Textiles — Tests for colour fastness —
Part F: Standard adjacent fabrics

Textiles — Essais de solidité des teintures — Partie F: Tissus témoins

Third edition — 1985-10-15
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/F was prepared by Technical Committee ISO/TC 38, Textiles.

Sections F07, F08 and F09 complete this third edition, which cancels and replaces the second edition, ISO 105/F-1982.

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.
Contents of ISO 105

ISO 105/A Textiles and leather — Tests for colour fastness —
Part A : General principles
A01 General principles of testing
A02 Grey scale for assessing change in colour
A03 Grey scale for assessing staining

ISO 105/B Textiles and leather — Tests for colour fastness —
Part B : Colour fastness to light and weathering
B01 Colour fastness to light : Daylight
B02 Colour fastness to light : Xenon arc
B03 Colour fastness to weathering : Outdoor exposure
B04 Colour fastness to weathering : Xenon arc
B05 Detection and assessment of photochromism

ISO 105/C Textiles — Tests for colour fastness —
Part C : Colour fastness to washing and laundering
C01 Colour fastness to washing : Test 1
C02 Colour fastness to washing : Test 2
C03 Colour fastness to washing : Test 3
C04 Colour fastness to washing : Test 4
C05 Colour fastness to washing : Test 5
C06 Colour fastness to domestic and commercial laundering

ISO 105/D Textiles and leather — Tests for colour fastness —
Part D : Colour fastness to dry cleaning
D01 Colour fastness to dry cleaning
D02 Colour fastness to rubbing : Organic solvents

ISO 105/E Textiles and leather — Tests for colour fastness —
Part E : Colour fastness to aqueous agencies
E01 Colour fastness to water
E02 Colour fastness to sea water
E03 Colour fastness to chlorinated water (swimming-bath water)
E04 Colour fastness to perspiration
E05 Colour fastness to spotting : Acid
E06 Colour fastness to spotting : Alkali
E07 Colour fastness to spotting : Water
E08 Colour fastness to water : Hot water
E09 Colour fastness to potting
E10 Colour fastness to decatizing
E11 Colour fastness to steaming
E12 Colour fastness to milling : Alkaline milling
E13 Colour fastness to acid-felting : Severe
E14 Colour fastness to acid-felting : Mild
ISO 105/F  Textiles — Tests for colour fastness —
Part F : Standard adjacent fabrics
  F01 Specification for standard adjacent fabric : Wool
  F02 Specification for standard adjacent fabric : Cotton and viscose
  F03 Specification for standard adjacent fabric : Polyamide
  F04 Specification for standard adjacent fabric : Polyester
  F05 Specification for standard adjacent fabric : Acrylic
  F06 Specification for standard adjacent fabric : Silk
  F07 Specification for standard adjacent fabric : Secondary acetate
  F08 Specification for standard adjacent fabric : Triacetate
  F09 Specification for standard rubbing cloth : Cotton

ISO 105/G  Textiles — Tests for colour fastness —
Part G : Colour fastness to atmospheric contaminants
  G01 Colour fastness to nitrogen oxides
  G02 Colour fastness to burnt gas fumes
  G03 Colour fastness to ozone in the atmosphere

ISO 105/J  Textiles — Tests for colour fastness —
Part J : Measurement of colour and colour differences
  J01 Method for the measurement of colour and colour differences

ISO 105/N  Textiles — Tests for colour fastness —
Part N : Colour fastness to bleaching agencies
  N01 Colour fastness to bleaching : Hypochlorite
  N02 Colour fastness to bleaching : Peroxide
  N03 Colour fastness to bleaching : Sodium chlorite : Mild
  N04 Colour fastness to bleaching : Sodium chlorite : Severe
  N05 Colour fastness to stoving

ISO 105/P  Textiles — Tests for colour fastness —
Part P : Colour fastness to heat treatments
  P01 Colour fastness to dry heat (excluding pressing)
  P02 Colour fastness to pleating : Steam pleating

ISO 105/S  Textiles — Tests for colour fastness —
Part S : Colour fastness to vulcanizing
  S01 Colour fastness to vulcanizing : Hot air
  S02 Colour fastness to vulcanizing : Sulphur monochloride
  S03 Colour fastness to vulcanizing : Open steam

