



Step 2
Sustainability

Online Course

UNIT 1 Standardisation and Certification Systems

***How to Implement Sustainable Manufacturing in Footwear
- New Occupational Profile and Training Opportunities -***

How to Implement Sustainable Manufacturing in Footwear - New Occupational Profile and Training Opportunities

Credits

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1. Introduction

Quality is the degree to which a set of inherent characteristics of a product fulfils requirements, i.e. it is the product's fitness for the intended use, meeting the client's expectations.

Good quality in a product or service involves three important dimensions:

- 1. Technical dimension:** this includes the scientific and technological aspects affecting a product or service.
- 2. Human dimension:** this cares for a good relationship between clients and companies.
- 3. Economic dimension:** this tries to minimise costs for the client and the company.

It is also important to control:

- **Quality of design:** degree in which a product or service is reflected in its design.
- **Quality of conformance:** the ability of a product, service, or process to meet its design specifications.
- **Quality in use:** the product should be easy to use, safe, reliable, etc.
- **The customer:** new theories set the customer as an active party in the qualification of a product's quality, in an attempt of creating a standard based on the subjective assessment of the customer. A product's quality is not only determined by purely objective parameters, but also including the opinions of a customer who uses said product or service.

Thanks to standardisation and certification, a consensus is reached, which balances manufacturer's possibilities and consumer's demands or needs. Standards offer a common communication language between companies, users and consumers, establish a socio-economic balance between the different actors participating in commercial transactions, are the base of every market economy, and are a necessary trust reference between customers and suppliers.

This teaching unit aims to establish a knowledge base on this subject, also highlighting its importance and beneficial nature for companies, consumers, and countries, as it ensures the establishment of quality, environmental and safety policies. consumables etc.

2. Concepts and definitions. Standard types and classification

Standardisation consists of the preparation, dissemination, and implementation of standards in scientific, industrial or economic activities with the aim of ordering and improving them. Its main objectives are:

- To simplify and unify products and services, facilitating their exchange
- To promote a quality culture
- To open new markets
- To increase safety
- To protect consumers' and society's interests
- To reduce general costs

A standard is a document designed for voluntary use which results from consensus, based on the results of experience and technological development and approved by a recognised national, regional (EU) or international standardisation body. Standards are prepared for the benefit of the community, are not mandatory, and are at the disposal of the general public.

Standards guarantee quality levels and security that allow any company to better position itself on the market and constitute a significant source of information for professionals of any economic activity.

There are different types of normative documents, according to the body in charge of their preparation. Standards are traditionally classified as follows:

- **National standards:** These are drafted and subjected to public enquiry, and are approved by a body legally authorised for standardisation activities in the national territory. In Spain, the **UNE standards** are approved by AENOR, which is the body recognised by the Spanish Administration to develop standardisation activities in Spain (Royal Decree 2000/1995).

- **Regional standards:** These are drafted by regional standardisation bodies usually operating at a continental level, which group together a certain number of national standardisation bodies. The most well-known, while not the only ones, are those developed by European Standardisation Bodies (CEN, CENELEC, ETSI) with the participation of accredited representatives from all member countries. AENOR is the Spanish National Standardisation Organisation belonging to CEN and CENELEC and, therefore, the organisation through which the interests and participation of the Spanish socio-economic actors are channelled in European standardisation.

- **International standards:** These are similar to regional standards in terms of how they are developed, but they differ in their scope, which is global. The most representative due to their field of activity are IEC standards (International Electrotechnical Commission) for electrotechnology fields, ITU (International Telecommunication Union) for the telecommunications sector, and ISO standards (International Standardisation Organisation) for the rest of fields. AENOR is the Spanish National Standardisation Organisation belonging to ISO and IEC and, therefore, the organisation through which the interests and participation of the Spanish socio-economic actors are channelled in international standardisation.

- There are also "**sectoral standards**" promoted and developed by sectoral industrial associations or groupings. Unlike the previous ones, these are neither developed by all the stakeholders nor approved by a recognised body. Nevertheless, in some cases they are accepted by national, regional or international standardisation bodies and form part of their respective sets of regulations.

In general, there are standards for almost all products, services and processes:

	Management systems
	Raw Materials
	Products and equipment
	Construction
	Consumer products (electronics, appliances, toys, furniture, shoes, childcare, ...)
	Tourism and leisure
	Facilities and sports equipment
	Agrifood
	Health
	Transport
	Power Management
	Accessibility
	R & D + i
	Information technology
	Logistics
	Social responsibility

F.1 Standards topics

3. National and International standardisation: market relevance

Standardisation is aimed to develop a number of technical specifications (standards), which are used by companies, on a voluntary basis, as a reference to check the quality and safety of their products and activities.

For customers, the compliance with standards is a guarantee of the optimum level of the goods purchased and a stimulus for consumption, as such goods are perceived as differentiated from the rest of the market supply.

In addition, international business has established the need for reference standards that are agreed by global consensus within international organisations. Likewise, standards are the basis for teaching and research, providing information about technological developments, scientific findings and technologies used.

3.1. Standardisation organisations

Standardisation bodies are non-profit private entities in charge of developing activities related to the preparation of standards at a national level, in order to unify criteria with regard to a certain activity.

AENOR-Spanish National Standardisation Organisation- is the Spanish standardisation body that aims at standardising and certifying in accordance with ISO (International Standardisation Organisation) international Standards, and the provisions of the Official Journal of the European Communities (OJEC) with regard to quality and the environment, and also, in accordance with the rest of European, national, regional or local standards.

Standardisation activities within AENOR are carried out by Technical Committees (AEN/CTN) working on different areas. All stakeholders participate in said technical committees, the composition of which must be balanced, in order to guarantee that all interested parties are correctly represented.

CEN is made up of the National Standardisation Bodies from twenty-two countries and it is based on the same standardisation fundamentals as AENOR, given that, since the moment it was created, this entity has been focused on obtaining standards that are applicable on a European scope and approved by consensus in all member states.

Their standardisation activities are carried out by Technical Committees (TC).

The most significant CEN documents and related obligations are listed below:

- **European Standard (EN):** European document prepared by CEN members aiming at overcoming technical barriers to commerce, on the basis of consensus, and approved by weighted voting procedure. Once the EN is approved, it may include divergences due to national regulations applicable.
- **Technical Specification (TS):** European document prepared by CEN members (who are only obliged to announce their existence at national level and ensure their availability) in order to:

1. Publish aspects related to a specific field, supporting progress and development of the European market.
2. Establish guidelines for the market by means of specifications and the corresponding test methods.
3. Be applied to those technical areas with a significant component of technology innovation or the urgent need for clear guidance.

- **Technical Report (TR):** information document relating to technical contents of standardisation, prepared by a European standardisation body and approved by one of their technical committees, of which the adoption is not mandatory. It is usually issued to report on data regarding experiments, research, etc. and normally adopted as UNE report.

It is worth mentioning that **ISO** publishes different types of normative documents, including International Standards (ISO) and Technical Reports (TR). With regard to International Standards, the most significant phases involved in their preparation are detailed below, starting from the agreement by the corresponding TC to include a new topic in their work plan and the corresponding preparatory work:

- **Committee Draft (CD).** A document (considered as a draft International Standard) is circulated among the members of the TC for voting and approval. This process could take between three to six months, usually three months.

- **Enquiry stage (DIS).** The draft International Standard (DIS) is circulated to all ISO member bodies by the ISO Central Secretariat for voting and technical comment within a period of five months. It is approved for submission as a final draft International Standard (FDIS).
- **Approval stage (FDIS).** The final draft International Standard (FDIS) is circulated to all ISO member bodies by the ISO Central Secretariat for a final Yes/No vote within a period of two months. If technical comments are received during this period, they are no longer considered at this stage. The text is approved as an International Standard.

Once a final draft International Standard has been approved, it is sent to the ISO Central Secretariat which publishes the International Standard. All International Standards are reviewed at least once every five years by the responsible TCs/SCs, who decide whether an International Standard should be confirmed, revised or withdrawn.

Agreement on Technical Cooperation between ISO and CEN (Vienna Agreement)

The Vienna Agreement, formally approved in 1991, set the basis for technical cooperation in the development of joint standardisation works between ISO and CEN, where there is common European and international interest.

The enforcement of this Agreement brought about numerous benefits, both in the European and international stage, in that:

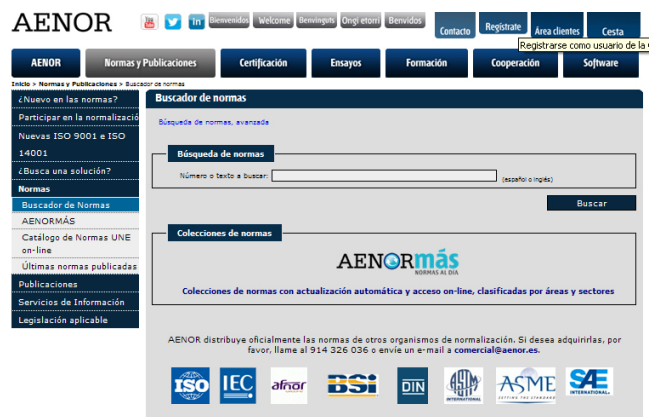
- It allows the adoption of European standards as International standards, extending the European standardisation borders and opening the way for it to be international, with the resulting benefits to technological and commercial exchanges;
- It allows the adoption of International standards as European standards, and their parallel preparation (in ISO standards), thus promoting international standardisation in European countries for the preparation of International standards that will also be European at the same time, with the resulting obligation for CEN members to adopt them also as National standards.

Here one can see that standardisation follows the same trend towards globalisation as industrial or business activities do.

