INTERNATIONAL STANDARD

ISO 3175-1

Second edition
2010-03-01

Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments —

Part 1: Assessment of performance after cleaning and finishing

Textiles — Entretien professionnel, nettoyage à sec et nettoyage à l'eau des étoffes et des vêtements —

Partie 1: Évaluation de la résistance après le nettoyage et la finition

Reference number
ISO 3175-1:2010(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3175-1 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests*.

This second edition cancels and replaces the first edition (ISO 3175-1:1998), of which it constitutes a minor revision. It also incorporates Technical Corrigendum ISO 3175-1:1998/Cor.1:2002.

ISO 3175 consists of the following parts, under the general title *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments*:

— *Part 1: Assessment of performance after cleaning and finishing*

— *Part 2: Procedure for testing performance when cleaning and finishing using tetrachloroethene*

— *Part 3: Procedure for testing performance when cleaning and finishing using hydrocarbon solvents*

— *Part 4: Procedure for testing performance when cleaning and finishing using simulated wetcleaning*

Introduction

Drycleaning is a process for cleaning textiles in an organic solvent that dissolves oils and fats and disperses particulate dirt substantially without the swelling and creasing associated with washing or wetcleaning. Small quantities of water may be incorporated in the solvent with the aid of a surfactant for the purpose of obtaining better soil and stain removal. Some moisture-sensitive articles are preferably drycleaned without the addition of water to the solvent. A surfactant is often used to assist with soil removal and reduce the risk of greying, but it should be borne in mind that surfactants contain varying amounts of water in their formulations.

Drycleaning is normally followed by an appropriate restorative finishing procedure. In most cases, this comprises some form of steam treatment and/or hot pressing.

Properties of the textile or garment may change progressively on drycleaning and steaming and/or pressing and, in some cases, a single treatment can give little indication of the extent of dimensional and other changes that can arise after repeated treatments and which can affect the useful life of the article. Generally, most of the potential changes become apparent after three to five of the drycleaning and finishing treatments specified in ISO 3175-2.

Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments —

Part 1: Assessment of performance after cleaning and finishing

1 Scope

This part of ISO 3175 specifies a method for assessing textile articles which have been tested according to ISO 3175-2.

Fabric and garment properties, which can change on drycleaning and finishing, are identified and methods for assessing change using existing International Standards are given as appropriate. Other properties which are also important, but for which there are no International Standards providing methods of assessment, are indicated in Annex A, together with advice on how to proceed on their assessment.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

ISO 105-A03, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

ISO 105-D01, *Textiles — Tests for colour fastness — Part D01: Colour fastness to dry-cleaning using perchloroethylene solvent*

ISO 105-E07, *Textiles — Tests for colour fastness — Part E07: Colour fastness to spotting: Water*

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

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 3175-2, *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments — Part 2: Procedure for testing performance when cleaning and finishing using tetrachloroethene*

ISO 3759, *Textiles — Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change*

ISO 4920, *Textiles — Determination of resistance to surface wetting (spray test) of fabrics*

ISO 7768, *Textiles — Test method for assessing the smoothness appearance of fabrics after cleansing*

ISO 7769, *Textiles — Test method for assessing the appearance of creases in fabrics after cleansing*

ISO 7770, *Textiles — Test method for assessing the smoothness appearance of seams in fabrics after cleansing*

ISO 9867, *Textiles — Evaluation of the wrinkle recovery of fabrics — Appearance method*

ISO 12947-1, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 1: Martindale abrasion testing apparatus*

ISO 12947-2, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 2: Determination of specimen breakdown*

ISO 12947-3, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 3: Determination of mass loss*

ISO 12947-4, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 4: Assessment of appearance change*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
composite test specimen
test specimen consisting of all component parts used in the finished item, and combined in a representative assembly

3.2
drycleanability
extent to which an article may be cleaned by means of immersion with agitation in organic solvents commonly used for the purpose

NOTE This process consists of cleaning, centrifugal extraction, drying and finishing in order to restore shape and appearance.

4 Principle

At least two identical test specimens are obtained. The first test specimen is used as a control, and does not undergo any drycleaning treatment. It is retained to indicate the original condition. The second test specimen is subjected to a drycleaning process using commercial equipment involving a two-bath cleaning process, centrifugal extraction, tumble drying and appropriate finishing. An assessment of dimensional, colour and other changes is carried out after cleaning and finishing by comparing the second test specimen with the first test specimen. The assessment determines whether or not the item is regarded as drycleanable in the process selected.

If a retest in a more sensitive process is necessary, a third test specimen is required.

5 Apparatus and reagents

5.1 **Drycleaning and finishing apparatus**, as specified in ISO 3175-2.

5.2 **Grey scales**, as specified in ISO 105-A02 and ISO 105-A03.

