BRITISH STANDARD

BS EN ISO 105-N05: 1995
ISO 105 -N05: 1993

Textiles —

Tests for colour fastness

Part N05: Colour fastness to stoving

The European Standard EN ISO 105-N05: 1993 has the status of a British Standard.

Textiles — Tests for colour fastness —

Part N05:
Colour fastness to stoving

1 Scope

This part of ISO 105 specifies a method for determining the resistance of the colour of textiles of all kinds and in all forms to the action of sulfur dioxide as used for bleaching animal fibres.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 105. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 105 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A01:1989, *Textiles — Tests for colour fastness — Part A01: General principles of testing.*

ISO 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour.*

ISO 105-A03:1993, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining.*

ISO 105-F:1985, *Textiles — Tests for colour fastness — Part F: Standard adjacent fabrics.*

ISO 105-F10:1989, *Textiles — Tests for colour fastness — Part F10: Specification for adjacent fabric: Multifibre.*

3 Principle

A composite specimen of the textile containing its own mass of soap solution, and a composite test-control specimen, are exposed in an atmosphere containing sulfur dioxide. The change in colour of the specimen and the staining of the adjacent fabric(s) are assessed with the grey scales.

4 Apparatus and reagents

4.1 Vessel, of approximately 10 litres capacity, for the sulfur dioxide atmosphere.

4.2 Sulfur.

4.3 Soap, containing not more than 5 % moisture and complying with the following requirements based upon dry mass:

— free alkali, calculated as Na_2CO_3: 3 g/kg maximum;

— free alkali, calculated as NaOH: 1 g/kg maximum;

— total fatty matter: 850 g/kg maximum;

— titre of mixed fatty acids prepared from the soap: 30 °C maximum;

— iodine value: 50 maximum.

The soap shall be free from fluorescent brightening agents.

4.4 Soap solution, containing 5 g of soap (4.3) per litre of grade 3 water (4.9).

4.5 Test control, prepared as follows:

Enter a well wetted-out pattern of wool fabric at 40 °C into a dye-bath containing 2,5 % of CI Acid Red (Colour Index, 3rd Edition), 10 % of sodium sulfate decahydrate ($Na_2SO_4.10H_2O$) and 3 % of acetic acid (300 g/l), all percentages being calculated relative to the mass of the pattern. The liquor ratio shall be 40:1.

Raise the dye bath to the boil in 30 min and boil for 30 min. If necessary, exhaust the dye-bath by careful addition of 1 % to 3 % of acetic acid (300 g/l) or 1 % of sulfuric acid (relative density 1,84) well diluted with water. Boil the bath for a further 15 min after addition of the acid. Then remove the pattern, rinse in cold, running tap-water and dry.

4.6 Adjacent fabrics, each measuring 40 mm × 100 mm (see ISO 105-A01:1989, subclause 8.3).

her:

4.6.1 A multifibre adjacent fabric, complying with ISO 105-F10.

Or:

4.6.2 Two single-fibre adjacent fabrics, complying with the relevant sections of F01 to F08 of ISO 105-F:1985, to be assessed for staining, one piece being made of wool and the other of the same fibre as the fabric under test, or as otherwise specified.

4.7 If required, a **non-dyeable fabric** (for example, polypropylene).

4.8 Grey scale for assessing change in colour, plying with ISO 105-A02, and **grey scale for assessing staining**, complying with ISO 105-A03.

4.9 Grade 3 water (see ISO 105-A01:1989, subclause 8.2).

5 Test specimen

5.1 If the textile to be tested is fabric,

a) attach a specimen measuring 40 mm × 100 mm to a piece of the multifibre adjacent fabric (4.6.1), also measuring 40 mm × 100 mm, by sewing along one of the shorter sides, with the multifibre fabric next to the face of the specimen;

or

b) attach a specimen measuring 40 mm × 100 mm between the two single-fibre adjacent fabrics (4.6.2), also measuring 40 mm × 100 mm, by sewing along one of the shorter sides.

5.2 Where yarn or loose fibre is to be tested, take a mass of the yarn or loose fibre approximately equal to one-half of the combined mass of the adjacent fabrics and

a) place it between a 40 mm × 100 mm piece of the multifibre adjacent fabric and a 40 mm × 100 mm piece of the non-dyeable fabric (4.7) and sew them along all four sides (see ISO 105-A01:1989, subclause 9.6);

or

b) place it between a 40 mm × 100 mm piece of each of the two specified single-fibre fabrics and sew along all four sides.

5.3 Prepare a composite specimen from the test control (4.5) in one of the ways outlined for fabric in 5.1.

6 Procedure

6.1 Thoroughly impregnate the composite specimen and the composite test-control specimen by immersion for 5 min at a temperature of 25 °C ± 2 °C in the soap solution (4.4), then squeeze so that each contains its own mass of solution.

6.2 Suspend the composite specimen and the composite test-control specimen for 16 h in the vessel (4.1) containing an atmosphere of sulfur dioxide, obtained by igniting 5 g of sulfur (4.2) below the composite specimen and the composite test-control specimen and immediately closing the vessel.

6.3 Remove the composite specimen and the composite test-control specimen from the sulfur dioxide atmosphere.

If the composite specimen contains no cellulosic fibres, remove the stitching on all sides except one of the shorter sides of each specimen and allow both to hang in air for at least 2 h without rinsing.

If the composite specimen contains cellulosic fibres, rinse it immediately after removal from the sulfur dioxide atmosphere in grade 3 water (4.9) and then in cold, running tap-water. Remove the stitching on all sides except one of the shorter sides of each specimen and dry both by hanging them in air at a temperature not exceeding 60 °C.

Examine the composite specimen and the composite test-control specimen when dry.

6.4 Assess the effect on the test-control specimen with the grey scales (4.8). If the change in colour is not equal to the contrast illustrated by grade 3, the test has not been carried out correctly and the operations described in 6.1 to 6.3 shall be repeated with

a fresh composite specimen and a fresh composite test-control specimen.

6.5 Assess the change in colour of the specimen and the staining of the adjacent fabric(s) with the grey scales (4.8).

7 Test report

The test report shall include the following particulars:

a) the number and date of publication of this part of ISO 105, i.e. ISO 105-N05:1993;

b) all details necessary for the identification of the sample tested;

c) the numerical rating for change in colour of the specimen;

d) if single-fibre adjacent fabrics were used, the numerical rating for staining of each kind of adjacent fabric used;

e) if a multifibre adjacent fabric was used, the type of multifibre adjacent fabric used and the staining of each type of fibre in the multifibre adjacent fabric.