INTERNATIONAL STANDARD

ISO 30023

Second edition
2021-08

Textiles — Qualification symbols for labelling workwear to be industrially laundered

Textiles — Symboles de qualification pour l'étiquetage des vêtements de travail destinés à être lavés de manière industrielle

Reference number
ISO 30023:2021(E)

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Published in Switzerland

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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.

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 www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products,* in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 30023:2010), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

— Table 1 has been redesigned in accordance with the latest edition of ISO 15797, to enable precise referencing in the assignment of the washing processes of this document.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

ISO 15797 was developed to assist manufacturers, suppliers and launderers to assess and specify workwear garments for use in the textile rental industry. ISO 15797 also had an application in the emerging personal protective equipment (PPE) clothing market.

While ISO 15797 made a significant beneficial impact on the industry, there was still a requirement to supply information in a clear but uncomplicated way down an often-extended chain to the launderer. A labelling code using symbols (see ISO 3758) has been successfully used for this purpose by the retail textile industry for many years and has, by and large, proved to be a success for textile producers, retailers, detergent suppliers, professional dry and wet cleaners and, of course, the customer who launders the products at home.

No such labelling code existed for the professional laundry sector. This document provides an equivalent, but visually distinctly different, code of symbols for the professional industrial laundering of workwear and protective clothing.

Textiles — Qualification symbols for labelling workwear to be industrially laundered

1 Scope

This document

— establishes a system of graphical symbols, intended for use in the marking of workwear articles and protective clothing providing information on the suitability for professional industrial laundering using ISO 15797, and

— specifies the use of these symbols in qualifying garments as potentially suitable for industrial laundering.

The following professional industrial laundering treatments are covered: washing, bleaching, tunnel finishing and tumble drying after washing. Textile-care treatments in dry and wet cleaning are covered in ISO 3175 (all parts).

This document applies to articles of workwear and protective clothing in the form in which they are supplied to the professional launderer.

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.

ISO 15797:2017, *Textiles — Industrial washing and finishing procedures for testing of workwear*

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 https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
drying
finishing
process carried out on workwear and protective-clothing articles after washing and extraction in order to remove excess water, remove creases and restore the shape

3.1.1
tumble drying
process carried out on an article of workwear and protective clothing after washing and extracting, with the intention of removing residual water by treatment with hot air in a rotating drum

3.1.2
tunnel finishing
cabinet finishing
process carried out on an article of workwear and protective clothing after washing and extracting, with the intention of removing residual water and restoring its shape and appearance

Note 1 to entry: An appropriate appliance consists of a conveyor system that transports garments on hangers through a cabinet or tunnel equipped with suitable steam and air jets for providing moisture, heat and turbulence.

3.2
professional industrial laundering
professional laundering of workwear in greater quantities than domestic laundering

3.3
washing
process designed to clean textile articles in an aqueous bath

Note 1 to entry: Washing includes all or some of the following operations in relevant combinations:

— soaking, pre-washing and main washing (carried out usually with heating, mechanical action and in the presence of detergents or other products) and rinsing;

— water extraction, i.e. spinning or squeezing performed during and/or at the end of the operations mentioned above.

3.4
bleaching
process carried out in an aqueous medium usually during *washing* (3.3) or rinsing, requiring the use of an oxidizing agent, such as chlorine or oxygen products, for the purpose of improving soil and stain removal and/or improving whiteness

3.4.1
chlorine bleach
agent that releases active chlorine

EXAMPLE Sodium hypochlorite

3.4.2
oxygen bleach
agent that releases active oxygen species in solution

Note 1 to entry: Oxygen bleach products encompass a wide range of different activated and non-activated bleaching species which vary in their activity.

3.5
protective clothing
clothing which covers or replaces personal clothing, and which is designed to provide protection against one or more hazards

3.6
workwear
garment specifically designed to be worn in the workplace

Note 1 to entry: The attributes of workwear are determined by the reason for its use, the activity in the workplace and the requirement to restore it for re-use.

4 Description and specification of symbols

4.1 Professional industrial laundering

A rectangular box with the word PRO in capitals in reverse text (white text on a black background) shall be used to indicate professional industrial laundering as shown in Figure 1.

Figure 1 — Professional industrial laundering

4.2 Washing

The selected washing procedure(s) is shown in reverse text, as illustrated in Figure 2.

Figure 2 — Selected washing procedure shown in reverse text

The number in each square corresponds to one of the washing procedures of ISO 15797:2017. The corresponding reference is shown in Table 1.

