



Ecodesign in the Textile Sector

Unit 04: Mandatory and voluntary requirements in the EU and in the world

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With this unit, students will be able to:

- Know the European and international legislative system of the textile sector;
- Being able to critically evaluate customer requests from a technical point of view.



4.1. Introduction

In the textile sector three types of risk are identified: chemical, mechanical, heat and flame. It should be considered that these categories depend on the end users to whom the products are intended, if children under 36 months old (12 years old in some cases) or adults.

Following a description of these categories, with a particular focus on chemical risk.

MECHANICAL RISK:

Expected Possibility that, under normal conditions of use and maintenance, a level of potential danger to the physical integrity of the user can be reached, through the use of the article or parts of it.

The most significant risks in the mechanical field include:

- Entrapment
- Stings or lacerations
- Lacerations or avulsions
- Suffocation, aspiration or ingestion of small parts

The suffocation and entrapment risks are especially important for children¹ so as to provide specific rules for the safety of children clothing (restrictions on cords² and drawstrings, buttons³, decorations, etc.).

HEAT AND FLAME RISK:

Expected possibility that, under normal conditions of use and maintenance, a potential danger to the physical integrity of the user in the form of "thermal stress" and in relation to the development and spread of flames is determined. The associated risks with exposure to heat or flame depend on:

- Chemical characteristics of the fiber
- Physical properties of the fabric
- Mass/volume ratio
- Fibers come out from the surface

Also in this case there is a wide international regulation concerning the danger of heat and flame propagation, to certify the behaviour of fabrics and finished products.

¹ BS 7907-2007

² UNI EN 14682-2008

³ BS 4162-1983



CHEMICAL RISK:

Expected possibility that, under normal conditions of use and maintenance, there is a danger for the end user due to one or more chemicals contained in the textile product or its attachments. The risk may occur through exposure due to contact with the skin and mucous membranes, inhalation or ingestion.

The associated risks with a substance depend on:

- Intrinsic properties of the substance present on the fabric
- Quantity and intensity of exposure to the substance

The requirements for the textile sector come from these types of risk the, which aim to avoid the situations above.

4.2 Reference standards for safety in the textile sector

The relevant legislative and regulatory framework is not an organic text dedicated to the safety of textile products, but it must be defined on the basis of general and special binding legislation, harmonized standards and technical standards.

At European and international level, there are laws relating to the general obligation of product safety, as the General Product Safety Directive (SGP) no. 2001/95 / EC, and EN harmonized standards, consisting of UNI/ISO voluntary technical standards and technical standards of the individual European countries.

In Italy, for example, it is in force the Consumer Code (D.lgs. 206/2005), starting point for understanding the legislative framework of reference. In Part IV, art. 102-112, general safety obligations are set to comply with all products placed in the market. Part IV of the text, which relates to the safety and quality of products in general, outlines the pursued objectives, the definition of a safe product, the responsibilities and burdens which are imposed on the distributors, producers and importers, ways and means of supervision, applicable penalties. In the absence of specific binding regulations, the products on sale must at least meet the general safety requirements contained in the Consumer Code. In the presence of a specific security discipline, however, the latter will be applied, for all the provisions expressly considered, as confirmed by the Consumer Code itself.

To be noted with reference to textile safety, they are worthy of mention.

UNI/TR 11359:2010: *Gestione della sicurezza dei prodotti tessili, di abbigliamento, arredamento, calzaturiero, in pelle e accessori.* (Safety management of textiles, clothing, furniture, footwear, leather and accessories.)



CEN/TR 16741:2015: Textiles and textile products - Guidance on health and environmental issues related to chemical content of textile products intended for clothing, interior textiles and upholstery.

PD CEN/TR 16417:2016: Footwear industry guideline for substances of very high concern (Annex XIV of REACH)

Finally, with particular reference to chemical risk, there are regulations concerning the use of chemicals, the REACH Regulation 1907/2006/EC and the Regulation CLP 1272/2008.

4.3 REACH Regulation

The Regulation (EC) n.1907/2006 of the European Parliament and of the Council approved on 18th December 2006, called the "REACH" Regulation (acronym of "Registration, Evaluation, Authorization and restriction of Chemicals") provides for the registration of all the substances produced or imported into the European Union in quantities greater than one tonne per year. The REACH regulation has the following objectives:

- Improve knowledge of hazards and risks from chemicals in order to ensure a high level of protection of human health and the environment;
- Promote the development of alternative methods to those that require the use of vertebrate animals to assess the dangers of substances;
- maintain and strengthen the competitiveness and innovative capacities of the EU chemical industry.

The Regulation (EC) n.1907/2006 consists of three main annexes described below.

4.4 SVHC – Candidate List of substances for Authorisation

Some substances that have very serious effects on humans and the environment can be identified as substances of very high concern (SVHC - Substances of Very High Concern). The REACH Regulation aims to ensure the control of risks resulting from the use of SVHCs and the substitution of substances, where possible.

At the request of the European Commission, a Member State or ECHA (European Chemicals Agency) may propose that a substance be identified as SVHC.

These include the Carcinogenic, Mutagen and Reproductive Toxic (CMR) substances; Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) and Equivalent Levels of Concern (ELOC).



Producers/importers of articles have the obligation to inform down the chain if one of these substances is contained in an amount greater than 0.1% within the same article.

The aim is to favor the substitution of the most problematic substances with less dangerous substances.

4.5 Annex XIV

The substances with a high level of risk contained in the SVHC list (Candidate List) are subjected to evaluation by the European Community and gradually included in Annex XIV of the REACH Regulation.

Once inserted in this Annex, they can not be placed on the market or used from a certain date unless an authorization is granted to the company by ECHA.

