INTERNATIONAL STANDARD

ISO 105-E09

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Textiles — Tests for colour fastness —

Part E09: Colour fastness to potting

Textiles — Essais de solidité des coloris —

Partie E09: Solidité des coloris au décatissage à l'eau bouillante

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 105-E09 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 1, *Tests for coloured textiles and colorants*.

This fourth edition cancels and replaces the third edition (ISO 105-E09:1989), of which Clauses 2, 4 and 5 have been technically revised and instrumental measurement added to the appropriate clauses. It incorporates ISO 105-E09:1989/Cor.1:2002.

ISO 105 consists of many parts designated by a part letter and a two-digit serial number (e.g. A01), under the general title *Textiles — Tests for colour fastness*. A complete list of these parts is given in ISO 105-A01.

Textiles — Tests for colour fastness —

Part E09:
Colour fastness to potting

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 to the action of boiling water. It is mainly applicable to wool and textiles containing wool.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-A03, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

ISO 105-A04, *Textiles — Tests for colour fastness — Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics*

ISO 105-A05, *Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change in colour for determination of grey scale rating*

ISO 105-F01, *Textiles — Tests for colour fastness — Part F01: Specification for wool adjacent fabric*

ISO 105-F02, *Textiles — Tests for colour fastness — Part F02: Specification for cotton and viscose adjacent fabrics*

ISO 105-F03, *Textiles — Tests for colour fastness — Part F03: Specification for polyamide adjacent fabric*

ISO 105-F04, *Textiles — Tests for colour fastness — Part F04: Specification for polyester adjacent fabric*

ISO 105-F05, *Textiles — Tests for colour fastness — Part F05: Specification for acrylic adjacent fabric*

ISO 105-F06, *Textiles — Tests for colour fastness — Part F06: Specification for silk adjacent fabric*

ISO 105-F07, *Textiles — Tests for colour fastness — Part F07: Specification for secondary acetate adjacent fabric*

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

3 Principle

A specimen of the textile between adjacent fabrics is rolled around a glass rod and treated with boiling water. The specimen and the adjacent fabrics are dried separately. The change in colour of the specimen and the staining of the adjacent fabrics are assessed with the grey scales or instrumentally.

4 Apparatus

4.1 Vessel equipped with reflux condenser, to hold a cylindrical specimen (40 ± 2) mm long in boiling water.

4.2 Glass rod, 5 mm to 8 mm in diameter.

4.3 Wool adjacent fabric, measuring (40 ± 2) mm × (100 ± 2) mm, complying with ISO 105-F01.

4.4 Cotton adjacent fabric, complying with ISO 105-F02, or in the case of blends, adjacent fabric made from the predominant fibre admixtured with the wool as indicated in Table 1, measuring (40 ± 2) mm × (100 ± 2) mm, and complying with the relevant part of ISO 105-F01 to ISO 105-F07.

Table 1 — Single-fibre adjacent fabrics

If first piece is:	Second piece is to be:
Cotton	Wool
Wool	Cotton
Viscose	Wool
Polyamide	Wool or cotton
Polyester	Wool or cotton
Acrylic	Wool or cotton

4.5 Grey scale for assessing change in colour, complying with ISO 105-A02.

4.6 Grey scale for assessing staining, complying with ISO 105-A03.

4.7 Spectrophotometer or colorimeter for assessing change in colour and staining, complying with ISO 105-A04 and ISO 105-A05.

4.8 Analytical balance, accurate to ±0,01 g (see ISO 105-A01).

5 Reagents

5.1 Grade 3 water, complying with ISO 3696.

6 Test specimen

6.1 If the textile to be tested is fabric, place a specimen measuring (40 ± 2) mm × (100 ± 2) mm between the two adjacent fabrics (4.3 and 4.4) and sew along one of the shorter sides to form a composite specimen.

6.2 If the textile to be tested is yarn, knit it into fabric and treat it as in 6.1 or form a layer of parallel lengths of it between the two adjacent fabrics (4.3 and 4.4), the amount of yarn taken being approximately equal to

half the combined mass of the adjacent fabrics. Sew along two opposite sides to hold the yarn in place and to form a composite specimen.

6.3 If the textile to be tested is loose fibre, comb and compress an amount approximately equal to half the combined mass of the adjacent fabrics (4.3 and 4.4) into a sheet measuring (40 ± 2) mm × (100 ± 2) mm. Place the sheet between the two adjacent fabrics and sew along all four sides to hold the fibres in place and to form a composite specimen.

7 Procedure

7.1 Roll the composite specimen compactly around the glass rod to form a cylinder (40 ± 2) mm long and tie it uniformly, but not tightly, with thread.

7.2 Treat the specimen on the rod for 1 h in boiling water (5.1), at a liquor ratio of 30:1, under reflux.

7.3 Open out the composite specimen (by breaking the stitching on all sides, except one of the shorter sides, if necessary) and dry it by hanging it in the air at a temperature not exceeding 60 °C, with the three parts in contact only at the line of stitching.

7.4 Assess the change in colour of the specimen and the staining of the adjacent fabric(s) with reference to the original specimen and adjacent fabric(s) by comparison with the grey scales (4.5 and 4.6) and/or instrumentally (see 4.7).

8 Test report

The test report shall include the following information:

a) a reference to this part of ISO 105 (ISO 105-E09:2010);

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

c) the numerical grey scale ratings and/or instrumental assessment for the change in colour of the specimen;

d) the numerical grey scale rating and/or instrumental assessment for staining of the adjacent fabrics used;

e) any deviation, by agreement or otherwise, from the procedure specified.

Bibliography

[1] ISO 105-J01, *Textiles — Tests for colour fastness — Part J01: General principles for measurement of surface colour*

[2] ISO 105-J03, *Textiles — Tests for colour fastness — Part J03: Calculation of colour differences*