3.2. Standards search and catalogues

Standards can be searched in catalogues that standardisation bodies have available on their websites. Here you can find bibliographic references and it is also possible to buy standards in paper or electronic version. Below are some examples of standardisation bodies' websites:

- Spain: **AENOR** Asociación Española de Normalización y Certificación
- France: **AFNOR** Association Française de Normalisation
- Germany: **DIN** Deutsches Institut für Normung
- Portugal: **IPQ** Instituto Português da Qualidade
- Romania: **ASPRO** Asociația de Standardizare din România
- Italy: **UNI** Ente Italiano di Normazione
- Belgium: **NBN** Bureau for Standardisation
- Czech Republic: **CSNI** Český normalizační institut
- Slovenia: **SIST** Slovenski Inštitut za Standardizacijo
- United States: **ANSI** American National Standards Institute
ASTM American Society for Testing and Materials
- International: **CEN** European Committee for Standardisation
ISO International Organisation for Standardisation



F.2 AENOR standards search tool

4. Conformity assessment: types and strategy

Conformity assessment (CA) is an activity to determine that a product, process, system, individual or body meets relevant technical requirements.

There are regulatory (mandatory) and voluntary schemes. **Regulatory schemes** refer to goods or services that may pose dangers to health, security or the Environment. Voluntary schemes refer to the rest of products or services.

Voluntary schemes are different, since there are no regulations (directives) obliging to accept a product, test report, certificate or brand if there is not enough confidence in its quality level.

Here there are four different alternatives for the assessment and verification of the conformity of products, processes or services, based on the requirements of the **Conformity Assessment Standards** (17000 series standards).

For the **first-party CA**, the product manufacturer or supplier declares on his own responsibility that the product, process or service (including its management system) meets the specified requirements.

This is usually called “manufacturer declaration” or “supplier declaration”.

The **second-party CA** is performed by the purchaser or end user.

The **third-party CA** is performed by a person or body that is independent of the seller and the buyer. This is the most commonly used type of conformity assessment, especially with regards to the use of conformity marks.

4.1. Legal framework

The free movement of goods is the central pillar of the Single Market. Essential progress has been made in removing technical barriers to trade, and promoting mutual recognition and technical harmonisation.

The Global Approach on conformity assessment lays down the principles for the different stages of conformity assessment procedures. Such principles are:

- Conformity assessment subdivided into modules.
- Full application of European standards relative to quality assurance (ISO 9000 series).
- Implementation of accreditation systems.
- Mutual recognition agreements.

The Global Approach and conformity assessment are based on:

- Manufacturer’s internal design and production control activities;
- Third-party type examination combined with manufacturers’ internal production control activities;
- Third-party type or design examination combined with third party approval of product or production quality assurance systems, or third party product verification;
- Third-party unit verification of design and production;
- Third-party approval of full quality assurance systems.

Relevant aspects of the “New Approach” Directives

Essential requirements: The essential requirements are set out in relevant sections or annexes of a given piece of Union harmonisation legislation and define the results to be attained. Only products fulfilling the Essentials requirements can be placed into the market or put into service.

Free movement: Member States presume that products bearing the CE marking are in conformity with the applicable directives providing for its affixing.

Presumption of conformity: Products that comply with national standards transposing harmonised standards which are published in the Official Journal of the European Union, are presumed to meet the relevant essentials requirements.

Safeguard clause: Member States are obliged to take all appropriate measures to prohibit or restrict the placing on the market of products bearing CE marking (or to withdraw them from the market) if these products could compromise the safety and health of individuals.

Conformity assessment: The conformity assessment procedure is carried out before the product can be sold. A manufacturer can only place a product on the EU market when it meets all the applicable requirements for CE marking.

Transposition and transitional provisions: Member States are required to transpose the provisions of the directives into their national legislation.

Scope of “New Approach” Directives

Products subject to Directives

New Approach directives apply to products intended to be placed or put into service) on the EU market for the first time. Therefore, the Directives apply also to new products manufactured in Member States or new, used or second-hand products imported from third countries.

Simultaneous application of Directives

Essential and other requirements laid down by New Approach directives may overlap or complement each other, depending on the hazards covered by these requirements that are related to the product in question. The making available or putting into service can only take place when the product complies with the provisions of all applicable directives and conformity assessment has been carried out according to the applicable directives.

General Product Safety Directive

The General Product Safety Directive applies to consumer goods supplied in the course of commercial activity provided that the product is not covered by New Approach Directives or other Community legislation, or not all aspects of safety or category of risks are covered by New Approach Directives or other Community legislation.

Product liability

The Directive on product liability covers any product manufactured or imported into the Community, which causes damages to individuals or private property. This Directive applies also to products that fall within the scope of a New Approach directive.

The Directive on product liability places liability for defective products on manufacturers and importers in the Community.

Notified Bodies

Notified bodies carry out the tasks pertaining to the conformity assessment procedures referred to in the applicable New Approach directives when a third party is required.

Member States are responsible for their notification. They may choose the bodies they notify from the bodies under their jurisdiction which comply with the requirements of the directives.

Manufacturers are free to choose any notified body that has been designated to carry out the conformity assessment procedure in question according to the applicable directive.

CE Marking

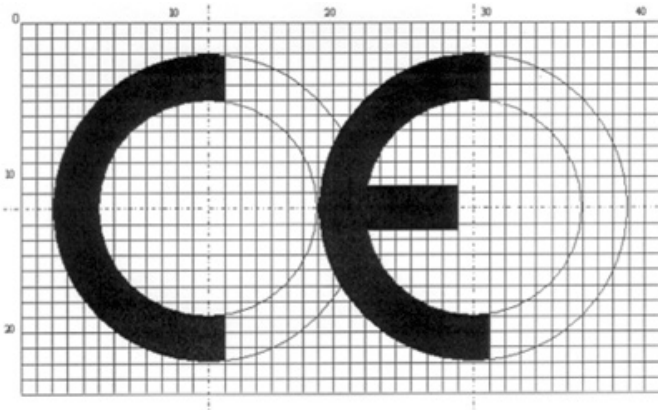
The CE marking symbolises the conformity of a product with the applicable Community requirements imposed on the manufacturer.

It indicates that the product conforms to all the Community provisions providing for its affixing.

Where products are subject to several directives, which all provide for the affixing of the CE marking, the marking indicates that the products are presumed to conform to the provisions of all these directives.

A product may not be CE marked unless it is covered by a Directive providing for its affixing.

CE marking must take the form below. If the CE marking is enlarged or reduced, the proportions must be respected.



Market Surveillance

Market Surveillance principles

Market surveillance is an essential tool for the enforcement of New Approach directives.

The purpose of market surveillance is to ensure that the provisions of applicable directives are complied with across the Community. Citizens are entitled to an equivalent level of protection throughout the single market, regardless of the origin of the product. Further, market surveillance is important for the interest of economic operators, because it helps to eliminate unfair competition.

Monitoring of products placed on the market

The objective of monitoring products placed on the market is to verify that they comply with applicable directives at the moment when placed on the market and, if relevant, when put into service.

The EC declaration of conformity and the technical documentation provide the surveillance authority with necessary information about the product (which is complemented by the realisation of the relevant tests).

Products imported from third countries

A manufacturer established in a third country is responsible, in the same way as a manufacturer established in a Member State, for designing and manufacturing a product in accordance with all applicable New Approach directives and for carrying out the required conformity assessment procedure, where the product is intended to be placed or put into service on the Community market.

Where the manufacturer is not established in the Community and has no authorised representative in the Community, the importer or person responsible for placing the product on the Community market may become responsible to some extent.

5. Standardisation as a tool for strategic decision making and a key factor for competitiveness

As explained above, Standardisation is an activity by which consumers, users, testing laboratories and the Administration establish a voluntary agreement in the form of a technical document or standard, that is repeatedly or continuously applied and defines the technical characteristics that must be met by a material, product, service or system to ensure safety, fitness for purpose or compatibility with other products, services or systems. Standardisation brings about several practical benefits and is an exchange tool that enables:

- The development of markets harmonised with rules and practices aimed to reduce technical barriers to trade.
- The clarification of transactions, helping to define the needs and aiming to optimise the relationships between customers and manufacturers by preparing a set of references for the valorisation of products and services and savings in complementary tests.

This is a tool for the development of economy, in that it enables:

- The rationalisation of production through the mastering of the technical features of products, customer satisfaction, validation of production methods, and the obtaining of profits thanks to higher productivity and the assurance of safety of operators and installers.
- The transfer of new technologies within the essential field for companies and the community: new materials, information systems, surveillance technology, electronics, production, etc.

With regard to users:

- It helps them choose the most suitable products for the intended use.
- Contributes to their protection. Standardisation ensures the design and production of safe products.

With regard to companies and the Administration:

- It allows companies to be more competitive with the best tools to conquer markets, with better knowledge of markets and their trends.
- Standardisation is also a public policy tool, in that it is a complement to regulations and a reference for public procurement openness and transparency.

6. European Directives and Harmonised Standards

A **Directive** is a legal instrument that obliges all EU Member States to achieve a certain result, but leaves them free to choose how to do so. It is a legal act under the Treaty on the Functioning of the EU States (TFEU). It is legally binding and Member States are obliged to transpose it to their national legislation by the set deadline. Directives are enforced when they are published in the Official Journal of the European Union (OJEU).

Notified Bodies are impartial entities that have the necessary competence and responsibility to certify conformity according to process and management standards. In Spain, Notified Bodies must be accredited by ENAC, the Spanish National Accreditation Body. This way, for instance, INESCOP – the Spanish Footwear Technology Institute – is the Notified Body No. 0160 for the following Directives:

• 89/686/EEC Personal Protective Equipment

Council Directive 89/686/EEC of 21 December 1989 on the approximation of the laws of the Member States relating to personal protective equipment.

PRODUCTS OF COMPETENCE	PROCEDURES OF COMPETENCE	ARTICLES/ ANNEXES
Equipment providing foot and leg protection, occupational and professional protective equipment against mechanical and physical risks	EC type-examination	Art. 10
	EC quality control system for the final product	Art. 11A

• 89/106/EEC Construction products

Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products. This Directive was repealed on 1 July 2013 by the Regulation (EU) No 305/2011 on Construction Products.

A **Harmonised Standard** is a technical specification (an in European standard or a HD harmonisation document) developed by a recognised European Standards Organisation, e.g. CEN, following a request from the European Commission according to the provisions of the Directive for which it has been prepared. It lays down an information procedure in the field of standards and technical regulations.

Harmonised standards are voluntary and provide a presumption of conformity with the essential requirements of technical harmonisation directives. When using a harmonised standard, the manufacturer gets faster market access than his competitors who do not use or partially use harmonised standards and hence bear the burden of proof.

