

---

# International Standard



# 105/S

---

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

---

## **Textiles — Tests for colour fastness — Part S: Colour fastness to vulcanizing**

*Textiles — Essais de solidité des teintures — Partie S: Solidité des teintures à la vulcanisation*

**First edition — 1978-12-15**

Updated and reprinted — 1982-09-01

---

**UDC 677.016.47**

**Ref. No. ISO 105/S-1978 (E)**

**Descriptors :** textiles, dyes, tests, colour fastness, visual inspection, vulcanizing tests, warm air heating, sulphur chlorides, steam heating.

Price based on 6 pages

## 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/S was developed by Technical Committee ISO/TC 38, *Textiles*.

It was submitted directly to the ISO Council, in accordance with sub-clause 5.10.1 of part 1 of the Directives for the technical work of ISO.

This part of ISO 105 cancels and replaces group S of ISO 105-1978, originally published as parts 6 and 7 of ISO Recommendation R 105/IV-1968, and part 1 of ISO Recommendation R 105/V-1969.

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.

## Contents of ISO 105

### ISO 105/A Textiles — 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 — 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 — 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 — 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

### 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 — 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 dyes 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

## S01 Colour fastness to vulcanizing : Hot air

### 1 SCOPE AND FIELD OF APPLICATION

This method is intended for determining the resistance of the colour of textiles of all kinds and in all forms to the action of a typical rubber compound, such as may be used in the proofing industry, and to its decomposition products, during vulcanization in hot air.

### 2 PRINCIPLE

A specimen of the textile is heated in air in direct contact with an (initially) unvulcanized rubber compound. The change in colour of the specimen is assessed with the grey scale.

### 3 REFERENCES

ISO 105 :

Section A01, *General principles of testing*.

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

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

### 4 APPARATUS AND REAGENTS

**4.1 Oven**, maintained at  $125 \pm 2^\circ\text{C}$ , with a fan to ensure uniformity of air temperature.

**4.2 Sheet of uncured rubber compound**,  $0,25 \pm 0,15$  cm thick, consisting of the following :

- 100 parts pale crêpe;
- 5 parts zinc oxide;
- 1 part stearic acid;
- 2 parts sulphur;
- 1 part mercaptobenzothiazole;

0,2 part zinc diethyldithiocarbamate;

15 parts titanium oxide;

75 parts barium sulphate.

If it is necessary to transport the rubber compound, it should be covered with thin polyethylene film.

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

### 5 TEST SPECIMEN

**5.1** Remove any polyethylene film from the sheet of uncured rubber compound (4.2) and moisten the compound with petroleum ether.

**5.2** If the textile to be tested is fabric, place a specimen of it  $10\text{ cm} \times 4\text{ cm}$  on the sheet of uncured rubber compound. To ensure a uniform degree of adhesion, the specimen should be "rolled" on to the rubber with a metal roller.

**5.3** If the textile to be tested is yarn, knit it into fabric and use a specimen  $10\text{ cm} \times 4\text{ cm}$ , or stick a number of lengths flat and side by side on the rubber sheet to obtain the specified area of  $10\text{ cm} \times 4\text{ cm}$ .

**5.4** If the textile is loose fibre, comb and compress enough of it to form a sheet  $10\text{ cm} \times 4\text{ cm}$  and stick this to the rubber sheet.

### 6 PROCEDURE

**6.1** Hang the composite specimen in the oven for 30 min at  $125 \pm 2^\circ\text{C}$ , uniformity of temperature being ensured by a fan.

**6.2** Cool the composite specimen for 4 h in the standard atmosphere for testing.