INTERNATIONAL STANDARD

ISO 105-X10

Fourth edition
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Textiles — Tests for colour fastness —

Part X10:
Assessment of migration of textile colours into polyvinyl chloride coatings

Textiles — Essais de solidité des teintures —

Partie X10: Évaluation de la migration des teintures des textiles dans les enductions de polychlorure de vinyle

Reference number
ISO 105-X10:1993(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-X10 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-X10:1987), 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.

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INTERNATIONAL STANDARD ISO 105-X10:1993(E)

Textiles — Tests for colour fastness —

Part X10:
Assessment of migration of textile colours into polyvinyl chloride coatings

1 Scope

This part of ISO 105 specifies a method for determining the resistance of the colour in textile fabrics to migration into polyvinyl chloride (PVC) which contains plasticizer.

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

3 Principle

A specimen of a textile impregnated with plasticizer is brought into contact with a white pigmented polyvinyl chloride foil and kept under pressure at 80 °C. Then the specimen and excess plasticizer are removed from the foil and the staining of the foil is assessed with the grey scale.

4 Apparatus and reagents

4.1 Testing device, consisting of a frame of stainless steel into which a weight-piece of mass 5 kg and base 60 mm × 115 mm is closely fitted, so that a pressure of 12,5 kPa can be applied to test specimens measuring 40 mm × 100 mm placed between glass or acrylic resin plates. Up to 10 specimens can be tested simultaneously, each one separated by a glass plate. If the weight-piece is removed during the test, the testing device shall be so constructed that the pressure of 12,5 kPa remains unchanged.

NOTE 1 Other devices may be used, provided that the same results are obtained as with the apparatus described here.

4.2 Oven, maintained at 80 °C ± 2 °C.

4.3 Graduated pipette or **dropping tube**, with which the plasticizer can be applied.

4.4 White pigmented polyvinyl chloride foil, of thickness 0,5 mm ± 0,1 mm.

If ready-for-use white pigmented polyvinyl chloride foil cannot be obtained, it may be prepared as follows:

A mixture of

— 65 g of polyvinyl chloride powder,

— 2 g of stabilizer and

— 5 g of titanium dioxide

is thoroughly stirred with 35 g of dioctyl phthalate.

The homogenized paste is poured on to a glass plate to a thickness of 0,5 mm ± 0,1 mm and the paste left for 5 min at 170 °C to gel.

4.5 Dioctyl phthalate. Other plasticizers or mixtures of plasticizers can also be used.

4.6 Petroleum ether (boiling point below 80 °C).

4.7 Grey scale for assessing staining, complying with ISO 105-A03:1993.

5 Test specimen

5.1 Use a specimen of fabric measuring 40 mm × 100 mm.

5.2 Cut out a piece of the white pigmented polyvinyl chloride foil (4.4) measuring 40 mm × 100 mm.

6 Procedure

6.1 Clean the piece of white PVC foil by wiping with an undyed cloth impregnated with petroleum ether (4.6) and place it on the glass plate of the test apparatus (4.1). Then place the specimen on the foil with the side of the fabric to be tested facing the foil and apply uniformly drop by drop an amount of plasticizer (4.5) equal to the mass of the specimen. (In the case of heavy fabrics, care shall be taken that the plasticizer is distributed uniformly on the specimen.) Then cover the composite specimen with another glass plate and subject it to a pressure of 12,5 kPa in the test apparatus. If a weight is used, it shall be preheated to the test temperature.

If the dimensions of the composite specimen differ from 40 mm × 100 mm, use a weightpiece such that a pressure of 12,5 kPa is applied to the specimen.

6.2 Place the test apparatus containing the specimen in the oven (4.2) for 3,5 h at 80 °C ± 2 °C.

6.3 Remove the specimen from the PVC foil. Rinse the foil on the glass plate with petroleum ether and allow the latter to evaporate at room temperature.

CAUTION — Petroleum ether is flammable.

6.4 Immediately after drying, assess the staining of the polyvinyl chloride foil by means of the grey scale (4.7).

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-X10:1993);

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

c) the type of plasticizer used;

d) the numerical rating for the staining of the white pigmented polyvinyl chloride foil.

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