Furthermore, harmonised standard also provide a presumption of conformity because they always represent the state of the art with regard to the essential safety requirements laid down by directives.

A standard becomes harmonised when it is published in the Official Journal of the European Union (OJEU). Similarly, when the standard is no longer published in the OJUE, it loses the status of harmonised standard and the presumption of conformity, as of the date fixed by the OJEU.

It is important to note that, even though the compliance with standards is not mandatory, in practice it is the simplest way for a product to comply with the necessary requirements to be able to move freely in the EU market.

7. IPR, patents and standardisation

Patents and standards serve common objectives, insofar as they both encourage innovation as well as the diffusion of technology. The patent system intends to encourage innovation by granting a limited exclusive right, and at the same time, to promote the diffusion of technology through mandatory complete disclosure of patented inventions.

In general, a patent confers an exclusive right to prevent others, without consent of the owner of the patent, from making and using the patented invention during a limited period of time. Such an exclusive right enables the patent owner to choose whether, for example, to (i) make or use the patented invention himself/herself and prevent others from doing so; (ii) grant a license to (a) third party(ies); or (iii) sell the patent to (a) third part(ies). Therefore, the patent system provides various options for a patent owner to exploit a patent so that he/she might recover the investment in the best possible way, which will of course depend on the business and market environment in which the patent owner is active.

Patents and standards serve certain common objectives insofar as they both encourage or support innovation as well as the diffusion of technology. So long as the patent system motivates companies to contribute their technologies to standardisation, and consequently, the best solution is adopted as a standard for a wide use in the market at reasonable cost, the patent system and the standardisation process share the objective of promoting innovation and diffusion of technology. However, if patent rights are enforced in a way that may hamper the widest use of standards, some antagonism between the two systems may arise.

The European Commission, as guardian of the competition in the EU, is concerned about the way in which companies are using their **standard-essential patents** (patents included in standards or technical standards). As already mentioned, both patents and technical standards are aimed to stimulate and support innovation as well as the diffusion of technology, but sometimes frictions arise between the two systems, normally when the observance of certain patents (the so-called standard-essential patents) can interfere with the wide spreading of standards.

To avoid and/or address the possible conflicts between the patent system and technological standards, different approaches are pursued:

- To increase transparency and accessibility to patented technology.
- To create patent pools to reduce transaction costs of licensing agreements.
- To apply legislative measures related to competition.

Measures intended to increase transparency and accessibility to patented technology:

- To encourage early disclosure of essential patents and patent applications.
- To seek assurances from patent holders to commit to certain licensing terms, such as reasonable and non-discriminatory (RAND) terms or fair, reasonable and non-discriminatory (FRAND) terms.
 - Fair: means terms which are not anti-competitive and that would not be considered unlawful if imposed by a dominant firm in their relative market. Examples of terms that would breach this commitment are; requiring licensees to buy licenses for products that they do not want in order to get a license for the products they do want or requiring licensees to take licenses to certain unwanted or unneeded patents to obtain licenses to other desired patents (bundling).
 - Reasonable: refers to licensing rates charged on licensees. It is not easy to establish a reasonable rate for a licence. The exact rate to be charged for royalties is up to the interested parties (namely, the patent owner and the one who applies the standard), outside the standardisation process.
 - Non-discriminatory: this commitment requires that licensors treat each individual licensee in a similar manner.

8. Management System Standards: ISO 9001:2015, ISO 14000, OHSAS 18000, SA 8000

A **management system** is a tool that allows a company to optimize resources, reduce costs and improve its productivity. This management tool reports data in real time, allowing the company to make decisions to correct errors and prevent unnecessary expenses.

A **management system** is especially recommended to any organisation or activity aimed at the production of goods or services, which needs a management system as a useful tool to improve the company.

Types of management systems:

- **ISO 9001:** A quality management system based on the ISO 9001 standard is a business tool that allows the control of all the critical points of the company to be improved, reducing production costs and improving the productivity of the company.
- **ISO 14001:** The management system ISO 14001 is a voluntary instrument aimed at companies or organisations who want to achieve a high level of environmental protection in the development of their activities.

The ISO 14001 standard allows the assurance of compliance with legal requirements, the reduction of environmental risks, cost savings (optimising raw materials or energy consumption), as well as the improvement of the company's position and enhancement of the corporate image.

The ISO 14001 management system is intended for any organisation willing to achieve advantages in the cost-benefit ratio, since integrating environmental parameters at all levels of the organisation means obtaining a scheme for resource savings and rationalization.

- **OHSAS 18000:** Safety and health in the workplace are key factors for any organisation. A management system for safety and health in the workplace based on the OHSAS 18001 standard (within the OHSAS 18000 standard) helps protect the company and workers, provides mechanisms to comply with all legal requirements in this field, improves staff awareness about accident prevention, and improves the use of tools and machinery to prevent accidents.

- **SA8000:** SA8000 is a voluntary certification that was created by the American organization Social Accountability International - SAI, with the purpose of promoting better working conditions. The SA8000 Certification is based on international agreements on working conditions, which include issues such as social justice and the rights of workers. It lays down measurable and observable guidelines to certify the development of companies in key areas of social responsibility. The SA 8000 certification is a guarantee that the certified company develops its production processes under welfare, respect for the rights of workers and social justice conditions.

9. Environmental Management Systems: ISO 14001 and EMAS

The ISO 14000 standard is an internationally accepted standard for the implementation of an effective Environmental Management System (EMAS). It helps organisations minimise how their operations negatively affect the environment, comply with applicable laws, regulations, and other environmentally oriented requirements, and continually improve in the above.

Organisations, regardless of their activity, size or physical location, are increasingly required to comply with a growing number of environmental demands imposed by the Administration, clients and the general public. For this reason, the use of tools that integrate the environment in the overall management of the company is essential.

The implementation of a System of Environmental Management that conforms to UNE-EN ISO 14001 offers a simple way to systematise the environmental features that are involved in each of the activities that take place in the organisation, in addition to promoting environmental protection and the prevention of pollution while maintaining a balance with socioeconomic concerns.

Environmental issues are more and more relevant in our daily lives. In recent years, a considerable increase in environmental awareness has been observed towards issues such as the recycling of waste (paper, plastic, glass, etc.), the savings in water and energy consumption, and the increasing demand for organic products. This increase in environmental awareness has led companies in all industrial sectors to implement environmental improvement in all their processes and products as a useful tool to increase their competitive advantages both domestically and internationally.

If we look at the footwear sector, many companies are committed to decreasing the environmental impacts generated by their production processes and their final product, footwear, by using eco-innovative environmental management tools, and improving their environmental situation to become more competitive. The steps to be followed for the implementation of an environmental management system in a footwear company are described below.

9.1. Environmental policy

One of the first important steps to be carried out by footwear companies is to establish the commitment of senior management in terms of the guidelines about respect for the environment. This is what is known as the "environmental policy of the company" and consists of documents establishing the intentions and general guidelines of the organisation about its environmental performance, and all with the approval of the highest hierarchy in the company management.

It is important to ensure that the company's environmental policy:

- Is adequate to the nature, size and environmental impact of its activities, products and services;
- Implies a commitment for continuous improvement and pollution prevention;
- Implies a commitment for the compliance with the applicable legal requirements or any other requirements agreed upon by the organisation with regard to environmental issues;
- Provides a reference framework for setting and revising the environmental objectives and targets;
- Is documented, implemented and maintained;
- Is circulated among all workers on behalf of the company;
- Is publicly available.

It is also important that the environmental policy be communicated both internally and externally since, ultimately, it is a document that reveals the reasons why an environmental strategy will be developed and explains to workers how such a strategy within the company will be carried out. Thus, it facilitates the active participation and commitment at all levels within the organisation.

It is recommended that the environmental policy is a brief document written in the clearest way possible that can be understood by any person, whether they work or not for the company.

Finally, it is important to note that the environmental policy is a living document and can be modified according to the changes that are occurring in the company, i.e. it is a document that must be subject to regular revisions and modified accordingly.

9.2. Identification of environmental issues

Definitions:

- **Environmental aspect:** An environmental aspect is an element or characteristic of an activity, product, or service that interacts or can interact with the environment.
- **Environmental impact:** An environmental impact is a change to the environment that is caused either partly or entirely by one or more environmental aspects of an organisation.

Therefore, one could say that the environmental aspect is the "cause" and the environmental impact is the "effect". For example, an environmental aspect could be the emission of volatile organic compounds (VOC), which in the case of footwear, may originate from footwear finishing booths, and the environmental impact would be the atmospheric pollution caused by the VOC.

With respect to the identification of environmental aspects, once the collaboration and support of the senior management is achieved, one should begin to diagnose the situation of the company in relation to the environment, to subsequently determine the relevance of the environmental issues found and act on them. Therefore it is important to establish procedures that indicate how to identify and evaluate the environmental aspects, and keep the corresponding records updated, i.e., all the actions that are carried out for the identification of environmental aspects shall be somehow recorded in writing.

In particular, the stage of identification of environmental aspects should start by knowing very well the industrial activity and the products and services that are supplied by the company. In addition, it should be considered if new technology has been acquired, if there are new suppliers, if some process has changed, if there are new products, etc.

To do this, it is necessary to ensure that the staff responsible for the identification of environmental aspects has access to any information required for that purpose, as well as to interview general managers, production managers, employees, suppliers, contractors, etc.

It is important to note that in order to properly perform the identification and evaluation of environmental aspects, not only the aspects of normal operation of the company should be considered, but also unusual situations (stops, cleaning, etc.) and potential emergencies (fire, accidental spillages, etc.).

