INTERNATIONAL STANDARD

ISO 105-G04

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Textiles — Tests for colour fastness —

Part G04 :
Colour fastness to oxides of nitrogen in the atmosphere at high humidities

Textiles — Essais de solidité des teintures —

Partie G04 : Solidité des teintures aux oxydes d'azote en atmosphère à taux d'humidité élevés

Reference number
ISO 105-G04:1989(E)

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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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-G04 was prepared by Technical Committee ISO/TC 38, *Textiles*.

ISO 105 was previously published in 13 "parts", each designated by a letter (e.g. "Part A"), with publication dates between 1978 and 1985. Each part contained a series of "sections", each designated by the respective part letter and by a two-digit serial number (e.g. "Section A01"). These sections are now being republished as separate documents, themselves designated "parts" but retaining their earlier alphanumeric designations. A complete list of these parts is given in ISO 105-A01.

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Introduction

This method is based on a test (AATCC 164-1987), developed by AATCC in response to a specific need in the USA for the determination of fading in the presence of oxides of nitrogen at high relative humidities. Such conditions are prevalent along the Gulf of Mexico coast of the USA and in Southern California. Fading of some dyes on certain man-made fibres, particularly on carpets, was observed to be quite severe under such conditions. The development of this test method enabled dye manufacturers, fibre producers and textile manufacturers to select dye/fibre combinations which were resistant to fading in the presence of oxides of nitrogen at high relative humidities. The same fabrics when tested at low humidities showed little or no fading.

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Textiles — Tests for colour fastness —

Part G04 : Colour fastness to oxides of nitrogen in the atmosphere at high humidities

1 Scope

This part of ISO 105 specifies a method for determining the resistance of the colour of textiles to the action of oxides of nitrogen in the atmosphere at elevated temperatures and high relative humidities.

For testing at lower humidities, see ISO 105-G:1978, section G01.

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-A02:1987, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour.*

ISO 105-C01:1989, *Textiles — Tests for colour fastness — Part C01: Colour fastness to washing: Test 1.*

ISO 105-C02:1989, *Textiles — Tests for colour fastness — Part C02: Colour fastness to washing: Test 2.*

ISO 105-C03:1989, *Textiles — Tests for colour fastness — Part C03: Colour fastness to washing: Test 3.*

ISO 105-C04:1989, *Textiles — Tests for colour fastness — Part C04: Colour fastness to washing: Test 4.*

ISO 105-C05:1989, *Textiles — Tests for colour fastness — Part C05: Colour fastness to washing: Test 5.*

ISO 105-D01:1987, *Textiles — Tests for colour fastness — Part D01: Colour fastness to dry cleaning.*

ISO 105-G:1978, *Textiles — Tests for colour fastness — Part G: Colour fastness to atmospheric contaminants.*

ISO 105-J01:1989, *Textiles — Tests for colour fastness — Part J01: Measurement of colour and colour differences.*

3 Principle

A test specimen and a piece of control fabric are simultaneously exposed to oxides of nitrogen in an atmosphere which is maintained at 87,5 % ± 2,5 % relative humidity and a temperature of 40 °C ± 1 °C until the control fabric shows a colour change corresponding to that of a reference of fading. The exposure/measurement cycle is repeated until the specimen shows a definite colour change or for a prescribed number of cycles.

4 Apparatus and reagents

4.1 Exposure chamber, made of stainless steel which is coated on the inside with a resistant coating, capable of maintaining an atmosphere having a relative humidity of 87,5 % ± 2,5 % relative humidity at a temperature 40 °C ± 1 °C and contain-