
Textiles — Tests for colour fastness —

Part J05:

**Method for the instrumental assessment
of the colour inconstancy of a specimen
with change in illuminant (CMCCON02)**

Textiles — Essais de solidité des teintures —

*Partie J05: Méthode d'évaluation instrumentale de la variation de
nuance d'un échantillon en fonction de l'illuminant (CMCCON02)*



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Foreword

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ISO 105-J05 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 1, *Tests for coloured textiles and colorants*.

ISO 105 was previously published in 13 “parts” under the general title *Textiles — Tests for colour fastness*, 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”). A complete list of these parts is given in ISO 105-A01.

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Textiles — Tests for colour fastness —

Part J05:

Method for the instrumental assessment of the colour inconstancy of a specimen with change in illuminant (CMCCON02)

1 Scope

This part of ISO 105 provides a colorimetric method for calculating an estimate of the magnitude (and optionally the direction) of the change in the perceived colour of a textile specimen when the chromaticity of the illumination by which it is viewed is changed. It therefore provides an estimate of the colour inconstancy of the specimen.

NOTE 1 Colour inconstancy and metamerism are related but distinct. With respect to a change in the quality of illumination,

- a) colour inconstancy is the extent of change in the colour appearance of a single specimen,
- b) metamerism is the extent of change in the colour difference between two specimens.

This part of ISO 105 therefore provides a method for assessing (a) but not (b).

NOTE 2 Comparison of the results of this method and those from visual assessments is valid only when the visual assessments are made

- a) in lighting of the same spectral power distributions as used in the colorimetric calculations,
- b) with the specimens illuminated at 1 000 lux to 4 000 lux,
- c) by an assessor who is fully adapted to the relevant viewing conditions.

2 Principle

The tristimulus values (X_r , Y_r , Z_r and X , Y , Z respectively) of the specimen are measured or computed using CIE Standard Illuminant D65 as reference illuminant and an agreed test illuminant. All calculations are based upon the CIE 1964 Standard Colorimetric Observer. A chromatic adaptation transform (CAT02 simplified appropriately for the current application) is then applied to the tristimulus values in the test illuminant to determine the tristimulus values of the corresponding colour of the specimen in illuminant D65 (X_c , Y_c , Z_c). Finally, using the colour-difference formula specified in ISO 105-J03, the colour difference between the tristimulus values of the corresponding colour in illuminant D65 (X_c , Y_c , Z_c) and the measured or computed values in illuminant D65 (X_r , Y_r , Z_r) is calculated. This colour difference is the required Colour-Inconstancy Index, CMCCON02.

NOTE 1 For further information on CMCCON02 and CAT02, see Reference [1] in the Bibliography.

NOTE 2 The corresponding colour is the colour that would have the same appearance in illuminant D65 as it has in the test illuminant.