BUREAU OF INDIAN STANDARDS

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Draft Indian Standard

Textiles — Tests for colour fastness — Part C12: Colour fastness to industrial laundering

Chemical Methods of Test Sectional Committee, TXD 05

NATIONAL FOREWORD

This Indian Standard (Part C12) intended to be adopted is identical with ISO 105-C12:2024 'Textiles — Tests for colour fastness — Part C12: Colour fastness to industrial laundering' issued by the International Organization for Standardization (ISO).

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the standard intended to be adopted, reference appears to certain International Standard for which Indian Standard also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 105-A01, Textiles — Tests for colour fastness — Part A01: General principles of testing	IS/ISO 105-A01 : 2010 Textiles — Tests for colour fastness Part A01 General principles of testing (*first revision*)	Identical with ISO 105-A01:2010.
ISO 105-A02, Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour	IS/1SO 105-A02 :1993 Textiles — Tests for colour fastness Part A02 Grey scale for assessing change in colour	Identical with ISO 105-A02:1993.

ISO 105-A03, Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining	IS/ISO 105 - A03 : 2019 Textiles — Tests for colour fastness Part A03 Grey scale for assessing staining (*first revision*)	Identical With ISO 105 -A03 : 2019
ISO 105-A04, Textiles — Tests for colour fastness — Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics	IS/ISO 105-A04 :1989 Textiles — Tests for colour fastness Part A04 Method for the instrumental assessment of the degree of staining of adjacent fabrics	Identical With ISO 105-A04 :1989
ISO 105-A05, Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change in colour for determination of grey scale rating	IS/ISO 105-A05 :1996 Textiles — Tests for colour fastness Part A05 Instrumental assessment of change in determination of grey scale rating	Identical with ISO 105-A05:1996.
ISO 105-F02, Textiles — Tests for colour fastness — Part F02: Specification for cotton and viscose adjacent fabrics	IS/ISO 105-F02 : 2009 Textiles — Tests for colour fastness Part F02 Specification for cotton and viscose adjacent fabrics	Identical with ISO 105-F02:2009.
ISO 105-F04, Textiles — Tests for colour fastness — Part F04: Specification for polyester adjacent fabric	IS/ISO 105-F04 : 2001 Textiles — Tests for colour fastness Part F04 Specification for polyester adjacent fabric	Identical with ISO 105-F04:2001.
ISO 105-F10, Textiles — Tests for colour fastness — Part F10: Specification for adjacent fabric: Multifibre	IS/ISO 105-F10 : 1989 Textiles — Tests for colour fastness Part F10 Specification for adjacent fabric multi fibre	Identical with ISO 105-F04:2001.
ISO 139, Textiles — Standard atmospheres for conditioning and testing	IS 6359 : 2023 Method for conditioning of textiles (*first revision*)	Technically Equivalent
ISO 3696, Water for analytical laboratory use — Specification and test methods	IS 1070 : 2023, Reagent grade water — Specification (*fourth revision*)	Technically Equivalent

In reporting the result of a test or analysis made in accordance with this standard, if the final value; observed or calculated, is to be rounded off, it shall be done in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*).

Extract of ISO 105-C12:2024 'Textiles — Tests for colour fastness — Part C12: Colour fastness to industrial laundering'.

Foreword

This second edition cancels and replaces the first edition (ISO 105-C12:2004), which has been technically revised.

The main changes are as follows:

i) ISO 105-F:1985 was withdrawn and the test conditions of industrial laundering are seldom used for the fabrics mainly made of delicate fibres (for example silk or wool), therefore ISO 105-C12:2004/Cor 1:2007 has not been suitable to be incorporated into this method;
ii) addition of ISO 3696 and replacement of ISO 105-A01:1994 with ISO 105-A01 in Clause 2;
iii) revision of clause title from "Reagents" to "Reagents and materials" in Clause 5 (Former Clause 4);
iv) addition of "Other suitable detergent can be used if agreed upon between interested parties." in 5.1 (former 4.1);
v) clarification that 30 % is mass fraction in 5.3 (former 4.3);
vi) addition of sodium percarbonate as an optional reagent in 5.6, 8.1.3, Table 1 and A.1 (former 4.6, 7.1.3, Table 1 and A.1);
vii) replacement of "see 8.2 of ISO 105-A01:1994" with "in accordance with ISO 3696" in 5.7 (former 4.7);
viii) movement of "Adjacent fabrics" and "Grey scales" to the clause "Reagent and materials";
ix) addition of the statement "using either a multifibre adjacent fabric or two single-fibre adjacent fabrics as specified in ISO 105-A01." in 5.8 (former 5.4);
x) deletion of "Condition the sample for 24 h before assessing to allow for temporary colour change caused by heat." in 6.6 (former 5.6);
xi) addition of "Balance, with a resolution of 0,01 g." in Clause 6 (former Clause 5);
xii) addition of the dimension of the multifibre TV adjacent fabric as "80 mm × 100 mm" in 7.2 (former 6.2);
xiii) revision of Figure 1;
xiv) replacement of "mixer" with "mechanical stirrer" in 8.1 (former 7.1);
xv) replacement of "running tap water for 10 min" with "running tap water until being clean" and addition of a NOTE to check the cleanness degree of the rinsed test specimen in 8.2.2 (former 7.2.2);
xvi) revision of the requirement for conditioning the test specimen in 8.2 (former 7.2);
xvii) improvement of the contents in Test report;
xviii) revision of Annex A from "informative" to "normative";

