



RESEARCH OF LABELING STANDARDS ON TEXTILE PRODUCTS

Professional paper
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ABSTRACT: All textile products must meet certain needs and standards. It is evident that textiles are best recognized in the fashion industry, where the fineness of the material is expressed, qualitatively assessed with the implementation of certain standards for storage, ironing, maintenance, longer use and possible recycling. Among the characteristics that are important for clothing items, the use of bleach, washing at a certain temperature, hand or machine washing, ironing, separation of clothing according to raw material composition (cotton, wool, textiles, elastane), washing duration, drying, and the like are highlighted. This paper presents existing standards for labeling textile items, which exist in different parts of the world. The purpose of familiarizing yourself with the lists of standards is to provide a basis for the standardization of environmentally sustainable materials, which will use resources rationally, with innovative proposals understandable to all manufacturers, distributors, verifiers, sellers, users and re-users of the observed textile goods.

Keywords: standards, label, textile, categories.

ISPITIVANJE STANDARDA ZA OZNAČAVANJE NA TEKSTILNIM PROIZVODIMA

APSTRAKT: Svi tekstilni proizvodi moraju da zadovolje neke potrebe i standarde. Evidentno je da se tekstilstvo najbolje prepoznaje u modnoj industriji, pri čemu do izražaja dolazi finoća materijala, kvalitativno procenjena uz proštovanje određenih standarda za čuvanje, peglanje, održavanje, duže korišćenje i moguću reciklažu. Od karakteristika koje su bitne za odevne predmete izdvajaju se upotreba izbeljivača, pranje na određenoj temperaturi, ručno ili mašinsko pranje, peglanje, izdvajanje odeće prema sirovinском sastavu (pamuk, vuna, tekstil, elastin), dužina trajanja pranja, sušenje i slično. U ovom radu se prilažu postojeći standardi kod označavanja tekstilnih predmeta, koji postoje u različitim delovima sveta. Svrha upoznavanja sa listama standarda je osnov za ujednačavanje ekološki održivih materijala, koji će koristiti resurse racionalno, uz



inovativne predloge razumljive svim proizvođačima, distributerima, proverivačima, prodavcima, korisnicima i ponovnim korisnicima posmatrane tekstilne robe.

Ključne reči: standardi, etikete, tekstil, kategorije.

1. INTRODUCTION

There are various standards in the world, which differ more or less in relation to others according to the degree of concretization, established specific requirements for the fulfillment of application standards. In the textile industry, well-known brands are synonymous with the Western culture of the clothing industry, while the abundance of clothing is consequently associated with cultures that have a large population, and refinement and quality with Italian or French fashion. The goal is to have unique standards, which will be applied everywhere and thus familiarize consumers with the rules of clothing maintenance, treatment with different chemical means, without rapid rejection. The European Union has specific labeling systems for textile products. In order for textile products to be found on its market, they must have a label that determines the composition of the textile fibers used, as well as indicating those that are not, but are, for example, of animal origin. National authorities can check the conformity of textile products with the information shown on the label at any stage of the marketing chain, such as: at the time of application for customs clearance, in the warehouses of distributors, in wholesale or retail establishments. The label must explain the composition of the fabric - written in descending percentage order, use clear and legible text, including uniform writing (same font, size and style), contain a clear separation between information on the composition of the textile and other information, such as product care.

The rules on the labeling of textile products in accordance with the current Textile Labeling Regulation are limited to the fiber composition of textile products, which has increasingly enabled the introduction of different labeling requirements in EU countries. Physical labels are currently envisaged, while digital labeling technologies are affordable. The EU Ecolabel helps consumers, retailers and businesses make sustainable choices. In general, textile products must have a permanent, legible, easily visible and accessible label, either on the product or on its packaging.

