



Ecodesign in the Textile Sector

Unit 07: Sustainability certifications in the textile sector.

Stefania Dal Corso stefania.dalcorso@centrocot.it

Chiara Salmoiraghi chiara.salmoiraghi@centrocot.it

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With this unit, students will be able to:

- know the main product or system certifications used in the textile industry.
- Known common standards on textile sector
- know and evaluate standards to be applied in their own company.



7.1 Introduction

Over the last few years, the concept of SUSTAINABILITY has been increasingly discussed in all business sectors. This concept is useful to raising awareness about sustainable purchasing to the final consumer, the average citizen, who has little or no involvement with business, sales and production strategies.

Consider, for example, the strong campaign for recycling, the importance given to drinking bottles that are so-called "green" as they are obtained from recycled plastic or even produced with a certain percentage of bio-based materials. Not to mention the fact that some water bottles are declared to reduce the environmental impact and to enhance the territories (due it is related to social sustainability actions). Also think about replacing plastic bags with biodegradable bags. In short, in many aspects of everyday life, this concept is increasingly present, often linked to the environment.

7.2 Definition of sustainability

One of the first goals that companies are looking for is to be sustainable-oriented, but, in order to meet the related requirements, it is important, first of all, to understand what it means. On various occasions throughout history, attempts have been made to give a proper definition helping companies set their own goals with respect to this topic. Below some of the most famous definitions are reported:

- «improving the quality of human life while living within the carrying capacity of supporting eco-systems.» Caring for the Earth Report , 1991, UNEP, IUCN, WWF
- «Maximum value that a community can consume in a certain period and still expect to be as well off at the end of that period as it was at the beginning» - J. R. Hichs
- «Sustainable development means improving the quality of life not exceeding the carrying capacity of the ecosystems» - ONU, 1992
- «Development that delivers basic environmental, social and economic services to all members of a community, without threatening the viability of the natural, built and social systems upon which the delivery of these services depends» - International Council for Local Environmental Initiatives, 1994
- «A community is unsustainable if it consumes resources faster than they can be renewed, produces more wastes than natural systems can process or, relies upon geographically distant sources for its own needs» - SUSTAINABLE COMMUNITY ROUNDTABLE

All these sentences above can help to get an idea of what is meant when it comes to sustainability, considering that any definition depends on the time and context in



which it was born. However, what is commonly accepted as a unique definition of SUSTAINABLE DEVELOPMENT is as follows:

«Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs» - Brundtland Report (1987).

The fundamental concept introduced here is that of "DEVELOPMENT" which underlines that this topic is not static, but on the contrary, it is meant as a process of continuous refinement.

The terms "Sustainability / Sustainable Development" are frequently linked to the environmental aspect, but in reality the meaning goes far beyond this principle, even if this aspect is taken into account.

When it comes to sustainability it is important to know that it concerns three main aspects:

- **ECONOMIC** sustainability represents the ability to generate income and work to satisfy people's basic needs.
- **SOCIAL** sustainability represents the ability to ensure human well-being conditions (safety, health, education) equally distributed by class and gender.
- **ENVIRONMENTAL** sustainability represents the ability to produce while respecting the environment.

7.3 ECOLABEL UE



Fig 1: Ecolabel

The EU Ecolabel is the European Union's ecological quality label that identifies products and services that have a reduced environmental impact through their life cycle while maintaining high performance levels.

The Ecolabel has been created in 1992 by the CEE 880/1992 Regulation and currently regulated by the CE 66/2010 Regulation as modified by the EU 782/2013 Regulation. It is in force in the 28 European Union countries and in the countries belonging to the European Economic Area – EEA (Norway, Iceland, Liechtenstein). In particular, textile



products are regulated by the Commission Decision 2017/1392 of 25 July 2017 amending Decision 2014/350/EU establishing the ecological criteria for the award of the EU Ecolabel for textiles.

