

BRIEF HISTORY

Amendment 4 to ISO Recommendation R 105/I-1959 was drawn up by Technical Committee ISO/TC 38, *Textiles*, and circulated to the Member Bodies in February 1973.

It has been approved by the Member Bodies of the following countries :

|                     |             |                       |
|---------------------|-------------|-----------------------|
| Australia           | Hungary     | South Africa, Rep. of |
| Belgium             | India       | Sweden                |
| Brazil              | Ireland     | Switzerland           |
| Bulgaria            | Israel      | Thailand              |
| Canada              | Japan       | Turkey                |
| Czechoslovakia      | Netherlands | United Kingdom        |
| Egypt, Arab Rep. of | New Zealand | U.S.A.                |
| Finland             | Norway      | U.S.S.R.              |
| France              | Poland      |                       |
| Germany             | Romania     |                       |

No Member Body expressed disapproval of the document.

Amendment 4 – January 1975 – to ISO Recommendation R 105/I-1959

Amendment 4  
to ISO Recommendation R 105/I-1959  
**TESTS FOR  
COLOUR FASTNESS OF TEXTILES  
FIRST SERIES**

*Pages 42 and 43 : Part 17*

Delete the entire text and substitute the following :

**Part 17  
COLOUR FASTNESS TO HOT PRESSING**

**1. PURPOSE AND SCOPE**

This method is intended for assessing the resistance of the colour of textiles of all kinds and in all forms to ironing and to processing on hot cylinders.

Tests are given for hot pressing when the textile is dry, when it is wet and when it is damp. The end use of the textile usually determines which test should be made.

## 2. PRINCIPLE

The specimens are pressed with a heating device of specified temperature and mass for a specified time.

- 2.1 **Dry pressing.** The dry specimen is pressed.
- 2.2 **Damp pressing.** The dry specimen is covered with a wet undyed cotton cloth and pressed.
- 2.3 **Wet pressing.** The upper surface of the wet specimen is covered with a wet, undyed cotton cloth and pressed.
- 2.4 The change in colour and the staining of the undyed cloths are assessed with standard grey scales immediately and again after a period of exposure to air in the standard atmosphere.

## 3. APPARATUS AND REAGENTS

- 3.1 Heating device, providing even heat transfer to the specimen from the top by close contact at a controlled temperature (see clauses 7.1 and 7.2) and giving a pressure on the specimen of  $4 \pm 1$  kPa\* (see clause 7.4).
- 3.2 A smooth asbestos sheet of thickness 3 to 6 mm (see clause 7.2 and 7.3).
- 3.3 Undyed flannel of mass per unit area approximately  $260 \text{ g/m}^2$ . Two layers of this material are used to make a pad of thickness approximately 3 mm. Similar smooth wool fabrics or felt can be used to give a pad of thickness approximately 3 mm.
- 3.4 An undyed, bleached and unmercerised cotton cloth, of mass per unit area 100 to  $130 \text{ g/m}^2$  and with a smooth surface.
- 3.5 Grey scale for assessing change in colour and staining of the undyed cloths\*\*.

## 4. SPECIMEN

- 4.1 If the textile to be tested is fabric, use a specimen  $100 \text{ mm} \times 40 \text{ mm}$ .
- 4.2 If the textile to be tested is yarn, knit it into fabric and use a piece  $100 \text{ mm} \times 40 \text{ mm}$ , or wind it closely round a piece of thin inert material measuring  $100 \text{ mm} \times 40 \text{ mm}$  to form a layer having only the thickness of the yarn.
- 4.3 If the textile to be tested is loose fibre, comb and compress enough of it to form a sheet  $100 \text{ mm} \times 40 \text{ mm}$  and sew the sheet on a piece of cotton cloth to support the fibre.

## 5. PROCEDURE

- 5.1 The following temperatures are used (see clause 7.1)

$110 \pm 2 \text{ }^\circ\text{C}$   
 $150 \pm 2 \text{ }^\circ\text{C}$   
 $200 \pm 2 \text{ }^\circ\text{C}$

When necessary, other temperatures may be used, provided they are specially noted in the report.

