BS ISO 30023:2010

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Textiles — Qualification symbols for labelling workwear to be industrially laundered

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National foreword

This British Standard is the UK implementation of ISO 30023:2010.

The UK participation in its preparation was entrusted to Technical Committee TCI/82, Textiles care labelling, dry cleaning, domestic laundering and drying.

A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL STANDARD

ISO 30023

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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 30023:2010(E)

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Foreword

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ISO 30023 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests*.

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 (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 International Standard provides an equivalent, but visually distinctly different, code of symbols for the professional industrial laundering of workwear and protective clothing.

INTERNATIONAL STANDARD ISO 30023:2010(E)

Textiles — Qualification symbols for labelling workwear to be industrially laundered

1 Scope

This International Standard

— 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.

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

It is a requirement of this International Standard that information on the performance of workwear and protective-clothing articles and their components with respect to cleaning treatments (ISO 15797) be obtained to allow selection of the appropriate labels.

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

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 15797:2002, *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.

3.1
drying and 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 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 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 or rinsing, requiring the use of an oxidizing agent, e.g. 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 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 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 definition 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. The number in each square corresponds to one of the washing procedures described in ISO 15797 (see Table 1).

Figure 2 — Selected washing procedure shown in reverse text

Table 1 — Washing and drying procedures in ISO 15797:2002

Classification	Fabric type[a]	Procedure number
White workwear and/or sensitive coloured trimmings — peracetic acid bleach	Cotton	1
	Polyester/cotton	2
White workwear — chlorine bleach	Cotton	3
	Polyester/cotton	4
White workwear and/or sensitive coloured trimmings — hydrogen peroxide	Cotton	5
	Polyester/cotton	6
Coloured workwear	Cotton	7
	Polyester/cotton	8
	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.

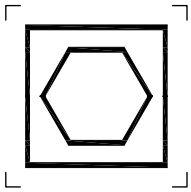

Figure 3 — Professional industrial laundering — Tumble drying (ISO 7000 – 3008)

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.

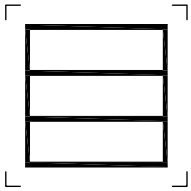

Figure 4 — Professional industrial laundering — Tunnel finishing (ISO 7000 – 3009)

4.4 Examples of complete labels

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

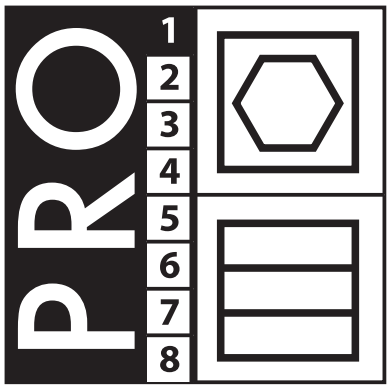

Figure 5 — Professional industrial laundering, indicating washing procedure 1 with tumble dry or tunnel finishing

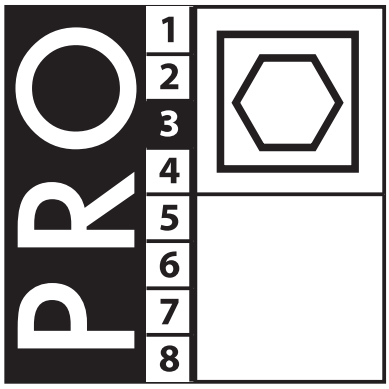

Figure 6 — Professional industrial laundering, indicating washing procedure 3 with tumble dry only

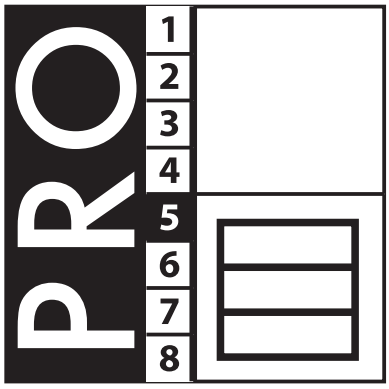

Figure 7 — Professional industrial laundering indicating washing procedure 5, with tunnel finishing only

5 Application and use of symbols

5.1 Application of symbols

It is not a requirement for the symbols to be placed on each individual item. The symbols defined 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 methods for the correct selection of symbols to indicate potential suitability for 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 Introduction

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 (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

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

	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, Table 2, Test number E(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

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

[b] Method using intermediate scale equipment: see ISO 15797; 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.

Bibliography

[1] ISO 105-A01, *Textiles — Tests for colour fastness — Part A01: General principles of testing*

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

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

[4] ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

[5] ISO 105-C06:2010, *Textiles — Tests for colour fastness — Part C06: Colour fastness to domestic and commercial laundering*

[6] ISO 105-C10:2006, *Textiles — Tests for colour fastness — Part C10: Colour fastness to washing with soap or soap and soda*

[7] ISO 105-E01, *Textiles — Tests for colour fastness — Part E01: Colour fastness to water*

[8] ISO 105-N01, *Textiles — Tests for colour fastness — Part N01: Colour fastness to bleaching: Hypochlorite*

[9] ISO 105-N02, *Textiles — Tests for colour fastness — Part N02: Colour fastness to bleaching: Peroxide*

[10] ISO 3175 (all parts), *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments*

[11] ISO 3758, *Textiles — Care labelling code using symbols*

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

[13] ISO 5077, *Textiles — Determination of dimensional change in washing and drying*

[14] ISO 7000, *Graphical symbols for use on equipment — Index and synopsis* [1)]

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

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

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

[18] ISO 12945-2, *Textiles — Determination of fabric propensity to surface fuzzing and to pilling — Part 2: Modified Martindale method*

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

1) The database *Graphical symbols for use on equipment*, available at http://www.graphical-symbols.info/, contains all the symbols in IEC 60417 and ISO 7000.

[20] ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

[21] ISO 15487, *Textiles — Method for assessing appearance of apparel and other textile end products after domestic washing and drying*

[22] DIN 53891-2, *Testing of textiles; determination of crease resistance of textile fabrics by measuring the angle of recovery, method of vertical fold on the wet sample*

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