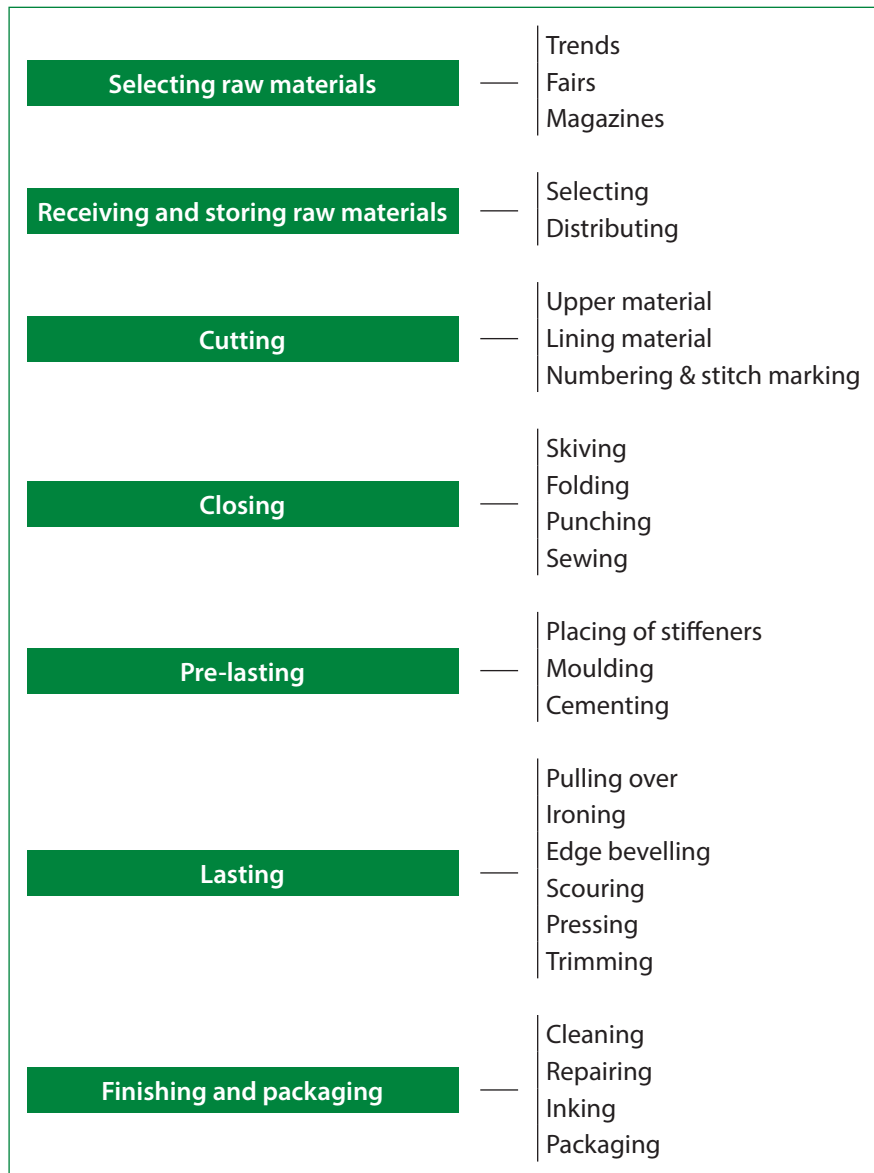
In addition, not only the current activity of the company should be considered, but also those environmental aspects that may come from past activities (soil contamination), as well as to prevent those that may occur as a result of future activities (e.g. waste that may be produced on the installation of a machine in the future) should also be studied.

Likewise, during the study of the activity of the company one should detect and log issues such as the following:

- The frequency at which the different environmental aspects are produced.
- Existing annual data of the organisation about materials and energy consumption, discharges, wastes and emissions.
- Responsibilities and job hierarchies.
- Degree of environmental awareness of employees.
- Level of knowledge of the environmental impacts identified.
- Identification of existing environmental management practices
- Collection of opinions and complaints
- Environmental issues in the footwear sector

Firstly, and as mentioned previously, the staff in charge of the identification of environmental aspects should know perfectly all the activities, products and services offered by the company, and then begin to investigate each of the environmental aspects originating from these operations.

In general, the stages comprising the footwear manufacturing process are usually as follows:

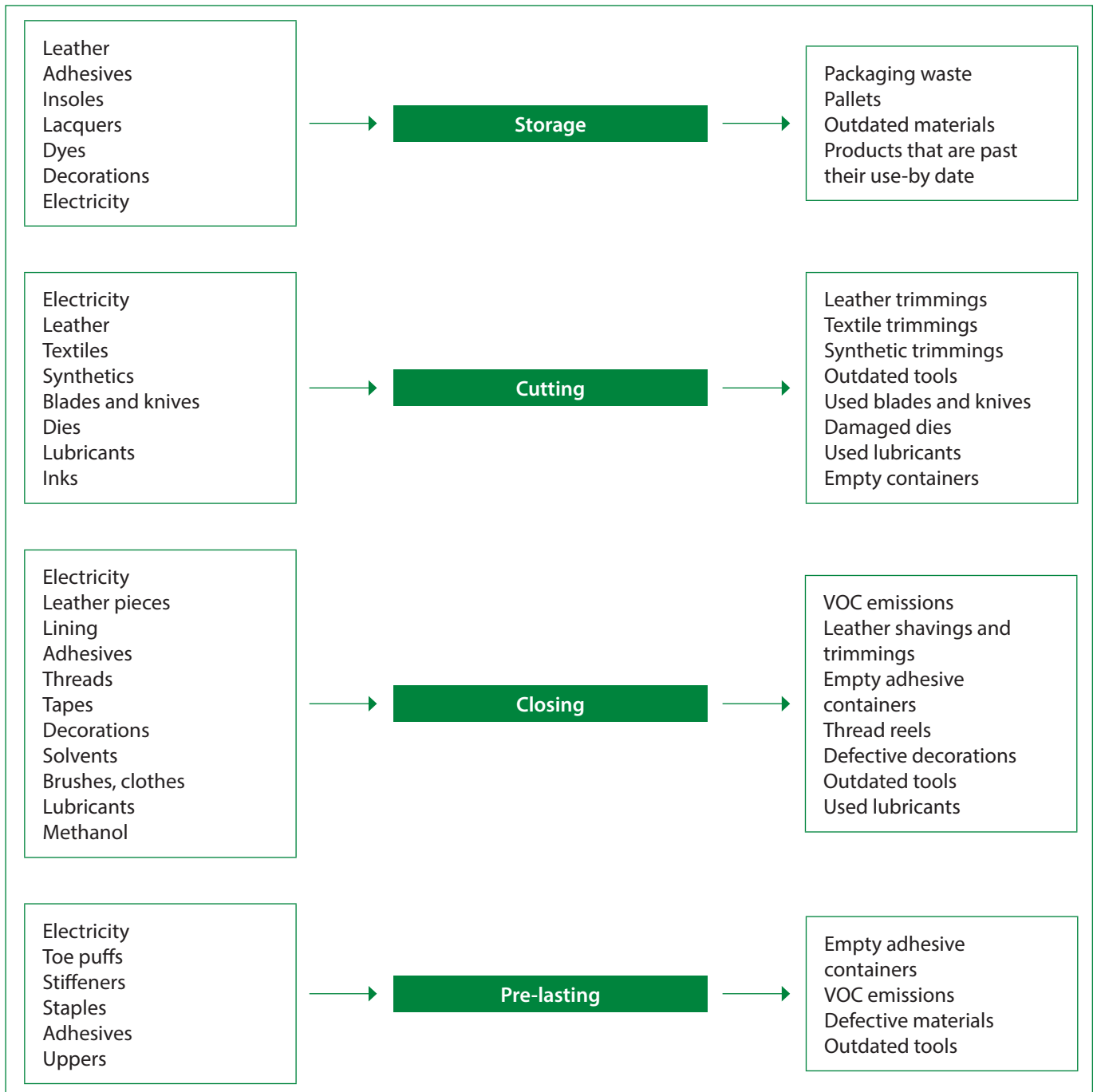


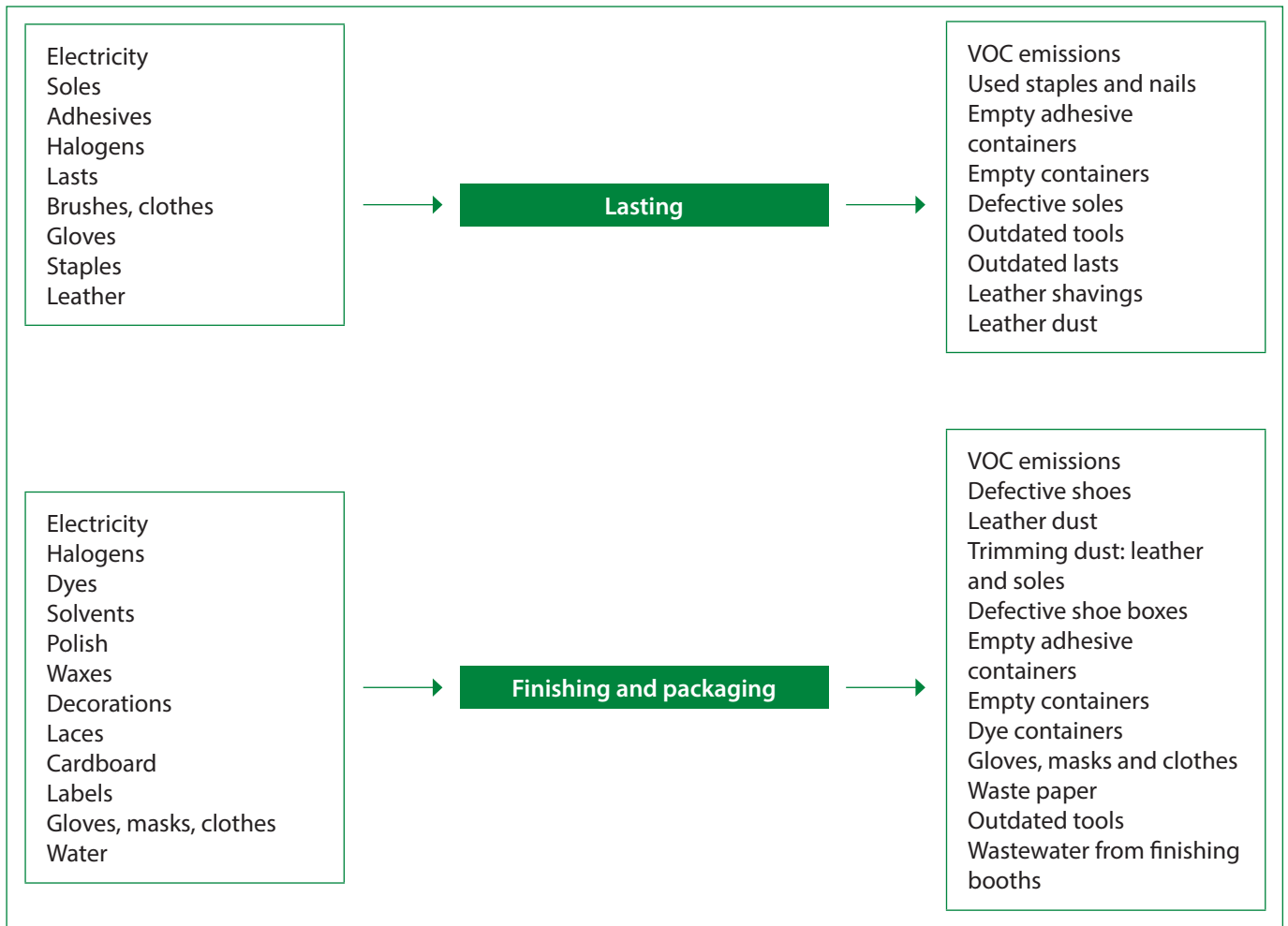
F.1 Manufacturing stages in a “standard” footwear company