Table 1 — Washing and drying procedures in ISO 15797:2017

Classification	Fabric type[a]	Procedure-number	Methods in ISO 15797:2017
White workwear and/or sensitive coloured trimmings — peracetic acid bleach	Cotton	1	1. Full load in Table 1
	Polyester/cotton	2	2. Reduced load in Table 1
White workwear — chlorine bleach	Cotton	3	1. Full load in Table 2
	Polyester/cotton	4	2. Reduced load in Table 2
White workwear and/or sensitive coloured trimmings —hydrogen peroxide	Cotton	5	1. Full load in Table 3
	Polyester/cotton	6	2. Reduced load in Table 3
Coloured workwear	Cotton	7	1. Full load in Table 4
	Polyester/cotton	8	2. Reduced load in Table 4
	Drying — procedure A — tumble drying		
	Drying — procedure B — tunnel/cabinet finishing		

[a] Polyester/cotton refers to any blend combination including reverse blends and also 100 % synthetic fibres.

4.3 Drying

4.3.1 Tumble drying

Tumble drying shall be indicated as a hexagon inside an outline square, as shown in Figure 3.

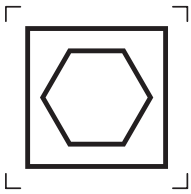

Figure 3 — Professional industrial laundering — Tumble drying (ISO 7000 – 3008)

4.3.2 Tunnel/cabinet finishing

Tunnel or cabinet finishing shall be indicated by an outline square divided into three equal horizontal rectangles, as shown in Figure 4.

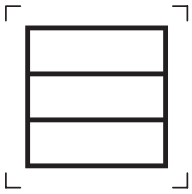

Figure 4 — Professional industrial laundering — Tunnel finishing (ISO 7000 – 3009)

4.4 Examples of complete labels

Examples of complete labels are shown in Figures 5, 6 and 7.

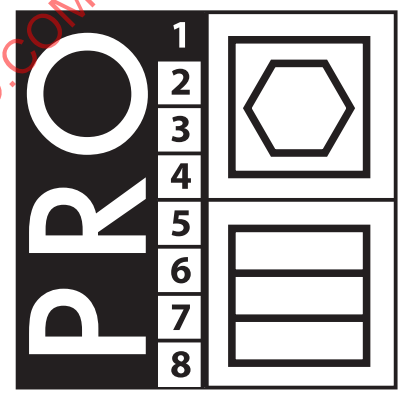

Figure 5 — Professional industrial laundering, indicating washing procedure 1 with tumble dry or tunnel finishing

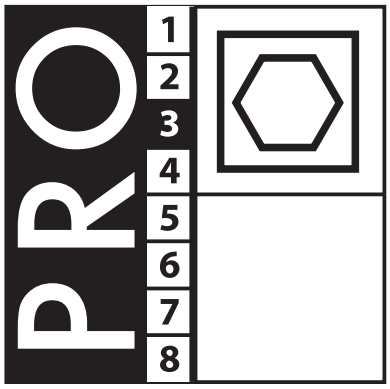

Figure 6 — Professional industrial laundering, indicating washing procedure 3 with tumble dry only

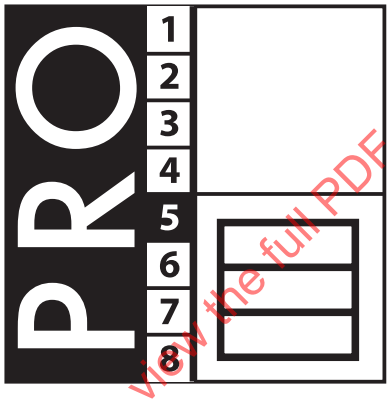

Figure 7 — Professional industrial laundering indicating washing procedure 5, with tunnel finishing only

5 Application and use of symbols

5.1 Application of symbols

Information on the performance of workwear and protective-clothing articles and their components with respect to cleaning treatments (see ISO 15797) shall be obtained to allow selection of the appropriate labels.

Only garments that can be successfully tested according to ISO 15797 shall be labelled.

It is not a requirement for the symbols to be placed on each individual item. The symbols specified in Clause 4 shall be placed either directly on the workwear article or on the containers or invoices for bulk quantities.

If placed directly on the garment, labels shall be made of a suitable material with resistance to the care treatment indicated on the label at least equal to that of the article on which they are placed.

Labels and symbols shall be large enough for the symbols to be easily read and remain readable throughout the lifetime of the article.

Labels shall be affixed to the material in such a way that they can easily be located and read and that no part of the label is hidden.