2. STANDARDS IN TEXTILE

In general, without information on size and care instructions, it is possible that neither consumers nor distributors would purchase the product. Therefore, it is recommended to add such information. It would also increase the risk of returns, should the garment be washed at the wrong temperature. It should be noted that there are voluntary standards:

- EN 13402, which covers clothing size marking; and
- ISO 3758, which covers the labeling of textile care.



The International Organization for Standardization (ISO) has set standards for three types of environmental labels:

- I) ISO 14024 – Third party certifications,
- II) ISO 14021 - Independent environmental claims,
- III) ISO 14025 - Declarations on ecological products

ISO 3759:2011 specifies a method for preparing, marking and measuring textile fabrics, garments and fabric assemblies for use in tests to assess dimensional change after a specific treatment, e.g. washing, dry cleaning, soaking in water and steaming, following the procedures in ISO 3005, ISO 7771, ISO 6330, ISO 3175 or ISO 15797. ISO 3759:2011 applies to woven and knitted fabrics and finished textile products. Procedures do not apply to certain upholstery covers.

The **General Product Safety Regulation (GPSR)** covers consumer products and mandates that "only" safe products can be placed on the EU market. Unsafe products may contain flammable materials, pose a choking hazard, or have small parts that detach easily. There are several harmonized standards relevant to textile products:

- EN 14682 - Safety of children's clothing, Strings and laces on children's clothing.
- EN 13209-1 - Child care products, Carriers with a back frame
- EN 13209-2 - Products for the use and care of children, Soft carrier

When there are no harmonized standards for a specific product, you can still use the relevant national, international or non-harmonised EN standards to assess the safety of the product.

The **Global Organic Textile Standard (GOTS)** was developed by leading standard setters to define globally recognized requirements for organic textiles. From the collection of raw materials, ecologically and socially responsible production to labeling, textiles certified according to the GOTS standard provide the consumer with a credible guarantee. The **Fair-trade Textile Standard** incorporates an innovative approach to assurance to address weaknesses in the compliance audit model for the textile industry, which includes: 1) improving auditor competencies, including fraud identification, 2) strengthening worker participation in the process, 3) identifying the root cause of non-conformities so that they can be addressed, especially when related to the purchasing practices of brand owners, 4) maintaining a high level of control over the frequency and duration of audits, including unannounced audits, 5) increased transparency throughout the process.

Only fibers guaranteed by Fairtrade approved schemes can be used in processing under the terms of the Fairtrade Textile Standard. Schemes are classified into environmental, socioeconomic criteria and scheme management system. A certain threshold in a category, or combination of categories, must be met for the scheme to be used within the Textile Standard, where child and forced labor is not allowed.

OEKO-TEX® STANDARD 100 is a label for textiles tested for harmful substances. Every article, from the yarn to the finished product, that bears the STANDARD 100 mark has received a certificate of passing safety tests for the presence of harmful substances.

ASTM Textile Standards provide specifications for the physical, mechanical, and chemical properties of textiles, fabrics, and fibers, as well as natural and man-made fibers. Textiles covered by these standards are usually formed by weaving, knitting or spinning fibers such as glass fiber threads, wool and other animal fibers, cotton and other



plant fibers, yarn, sewing thread. These textile standards assist fabric designers and manufacturers in testing textiles to ensure acceptable characteristics for proper end use.

The **global standard for organic textiles ECO Textile - ECOmark®** is the world's leading standard for the processing of textile products made from organic fibers. It defines high-level environmental criteria throughout the organic textile supply chain and requires compliance with social criteria.

ECOmark is a worldwide, independent, independent testing and certification system for auxiliary materials used for raw, semi-finished and finished textile products at all levels of the process. Examples of certified items: raw and dyed/finished yarns, woven and knitted fabrics, accessories such as buttons, zippers, sewing threads or labels, various types of finished goods (all types of clothing, housewares and household items), textiles, bedding, towel products and more).