ISO 105/X  Textiles and leather — Tests for colour fastness —
Part X : Tests not included in parts A to S or part Z
  X01 Colour fastness to carbonizing : Aluminium chloride
  X02 Colour fastness to carbonizing : Sulphuric acid
  X03 Colour fastness to chlorination
  X04 Colour fastness to mercerizing
  X05 Colour fastness to organic solvents
  X06 Colour fastness to soda boiling
  X07 Colour fastness to cross dyeing : Wool
  X08 Colour fastness to degumming
  X09 Colour fastness to formaldehyde
  X10 Assessment of migration of textile colours into polyvinyl chloride coatings
  X11 Colour fastness to hot pressing
  X12 Colour fastness to rubbing
  X13 Colour fastness of wool dye to processes using chemical means for creasing, pleating and setting

ISO 105/Z  Textiles — Tests for colour fastness —
Part Z : Colorant characteristics
  Z01 Colour fastness to metals in the dye-bath : Chromium salts
  Z02 Colour fastness to metals in the dye-bath : Iron and copper
Textiles — Tests for colour fastness —

F01 Specification for standard adjacent fabric: Wool

1 Scope and field of application

This specification is intended to establish an undyed pure wool adjacent fabric which may be used for the assessment of staining in colour fastness test procedures. The standard wool adjacent fabric exhibits standardized staining properties.

2 Principle

For testing the standardized staining properties, two water fastness tests and also a wash test carried out at 50 °C are conducted on two composite specimens made from a dyed master fabric and a cotton adjacent fabric with:

a) the wool fabric under test, and
b) a sample of the master standard wool adjacent fabric.

Staining is then assessed using the grey scale for assessing staining.

3 References

ISO 105:
Section A01, General principles of testing.
Section A03, Grey scale for assessing staining.
Section C02, Colour fastness to washing: Test 2.
Section E01, Colour fastness to water.

4 Apparatus and reagents

4.1 Apparatus and reagents, as specified in section E01.

4.2 Apparatus and reagents, as specified in section C02.

4.3 Grey scale for assessing staining (see clause 3).

4.4 For first dyed master fabric — 1.5% CI Direct Red 16 (Colour Index, 3rd Edition).

For second dyed master fabric — 3% CI Acid Red 42 (Colour Index, 3rd Edition).

For third dyed master fabric — 2% CI Acid Red 42 (Colour Index, 3rd Edition).

4.5 Samples of master standard wool adjacent fabric (see 6.3).

5 Characteristics of the fabric

Choose a fabric having technical characteristics as similar as possible to those of the master standard adjacent fabric.

5.1 Composition and construction

The standard wool adjacent fabric is a wool cloth of mass per unit area 125 g/m². It consists of a plain weave cloth with an even and smooth surface made of pure wool fibres. After wetting and tensionless drying, a sample shall remain flat. It shall be free from finishes, residual chemicals, and chemically damaged fibres.

5.2 Staining properties

As adjacent fabrics shall yield exact and reproducible assessments, their most important property is standardized staining characteristics during colour fastness tests. Dyed master fabrics are set up, whose staining properties in specified fastness tests are defined. Staining characteristics of the wool adjacent fabrics shall conform to those of the dyed master fabric.

5.2.1 Dyed master fabrics to be subjected to the colour fastness tests

a) First dyed master fabric : 1.5% CI Direct Red 16 (Colour Index, 3rd Edition) dyed on a specified cotton adjacent fabric (see 6.2.1). This dyeing is intended for the water fastness test method (see 5.2.2 a).

b) Second dyed master fabric : 3% CI Acid Red 42 (Colour Index, 3rd Edition) dyed on a specified wool adjacent fabric (see 6.2.2). This dyeing is intended for the water fastness test method (see 5.2.2 a).

c) Third dyed master fabric : 2% CI Acid Red 42 (Colour Index, 3rd Edition) dyed on a specified wool adjacent fabric (see 6.2.3). This dyeing is intended for the washing test 2 (50 °C) (see 5.2.2 b1).

5.2.2 Colour fastness test methods employed for assessing the staining properties

The staining properties of the standard wool adjacent fabric are determined by the following test methods:

a) Water fastness test according to section E01:

b) Washing test 2 (50 °C) according to section C02.
5.2.3 Test specimens

In order to test the wool fabric, which is prepared as described in 6.1 and which is intended to be used as a specified wool adjacent fabric, a dyed master fabric (see 5.2.1) is placed between the wool fabric to be tested and a cotton adjacent fabric. For comparison, another composite specimen is made by using a sample of the master wool adjacent fabric. Both composite specimens are tested according to 5.2.2.

5.2.4 Results of the staining during the tests

The staining of the wool adjacent fabrics shall yield the following assessment, measured by the grey scale for assessing staining (see 6.3):

a) water fastness test with the first dyed master fabric: 3;

b) water fastness test with the second dyed master fabric: 2-3;

c) washing test 2 (50 °C) with the third dyed master fabric: 3-4.