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In each of the previous stages environmental impacts are generated, which are derived from certain environmental aspects to be identified; therefore, it will be important to identify all inputs (raw materials, energy, etc.) and outputs (emissions, waste, etc.) that take place in each of the

processes that are conducted in a footwear company. In this regard, below are some of the environmental inputs and outputs that are often identified in the footwear production stages:





F.2 Inputs and outputs to/from footwear production stages

However, it should not be forgotten that, although this section has focused on inputs and outputs derived from footwear production stages, also those derived from any other activity (offices, first-aid kits, company vehicles, etc.) that will depend on each footwear company in particular.

All the information collected should be recorded in documents as this will be used to develop the methodology for the assessment of environmental aspects.

In addition, to facilitate the identification of environmental aspects by footwear companies, below are some of the environmental aspects that are usually found in footwear companies:

Consumption

In footwear companies, as in any other industry, resources are used to develop their usual production activities. To identify the environmental aspects related to consumption, the above- mentioned above analysis of inputs & outputs should be carried out.

As an example of usual consumption in footwear companies, the following can be listed:

- Electricity consumption
- Leather consumption
- Water consumption
- Fuel consumption for internal (e.g., diesel forklifts) and external (e.g. vans) transportation and heating (e.g. oil boilers)
- Office paper consumption

Once the consumption of each activity of the company has been identified, information can be obtained about the amounts used, for example, in water and electricity invoices.

Waste

Footwear companies' waste is one of the factors to be considered in the phase of identification of environmental aspects. Almost all the operations which are carried out in a footwear company (cutting, closing, lasting, etc.) produce, to a greater or lesser extent, both hazardous and non-hazardous waste, which will therefore have a lesser or greater repercussion in the assessment phase which is described below in Chapter 6.

As in the case of consumption, in order to identify it is necessary to carry out a study of all the output materials that are produced in each of the company's activities. Information about the amount of waste generated can also be obtained from the invoices of the management of hazardous and non-hazardous waste.

Below, Table 1 shows the most common waste generated in some of the processes of footwear production, highlighting in bold the main waste generated, which is often waste leather (non-hazardous waste) and empty hazardous substances containers (hazardous waste):

PRODUCTION PROCESS	WASTE
Cutting & punching	Leather trimmings , PU, PVC, lining, sponges, etc.
Splitting & skiving	Leather shavings and trimmings
Folding	Cans with adhesive residues and tools impregnated with dry adhesive
Upper closing and lining stitching	Empty adhesive cans and tools impregnated with dry adhesive, thread reels, reinforcing tape waste, trimmings, embroideries, etc. and outdated stitching tools
Toe cap and counter attaching	Contaminated tools and cans with adhesive residues
Bevelling, roughing and buffing	Leather shavings
Sole cementing	Cans with solvent adhesive residues and contaminated tools
Sole injection	Hot-melt plastic flashes, empty containers of mould-release agents
Last pulling	Outdated wooden or plastic lasts
Heel nailing	Used/defective nails and heels
Upper cleaning	Used drums or cans
Edge inking	Empty ink containers or cans , dirty filters and used, dirty tools
Insock fitting	Cans with adhesive residues , tools impregnated with dry adhesive, used marker rollers, etc.
Buffing and polishing	Finishing product containers , application tools, clothes, spray booth filters, etc.
Hanger or tag attaching	Paper waste, labelling waste, etc.
Packaging	Cardboard waste, paper waste, sealing tape waste, etc.

T.1 Waste produced in different footwear production stages

Apart from the study of the production process itself, the environmental aspects involved in all the company activities should also be taken into account. Such activities include, among others:

ACTIVITY	WASTE
Maintenance	Used oils, outdated tools, fluorescent tubes, contaminated material (clothes, gloves, masks, etc.), batteries, etc.
Offices	Used paper, ink cartridges, toners, button cells, etc.

T.2 Waste derived from other activities of footwear companies

Apart from the study of the production process itself, the environmental aspects involved in all the company activities should also be taken into account. Such activities include, among others:

With regard to the classification of footwear waste into hazardous and non-hazardous, these include the following ones:

- Non-hazardous waste:
 - Leather waste
 - Non-hazardous waste containers
 - Waste similar to urban waste (wood, plastic, metal, textile waste, etc.)
 - Ink cartridges and toners



F.3 Tanned leather trimmings

- Hazardous waste:
 - Hazardous waste containers
 - Contaminated materials (clothes, brushes, paper, gloves, etc.)
 - Used oils
 - Batteries and button cells
 - Fluorescent tubes



F.4 Hazardous containers

- Atmospheric emissions

The air pollution caused by footwear companies is mainly due to volatile organic compounds (VOCs) that emitted into the atmosphere through booths or exhaust systems. VOCs are found in solvent based products, such as adhesives, finishing chemicals and halogenated products, so the major emitting source of footwear companies will be areas where the application of adhesives, the halogenation of soles, and the application of lacquers and polishes for footwear finishing are carried out.



F.5 Exhaust system in a footwear factory

- Noise emissions

The environmental aspects to be taken into account include also those related to the environmental noise that can be emitted by footwear companies. The noise emission sources in footwear companies are usually generators, compressors, punch presses, etc.

To identify the possible sources of environmental noise, it is recommended that the staff responsible for the identification of environmental aspects firstly make an inspection inside the plant to identify the machinery that would be likely to generate noise that could be measured from the outside of the plant to, secondly, carry out an inspection outside the plant when it is in normal activity, ensuring that the identified machinery is in operation. In addition, courtyards and backyards should also be inspected.



F.6 Air compressor

- Wastewater discharge

Wastewater coming from footwear companies can be of different origin, mainly:

- Black water (toilets, cleansing water, sinks, etc.)
- Water-curtain finishing booths



F.7 Water-curtain finishing booths

- And potentially:

- Spills caused by fires/explosions
- Chemical spills

9.3. Assessment of the environmental issues identified

Once the environmental aspects associated with activities, products and services of the company are identified, they have to be assessed. This way, the most significant environmental aspects are identified. This will allow us to know the significance of the environmental aspects in order to subsequently take actions upon them by setting environmental mitigation goals.

For the assessment of the environmental aspects, the organisation shall establish and document the criteria that will be applied. These criteria must be objective so that the result is always the same regardless of the person who carries out such an assessment.

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Normally, the methodology used in the assessment of the environmental aspects aims to assign a rating to each of the identified environmental aspects to, subsequently, use this rating to assess their degree of significance. The allocation of this rating is typically based on criteria of diverse nature, including:

- Magnitude: rates the size or dimension of the environmental impact.
- Nature: rates the dangerousness, severity and toxicity of the environmental aspect
- Frequency: rates the occurrence of a given environmental impact

In addition to the most commonly used criteria (magnitude, nature and frequency), depending on the particular case of each company, others may be chosen as for instance: compliance with legal or voluntary limits, the sensitivity of the surrounding environment (a factory close to a natural park as not the same as a same factory located in an industrial area), etc.

The tables below show examples of the assessment of the “magnitude” and “compliance with limits” criteria:

ENVIRONMENTAL ASPECT	MAGNITUDE	RATING
1. Electricity consumption	High Higher than electricity consumption from the previous year, assessed as kwh per pair of shoes produced	50
	Medium Lower than the electricity consumption from the previous year by up to 20%, assessed as kwh per pair of shoes produced	25
	Low Lower than the electricity consumption from the previous year by over 20%, assessed as kwh per pair of shoes produced	1
2. VOC emissions	High Solvent consumption per pair of shoes produced higher than that of the previous year.	50
	Medium Solvent consumption per pair of shoes produced lower than that of the previous year by up to 10%	25
	Low Solvent consumption per pair of shoes produced lower than that of the previous year by 10%.	1

T.3 “Magnitude” rating

ENVIRONMENTAL ASPECT	COMPLIANCE WITH LIMITS	RATING
1. Electricity consumption	High > 2 kwh/ pair of shoes produced	50
	Media 1.5 - 2 kwh/ pair of shoes produced	25
	Low < 1,5 kwh/ pair of shoes produced	1
2. VOC emissions	High > 90% of 50 mg TOC (Total Organic Carbon) /Nm3	50
	Medium 70% - 90% of 50 mg TOC /Nm3	25
	Low < 70% of 50 mg TOC /Nm3	1

T.4 “Compliance with limits” rating

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For a better understanding of Table 4, the methodology used to establish the above examples is explained below:

- **Consumption:** the company could establish a reference value and give a rating according to whether it exceeds this preset value or not. For example, in table 4 it was assumed that a shoe company, after having studied their energy consumption, set 2 kwh/pair as the reference energy value over which a higher rating should be assigned. From this value the company also could determine whether the rating should be medium or low.
- **Emissions:** in this case it was assumed that the company is based in the Valencian Region. According to current legislation for this Autonomous Region, all those companies not included in the scope of the Royal Decree 117/2003, i.e. footwear companies that do not exceed 5 tonnes of annual solvent consumption, should not exceed the emission limit of 50 mg TOC/Nm³. Therefore, if the average value of annual TOC emission exceeds 90% of 50 mg TOC/Nm³, a high rating should be assigned due to the risk posed by approaching this limit. Similarly, other percentages were established to rate medium and low risk.