The EU Ecolabel is a voluntary Type I label (as defined in ISO 14024 standard)

- It is based on scientific criteria related to the entire product life cycle (from extraction of raw materials, manufacturing, packaging and distribution, use and recover or disposal. The criteria are related to various environmental aspects such as energy, chemicals and water consumption, and production of waste (multi-criteria system) but also product functionalization and quality of performances;
- The criteria include minimum values or thresholds;
- The respect of the criteria is verified by an independent third party (Ecolabel and Ecoaudit Committee)

The EU Ecolabel criteria, developed at European level by a number of stakeholders including industrial associations, consumer organizations and environmental protection groups, concerns aspects of consumer health and safety and, where relevant, the main social and ethical aspects of production processes.

The EU Ecolabel is aimed at consumers and guarantees that certified products, in addition to high performance, have a low environmental impact throughout the life cycle certified by independent bodies (national competent bodies) recognized at European level. EU Ecolabel criteria are revised periodically to reflect regulatory and market developments as well as scientific and technological progress.

EU Ecolabel products help to protect the environment by reducing the amount of waste and pollution, energy and water consumption and reducing / eliminating the use of hazardous chemicals damaging the health and biodiversity of animal and plant species.

7.4 STANDARD 100 by OEKO-TEX®



Fig 2: STANDARD 100 by OEKO-TEX® label



Standard 100 by Oeko-Tex® is the most renowned voluntary eco-friendly label for textile goods and accessories in the world. Established in 1992 as a voluntary initiative by the textile and clothing industry in the German-speaking countries (Switzerland, Austria and Germany), which founded the International Research and Testing Association in the field of Textile Ecology (OEKO-TEX®), headquartered in Zurich. Today, the Oeko-Tex® association is a union of 16 independent textile research and test institutes in Europe and Japan with more than 40 representative offices in all main textile production areas worldwide.

This is the reason why STANDARD 100 by OEKO-TEX® was developed: the purpose of the planned lab analysis is to standardize the international differences in the assessment of harmful substances. With the OEKO-TEX® system, it is possible to identify the potential sources of harmful substances at each stage of the processing chain. Whenever a textile product is processed or a chemical modification of the product is made, an analysis is required.

For the textile and clothing industries, the OEKO-TEX® catalog offers a uniform and scientifically proven assessment standard for the human-ecological safety of textile products, taking into account the globalized and extremely fragmented nature of the textile industry.

The presence of the OEKO-TEX® label therefore indicates to the consumer that textile products are certified, and that they have the added value of the guarantee of having been analyzed with scientific methods in order to evaluate their safety for human health. The OEKO-TEX® label therefore offers an important decision-making tool for purchasing.

The STANDARD 100 by OEKO-TEX® is a worldwide consistent, independent testing and certification system for raw, semi-finished, and finished textile products at all processing levels, as well as accessory materials used. For the textile and clothing industries. The OEKO-TEX® STANDARD 100 catalog offers a scientifically proven assessment standard for the human-ecological safety of textile products, taking into account to the globalized and extremely fragmentary nature of the textile industry.

It is possible to certify: raw and dyed/finished yarns, woven and knitted fabrics, accessories such as buttons, zip fasteners, sewing threads or labels, ready-made articles of various types (garments of all types, household textiles, bed linen, terry products etc.).

Since 1992 the main aim of STANDARD 100 by OEKO-TEX® has been the development of test criteria, limit values and test methods on a scientific basis.

Reference is made to the Product Restricted Substances List (PRSL) present in the Reference Standard, which includes more than 300 individual substances deemed dangerous and is updated annually by a competent body. The STANDARD 100 by OEKO-TEX® includes:



- Numerous harmful chemicals, even if they are not yet regulated.
- Limits of Annex XVII such as Azo colorants, cadmium, nickel, lead,
- Limits of Annex XIV of the European Chemicals Regulation REACH as well as of the ECHA's SVHC Candidate List insofar as they are assessed by expert groups of the OEKO-TEX® Association to be relevant for fabrics, textiles, garments or accessories. Discussions and developments that are considered to be relevant are taken into account as quickly and effectively as possible through updates to the STANDARD 100 by OEKO-TEX® requirements.
- Requirements from the US Consumer Product Safety Improvement Act (CPSIA) regarding lead.
- Numerous substances classes also relevant for the environment, such as Perfluorinated Organic Compounds (PFC), used in hydro and oil repellent treatment

With its decades of experience, the STANDARD 100 by OEKO-TEX® contributes to ensure a high and effective product safety from a consumer's point of view. Test criteria and limit values in many cases go far beyond applicable national and international standards. Product checks and regular company audits also ensure that the industry has a globally sustainable awareness of the responsible use of chemicals.

