Textil – Färghärdighetsprovning –
Del X12: Färghärdighet vid gnidning
(ISO 105-X12:2001)

Textiles – Tests for colour fastness –
Part X12: Colour fastness to rubbing
(ISO 105-X12:2001)

English version

Textiles - Tests for colour fastness - Part X12: Color fastness to rubbing (ISO 105-X12:2001)

This European Standard was approved by CEN on 19 August 2002.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.
Foreword

The text of ISO 105-X12:2001 has been prepared by Technical Committee ISO/TC 38 “Textiles” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 105-X12:2002 by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2003, and conflicting national standards shall be withdrawn at the latest by March 2003.

This document supersedes EN ISO 105-X12:1995.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 105-X12:2001 has been approved by CEN as a European Standard without any modifications.

NOTE Normative references to International Standards are listed in annex ZA (normative).
Textiles — Tests for colour fastness —
Part X12:
Colour fastness to rubbing

1 Scope

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.

The method is applicable to textiles made from all fibres in the form of yarn or fabric, including textile floor coverings, whether dyed or printed.

Two tests may be made, one with a dry rubbing cloth and one with a wet rubbing cloth.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 105. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 105 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.


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


ISO 105-X16, Textiles — Tests for colour fastness — Part X16: Colour fastness to rubbing — Small areas.

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

3 Principle

Specimens of the textile are rubbed with a dry rubbing cloth and with a wet rubbing cloth. The machine provides two combinations of testing conditions through two alternative sizes of rubbing finger: one for pile fabrics; one for solid colour or large print fabrics.

4 Apparatus

4.1 Suitable testing device for determining the colour fastness to rubbing, using a reciprocating straight line rubbing motion and two alternative sizes of rubbing fingers.

4.1.1 For pile fabrics, including textile floor coverings: rubbing finger with a rectangular rubbing surface with the lead edge rounded measuring 19 mm × 25,4 mm (crock block).

The rubbing finger shall exert a downward force of (9 ± 0,2) N, moving to and fro in a straight line along a (104 ± 3) mm track.
NOTE 1 Difficulty may be experienced in making assessments of the degree of staining on the rubbing cloth when pile fabrics are tested using the (16 ± 0.1) mm diameter rubbing finger due to heavier staining occurring on the circumference of the stained area, i.e., haloing. The rubbing finger described in 4.1.1 will eliminate the haloing with many types of pile fabrics.

Even with the use of the crock block, difficulty may be experienced in assessing staining when fabrics with high pile are tested.

NOTE 2 A suitable apparatus for pile fabrics is described in Journal of the Society of Dyers and Colourists, 87 1971, 155; 88 1972, 259.

4.1.2 For other textiles: rubbing finger comprised of a cylinder of (16 ± 0.1) mm diameter moving to and fro in a straight line along a (104 ± 3) mm track on the specimen and exerting a downward force of (9 ± 0.2) N.

NOTE A suitable apparatus is described in the Technical Manual of the American Association of Textile Chemists and Colorists, Test Method 8, for 4.1.2, and Test Method 165 for 4.1.1. Other devices can be used, provided that the same results are obtained as with the apparatus described in clause 4. There is no known correlation of results between the two methods described.

4.2 Cotton rubbing cloth, desized, bleached, without finish, cut into 50 mm squares (± 2 mm) for the finger used in 4.1.2. For the finger described in 4.1.1, a 25 mm × 100 mm ± 2 mm cloth is used. See ISO 105-F09.

4.3 Soft-back waterproof abrasive paper, or grating of stainless steel wire 1 mm in diameter and mesh width about 20 mm.

NOTE Attention should be paid to the characteristics of the grating or abrasive paper used to hold the specimen as they may leave an imprint through the textile which would cause a false rating to be made. The use of the abrasive paper may be preferred for testing textile fabrics.

4.4 Grey scale, for assessing staining, in accordance with ISO 105-A03.

Verification on the operation of the test and the apparatus shall be made routinely and the results kept in a log. Use an in-house or established rubbing specimen and conduct three (3) dry tests.

5 Test specimens

5.1 If the textile to be tested is a fabric or textile floor covering, two pieces not less than 50 mm × 140 mm are required for dry rubbing and two for wet rubbing. Additional specimens may be used when higher precision is needed. 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). An alternate method of cutting specimens is to cut the long dimension diagonally to warp and weft. If the pile lay of a carpet specimen is distinguishable, cut the specimen with the pile lay pointing in the long direction.

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

5.3 Before testing, condition the specimen and rubbing cloth for at least 4 h in an atmosphere of (20 ± 2) °C and (65 ± 2) % RH by laying each test specimen and each piece of rubbing cloth separately on a screen or perforated shelf. Some fabrics such as cotton or wool may require longer periods of conditioning.

5.4 For best results, testing should be conducted under standard atmosphere for testing textiles (see ISO 139).

6 Procedure

6.1 General

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. Between the baseboard of the testing device and the specimen, place a piece of wire mesh or soft-back waterproof abrasive paper to help reduce movement of the specimen. Test the specimens prepared in clause 5 according to the procedures in 6.2 and 6.3.