- 5.2 Specimens of materials that have been subjected to any heat or drying treatment must be allowed to condition in the standard atmosphere for testing textiles\*\*\*, i.e.  $65 \pm 2 \%$  relative humidity and a temperature of  $20 \pm 2 \text{ }^\circ\text{C}$ , before they are tested.

\*  $1 \text{ kPa} = 10^3 \text{ N/m}^2 \approx 10 \text{ gf/cm}^2$

\*\* See also : Part 1 : "General principles of testing".  
Part 2 : "Grey scale for assessing change in colour".  
Part 3 : "Grey scale for assessing staining".

\*\*\* See ISO 139, *Textiles – Standard atmospheres for conditioning and testing*.

- 5.3 The bottom plate of the heating device is covered with asbestos sheeting (see clause 3.2), wool flannel (see clause 3.3) and dry, undyed cotton cloth, whether it is heated or not (see clause 3.4; also clauses 7.3 and 7.4).
- 5.4 **Dry pressing.** Place the dry specimen on top of the cotton cloth covering the wool flannel pad (see clause 5.3). Lower the top plate of the heating device and leave the specimen for 15 s at the specified pressing temperature.
- 5.5 **Damp pressing.** Place the dry specimen on top of the cotton cloth covering the wool flannel padding (see clause 5.3). Soak a piece of undyed cotton cloth measuring 100 mm × 40 mm in distilled water, and squeeze or extract it to contain its own mass of water. Place the wet cloth on top of the dry specimen. Lower the top plate of the heating device and leave the specimen for 15 s at the specified pressing temperature.
- 5.6 **Wet pressing.** Soak the specimen and a piece of undyed cotton cloth measuring 100 mm × 40 mm (see clause 3.4) in distilled water and squeeze or extract them to contain their own mass of water. Place the wet specimen on top of the dry cotton cloth covering the wool flannel pad (see clause 5.3) and place the wet undyed cloth on the specimen. Lower the top plate of the heating device and leave the specimen for 15 s at the specified pressing temperature.
- 5.7 Asses the change in colour of the specimen with the appropriate grey scale (see clause 3.5) immediately and again after the specimen has been allowed to condition for 4 h in the standard atmosphere for testing textiles.
- 5.8 Asses the staining of the undyed cotton cloth with the appropriate grey scale. Use the more heavily stained side of the undyed cotton specimen for the assessment.

## 6. REPORT

Report the test procedure (dry, damp or wet) and the temperature of the heating device. Report the numerical rating for change in colour immediately after testing and after conditioning for 4 h in the standard atmosphere for testing textiles. Report the numerical rating of the staining of the undyed cotton cloth.

## 7. NOTES

- 7.1 The pressing temperature depends to a large extent on the type of fibre and on the construction of the fabric or garment. In the case of blends it is further suggested to use the temperature appropriate to the fibre with the lowest heat resistance. The indicated temperatures cover three commonly used pressing conditions.
- 7.2 The heating device may be the same as that used in the test for colour fastness to dry heat (excluding pressing) (see ISO/R 105/IV Part 2, clause 7.1 a), and a suitable insulating material must be used whether the bottom plate is heated or not to minimise heat transfer to or from the bottom of the test assembly (see clauses 3.2 and 7.3).
- 7.3 The asbestos sheet used for insulation should be smooth and not warped. It is best to complete the specimen assembly on the asbestos sheet before placing it on the heating device. The asbestos should be cooled and the wet wool should be dried between successive tests.
- 7.4 In order to obtain the pressure per unit area ( $4 \pm 1$  kPa), the total area of the wool flannel padding should bear a suitable relationship to the mass of the plate pressing down on the padding. If the fabric to be tested has an appreciable thickness, it is necessary to either increase the area of the test specimen, or to augment the pressure-bearing surface using a suitable template made from the same material as the test specimen. If the dimensions of the plates of the heating device are smaller than those of the specimen, the pressure depends on the design of the apparatus (ratio of mass and area of top plate).
- 7.5 For less critical testing a household iron may be used, but its temperature should be measured with a surface pyrometer or with temperature-sensitive papers. The iron should be weighted so that its area and total mass are in the appropriate ratio to exert a pressure of  $4 \pm 1$  kPa. However, due to temperature fluctuation during on-off differences over the iron surface, the accuracy and reproducibility are limited. When a hand iron is used, it must be stated in the report.