One of the most common difficulties for the development of this type of tables for the assessment of environmental aspects by the companies consists in trying to apply the same criteria to all environmental aspects identified. Thus, it is possible that the "nature" criterion fits very well to assess the company "consumption"; however, it would be difficult for it to fit the "emissions" criterion. For this reason, it is advisable that companies define specific criteria for each family of aspects.

Once the method for the environmental aspect assessment has been established, it is necessary to assign a score to each one. Then a formula or method needs to be established, which reflects the real environmental relevance of each aspect. For instance:

Aspect relevance (AR) = Magnitude (M) + Compliance with limits (CL)

Once the environmental aspects have been rated, a "significance criterion" should be established, i.e., a criterion that, according to the score obtained for each environmental aspect, classifies every aspect as significant or non-significant. For example, for the above case the following significance criterion can be established:

ASSESSMENT	CLASSIFICATION
Score ≥ 75	Significant
Score < 75	Non-significant

T.5

Therefore, the final assessment of the environmental aspects in a shoe company might look more or less like the example shown below:

ENVIRONMENTAL ASPECT	M	CL	AR	CLASSIFICATION
Water consumption	1	50	51	Non-significant
Electricity consumption	1	50	51	Non-significant
Water-curtain finishing booths	50	50	100	Significant
Exhaust system in closing room	1	50	51	Non-significant
Compressor noise	50	25	75	Significant
Leather waste	50	25	75	Significant
Ink and toner cartridges	1	1	2	Non-significant
Contaminated material	25	1	26	Non-significant
Hazardous container waste	50	50	100	Significant
Non-hazardous container waste	50	25	75	Significant
Used oils	1	1	2	Non-significant

T.6 Classification of environmental aspects according to their significance

For the assessment of the environmental aspects arising from abnormal operating conditions or potential accidents, criteria other than those shown in the examples above are often used, because the same criteria used for normal situations cannot always apply. For example, the following criteria could be used:

- Likelihood of occurrence of emergencies:
 - High: occurred twice or more times over the last year
 - Medium: occurred once over the last year
 - Low: did not occur over the last year

- Likelihood of occurrence of abnormal situations:
 - High: occurs more than once in a month
 - Medium: occurs once a month
 - Low: occurs less than once a month

- Severity:
 - High: if the emergency occurred, it would severely affect people and/or the environment (cannot be restored in less than 3 months)
 - Moderate: if the emergency occurred, it would moderately affect people and/or the environment (can be restored in 3 months)
 - Minor: if the emergency occurred, it would slightly affect people and/or the environment (can be immediately restored)

This way, a hazard rate for abnormal and emergency situations could be calculated as follows:

LIKELIHOOD OF OCCURRENCE	SEVERITY		
	LOW	MEDIUM	HIGH
LOW	Minor	Minor	Moderate
MEDIUM	Minor	Moderate	High
HIGH	Moderate	High	Unacceptable

T.7 Hazard rate for abnormal or emergency situations

The significance criterion could consist, for example, in classifying those environmental aspects with a “high” or “unacceptable” score as significant aspects.

Once the various environmental aspects have been identified, assessed and classified, they must be recorded in the documentation. It is also time to start thinking about measures to be taken on significant environmental aspects to reduce their environmental impact.

9.4. Identification of legal requirements and main environmental regulations affecting the footwear sector

Over the years, environmental regulations have been expanded and strengthened in order to bring real solutions to environmental problems. Thus, currently we find a multitude of environmental regulations the knowledge and interpretation of which can be a very complicated task, especially for SMEs and footwear companies. In many cases, this is due to lack of access to legal-environmental information, human resource shortages and/or economic limitations in the availability of time dedication, etc.

The footwear industry is not considered particularly problematic in relation to the environment but there are numerous environmental regulations that are directly applicable and it will, therefore, be required to comply with environmental requirements.

Therefore, the purpose of this section is to help footwear companies identify the environmental requirements that apply to them, as well as to give a global, comprehensive and indicative view of the main environmental regulations affecting the footwear sector.

Identification and evaluation of legal requirements

Firstly, a distinction should be made between legal requirements and regulations as a legal requirement refers to each of the requirements of a given regulation. For example, Law 10/1998 relative to Waste is a "regulation" while the obligation to deliver waste to an authorised waste manager or the obligation to maintain waste in appropriate health and safety conditions, or the prohibition of abandonment, dumping or uncontrolled disposal of waste, may be examples of legal requirements arising from that regulation.

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Legal requirements are essential for proper environmental management of any company as they are the benchmark for determining the degree of compliance with the legislation.

To identify the environmental requirements that apply to a shoe company and have easy access to them and keep them updated, it is advisable to establish, implement and maintain the procedure to be followed and document it, and to determine how these legal requirements apply to the identified and assessed environmental aspects. Also, it is to be noted other possible requirements which are not necessarily derived from environmental regulations but are related to activities, products or services delivered should be considered, such as those established by customers or those voluntarily assumed in relation to eco-labels.

The applicable environmental regulations can be accessed from different sources, as for example:

- Official gazettes
- Specialist publications
- Subscription to external legal updates services
- Manufacturers' associations
- Chambers of Commerce

Once the footwear company establishes a method of access to environmental regulations, the environmental requirements that are applicable to it must be identified. This task entails reading and interpreting the legislation

and, therefore, it is usually quite laborious. It is therefore recommended that the persons in charge of reviewing the legislation should have a minimum knowledge of environmental regulations and a thorough knowledge of the company, the production process and of its facilities. However, there are external services providing access to legislation which can offer very interesting services and can facilitate this work to a greater or lesser extent.

When identifying the legal requirements, it is recommended to make one or more checks, recording all the legislation applicable to the company, which indicate, for example, its scope of application (European, national, etc.), the environmental aspect it affects (wastewater discharges, atmospheric emissions, etc.), and also the environmental requirements deriving from it. This way, this check will make it possible to compile all the legal environmental references applicable to the company in question, and also to quickly identify which pieces of legislation and environmental requirements that can affect a specific environmental aspect that has been identified.

The next step is to evaluate the degree of compliance with the environmental regulations applicable to a specific company. To this end, it is also recommended that the company records, very simply and visually, whether it complies or not with each of the requirements arising from environmental regulations.

Below, Table 1 gives an example of some requirements identified and assessed in a footwear company:

ENVIRONMENTAL ASPECT	REGULATION	APPLICABLE REQUIREMENT	COMPLIANCE
Hazardous waste	RD 833/1988	Segregation of hazardous and non-hazardous waste	Yes
	RD 952/1997	Delivery to an authorised manager	Yes
	Law 22/2011	Registration as a Small Waste Producer	Yes
	RD 180/2015	Waste Minimization Plan	No
Atmospheric emissions from the finishing booths	RD 117/2003 Law 2/2006	Registration Book	Yes
Atmospheric emissions from combustion of the heating boiler	RD 117/2006 Law 34/2007 RD 100/2011 RD 102/2011	Inspection of the emission levels	No
Wastewater discharge to a sewer system	RD 849/1986 Law 46/1999 RD 606/2003	Inspection of the levels of the contamination parameters of the discharge	Yes

T.1 Example of identification and evaluation of environmental requirements

It must be considered that the task of identifying and evaluating environmental requirements does not finish in this point because the legislation identified should ideally be continually updated (repeals, partial amendments, correction of errors, etc.), any possible new regulations that might affect the footwear company should be identified and evaluated, and also the corresponding records should be amended and adapted.

Similarly, it should not be forgotten that the essence of all this work lies in improving the environmental situation of the company so, having reached this point, the necessary measures must be taken in order to find a solution to any possible infringements detected of any laws.

Principal environmental regulations affecting footwear This point is intended as a guide so that footwear companies can orient themselves with regard to the principal environmental regulations that can affect them at State level. It is important to point out that the legal environmental requirements applicable to each footwear company depend on the characteristics of each specific case.

Within the broad range of issues regulated by environmental legislation, below is a list of those having a greater repercussion for footwear companies:

- Waste
- Packaging and packaging waste
- Atmosphere
- Wastewater discharge
- Hazardous substances
- Environmental noise

Waste

Obligations for footwear companies on generating and managing waste, amongst which we would highlight the following, depending on whether the waste is hazardous (Table 3) or non-hazardous (Table 2):

NON-HAZARDOUS WASTE	
General obligations	Separate: Separate property and do not mix waste products in order to facilitate subsequent recycling and recoverability
	Deliver the waste to an authorised waste manager for transportation and recoverability or elimination, or hand it over to the Local Authorities in the terms established under the corresponding Municipal By-laws
	Assume the corresponding management costs
	Store non-hazardous waste in adequate conditions of safety and hygiene, for a maximum of two years

T.2 General obligations for non-hazardous waste

With regard to hazardous waste, it should be said that different obligations arise depending on whether the company is a small or large producer of hazardous waste. Small hazardous waste producers are considered to be those footwear companies that generate less than 10 tonnes per year of hazardous waste. Large producers of hazardous waste are those that generate more than 10 tonnes per year of hazardous waste. The latter are subject to greater administrative control and more legal obligations.

In any case, given the size of footwear companies, they are usually small hazardous waste producers.