The authorization is issued to individual companies and has a limited validity over time. Once the authorization is approved and published, any other use of the substance is automatically banned.

4.6 Annex XVII

Annex XVII contains a list of substances whose production and placing on the market is limited or prohibited. These substances are considered to constitute an unacceptable risk to human health and the environment. For each substance it is clearly indicated in the description of the restriction what is the field of application; in this sense it is quite simple to understand which types of articles are part of the scope of the Regulation.

4.7 Other sector regulations

At international level there are several mandatory regulations whose demands must be met in order to sell the products in various markets.

For example, as regards **CHINA**, the GB Standard 18401 of 2010 has set requirements for the textile product so that it can be marketed in its own country. GB 18401 establishes the necessary requirements to guarantee consumer safety for all textiles and clothing products and divides consumers into two main categories: children (up to 36 months old) and adults. The requirements are then subdivided in this way:

- Category A: products for children (0-36 months old);
- Category B: products in direct contact with the skin;
- Category C: products not in direct contact with the skin.



Clearly, category A contains the most restrictive requirements.

In the **USA** the **Consumer Product Safety Improvement Act** of 2008 is a law that limits the levels of hazardous substances and imposes certain requirements for testing and documentation. The products must: comply with all applicable safety requirements; be tested for compliance with a third-party laboratory accredited and accepted by the CPSC; be accompanied by a certificate of conformity (General Conformity Certificate - GCC), attached by the manufacturer (for articles produced in the USA) or by the importer (for articles produced outside the Uni States. Finally, the products must have impressed information, on the product itself and on the packaging if possible, that allow traceability.

Furthermore, at the international level it is advisable to know the AAFA, acronym of American Appereal Footwear Association, an association formed by experts that helps members to know the complex regulatory framework.

For example, in **CALIFORNIA** there is **Proposition 65 - Safe Drinking Water and Toxic Enforcement Act - 1986**. This act obliges companies (with ten or more employees) to notify the consumer, in a clear and reasonable manner, about the risk coming from possible exposure to carcinogenic or teratogenic chemicals and it also forbids the discharge into groundwater or drinking water. The requirements are not related to the prohibition of use of the substance, but to the need to declare it if the exposure to the quantity contained in the products, if prolonged for the whole life of the individual, involves a significant risk to health.

4.8 Customer specifications (RSL)

The increasingly widespread sensitivity and attention to consumer health and respect for the environment have led to the definition of other requirements related to products in addition to mandatory regulations. So the most virtuous companies have begun to require more stringent requirements in order to demonstrate the high quality level of the product, in particular with regard to the aspect of compatibility and respect for the environment. These requests are formalized in documents that take the name of *Product Restricted Substances List* (PRSL), or in proper product specifications.

4.9 The DETOX campaign by Greenpeace

One of the most important initiatives in the textile sector related to the presence of substances potentially harmful to health and the environment was the DETOX campaign by Greenpeace, which in recent years has created great agitation in the sector.



As seen in previous units, the textile industry uses many chemicals in the various stages of textiles finishing/ennobling. The discharges produced by these plants can be toxic and contaminate water resources. The danger of these discharges can have negative effects on humans, animals and the environment. These substances, after being used in the textile transformation processes, end up in the environment in which we live and sometimes in the clothes we wear every day.

Research carried out by Greenpeace has shown, for example, that in China textile industries release hazardous substances into the main rivers of the country. This practice poses a threat to the environment and to human health. Many substances, do not easily degrade and accumulate in living organisms, up to humans, also causing possible alterations at the hormonal level and at the level of the reproductive system. The danger of some products is also increased by the fact that many compounds can be transported far from their source of origin through oceanic and atmospheric currents and persist in the environment. This leads to an accumulation along the food chain, documented by their presence in the tissues of fish, birds, whales, polar bears and even in breast milk. The problem and its solution, therefore, can not be managed and resolved at the local level, but requires a common and global solution.

To respond to this serious environmental problem, in July 2011 Greenpeace launched the "Detox My Fashion" campaign, which fights for a sustainable and ethically avant-garde fashion that respects the surrounding environment and also the well-being of its workers. Greenpeace underlines the need for innovation and leadership by companies, which must focus on different production methods, without polluting the water with toxic and persistent substances.

The supply chain of the textile industry is very complex and fragmented. However, in general it is the brand owner who dictates the rules related to the product development, design and design process. It is the *brand* that selects the suppliers with whom collaborate and exercises control on the use of chemical compounds in production processes and in consumer items.

The fashion *brands* therefore have the power and the ability to push the industry towards change. Greenpeace invited all brands to commit themselves in order to create a future free from the use of toxic substances and to work with their suppliers to eliminate hazardous compounds from the production chain and products on the market. To achieve this, companies must:

- Define and implement a policy on the use of chemistry that no longer uses toxic compounds and identifies clear and realistic deadlines to eliminate them;
- Respond promptly to this emergency with an active action, giving priority to those particularly dangerous substances with the aim of eliminating them immediately;
- Recognize the importance of transparency and the right to information by publishing data on the elimination of hazardous substances.



4.10 Conclusion

The safety of textile products is fundamental for the choice of materials, design and design of garments, and must comply with stringent international regulations. It is therefore essential to acquire this knowledge for a general view of these aspects, not at all negligible.

References

To learn more about some of the topics covered in this unit, refer to the following websites:

REACH Regulation

<https://echa.europa.eu/it/regulations/reach/understanding-reach>

Greenpeace – DETOX Campaign

<https://www.greenpeace.org/archive-international/en/campaigns/detox/water/detox/intro/>