Test assessment of the staining shall not differ by more than half a step from those specified.

Alkali solubility shall not exceed 18 % (determined by the method in ISO 3072).

6.1.3 Grey goods

Weave 1/1 plain.

Number of threads:

- warp 210 ± 5 per 10 cm
- weft 180 ± 5 per 10 cm

Weaving without sizing.

Staining after washing according to 6.1.4 in water fastness test (see 5.2.2 a) should be 3-4.

Fat content: 0.5 ± 0.2 %.

6.1.4 Finishing

No singeing.

Continuous washing, for example with the Vibrotex (Kuesters, Krefeld) using non-ionic detergent, pH 8.5 to 8, temperature 45 °C, time in the washing liquor about 2 min.

Continuous rinsing until pH 6.5 to 7.5 is reached.

Continuous hot water fixation, for example with the “Con toc” machine (Montforts, Moenchengladbach), the goods being passed through a hot water tank at 80 °C and then passed over a heated drum at 90 °C below a rubber cloth. Time on the heated drum about 100 s; pH of the water at 80 °C, 5.5 to 7.5.

Mild drying, with 6 % over feed at 80 °C, for example with a Famatex jet dryer, Speed 20 m/min.

Shearing on both sides, for example with a hollow bed shearing machine (Ateliers Raxhon, Belgium).

Stain removal with perchloroethylene.

Straightening on a stenter frame with gentle steaming.

Degree of whiteness according to Stephanson:

\[ W = 2B - A = 2R - R \]

Standard source D65, CIE 1931 standard observer. White Standard: absolute White. Thickness of material: \( \mu \) m. The value should be 43 ± 1.

For visual assessment the specimen should be compared with the master standard.

The pH value of the aqueous extract should be 8.0 ± 0.5. The residual fat content: 0.4 ± 0.1 % (determined by IWTO-method 10—62 edition 1966).

The alkali solubility shall not exceed 18 % (determined by the method in ISO 3072).
6.2 Production of the dyed master samples
(see 5.2.1)

6.2.1 1.5 % CI Direct Red 16 (Colour Index, 3rd Edition)
dyed on a specified cotton adjacent fabric (see 5.2.1 a)

A wetted-out pattern of the cotton fabric is entered at 30 °C
into a dye-bath containing 1.5 % CI Direct Red 16 (Colour
Index, 3rd Edition) and 20 % sodium sulfate decahydrate
(Na₂SO₄·10H₂O), all percentages being calculated on the mass

Within 20 min the dye-bath is raised to 60 °C and the fabric is
dyed for 60 min at this temperature. The dye-bath is discharged
and the dyeing rinsed with cold-running tap-water until the
water is completely colourless. The dyed fabric is then dried.

6.2.2 3 % CI Acid Red 42 (Colour Index, 3rd Edition)
dyed on a specified wool adjacent fabric (see 5.2.1 b)

A wetted-out pattern of the wool fabric is entered at 40 °C into
a dye-bath containing 3 % CI Acid Red 42 (Colour Index, 3rd
Edition), 10 % sodium sulfate decahydrate (Na₂SO₄·10H₂O),
and 4 % sulfuric acid (96 %), all percentages being calculated
on the mass of the wool pattern at a liquor ratio of 40 : 1.

The dye-bath is raised to the boil within 30 min, and boiled for a
further 60 min. The dye-bath is then cooled down by addition
of cold water. The pattern is removed, rinsed in cold running
tap-water and dried.

6.2.3 2 % CI Acid Red 42 (Colour Index, 3rd Edition)
dyed on a specified wool adjacent fabric (see 5.2.1 c)

This master sample is dyed in the same manner as given in 6.2.2
but using 2 % Acid Red 42 (Colour Index, 3rd Edition) instead
of 3 %.

6.3 Master standard and dyed master standard

Samples of the master standard wool adjacent fabric and the
dyed master standards are available from

Beuth-Vertrieb GmbH
Burggrafenstrasse 4-7
D-1000 Berlin 30
Germany.

The master standard wool adjacent fabric may also be obtained
from Society of Dyers and Colourists
P.O. Box 244, Perkin House
82 Gratton Road
Bradford BD1 2JB
West Yorks
United Kingdom.
Textiles — Tests for colour fastness —
F02 Specification for standard adjacent fabric:
Cotton and viscose

1 Scope and field of application

This specification is intended to establish undyed cotton and viscose adjacent fabrics which may be used for the assessment of staining in colour fastness test procedures. The standard cotton and viscose adjacent fabrics exhibit standardized staining properties.

