SRI LANKA STANDARD 1076:1995
(ISO 11643:1993)

SRI LANKA STANDARD

LEATHER – TESTS FOR COLOUR FASTNESS – COLOUR FASTNESS TO SMALL SAMPLES TO DRY CLEANING SOLUTIONS

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SLS 1076: 1995

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SRI LANKA STANDARDS INSTITUTION
No. 17, Victoria Place
Elvitigala Mawatha
Colombo 08
SRI LANKA.

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SLS 1076:1995
ISO 11643:1993

Sri Lanka standard
LEATHER – TESTS FORCOLOUR FASTNESS - COLOUR FASTNESS OF SMALL SAMPLES TO DRY CLEANING SOLUTIONS

NATIONAL FOREWORD

This standard was finalised by the Sectoral Committee on Textiles, Clothing and Leather and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 1995-10-26.

This Sri Lanka Standard is identical with ISO 11643 : 1993 Leather – Tests for Colour fastness – colour fastness of small samples to dry cleaning solutions, published by the International Organization for Standardization. (ISO).

Terminology and Conventions

The text of the International Standard has been accepted as suitable for publication, without deviation, as a Sri Lanka Standard. However, certain terminology and conventions are not identical with those used in Sri Lanka Standards, attention is therefore drawn to the following :

a). Wherever the words " International standard/Publication" appear, referring to this Standard they should be interpreted as "Sri Lanka Standard".

b). Wherever page numbers are quoted, they are ISO page numbers.

INTERNATIONAL STANDARD

ISO 11643

IULTCS/IUF 434

First edition
1993-12-15

Leather — Tests for colour fastness — Colour fastness of small samples to dry-cleaning solutions

Cuir — Essais de solidité des teintures — Solidité des teintures de petits échantillons aux solutions de nettoyage à sec

Reference number
ISO 11643:1993 (E)
IULTCS/IUF
434, 1993 Edition

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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11643 was prepared by the Fastness Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUF Commission, IULTCS). It is based on IUF 434 published in *J. Soc. Leather Tech. Chem.*, **75**, pp. 30-32 (1991), and declared an official method of the IULTCS in September 1991.

Annexes A, B and C of this International Standard are for information only.

International Organization for Standardization
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Introduction

The testing of leather to determine its colour fastness to dry-cleaning can be done in different ways to achieve different aims. Small leather samples may be tested to assess the fastness to dry-cleaning of leather dyes and finishes, or of the finished leather itself. Whole garments, or composite parts thereof, may be tested to give guidance to the dry-cleaner as to the process to be used and/or to the garment manufacturer regarding the label to be used to mark the garment. The test method specified in this International Standard covers only the testing of small leather samples in the absence of any other materials (accessories, adhesives, etc.) that may influence the dry-cleanability of the finished article. Moreover, it does not consider changes in leather properties, such as the handling characteristics or area stability, as the samples are too small. It should not therefore be used to provide the dry-cleaner with guidance as to the process to be employed for cleaning.

Dry-cleaning using a solvent containing a detergent is common practice in some countries, while other countries do not use detergents in dry-cleaning. Cleaning solutions with a detergent have therefore been included (in annex A) so they may be used, if necessary, for specific applications.

The original draft of this International Standard included R 113 as a solvent, as it is still used quite frequently for dry-cleaning of leather. However, for environmental reasons, its use will be banned in many countries by 1995, and therefore R 113 was not included in the final draft.

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Leather — Tests for colour fastness — Colour fastness of small samples to dry-cleaning solutions

1 Scope

This International Standard specifies a method for determining the resistance to dry-cleaning solutions of the colour and the finish of unused, and not yet dry-cleaned, leather. It does not cover composite materials or complete leather garments. It is not intended to be used to give the dry-cleaner any guidance as to the process to be employed for cleaning.

During the test, the adjacent fabric used may become stained, the finish of the leather may be damaged and the colour of the leather may change.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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-A02:1993, *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-F10:1989, *Textiles — Tests for colour fastness — Part F10: Specification for adjacent fabric: Multifibre.*

ISO 2419:1972, *Leather — Conditioning of test pieces for physical tests.*

3 Principle

A composite specimen of the leather and an adjacent fabric is agitated, together with PTFE rods, in a solvent which may contain triolein (and possibly a detergent), then squeezed and dried at ambient temperature. The change in colour of the specimen and staining of the adjacent fabric are assessed with the grey scales and (if applicable) any changes in the finish are noted.

4 Apparatus and materials

Ordinary laboratory apparatus and

4.1 Apparatus[1] for mechanically agitating the containers (4.2).

The apparatus chosen shall be fitted with a cooling device, if necessary.

4.2 Containers, made of glass or stainless steel, of approximately 500 ml capacity, which can be closed, e.g. using solvent-resistant rubber gaskets, and which are suitable for agitating the composite specimen in the selected dry-cleaning solution.

4.3 PTFE (polytetrafluoroethylene) rods, 7 mm to 9 mm in diameter, 20 mm ± 2 mm long.

1) Examples of suitable apparatus available commercially are given in annex B.

4.4 Plain-weave fabric, 100 mm × 36 mm, for use as adjacent fabric.

NOTE 1 Type DW multifibre fabric[2)] conforming with ISO 105-F10 is normally used.

4.5 Solvent: tetrachloroethylene (perchloroethylene or "per"). The solvent shall be stored over anhydrous sodium carbonate to neutralize any hydrochloric acid formed.

CAUTION — "Per" is considered to be toxic. Use adequate ventilation and avoid contact with the skin.