5.3 **Crease replicas**, as specified in ISO 7769.

5.4 **Surface wetting scales**, as specified in ISO 4920.

5.5 **Wrinkle recovery replicas**, as specified in ISO 9867.

6 Test specimens

6.1 For fabric piece goods, select specimens representative of the sample. Do not cut specimens from within 1 m of either end of the piece. Samples shall be cut to the size specified in ISO 3175-2.

6.2 For made-up textiles, obtain at least two identical finished items or, alternatively, obtain at least two composite test specimens.

Testing may be an iterative procedure since alternative processes of varying sensitivity may be used, and it is advisable to obtain sufficient specimens for all the testing which might be required.

7 Procedure

7.1 Retain the first test specimen as a control to indicate the original overall appearance.

7.2 Condition the second test specimen for at least 16 h in one of the standard atmospheres for conditioning and testing textiles specified in ISO 139.

7.3 If required, mark and measure the test specimen for dimensional changes in accordance with ISO 3759.

7.4 If the test specimen is a garment, mark and measure different parts of the outer fabrics and linings separately.

7.5 Dryclean and finish the specimen in accordance with one of the procedures specified in ISO 3175-2, as agreed on between the interested parties.

7.6 Recondition the specimen in accordance with 7.2. If information on dimensional stability is required, remeasure the test specimen(s) and record values in accordance with ISO 3759.

7.7 Assess the drycleaned, finished specimen by comparing it with the original control or with replicas, using the assessment methods appropriate to the textile item and given in Table 1.

7.8 For certain properties, there are no International Standards which provide methods for assessment. Nevertheless, these are important properties for assessing drycleanability of textile items, and procedures for dealing with them are given in Annex A.

8 Test report

The test report (see the example in Annex B) shall include the following information:

a) reference to this part of ISO 3175, i.e. ISO 3175-1;

b) name of testing authority and report identification;

c) date of testing;

d) cross-reference to any test report relating to the specimen(s) issued under ISO 3175-2;

e) details of the item evaluated (description and reference);

f) details of the drycleaning and finishing procedures used, as specified in ISO 3175-2;

g) total number of drycleaning and finishing procedures;

h) appropriate properties assessed from Table 1, together with the methods of assessment and results;

i) comments on appropriate properties which appear in Table A.1;

j) details of any deviation from the specified procedure.

Table 1 — Methods for assessing properties of drycleanability

Property	Assessment/comparison method specified in
Dimensional stability	ISO 3759
Colour fastness	ISO 105-D01
Colour fastness of specimen	ISO 105-A02
Staining on multifibre adjacents	ISO 105-F10 (fabric), ISO 105-A03
Colour fastness to spotting: water	ISO 105-E07[a]
Seam pucker	ISO 7770 (procedure)[b]
Loss of finish	Dependent on type of finish[c]
Crease retention	ISO 7769 (procedure)
Creasing propensity, creasing	ISO 7768 (procedure)[bd]
Wrinkle recovery, appearance method	ISO 9867 (procedure)[d]
Surface abrasion	ISO 12947 (all parts)

[a] This test differs from the others in this table in that it is applied to the sample without drycleaning.

[b] ISO 7768 and ISO 7770 require that the specimens be washed and dried in accordance with ISO 6330. For assessment in accordance with this part of ISO 3175, the specimens shall be neither washed nor dried.

[c] There are many types of finishes which can be applied to textiles. In some cases, where destructive testing is necessary to prove that the finish is still present, it is advisable to test the fabric prior to making up, e.g.

— chemical resistance (ISO 6530);

— water resistance (ISO 811, ISO 4920, ISO 9865);

— flame resistance (e.g. ISO 6940).

For the assessment of finishes for which there are no available International Standards, see Table A.1.

[d] This can affect the level of finishing required by the cleaner and also the effect on the finished garment, e.g. double creases, glazing. See Annex A.

Annex A
(normative)

Method for assessment of properties not covered by International Standards

Drycleaned and finished specimens may be compared with an original control and a description of any changes may be recorded for the additional properties listed in Table A.1. Comments should be made in the test report (see Clause 8).

Table A.1 — Properties not covered by International Standards

Property	Method for assessment and comparison
Performance of component parts, trims, accessories and adornments	Assess the drycleaned specimen by comparison with the original control and record the findings, i.e. where no visual change has taken place, record this as “no visual change”. Where a visual change has taken place, record a description of this change.
Distortion (bow and skew, puckering, differential shrinkage)	Use the description: very slight, slight, moderate, severe, very severe, to indicate the extent of the change.
Felting	
Adhesion of fusible interlinings and bonded fabrics (delamination, blistering, deterioration of coated, bonded, laminated or fused fabrics)	
Fraying of seams	
Handle	
Loss of finish	
Pilling	