2 Principle

For testing the standardized staining properties, a wash fastness test carried out at 40 °C is conducted on a composite specimen made from a dyed master fabric, a standard adjacent fabric and an adjacent fabric under test. Upon completion of the test the staining of the two adjacent fabrics is evaluated using the grey scale for assessing change in colour.

3 References

ISO 105:
Section A01, General principles of testing.
Section A02, Grey scale for assessing change in colour.
Section C01, Colour fastness to washing: Test 1.

4 Apparatus and reagents

4.1 Apparatus and reagents, as specified in section C01.

4.2 Reference dye: CI Direct Blue 1, applied to standard cotton adjacent fabric (see 6.2).

4.3 Grey scale for assessing change in colour (see clause 3).

4.4 Samples of master standard cotton and viscose adjacent fabrics (see 6.3).

5 Characteristics of the fabric

Choose a fabric having technical characteristics as similar as possible to those of the master standard adjacent fabric.

5.1 Composition and construction

The standard cotton adjacent fabric is a cotton cloth of mass per unit area 115 ± 5 g/m² and the standard viscose adjacent fabric is a viscose cloth of mass 140 ± 5 g/m². They consist of plain weave cloths with even and smooth surfaces made of pure cotton or viscose fibres. After wetting and tensionless drying, samples shall remain flat. They shall be free from finishes, residual chemicals, and chemically damaged fibres.

5.2 Staining properties

As adjacent fabrics shall yield exact and reproducible assessments, their most important property is standardized staining characteristics during colour fastness tests. Dyed master fabrics are set up, whose staining properties in specified fastness tests are defined. Staining characteristics of the cotton and viscose adjacent fabrics shall conform to those of the dyed master fabrics.

5.2.1 Dyed master fabrics to be subjected to the colour fastness test


5.2.2 Colour fastness test method employed for assessing the staining properties

The staining properties of the standard cotton and viscose adjacent fabrics are determined by washing test 1 (40 °C) according to section C01.

5.2.3 Test specimens

In order to test the cotton and viscose fabrics, which are prepared as described in 6.1 and which are intended to be used as specified cotton and viscose adjacent fabrics, a dyed master fabric (see 5.2.1) is placed between the cotton or viscose fabric to be tested and a cotton adjacent fabric. To eliminate possible differences in test conditions, both the standard adjacent fabric and the adjacent fabric under test are used in the same composite specimen.

5.2.4 Results of the staining during the tests

The colour difference between the stain of the standard adjacent fabric and that on the fabric under test is evaluated using the grey scale for assessing change in colour. The fabric under
Ja, ik bestel

__ ex. ISO 105-F:1985 en Textiles - Tests for colour fastness - Part F: € 98.88
Standard adjacent fabrics

Wilt u deze norm in PDF-formaat? Deze bestelt u eenvoudig via www.nen.nl/normshop

Gratis e-mailnieuwsbrieven
Wilt u op de hoogte blijven van de laatste ontwikkelingen op het gebied van normen, normalisatie en regelgeving? Neem dan een gratis abonnement op een van onze e-mailnieuwsbrieven. www.nen.nl/nieuwsbrieven

Gegevens
Bedrijf / Instelling

T.a.v.  O  M  O  V
E-mail
Klantnummer NEN
Uw ordernummer  BTW nummer
Postbus / Adres
Postcode  Plaats
Telefoon  Fax
Factuuradres (indien dit afwijkt van bovenstaand adres)
Postbus / Adres
Postcode  Plaats
Datum  Handtekening

Retourneren
Fax: 015 2 690 271
E-mail: klantenservice@nen.nl
Post: NEN Standards Products & Services, t.a.v. afdeling Klantenservice Antwoordnummer 10214, 2600 WB Delft (geen postzegel nodig).

Voorwaarden
• De prijzen zijn geldig tot 31 december 2018, tenzij anders aangegeven.
• Alle prijzen zijn excl. btw, verzend- en handelingskosten en onder voorbehoud bij o.m. ISO- en IEC-normen.
• Bestelt u via de normshop een pdf, dan betaalt u geen handeling en verzendkosten.
• Meer informatie: telefon 015 2 690 391, dagelijks van 8.30 tot 17.00 uur.
• Wijzigingen en typefouten in teksten en prijsinformatie voorbehouden.
• U kunt onze algemene voorwaarden terugvinden op: www.nen.nl/leveringsvoorwaarden.

LEREN, WERKEN EN GROEIEN MET NEN