4.6 Glycerol tri(*cis*-9-octadecenoate) (glycerol trioleate or "triolein").

5 Test specimen

Cut out a leather specimen measuring 36 mm × 100 mm. Fix a piece of adjacent fabric (4.4) measuring 36 mm × 100 mm on the flesh side of the leather for grain leathers, or on the side worn inside on other leathers, using steel staples, one at each end of the specimen. Before testing, condition the test specimen in a standard atmosphere in accordance with ISO 2419 (20 °C and 65 % R.H.).

6 Procedure

6.1 The dry-cleaning solution used shall be one of those given in table 1, prepared as specified in the table.

Table 1 — Dry-cleaning solutions

Dry-cleaning solution	Solvent (4.5)	Triolein (4.6) g/l
No. 1	"Per"	—
No. 2[1)]	"Per"	30
1) Add the appropriate amount of triolein to the solvent and stir until a clear solution is obtained.		

NOTES

2 For certain purposes, it may be informative to add different amounts of triolein to the solution.

3 For some applications, the addition of a detergent may be approriate (see annex A).

6.2 Bring the container (4.2), the cleaning solution (see 6.1) and 20 PTFE rods (4.3) to 30 °C, place the composite specimen, 100 ml of the dry-cleaning solution and the PTFE rods in the container and rotate at 40 rpm ± 5 rpm for 30 min, maintaining the temperature at 30 °C ± 2 °C.

6.3 Remove the composite specimen from the container, place it between two sheets of absorbent paper, compress it uniformly with a load of 4,5 kg and maintain the pressure for 1 min. Remove the specimen, unfasten one staple and place the specimen on a horizontal grille so that leather and adjacent fabric are not touching. Let the solvent evaporate at ambient temperature under a suitable hood.

6.4 Assess the change in colour of the leather and the staining of each type of fibre in the adjacent fabric with the appropriate grey scales in accordance with ISO 105-A02 and ISO 105-A03, respectively, and note any changes in the finish, if applicable.

7 Test report

The test report shall include the following information:

a) a reference to this International Standard;

b) a description of the type of leather tested;

c) details of the apparatus used;

d) details of the dry-cleaning solution used;

e) the numerical ratings obtained for the staining of the adjacent fabric, giving a separate rating for each of the different types of fibre;

f) the numerical rating obtained for the change in colour of the leather specimen;

g) details of any changes in the finish, if applicable;

h) details of any deviations from the procedure.

2) Examples of commercial sources for multifibre fabric are given in annex B.

Annex A
(informative)

Preparation of dry-cleaning solution containing a detergent

A.1 Detergent[3)]

Prepared as follows:

To 79 parts by mass of dodecylbenzenesulfonic acid add slowly 21 parts by mass of 3-methoxypropylamine, while stirring. Do not allow the temperature to rise above 80 °C. On completion of the addition, maintain the temperature between 70 °C and 80 °C. Dilute 1 g of this mixture with 100 ml of water and measure the pH. If the pH-value is not between 4 and 7, add a small amount of dodecylbenzenesulfonic acid or 3-methoxypropylamine to the mixture and check the pH-value as before. Continue the procedure until the pH-value is in the required range. Allow to cool to room temperature.

A.2 Dry-cleaning solutions

The alternative dry-cleaning solution used may be one of those given in table A.1, prepared as specified in the table.

Table A.1 — Dry-cleaning solutions with detergent

Dry-cleaning solution	Solvent (4.5)	Triolein (4.6)	Detergent (A.1)	Water
		g/l	g/l	g/l
No. 3[1)]	"Per"	30	1,0	0,25
No. 4[2)]	"Per"	—	1,0	0,25

1) Add triolein, detergent and water in the appropriate amounts to the solvent and stir vigorously until a clear solution is obtained.

2) Add detergent and water in the appropriate amounts to the solvent and stir vigorously until a clear solution is obtained.

3) A commercial source for the detergent is given in annex B, B.3.

Annex B
(informative)

Commercial sources for apparatus and materials

Examples of suitable products available commercially are given below. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of these products.

B.1 Suitable items of equipment for mechanically agitating the containers which are supplied with the apparatus are:

The Wacker apparatus, made by Ludwig Dose KG, D-7581 Grauelsbaum, Germany (the "capacity" of the glass containers is taken to be 500 ml);

The Launder-Ometer (American Association of Textile Chemists and Colorists), supplier: Atlas Electric Devices Co., Chicago, IL, USA;

The Linitest, supplier: Heraeus Instruments GmbH, Original Hanau-Materialprüftechnik, Heraeusstrasse 12-14, D-6450 Hanau 1, Germany.

B.2 Examples of suppliers for DW multifibre fabric:

Society of Dyers and Colourists, P.O. Box 244, Bradford, West Yorkshire BD1 2JB, UK;

Testfabrics Inc., P.O. Drawer "O", Middlesex, NJ 08846, USA.

B.3 The detergent can be obtained in jars of 50 g from EMPA, Unterstrasse 11, CH-9001, St. Gallen, Switzerland.

Annex C
(informative)

Bibliography

The following IULTCS publications describe related methods:

[1] IUF 120, *General principles of colour fastness testing of leather.*

[2] IUP 3, *Conditioning.*

[3] IUF 434, *Leather — Test for colour fastness — Colour fastness of small samples to dry-cleaning solutions.*

UDC 675.016.2:535.684:620.1:648.28

Descriptors: leather, tests, determination, colour fastness. dry cleaning.

Price based on 5 pages

SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

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