HAZARDOUS WASTE	
General obligations when producing waste	Separate: Separate adequately and do not mix waste products in order to facilitate subsequent recycling and recoverability
	Pack the hazardous waste in suitable containers for the substances they are to contain
	Label the packaging containing hazardous waste. That label must indicate the waste code
	Have areas for storing hazardous waste that comply with legislation and the technical rules applicable to them
	The storage time of hazardous waste may not exceed 6 months. Nevertheless, companies which, for justifiable reasons, need to extend this deadline must seek special permission from the competent body through authorisation for extending the time limit for storing hazardous waste

HAZARDOUS WASTE	
General obligations when producing waste	Keep a record of the hazardous waste generated, its collection and transportation to the waste management plant
	Managing the waste generated through one or several authorised hazardous waste management companies
	Make an application to the management company for the admission of waste and keep the acceptance documents for at least 5 years, in addition to providing the companies handling the waste management with sufficient information for it to be suitably treated and eliminated
	Perform a Waste Minimisation Analysis for each unit produced. This analysis should be submitted to the pertinent body of the Autonomous Region every four years, and should show a commitment to reducing the production of hazardous waste.
Small hazardous waste producers	In case of accident (disappearance, loss or leakage of hazardous waste), the competent body must be notified.
	Register with the Registry of Small Hazardous Waste Producers kept by the pertinent service.
Manufacturers of more than 10 tonnes/year of hazardous waste	Obtain administrative authorisation for setting up, expanding or altering industries or activities generating hazardous waste
	Every year (before 1st March) submit to the competent body the Annual Declaration of Hazardous Waste Generation, specifying the origin and quantity of the waste generated and the destiny of each one (to be kept for at least 5 years)
Obligations regarding waste management	Apply to the waste management company for their acceptance of the waste to be treated.
	Fill out the documents for control and monitoring of the toxic and hazardous waste from where it is produced as far as the centres for containment, treatment or elimination
	Deliver the hazardous waste to an authorised transporter for the transport of waste
	Send notification of transferring waste to the pertinent body, at least ten days prior to the date of sending the waste in question.

T.3 General obligations regarding hazardous waste

One conclusion must be obtained from all of these obligations: waste, whether hazardous or non-hazardous, is the responsibility of the party who generates it. Companies must ensure that all requirements described in the legislation in force are complied with from the moment waste is produced until its delivery to an authorised waste manager. During the storage, delivery and subsequent waste management, there must be guarantees of the safety of the waste and of the persons entrusted with handling it, making sure that they are qualified to do so and they have the pertinent authorisation from the waste management companies and transporters.

Packaging and packaging waste

This subject is already regulated under the Law on Packaging and Packaging Waste. The objectives of the Law are to prevent and reduce the impact of packaging on the environment throughout the whole of its life cycle. Amongst the measures established for attaining those objectives is the implementation of two systems for managing packaging and packaging waste: the Integrated Management System (IMS) and the System of Deposit, Refund and Return System (DRRS). All packers and traders of packaged products who place a product on the market for the first time, providing that it involves packaging intended for the end consumer (for example: shoe boxes), are obliged to adopt one or other packaging management system.

However, this piece of legislation establishes several cases in which the business owner is not obliged to adopt the management systems mentioned. Amongst these is the exception for commercial or industrial packaging, that is to say, containers which are for the exclusive use and consumption of industry, shops or services and which, therefore, are not likely to be used and consumed in private homes, for example, packaging waste of footwear companies coming from finishing products, glues, etc., large cartons containing several boxes of shoes for distribution from the companies to the shops, etc. In this case, the business owner has two possible options, either to voluntarily adopt the existing management systems, or to transfer the responsibility of the subsequent management of the packaging waste generated to the final holder, demonstrated by documentary evidence (for example, in the bill or delivery docket).

Integrated Management Systems (IMS): are non-profit making organisations through which the packers and traders organise themselves for managing the packaging waste and used packaging, ensuring regular collection and compliance with the objectives of recoverability and recycling set out in the Law.

An integrated system works basically on the principle of paying the IMS an amount for each item of packaging placed on the market for the first time, thus obtaining the right to use an identifying symbol indicating that the packaging forms part of an IMS.

The objective of an IMS is to ensure the regular collection of packaging waste in the vicinity of the consumer's home. This method depends largely on the degree of separation and selective collection carried out in the homes of end consumers.

Deposit, Refund and Return System (DRRS): The DRRS establishes a financial incentive for guaranteeing the collection of packaging waste. This system obliges companies to comply with specific conditions such as charging their customers, down to the end consumer, and in the form of a deposit, an individual amount for each item of packaging forming part of the transaction, and also to accept the refund or return of the packaging waste and used packaging, refunding the same amount that had been charged.

However, this system, is not succeeding with footwear companies, given the difficulties involved in managing it.

In addition to the obligation of adopting an IMS or a DRRS, legislation relating to packaging and packaging waste establishes important obligations of a different type, such as the following:

- every year, an Annual Declaration on Packaging must be submitted which includes the quantity of used packaging per type, except for those items that are placed on the market through an IMS. In this latter case, the IMS will be responsible for sending the necessary information to the pertinent official bodies, so the packaging manufacturers will have to previously send the information to the corresponding IMS.

- if the footwear company places a quantity of packaging on the domestic market greater than 14 tonnes of cardboard containers per year, it must also submit a Packaging Waste Prevention Plan (PWPP). The PWPP will be valid for three years. Once the corresponding plan is approved, it will have to be demonstrated to what extent the objectives set for the previous calendar year have been met.

The Plans can be submitted individually, or at sectoral level through the Integrated Management Systems. In this latter case, the IMS will be responsible for drawing up the Plan and monitoring it, and the packer will be responsible for implementing and complying with it.

Atmosphere

Out of all legislation related to air pollution, the laws covering the issue of the limitation of emissions from volatile organic compounds due to the use of solvents in specific activities is worthy of special mention. Amongst the obligations established are those whereby footwear factories whose consumption of solvents, both in adhesives and in other preparations, is higher than 5 tonnes per year are obliged to not exceed the emission of 25 g VOC / pair into the atmosphere

Wastewater discharge

Legislation on wastewater described in this point covers the discharge of wastewater to the different receiving environments, such as the sewers or public watercourses, as, depending on the receiving environment, and on the nature of it, the obligations to be met by the footwear companies are different. For example, the obligations are not the same for indirect discharge through a municipal sewer as for direct discharge to a river basin. Even the competent authority for monitoring those discharges is different for each case.

As mentioned above, in the footwear manufacturing process, it is the finishing stage that can produce wastewater discharges if water curtain finishing booths are used. Generally speaking these discharges are low in volume but are usually contaminating to a greater or lesser degree.

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The Regulation of the Public Water Domain establishes the characteristic parameters and the maximum values permitted in discharges (see Table 4). These limits shall differ depending on the receiving environment of the discharge. If the discharge is a public watercourse, such as a river, an irrigation channel or land, the competent authority for establishing the discharge limits is the Water Authority corresponding to that river. On the other hand, if

the discharge is a sewer system, main drain or wastewater treatment plant, the discharge limits have to be consulted in the Municipal Regulations on discharges corresponding to the Town Hall in whose municipal district the discharge is produced as the Town Halls have been given jurisdiction on issues of wastewater discharged into the municipal sewer network.

PARAMETERS	LIMIT VALUES	PARAMETERS	LIMIT VALUES
pH	5.5-9	Selenium (mg/l)	0.1
Suspended solids (mg/l)	300	Tin (mg/l)	10
Sedimentable matter (ml/l)	2	Copper (mg/l)	10
Coarse solids	Absent	Zinc (mg/l)	20
COD (mg/l)	500	Toxic metals (mg/l)	3
BOD5 (mg/l)	300	Cyanides (mg/l)	1
Temperature (°C)	3°C increase	Chlorides (mg/l)	2,000
Colour	Negligable in solution 1/40	Sulphides (mg/l)	2
Aluminium (mg/l)	2	Sulphites (mg/l)	2
Arsenic (mg/l)	1	Sulphates (mg/l)	2,000
Barium (mg/l)	20	Fluorides (mg/l)	12
Boron (mg/l)	10	Total phosphorus (mg/l)	20
Cadmium	0.5	Ammonia (mg/l)	50
Chromium III (mg/l)	4	Nitric nitrogen (mg/l)	20
Chromium VI (mg/l)	0.5	Oils and Greases (mg/l)	40
Iron (mg/l)	10	Phenols (mg/l)	1
Manganese (mg/l)	10	Aldehydes (mg/l)	2
Nickel (mg/l)	10	Detergents (mg/l)	6
Mercury (mg/l)	0.1	Pesticides (mg/l)	0.05
Lead (mg/l)	0.5	-	-

T.4 Characteristic maximum discharge parameters and limits

All activity producing wastewater discharge that could pollute inland water systems requires administrative authorisation. In the case of footwear companies, they should consult the Public Water Domain if they discharge into a watercourse, or the Municipal Regulations on matters of discharge at the corresponding Town Hall if they discharge into a sewer system. Also, the permit for discharge into public watercourses will be valid for a maximum of 4 years, which can be renewed, providing

that the discharge is not a cause for failing to comply with the environmental quality standards imposed at any given time; and the permit for discharge into a sewer system will be indefinite, providing that the discharge does not vary in respect of the discharge initially authorised.

Similarly, footwear companies also are obliged to pay a discharge/sewerage tax linked to the volume of water consumed.

Hazardous substances

In general, prohibited or restricted substances can be found in footwear and its components because they have been used in the production process, because they are present as impurities of other compounds used, or due to contamination during conservation, storage or transportation.

The principal environmental regulations on the restrictions on the manufacture, marketing and the use of specific substances, mixtures and hazardous articles arise from the REACH Regulation, in relation to the registration, evaluation, authorisation and restriction of chemicals. As this is a piece of legislation with the force of a Regulation, it is directly applicable in all Member States of the European Union without the need to be incorporated into the legal system of any specific country.

Therefore, there are various restrictions in this Regulation concerning substances that can affect both footwear and its components. As an example of this we can list some as the following:

Chloroalkanes C10-C13: these shall not be put on the market or used as substances or components of other substances or mixtures in concentrations higher than 1% in weight (10,000 mg/kg), if the substance or the mixture is to be used in metalworking or for fat liquoring of leather.

Azo-Dyes: azo dyes that could release any of the 22 amines, as shown in Appendix 8 of the REACH Regulation, in detectable quantities (> 30 mg/kg), may not be put on the market or used in textile or leather articles that may come into direct, prolonged contact with the skin or oral cavity, such as for example, footwear, gloves, handbags, etc.

In any case, apart from the REACH Regulation, there is other legislation that can affect footwear with regard to the marketing and use of hazardous substances. Therefore, it must be taken into consideration that in each country there could be substances having different allowable limits, so for the case of footwear exports, it is important to consult the legislation in force in each country.