If it is appropriate for workwear articles to be laundered at home, care symbols consistent with ISO 3758 should be used.

5.2 Characteristics and test methods for the selection of appropriate symbols

The relevant characteristics and the respective test methods are given in Annex A.

5.3 Use of symbols

The treatments represented by the symbols apply to the whole of the textile article.

The symbols for drying should only be used if the garment has been subjected to the appropriate test method. Thus, the omission of a symbol can mean either that it has not undergone appropriate testing for that particular method or that it was tested but failed to meet the criteria.

Annex A
(informative)

Characteristics and available test methodsfor the correct selection of symbols to indicate potential suitabilityfor professional industrial laundering

A.1 Characteristics

A.1.1 Description

These characteristics are important for the usability of workwear or protective-clothing articles and may be influenced in a negative way by care treatments.

A.1.2 Characteristics tested by laboratory methods

For colour fastness, the general principles of testing are laid down in ISO 105-A01. The scales for assessing the change in colour and staining are specified in ISO 105-A02 and ISO 105-A03, respectively.

A.1.3 Characteristics tested by semi-scale methods

These characteristics include performance when washing, tumble drying and/or tunnel finishing. The relevant attributes may be determined by standardized test methods or sensory assessment.

The relevant characteristics are listed in Table A.1, column 1.

A.2 Test methods

A.2.1 General

A summary overview of the respective test methods for assessment is given in Table A.1, column 3.

In Table A.1, other characteristics may be taken into account according to the materials, structure and application of the articles.

Different types of test method are described in A.2.2 to A.2.4.

A.2.2 Machine (semi-scale) methods

These are test methods (see ISO 15797) applying standardized procedures similar to those used in practice.

A.2.3 Sensory assessment

Sensory assessment is an evaluation method which uses human senses only.

A.2.4 Laboratory methods

These are test methods applying standardized procedures under laboratory conditions or, more exactly, laboratory methods.

Table A.1 — Characteristics, ageing and assessment procedures

	Characteristic	Ageing procedure, type of test and number of cycles[a]	Assessment procedure (to be carried out after the ageing procedure)
Physical performance	Shrinkage	$n = 5$[b]	ISO 3759, ISO 5077
	Pilling	$n = 5$[b]	ISO 12945-2, photographic assessment
	Breaking strength	$n = 30$[b]	ISO 13934-1
	Abrasion	$n = 5$[b]	ISO 12947-4
	Crease recovery	only new fabric to be tested	Wet angle methods (such as DIN 53891-2)
	Function of accessories[d]	$n = 30$[b]	Assessment of performance and function
Colour performance	Colour fastness to laundering	c	ISO 105-C06:2010, Table 4, Test number E2S
	Colour fastness to bleaching: sodium hypochlorite	c	ISO 105-N01
	Colour fastness to bleach:peroxide	c	ISO 105-N02
	Colour fastness to water	c	ISO 105-E01
	Combined dry heat/washing fastness	c	Fixotest + ISO 105-C10:2006, Test number B(5)
	Colour fastness to artificial light: xenon arc fading lamp test	$n = 5$[b]	ISO 105-B02
	Function of accessories[d]	$n = 30$[b]	Assessment of performance and function
Visual and haptic performance	Appearance of seams	$n = 5$[b]	ISO 7770 or ISO 15487; visual assessment against standard scales
	Retention of permanent creases	$n = 5$[b]	ISO 7769 or ISO 15487; visual assessment against standard scales
	Creasing/appearance of fabric	$n = 3$[b]	ISO 7768 or ISO 15487; visual assessment against standard scales
	Surface	$n = 30$[b]	Visual assessment
	Hardening of coated fabrics	$n = 30$[b]	Haptic assessment
	Delamination of coated or laminated fabrics	$n = 30$[b]	Visual assessment
	Separation of fusible interlining	$n = 30$[b]	Visual assessment
	Hand modifications	$n = 30$[b]	Haptic assessment
	Unravelling, fraying of seams and yarn slippage	$n = 30$[b]	Visual assessment
	Function of accessories[d]	$n = 30$[b]	Assessment of performance and function

NOTE This table is an example of key indicators which can be used as a method of assessment and is dependent on the use.

[a] n = number of washing and drying cycles.

[b] Method using intermediate scale equipment: see ISO 15797:2017; assessment of the properties **after** n washing and drying cycles.

[c] Laboratory method as indicated in column 4 (Assessment procedure).

[d] Examples of accessories are buttons, zippers, embroidery, etc.