3. MARKING AND LABELS ON TEXTILE

Labeling is the most effective way to connect with the consumer by which he learns the characteristics of the product, reads the instructions and can preserve the product. More and more information is put on labels to attract customers. Labeling of textiles aims to familiarize consumers with the item, to see the impact of the purchase decision based on true facts that provide certain certainty regarding the quality, origin, method of production and materials used in the purchased item of clothing.

All items must have a fiber content label, either on the item or on the packaging. This label does not need to be permanently attached to the garment and can be removed. If the product is delivered to a wholesaler, the label may be included in the business documents (eg invoice). Member States may require that their national language be used for labeling and marking required by the Directive.

Consumers must be sure that a textile item is safe for use and meets the required standards. There is a law that protects the rights of consumers. The British Standards Institute (BSI) tests products and the process by which they are manufactured. If the product meets the required standards, the manufacturer can display the BSI Kitemark on the product label. Consumers trust that products bearing the Kitemark have undergone a rigorous certification process and will be not only safe to use, but also fit for purpose for which they were designed.

There are data that are not mandatory, but contribute to preserve the properties of the product: washing method (wet or dry, hand or machine, etc.), which products can be used and which cannot, whether ironing or drying is allowed. The symbology used corresponds to ISO (International Organization for Standardization), with 5 internationally recognized symbols: Wet cleaning; Dry cleaning; Product; Drying; and Ironing. Attention should be paid to the order and use of the pictograms in Figure 1.

 Wash	Machine wash cycles & Water temperatures (maximum) symbol (s) dots & °C.	normal permanent press delicate / gentle	hand wash	Warning symbols for laundering do not wash do not bleach do not dry (used with do not wash) do not iron
 Bleach	any bleach when needed only non-chlorine bleach when needed			Additional instructions (in symbols or words) do not wring do not tumble dry in the shade (added to line dry, drip dry, or dry flat) no steam (added to iron)
 Dry	Tumble dry cycles & Tumble dry heat setting	normal permanent press delicate / gentle	line dry / hang to dry drip dry dry flat	
 Iron	Iron when needed—dry or steam maximum temperature	200°C (390°F) high 150°C (300°F) medium 110°C (230°F) low		
 Dryclean	Dryclean - normal cycle (A) any solvent (P) perchlorethylene or petroleum solvent (F) petroleum solvent only	Dryclean - modified cycle (P) (F)		do not dryclean

Figure 1: Sequence of pictograms [Ginetex, 2015]

4. INTERNATIONAL STANDARDS OF MARKING ON TEXTILE

European Union member countries. According to EU Regulation No. 1007/2011 of the European Parliament and the Council, textile products are considered to be products that have at least 80% by weight of textile fibers, products for covering furniture, for umbrellas and sunshades with at least 80%; textile components (upper part of multi-layer floor coverings, mattress, camping equipment); textile products that are part of other products and form an integral part that is listed. Only textile products composed of the same fiber can be labeled "100%, pure or whole". There are 50 textile fibers on the EU list including wool, cashmere, horse hair, cow hair, silk, cotton, linen, natural hemp, jute, coconut, broom, acetate, alginate, viscose, acrylic, polyamide or nylon, polyester and others.

4.1 National labeling standards

Australia. Textile care labeling in Australia and New Zealand is established for the supply of new clothing and textiles. The mandatory standard for clothing and textile products is based on standard AS/NZS 1957:1998, which was amended by a consumer protection notice in 2010 (Australian Competition & Consumer Commission). Clothing and textile care labeling information can be found on the Australian Clothing Safety website, so whether it is wholly or partly manufactured in Australia, imported or exported affects. There used to be size standards for women's clothing AS 1344-1997 (underwear,



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outerwear and carpets), men's clothing AS 1954-1976 (multi-cut outerwear and industrial clothing) and children's and infants' clothing AS1182-1997 (underwear and outerwear), all of which now fall under EN 13402 (the European standard for sizing clothes).

