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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Textiles — Tests for colour fastness —

Part X12: Colour fastness to rubbing

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Textiles — Essais de solidité des teintures —

Partie X12: Solidité des teintures au frottement [ISO 105-X12:1987](#)

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Reference number
ISO 105-X12: 1987 (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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 105-X12 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This third edition cancels and replaces the second edition (included in ISO 105-X: 1984), 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.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Textiles — Tests for colour fastness —

Part X12:

Colour fastness to rubbing

1 Scope and field of application

1.1 This part of ISO 105 specifies a method for determining the resistance of the colour of textiles of all kinds, including textile floor coverings and other pile fabrics, to rubbing off and staining other materials.

1.2 The method is applicable to a laid textile floor covering or to a detached sample or yarns.

1.3 Two tests are made, one with a dry rubbing cloth and one with a wet rubbing cloth.

2 References

ISO 105, *Textiles — Tests for colour fastness —*

Part A01 : General principles of testing.

Part A03 : Grey scale for assessing staining.

3 Principle

Specimens of the textile are rubbed with a dry rubbing cloth and with a wet rubbing cloth. Two alternative sizes of rubbing finger are specified, one for pile fabrics (see 8.1) and one for other textiles. The staining of the rubbing cloths is assessed with the grey scale.

4 Apparatus

4.1 **Suitable testing device**, for determining the colour fastness to rubbing. Such a device has one of two alternative sizes of rubbing finger, dependent on the type of textile to be tested, as follows :

4.1.1 For pile fabrics, including textile floor coverings :

A rubbing finger of 3,2 cm diameter and flat area of 2,5 cm diameter with a circular transition of 0,32 cm radius (see the figure and 8.2).

The rubbing finger shall exert a downward force of 22 N, moving to and fro in a straight line along a 10 cm track.

4.1.2 For all other textiles :

A rubbing finger comprising a cylinder of 1,6 cm diameter moving to and fro in a straight line along a 10 cm track on the specimen and exerting a downward force of 9 N (see 8.2).

4.2 **Cotton rubbing cloth**, desized, bleached, without finish, cut into squares 5 cm × 5 cm.

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

4.4 **Grey scale for assessing staining** (see clause 2).

5 Test specimens

5.1 If the textile to be tested is a fabric or textile floor covering, two pieces not less than 14 cm × 5 cm are required for dry rubbing and two for wet rubbing. One specimen of each pair shall have the long direction parallel to the warp yarns (or in the direction of manufacture), the other parallel to the weft or filling yarns (or at right angles to the direction of manufacture).

5.2 If the textile to be tested is yarn or thread, knit it into fabric to provide specimens at least 14 cm × 5 cm, or form a layer of parallel strands by wrapping it lengthways on a cardboard rectangle of suitable dimensions.

6 Procedure

6.1 Fasten each test specimen by means of clamps to the baseboard of the testing device so that the long direction of the specimen follows the track of the device. Test the specimens prepared as in clause 5 according to the procedures in 6.2 and 6.3.

When testing multi-coloured textiles, care should be taken to position the specimens in such a way that all colours of the design are rubbed in the test. Alternatively, if the areas of colour are sufficiently large, more test specimens may be taken and the individual colours assessed separately.

It is necessary to eliminate dyed fibres pulled out during rubbing and retained on the surface of the cotton rubbing cloth; consider only the coloration due to staining by the dyestuff.

6.2 Dry rubbing. With the dry rubbing cloth (4.2) flat in place over the end of the finger of the testing device (4.1), rub to and fro in a straight line along a track 10 cm long on the dry specimen, 10 times to and fro in 10 s, with a downward force of 22 N or 9 N (see 4.1.1 and 4.1.2).

6.3 Wet rubbing. Repeat the test described in 6.2 with a fresh dry specimen and with a rubbing cloth that has been wetted with water by placing it on the grating (4.3) and dropping evenly on to it its own mass of water, or use any method to ensure a take-up of about 100 %. After rubbing, dry the cloth at room temperature.

6.4 Assess the staining of the cotton rubbing cloths with the grey scale.

7 Test report

Report the numerical rating for dry staining and for wet staining for each direction of manufacture.

8 Notes

8.1 Difficulty may be experienced in making assessments of the degree of staining on the rubbing cloth when pile fabrics are tested using the 1,6 cm diameter rubbing finger due to heavier staining occurring on the circumference of the stained area, i.e. haloing. The 3,2 cm diameter rubbing finger will eliminate the haloing with many types of pile fabrics.

Even with the use of the larger diameter rubbing finger, difficulty may be experienced in assessing staining when fabrics with high pile are tested.

8.2 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 in 4.1.

A suitable apparatus for testing pile fabrics is described in *J. Soc. Dyers Colourists*, **87** 1971 : 155; **88** 1972 : 259.

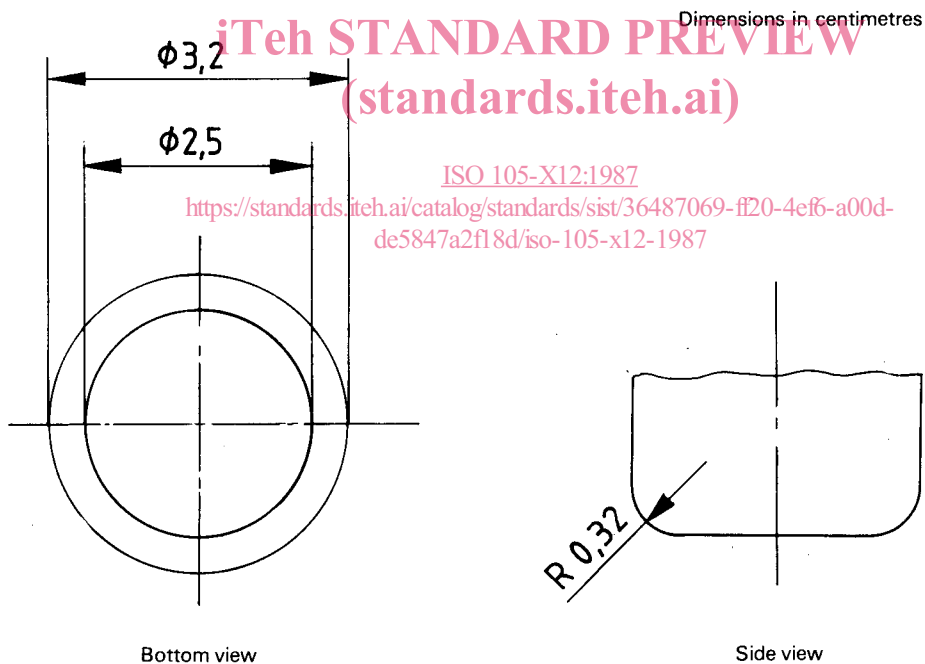


Figure – 3.2 cm diameter rubbing finger

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