xix) improvement of the Formula (A.1);
xx) updating of the Bibliography

Introduction

The test method in this document is intended to reflect the effect of comprehensive laundering during industrial laundry procedures, as distinct from the domestic washing test methods as given in ISO 105 C06, ISO 105-C08 and ISO 105-C10. Four test conditions are described, one at (92 ± 2) °C intended for the evaluation of workwear and three, as given below, at (75 ± 2) °C, for the evaluation of bed and table linen and corporate wear:

i) without the addition of peroxy bleach compounds;
ii) with the addition of hydrogen peroxide (for the bleaching of white workwear with coloured trimmings);
iii) with the addition of sodium perborate tetrahydrate (or sodium percarbonate) and tetra-acetylethylene diamine (TAED) (for the bleaching of white workwear with coloured trimmings).

NOTE
The addition of TAED/perborate (or percarbonate) is a conveniently stable way of producing peracetic acid in situ.

This test method does not reflect the effect of optical brightening agents.

This method and the single cycle test methods described in ISO 105-C06 and ISO 105-C08 might not reproduce the effect of coloured fabrics treated with certain dye fixing agents and finishes after multiple (5 to 10) industrial washes.

1 Scope

This document specifies methods for determining the resistance of the colour of textiles of all kinds exposed to all forms of industrial laundering procedures.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

i) ISO 105-A01, Textiles — Tests for colour fastness — Part A01: General principles of testing
ii) ISO 105-A02, Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour
iii) ISO 105-A03, Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining
iv) ISO 105-A04, Textiles — Tests for colour fastness — Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics
v) ISO 105-A05, Textiles — Tests for colour fastness — Part A05: Instrumental assessment of

change in colour for determination of grey scale rating

vi) ISO 105-F02, Textiles — Tests for colour fastness — Part F02: Specification for cotton and viscose adjacent fabrics

vii) ISO 105-F04, Textiles — Tests for colour fastness — Part F04: Specification for polyester adjacent fabric

viii) ISO 105-F10, Textiles — Tests for colour fastness — Part F10: Specification for adjacent fabric: Multifibre

ix) ISO 139, Textiles — Standard atmospheres for conditioning and testing

x) ISO 3696, Water for analytical laboratory use — Specification and test methods

3 Terms and definitions

No terms and definitions are listed in this document.

4 Principle

A test specimen of the textiles in contact with specified adjacent fabrics is laundered, rinsed and dried. Test specimens are laundered under appropriate conditions of temperature, alkalinity, bleaching and mechanical action such that the result is obtained in a conveniently short time. The mechanical action is accomplished by the use of an appropriate number of steel balls. The change in colour of the test specimens and the staining of the adjacent fabrics are assessed with reference to the original fabric, either using the grey scale or instrumentally.

One cycle approximates to the colour in change and cross staining resulting from chemical and/or mechanical action achieved after multiple (5 to 10) industrial launderings.

FORMAT FOR SENDING COMMENTS ON BIS DOCUMENTS

(Please use A4 size sheet of paper only and type within fields indicated. Comments on each clause/sub clause/table/fig etc. be started on a fresh box. Information in column 3 should include reasons for the comments and suggestions for modified working of the clauses when the existing text is found not acceptable. Adherence to this format facilitates Secretariat's work)

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Item, Clause Sub-Clause No. Commented upon (Use Separate Box afresh)	**Comments**	**Specific Proposal (Draft clause to be add/amended)**	**Remarks**	**Technical References and justification on which (2), (3), (4) are based**
(1)	**(2)**	**(3)**	**(4)**	**(5)**