- b) all details necessary for the identification of the sample tested;
- c) the test temperature used (see 6.1);
- d) the numerical rating for change in colour of the specimen (see 6.3);
- e) if single-fibre adjacent fabrics were used, the numerical rating for the staining of each kind of adjacent fabric used;
- f) if a multifibre adjacent fabric was used, the type of multifibre adjacent fabric and the numerical rating for the staining of each type of fibre in the multifibre adjacent fabric.

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