India. An Indian Standard was adopted at the Bureau of Indian Standards following a proposal by the handloom fiber section. Consumers are interested in information related to various textile requirements, such as blend composition, length, width, mass (g/m²), color fastness, fire resistance, shrinkage and care instructions, so that they can optimally use the textile and get full value for the price they paid. All important information should be marked on the textile in order to fulfill the interests of consumers, and thus abuse in the textile trade related to false markings that mislead consumers can be suppressed.

The height of letters on labels must be a minimum of 5 mm for signs, and for all other letters, the minimum height must be 2 mm. A fabric or finished garment may be marked with a standard mark (BIS) and the use of the standard mark is governed by the provisions of the Bureau of Indian Standards Act, 1986.

China. China's national standard is considered an important milestone to conquer the market, which has the mark "GB" is an abbreviation of the Chinese Pinyin "Guo Biao". A few different Chinese Standard Code prefixes are:

- GB - National Standard – Mandatory
- GB/T - National Standard - Recommended ("T" stands for Recommended Standard)
- FZ/T - Abbreviation of "Fang Zhi", ie. textile industry standard – Recommended
- QB/T - Abbreviation of "Qingong Biaozhun", ie. light industry standard (applies to some leather goods, footwear, hard goods, etc.) – Recommended

The mandatory standard in China refers to human health, safety and hygiene or to the category of high-risk products. A voluntary standard does not mean that the brand owner/importer/trader can ignore the requirements of the voluntary standard, but one must be chosen which when stated as an "enforceable standard", all the requirements of the standard must be met. Mandatory standards apply to textiles or clothing, because what people wear is considered important. In China, the size designation is based on the Chinese size standard, without S, M, L or 32, 34. For example, for adult clothing, the Chinese size is formed by using body height, chest or waist, and body type code. Several size standards are available, e.g. men's, women's, children's, sweater, etc.

Serbia. In 2013, the Ministry of Economy accepted European directives into the legal system of the Republic of Serbia for marking textile products and footwear. The Ministry of Economy - Sector for Quality and Product Safety is responsible for the transposition and implementation of European Regulation (EU) 1007/11 and Regulation (EU) 2018/122. This area is regulated by the Rulebook on Labeling and Marking of Textile Products ("Official Gazette of RS", No. 86/2019 - hereinafter: Rulebook) which is in accordance with all principles and essential requirements of Regulation No. 2018/122 of October 20, 2017 of the European Commission amending Regulation no. 1007/11 of the European Parliament and the Council on the names of textile fibers and the labeling and marking of the composition of textile products.



Spain. The Royal Spanish Academy (RAE) defines marking as a "label", as a piece of paper, rectangular in shape, that is placed on an object for its identification. Labeling of textiles has the purpose of protecting both consumers and workers, in order to obtain from them information on ethical and environmental considerations. Few authors analyze the scenario found in textile labeling in relation to a certain geographical area (Boström et al. 2005; Stolle and Micheletti 2013), while Austgulen (2016) points out that textiles and clothing are particularly important because they are considered one of the most polluting industries. In Spain, the labeling of textiles is regulated in Royal Decree 928/1987, where, apart from the place of installation, there are positive provisions for the obligation to have a label and a negative one indicating textile products that are exempt from labelling. Textile products must be labeled but it is limited to those who produce, commercialize or distribute textile products in the Spanish market (Santos-Roldan et al., 2020).

Turkey. The rules on labeling and marking of textile products specified in the Turkish system are in accordance with Regulation (EU) no. 1007/2011 of the European Parliament and the Council in 2011 on the names of textile fibers and related labeling and marking of fiber composition of textile products. Products must be labeled in a permanent, easily legible, visible and accessible manner to indicate their fiber composition in accordance with the Regulation. Manufacturers must ensure that textile products are properly labeled or marked with an indication of their fiber composition. Distributors must ensure that textile products bear appropriate labels, without confusing products with fiber names. Manufacturers are responsible for ensuring that the label is legible, firmly attached and accessible and not misleading. When it is impossible to determine the manufacturer, the seller is responsible for providing appropriate labeling.