For the implementation of this principle 4 product classes have been defined, which are distinguished as follows:

- Class I
Articles for babies and toddlers up to 3 years of age (underwear, rompers, clothing, bed linen, terry products etc.);
- Class II
Articles that are worn close to the skin (underwear, bed linen, t-shirts, socks etc.);
- Class III
Articles used away from the skin (jackets, coats etc.);
- Class IV
Decoration/Furnishing materials, (curtains, tablecloths, upholstery covers etc.).

The precondition for the certification of products in accordance with OEKO-TEX® Standard 100 is that all parts of an article meet the required criteria. In addition to the outer fabric, for example, also the sewing threads, fillings, prints etc., as well as non-textile accessories, such as buttons, zip fasteners, rivets etc. This is defined as a modular system.

7.5 ECO PASSPORT by OEKO-TEX®



Fig 3: ECO PASSPORT by OEKO-TEX® label



If we think of the textile industry, we refer to three major aspects: the chemical product, the process and the finished item.

Clearly, within a production process, such as dyeing, the purpose is to create a dyed fabric (output good of the company). The input elements are necessarily chemical products such as dyes, pigments and auxiliaries. Therefore it is quite easy to understand how chemical control is at the basis of a sustainable environmental textile process from the environmental and human health point of view.

ECO PASSPORT by OEKO-TEX® is an independent and voluntary certification for chemicals used in the textile sector, aiming at demonstrating that these chemicals can be used in a sustainable textile production.

It consists in three main stages::

Stage 1: Firstly, a screening of the products contained in the mixture is carried out and it is verified that none of these is contained in the lists of prohibited substances..

Stage 2: Secondly, it is carried out laboratory tests that verify the presence or absence of the pollutants characteristic of the reference sector. In this way it will be possible to evaluate the actual contents of these substances and relate them to their possible presence within the textile product.

Stage 3: On-site audit of the company in order to evaluate the environmental management system, documentation regarding waste water treatment, waste management and management of health and safety at work. This control is adapted to ensure that not only the product is free of hazardous substances, but that it is also prepared in a sustainable plant from the environment point of view and safety.

Products passing the requirements earn the ECO PASSPORT by OEKO-TEX® certification and they will be entered into the OEKO-TEX® buying guide which is the OEKO-TEX® central sourcing platform of certified articles and materials. These products will also be included in the ZDHC Chemical Gateway platform.

The ECO PASSPORT certificate is linked with the specific scope and validity of the certificate. Each certificate has an unique identification number, and it is valid for one year.

Users of a certified ECO PASSPORT by OEKO-TEX® item will be sure not to introduce harmful substances for humans and the environment in the production process.

7.6 Other certifications

The range of sustainability certifications on the textile sector in additions to the certifications seen above, is wide. Among these, the most common used is the Global Organic Textile Standard – GOTS.





Fig 4: GOTS label

GOTS is recognized as the most important standard for the sustainable production of garments and textiles made by natural fibers from organic agriculture such as organic cotton or organic wool. They can be certified according to GOTS: textile products, chemical products for the textile industry and manufacturing activities.

The Global Organic Textile Standard has been developed by leading international organizations in organic agriculture in order to guarantee the consumer that organic textiles are produced in compliance with stringent environmental and social criteria applied at all levels of production, from the collection in the field of natural fibers to the subsequent manufacturing phases, up to the labeling of the finished product. GOTS, responding to the strong demand for common production criteria by the industry and the distribution of textile and clothing products, has obtained a wide international recognition that allows those who produce and sell organic textile products to have at their disposal a certification accepted in all the main markets.

7.7 SOURCES

If you would like to focus the topics discussed in this unit, we suggest you to read the following sources:

<http://ec.europa.eu/ecat/category/en/14/textile-products>

https://www.oeko-tex.com/it/business/business_home/business_home.xhtml

<http://www.global-standard.org/>

