# INTERNATIONAL STANDARD

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

Part 4:

# Procedure for testing performance when cleaning and finishing using simulated wetcleaning (standards.iteh.ai)

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

https://standards.iteh.apartie 4: Mode operatoire pour évaluer la résistance au nettoyage et à Ta finition lors d'un nettoyage à l'eau simulé



Reference number ISO 3175-4:2018(E)

# iTeh STANDARD PREVIEW (standards.iteh.ai)

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# Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="https://www.iso.org/directives">www.iso.org/directives</a>).

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This document was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing*, *finishing and water resistance tests*. ISO 3175-4:2018 https://standards.iteh.ai/catalog/standards/sist/735b89bc-7d4c-4386-8e03-

This second edition cancels and replaces the first edition (ISO-3175-4:2003), which has been technically revised. It also incorporates the Technical Corrigendum ISO 3175-4:2003/Cor 1:2009. The main changes compared the previous edition are as follows:

- restriction of the scope to fabrics and garments that cannot be washed and need professional finishing;
- <u>6.1</u>: addition of a reference to the technical specifications of the apparatus as described in ISO 6330 and withdrawal of the reference to <u>Annex A</u>;
- <u>9.1</u>: clarification of the normal process steps;
- <u>Table 1</u>: updating of some settings in processes;
- <u>Annex A</u>: updating of some specifications of the tumble dryer (humidity control and cage outlet temperature);
- <u>Annex B</u>: withdrawal of the programming washing instructions, replaced by <u>Table 1</u>, and addition of an informative part dealing with an alternative procedure for Type C washing machines.

A list of all parts in the ISO 3175 series can be found on the ISO website.

This corrected version of ISO 3175-4:2017 incorporates the following corrections:

— in <u>8.2</u>, the test specimen dimensions have been corrected.

# Introduction

Professional wetcleaning is used by professionals for cleaning textiles in water. It uses specialized equipment, programming, detergent and other additives to minimize adverse effects on textiles such as mechanical action and temperature. It is followed by drying and restorative finishing procedures, in most cases by steam treatment and/or hot pressing.

The professional wetcleaning process takes place without the intense mechanical action associated with washing.

Properties of the textile or garment can change progressively on professional wetcleaning, steaming and/or pressing. 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 affect the useful life of the article. Generally, most of the potential change becomes apparent after three to five of the simulated professional wetcleaning and finishing treatments specified in this document. This progressive change should be borne in mind when determining the number of repeated cycles which is given (see <u>Clause 4</u>).

The properties that should be considered in an assessment for professional wetcleaning together with the methods for their assessment are given in ISO 3175-1.

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

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

## 1 Scope

This document specifies simulated professional wetcleaning procedures, using a reference machine for fabrics and garments. It is intended for fabrics and garments that cannot be washed and need professional finishing. It comprises a normal process for normal materials, a mild process for sensitive materials and a very mild process for very sensitive materials.

Localized staining and stain removal fall outside the scope of this document.

## 2 Normative references

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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.

ISO 139, Textiles — Standard atmospheres for conditioning and testing

ISO 3175-1, Textiles — Professional care, arycleaning and wetcleaning of fabrics and garments — Part 1: Assessment of performance after cleaning and finishing

ISO 6330:2012, Textiles — Domestic washing and drying procedures for textile testing

## 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <u>https://www.iso.org/obp</u>
- IEC Electropedia: available at <u>http://www.electropedia.org/</u>

#### 3.1

material

garment, composite test specimen or fabric

[SOURCE: ISO 3175-2:2017, 3.1]

#### 3.2

#### composite test specimen

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

[SOURCE: ISO 3175-1:2017, 3.1]

#### 3.3

#### normal material

material that is able to withstand a normal simulated professional wetcleaning process (3.6)

Note 1 to entry: Normal material is related to the care symbol 🞯 from ISO 3758:2012, Table 6.

#### 3.4

#### sensitive material

material that is able to withstand a *mild simulated professional wetcleaning process* (3.7)

Note 1 to entry: Sensitive material is related to the care symbol 🖗 from ISO 3758:2012, Table 6.

#### 3.5

#### very sensitive material

material that is able to withstand a very mild simulated professional wetcleaning process (3.8)

Note 1 to entry: Very sensitive material is related to the care symbol 🖗 from ISO 3758:2012, Table 6.

