International Standard 105/D

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Textiles — Tests for colour fastness — Part D : Colour fastness to dry cleaning

Textiles — Essais de solidité des teintures — Partie D : Solidité des couleurs au nettoyage à sec

Second edition — 1982-09-01

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 105/D was developed by Technical Committee ISO/TC 38, *Textiles*.

NOTE — International Standard ISO 105 is presented in the form of parts. Each of these parts corresponds to a group and is split up into its different component sections. This form facilitates the replacement of existing sections by successive editions as necessary.

This part of ISO 105 cancels and replaces group D of ISO 105-1978.

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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)
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Part S : Colour fastness to vulcanizing

- **S01** Colour fastness to vulcanizing : Hot air
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ISO 105/X **Textiles — Tests for colour fastness —**
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- **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 — D01 Colour fastness to dry cleaning

1 Scope and field of application

1.1 This method is intended for determining the resistance of the colour of textiles of all kinds and in all forms to dry cleaning.

1.2 This method is not suitable for the evaluation of the durability of textile finishes, nor is it intended for use in evaluating the resistance of colours to spot and stain removal procedures used by the dry-cleaner (see 8.1 and 8.2).

2 Principle

A specimen of the textile in contact with a cotton fabric bag together with non-corrodible steel discs is agitated in perchloroethylene (see 8.2 and 8.3), then squeezed or centrifuged, and dried in hot air. The change in colour of the specimen is assessed with the grey scale for assessing change in colour. At the conclusion of the test, the coloration of the solvent is assessed by comparing the filtered solvent with unused solvent by transmitted light, by means of the grey scale for assessing staining.

3 References

ISO 105 :

Section A01, *General principles of testing.*

Section A02, *Grey scale for assessing change in colour.*

Section A03, *Grey scale for assessing staining.*

4 Apparatus and reagent

4.1 Suitable mechanical device (see 8.4) consisting of a water bath containing a rotatable shaft which supports, radially, glass or stainless steel containers (4.2), the bottom of the containers being 45 ± 10 mm from the centre of the shaft. The shaft/container assembly is rotated at a frequency of 40 ± 2 min^{-1}. The temperature of the water bath is thermostatically controlled to maintain the test solvent at 30 ± 2 °C.

4.2 Glass or stainless steel containers, of 75 ± 5 mm diameter and 125 ± 10 mm high, of 550 ± 50 ml capacity, which shall be closed using solvent-resistant gaskets.

4.3 Non-corrodible (stainless) steel discs, 30 ± 2 mm × 3 ± 0,5 mm, smooth and free from rough edges, of mass 20 ± 2 g.

4.4 Undyed cotton "twill" cloth of mass per unit area 270 ± 70 g/m^2, free from finishes and cut into samples 12 cm × 12 cm.

4.5 Perchloroethylene, which must be stored over anhydrous sodium carbonate to neutralize any hydrochloric acid formed.

4.6 Grey scales for assessing change in colour and staining (see clause 3).

4.7 Glass tubes, of diameter 25 mm.

5 Test specimen

5.1 If the textile to be tested is fabric, use a specimen 10 cm × 4 cm.

5.2 If the textile to be tested is yarn, knit it into a fabric and use a specimen 10 cm × 4 cm or make a wick of parallel lengths 10 cm long and about 0,5 cm in diameter, tied near both ends.

5.3 If the textile to be tested is loose fibre, comb and compress enough of it to form a sheet 10 cm × 4 cm.

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6 Procedure

6.1 Prepare a bag with inside dimensions of 10 cm × 10 cm using the undyed cotton twill cloth (4.4) by sewing together two squares of this cloth around three sides. Place the specimen and 12 steel discs (4.3) inside the bag. Close the bag by any convenient means.

6.2 Place the bag containing the specimen and the steel discs in the container and add 200 ml of perchloroethylene at 30 ±2 °C. Treat the specimen for 30 min at 30 ± 2 °C in the specified equipment (4.1).

6.3 Remove the bag from the container, withdraw the specimen, place it between absorbent paper or cloth and squeeze or centrifuge to remove surplus solvent. Dry the specimen by hanging it in air at a temperature of 60 ± 5 °C.

6.4 Assess the change in colour of the specimen with the grey scale for assessing change in colour.

6.5 At the conclusion of the test, filter the solvent remaining in the container through filter paper. By means of the grey scale for assessing staining, compare the colour of the filtered solvent with that of unused solvent, in the glass tube (4.7) placed in front of a white card, using transmitted light.

7 Test report

Report the numerical rating for the change in colour of the specimen and the numerical rating for staining of the solvent.

8 Notes

8.1 This test covers colour fastness to dry cleaning only; commercial dry-cleaning practice normally involves other operations such as water spotting, solvent spotting, steam pressing, etc., for which other standard test methods are available if the full "dry cleanability" of the textile is to be assessed.

8.2 The presence of absorbed water in either the fabric or dry-cleaning solution, or the presence of a detergent water in the dry-cleaning solution, has not been found to be a critical factor in assessing colour fastness. This test gives results which correlate satisfactorily with those obtained in commercial dry cleaning.

8.3 Fastness to dry cleaning, without further qualification, means fastness to dry cleaning in perchloroethylene. However, if required, other solvents may be used and this should be indicated in the test report.

8.4 Other mechanical devices may be used for the test, provided that the results are identical with those obtained by the apparatus described in 4.1.