5. CONCLUSION

Textile products are important technologically processed semi-finished products and raw materials, which together with textile fibers create products used in the clothing industry, agriculture, military and construction sectors.

Environmental problems such as global climate change, harmful residues, toxic chemicals, the ozone hole, acid rain, water and air pollution, which are increasingly felt in the environment today, are caused by the textile industry, along with other industries. During production, there is a large consumption of water, and some chemicals are also used, which creates various wastes, and the production of environmentally friendly textiles is imposed. In addition, the eco-labeling system was conceived as a solution to prevent air and water pollution.

The European Union is an important market for Serbia's exports, and as a result of increasing environmental awareness, the countries of the Union attach importance to the production of products that do not harm human health and nature. For this purpose, the eco-label system has been applied for almost twenty years and covers a large number of products. Many standards have been developed according to the ecological principle, as well as socioeconomic and integrative, while each country can define its own specifics by which it determines the stages or prerequisites for obtaining the mark.



REFERENCES

- [1] Austgulen, M. H. (2016). Environmentally sustainable textile consumption—what characterizes the political textile consumers? *Journal of Consumer Policy*, 39(4), 441–466. <https://doi.org/10.1007/s10603-015-9305-5>.
- [2] Boström, M., Føllesdal, A., Klintman, M., Micheletti, M., & Sørensen, M. P. (2005). Studying political consumerism. In M. Boström, A. Føllesdal, M. Klintman, M. Micheletti, & M. P. Sørensen (Eds.), *Political consumerism: its motivations, power and conditions in the Nordic countries and elsewhere* (p. 517). Copenhagen: TemaNord, Nordic Council.
- [3] Royal Decree 928/1987 (1987) Real Decreto 928/1987, de 5 de junio, relativo al etiquetado de composición de los productos textiles. <https://www.boe.es/eli/es/rd/1987/06/05/928/con>
- [4] Santos-Roldan L., Palacios-Florencio B. and Berbel-Pineda J.M., The textile products labelling analysis and requirements, *Fashion and Textiles* (2020) 7:11, <https://doi.org/10.1186/s40691-019-0202-4>
- [5] Stolle, D., & Micheletti, M. (2013). *Political consumerism. Global responsibility in action*. Cambridge: Cambridge University Press.
- [6] Textiles — Requirements For Labeling And Marking Of Consumer Textiles — Specification (ICS 59.080.30; 61.020), Bureau of Indian Standards, Manak Bhavan, New Delhi, Nov.2007
- [7] Advancing Standards Transforming Markets, <https://store.astm.org/>
- [8] Australian Competition & Consumer Commission, <https://www.accc.gov.au/>
- [9] China Regulation and Quality Compliance – Textile Products, www.intertek.com.cn
- [10] Ecomark standard, <https://www.ecomark.com.tr/en/sektorel/eco-textile>
- [11] Fairtrade International, sajt <https://www.fairtrade.net/>
- [12] Ginetex. (2015). The international association for textile care labeling. <http://www.ginetex.net/>.
- [13] Ministry of Economy, Pravilnik o označavanju i obeležavanju tekstilnih proizvoda "Službeni glasnik RS", br. 1 od 6. januara 2014, 86 od 6. decembra 2019. <https://www.tehniks.privreda.gov.rs/> (on Serbian, June 10th 2025.)
- [14] Ministry of Trade, Türkiye, <https://urunkurallari.ticaret.gov.tr/>
- [15] Oeko-tex standard, <https://www.oeko-tex.com/en/downloads>
- [16] Regulation (EU) No 1007/2011 of the European Parliament, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02011R1007-20180215>
- [17] Tekstile standards, <https://www.textilestandards.com/>