#### 3.6

#### normal simulated professional wetcleaning process

cleaning procedure in water at 40 °C, followed by tumbler drying at 60 °C to residual moisture less than 3 %

Note 1 to entry: See <u>Table 1</u> for the requirements of this cleaning procedure. **iTeh STANDARD PREVIEW** 

#### 3.7

# mild simulated professional wetcleaning processeds.iteh.ai)

cleaning procedure in water at 30 °C followed by tumbler drying at 60 °C to residual moisture of approximately 15 % ISO 3175-42018

Note 1 to entry: See Table 1 for the requirements of this taleaning to the 7d4c-4386-8e03-

#### 3.8

#### very mild simulated professional wetcleaning process

cleaning procedure in water at 30 °C followed by 2 min tumbler drying at 40 °C as a maximum and followed by air-drying

Note 1 to entry: See <u>Table 1</u> for the requirements of this cleaning procedure.

Note 2 to entry: After giving careful consideration to the comments on progressive change in the Introduction, textile items that perform satisfactorily for purpose in the procedures intended for sensitive and very sensitive materials in <u>Table 1</u> may be labelled as appropriate with the D or B symbol.

## 4 Principle

Specimens are cleaned in a reference washing machine (<u>6.1</u>), dried in a tumble-dryer (<u>Annex A</u>) and finished to one of the specified procedures.

The process simulates the effect of professional wetcleaning, drying and finishing.

Testing is an iterative process since

- a) changes to the test specimens can be progressive, and
- b) alternative processes of varying severity can be used.

In selecting the number of cycles to be given, it should be borne in mind that test specimens can become unacceptable after single or multiple processes.

### **5** Reagents

**5.1** Water, for which the hardness is less than 0,1 mmol Ca/Mg per litre.

**5.2** Non-ionic detergent, of the type C13 oxoalcoholethoxylate (7E0).

## 6 Apparatus and materials

**6.1 Reference washing machine**, meeting the technical specifications given in ISO 6330:2012, Table A.1, using a Type A1 machine.

NOTE 1 The reference washing machine is intended for a simulation of a professional wetcleaning process.

Both the reference washing machine and the tumble dryer (6.2) shall have approximately the same load capacity.

NOTE 2 An alternative procedure based on a Type C washing machine is described in <u>Annex B</u>.

**6.2 Commercial, reversibly rotating tumble dryer**, with a drum volume as specified in <u>Table A.1</u>, electrically heated and with a temperature control of incoming or outgoing air.

NOTE The tumble dryer is intended for a simulation of a professional wetcleaning process.

**6.3** Iron, with an approximate mass of 1,5 kg and a sole surface area of 150 cm<sup>2</sup> to 200 cm<sup>2</sup>.

6.4 Steam press, consisting of two bucks, one fixed and the other movable, each buck having a surface area of approximately 0,35 m<sup>2</sup>.

Steam conducted to the bucks shall be released sunder ab pressure of approximately 500 kPa. The pressure exerted by the bucks shall be approximately 350 kPa.

**6.5 Steam table**, having a shape and dimensions suited to the dimensions of the specimens.

The steam shall be released at a pressure of approximately 500 kPa.

6.6 Steam cabinet, specific for garments.

The steam shall be released at a pressure of approximately 500 kPa.

6.7 **Steam former** (e.g. manikin, trouser topper), the shape of which can be specific for garments.

The steam shall be released at a pressure of approximately 500 kPa, followed by blowing warm air.

**6.8 Ballast**, consisting of dry, clean textile pieces which are either white or of a light colour and consist of polyester-cotton (50-50) with a mass per unit area of  $155 \text{ g/m}^2 \pm 10 \text{ g/m}^2$ .

Each piece shall comprise two layers of fabric sewn together at the edges and shall be  $(92 \pm 2)$  cm ×  $(92 \pm 2)$  cm square (as specified in ISO 6330:2012, for Type II).

If an alternative ballast is used, ensure that the ballast and the test specimens have similar moisture retention properties for an effective drying control.

# 7 Conditioning

The specimens and the ballast shall be conditioned for at least 16 h in one of the standard atmospheres for conditioning and testing textiles specified in ISO 139. Specimens shall either be