It should be mentioned that, apart from the legal restrictions on hazardous substances, there are other restrictions (not subject to legislation) to which business owners may submit voluntarily, such as those established in the criteria for awarding the European Ecolabel for Footwear or the limits established by private brands such as the German GS ecolabel. Furthermore, restrictions can also be imposed in orders from customers, generally of major brands or distribution chains.

Environmental noise

The intention of the Noise Act is to monitor and reduce noise pollution, to prevent and reduce the harm that this could produce for human health, property or the environment. Any activity, infrastructure, equipment, machinery or behaviour that generates noise pollution is subject to this law, with footwear companies being included under its scope of application. This Law obliges footwear companies to comply with the corresponding noise emission limit values to the exterior established by the different regional administrations. Furthermore, the Town Halls have the power to set more restrictive noise emission limits than the regional authority within the scope of their municipal territory.

Therefore, in order to monitor a footwear company's compliance with noise pollution legislation, it is necessary to ascertain whether in the municipal district where the company has its premises there are any municipal noise regulations, and furthermore, consult the corresponding regional legislation on noise.

NOISE LEVEL TRANSMITTED TO THE EXTERIOR LAEQ-T DB (A)		
Dominant use	Daytime from 08:00 h to 22:00 h	Night time from 22:00 h to 08:00 h
Residential (Town Centre)	55	45
Industrial	70	60

T.5 Limit values for reception of external sound levels for the Region of Valencia

This Law also establishes the need to perform acoustic audits and update them every 5 years.

9.5. Objectives, targets and environmental schemes

Knowing the principal environmental aspects affecting the footwear factory, together with the legal requirements applicable to it are the two essential pillars on which any subsequent environmental action should be based.

So, having established these basic pillars, the next step for a company to improve its environmental management consists of establishing environmental objectives and targets, that is to say, to define an operating commitment and an improvement in the company's environmental action. Those objectives should be in line with the environmental situation, company strategy and the resources available to it.

Once the environmental objectives and targets have been established, they should be included as part of an environmental programme in which a time horizon is established for each objective and target, and in which, in addition to the time frames, the resources assigned for accomplishing them are also established (both human, and technical and economic resources), and the corresponding indicators of achievement will also be defined.

The company should set out its environmental objectives, targets and programmes in the form of documents, as this is a way of demonstrating to interested parties (customers, shareholders, employees, the Public Administration, etc.) its real level of commitment with the environment.

The **environmental objectives** are the general environmental goals that a company sets itself for successfully improving a specific environmental aspect over a specific period of time. It is recommended that the objectives be quantifiable, wherever this is possible.

For example, an environmental objective in a footwear company could be "To reduce the consumption of finishing products containing organic solvents by 10% compared to the previous year".

Environmental targets are detailed action requirements, quantified where possible, applicable to the organisation or to part of it, based on the environmental objectives.

Continuing with the previous example, one of the environmental objectives of a footwear company was "To reduce the consumption of finishing products containing organic solvents by 10% compared to the previous year", and to attain this objective the following targets could be set:

- An analysis of the different footwear models that are to be manufactured, in order to determine which of them would be likely to use water-based finishings, maintaining the requisite quality standards. Selection of a number of models accounting for at least 10% of the annual consumption of finishing products with a solvent-based finish.
- Calculation and programmed purchase of products with water-based finish necessary for covering the manufacture of the mentioned models.
- Production of the footwear models selected through the use of products with water-based finish instead of the products based on organic solvents.

The environmental programme contains the actions or specific actions anticipated for attaining the objectives and targets, the people who are to implement them, the time limits and the resources assigned.

The company should set out its environmental objectives, targets and programmes in the form of documents, as this is a way of demonstrating to the parties involved (customers, shareholders, employees, the Public Administration, etc.) its real level of commitment with the environment.

Establishing environmental objectives

The first step consists of establishing environmental objectives, and for this the significant environmental aspects of the footwear company have to be considered (see Unit 1, Identification of environmental aspects and their evaluation in the footwear sector), the legal requirements applicable to each footwear company (see Unit 2, Identification of legal requirements and environmental legislation for the footwear sector), and also other elements not necessarily related to the environmental field, but of great importance to the footwear company, such as the technological options available, their economic viability, availability of funds, corporate strategy, etc.

The company should define objectives which:

- Are in line with its environmental policy
- Are consistent with its commitment to prevent contamination
- Are quantifiable, providing that this is possible.
- Involve an improvement of its environmental performance, at least in some area
- Are related to its significant environmental aspects
- Are consistent with its organisational management efforts, its operational performance and its environmental situation
- Are understandable for the parties involved, both internal and external
- Are attainable from the point of view of economic return and time.
- Criteria for defining objectives:
 - The objectives must be specific and measurable (providing that this is possible)
 - The definition of the corresponding measurement indicators. Indicators that can be used as the basis of the system for assessing the organisation’s environmental performance and, at the same time can provide information on environmental management and on the operational systems.
 - The objectives must be able to be reviewed regularly and take into account the viewpoints of the different stakeholders.

Simplified example: Let’s imagine a footwear factory, FABRICALZADO S.A., which last year made 100,000 pairs, using 1,000 litres of organic solvent-based finishing products, and which has detected the significant environmental aspects indicated in Table 1, while the legal requirements applicable to it are those set out in Table 2:

ENVIRONMENTAL ASPECT	M	AL	AI	CLASSIFICATION
Water consumption	1	50	51	Non-significant
Electricity consumption	1	50	51	Non-significant
Discharges from water curtain finishing booths	50	50	100	Significant
Boiler emissions	1	50	51	Non-significant
Compressor noise	50	25	75	Significant
Tanned leather residue	50	25	75	Significant
Cartridges of dye and toner	1	1	2	Non-significant
Contaminated material	25	1	26	Non-significant
Hazardous packaging waste	50	50	100	Significant
Non-hazardous packaging waste	50	25	75	Significant
Oils used	1	1	2	Non-significant

T.1 Example of environmental aspects of FABRICALZADO S.A.

The concepts described below are illustrated with examples applied to a footwear factory using the procedure of a case study.

ENVIRONMENTAL ASPECT	LEGISLATION	REQUIREMENT APPLICABLE	COMPLIANCE
Hazardous waste	RD 833/1988	Separation of hazardous and non-hazardous waste	Yes
	RD 952/1997 Law 22/2011	Delivery to an authorised waste manager	Yes
	RD 180/2015	Registration as a Small Waste Producer	Yes
Discharge from the finishing booths with water curtain	RD 117/2003 Law 2/2006	Limits of the discharge parameters	No
	RD 117/2006	Registration Book	Yes
Atmospheric Emissions from the heating boiler	Law 34/2007 RD 100/2011 RD 102/2011	Three-yearly Control	No
Wastewater discharge a sewer system	RD 849/1986 Law 46/1999 RD 606/2003	Inspection of the levels of the discharge contamination parameters	Yes

T.2 Example of identification of the environmental requirements of FABRICALZADO S.A.

In order to establish the environmental objectives, FABRICALZADO S.A. should first of all look at its significant environmental aspects (table 1), for which, in principle, and if it is possible, they should try to establish objectives related to the aspects contained in table 3:

SIGNIFICANT ENVIRONMENTAL ASPECTS FOR WHICH OBJECTIVES COULD BE ESTABLISHED

- Discharge from water curtain finishing booths
- Compressor noise
- Tanned leather residue
- Hazardous packaging waste
- Non-hazardous packaging waste

T.3 Significant environmental aspects for which objectives could be established

Once the priority issues have been selected, then the legal requirements identified (table 2) have to be taken into consideration and, especially, those that could entail any non-compliance with the regulations, as these will have to be given priority attention. So, in the example of FABRICALZADO S.A., the points that are not complied with are listed in table 4:

ENVIRONMENTAL ASPECTS AFFECTED BY LEGAL REQUIREMENTS FOR WHICH OBJECTIVES COULD BE ESTABLISHED

- The established discharge limits are exceeded for discharges coming from the of footwear finishing booths with water curtain
- No three-yearly inspection of the boiler has been made

T.4 Environmental aspects affected by legal requirements for which objectives could be established

If we analyse tables 3 and 4 of the example for FABRICALZADO S.A, it is seen there is an item repeated in both, namely the environmental aspect related with the discharges coming from the footwear water curtain finishing booths. Therefore, this aspect, which is at the same time a significant aspect and a non-compliance with the regulations, should be considered as a priority when establishing an environmental objective.

It might seem that the next aspect to be considered should be the other non-compliance with the regulations contained in table 4, referring to the fact of not making the three-yearly inspection of the boiler. However, while this is a aspect that has to be solved immediately, it does not necessarily require an environmental objective to be established because on the one hand there is no significant environmental aspect associated to it (in table 1 it is seen that the emissions from the boiler were marked “not significant”), while, on the other hand the fact of not having performed three-yearly inspection does not imply that the admissible emission limits have been exceeded. Therefore, the table of aspects for which potential objectives are to be developed would be as follows (table 5), highlighting in red the priority aspects and with no order of precedence for the rest:

SIGNIFICANT ENVIRONMENTAL ASPECTS FOR WHICH OBJECTIVES ARE ESTABLISHED

**Discharge from the water curtain finishing booths
+
Compliance with the discharge limits**

Compressor noise
Tanned leather residue
Hazardous packaging waste
Non-hazardous packaging waste

T.5 Significant environmental aspects for which objectives are established

Now is the time to put forward different alternative objectives for improving the significant environmental aspects. To continue and for the sake of simplicity, this example only focuses on the aspect highlighted as a priority (the wastewater from the finishing booths), but it should be stressed that the company has to implement similar alternatives for the rest of the significant aspects.

So continuing with the example, the company FABRICALZADO puts forward the alternatives, the pros and cons, contained in table 6 in relation to the discharge from its water curtain finishing booths:

ALTERNATIVE	PROS	CONS
1. Disconnect the water curtain	The legal problem of wastewater discharge is avoided	Increases particulate emissions as they are not retained by the water curtain
2. Change the water curtain booth for a dry filter spray booth	The legal problem of wastewater discharge is avoided	High cost of replacing the booths
3. Use ecological finishing products that reduce water contamination	Boosts the ecological market for the shoes produced	Possible problems with regard to the quality of the final finish. Does not ensure compliance with the discharge limits established
4. Instead of discharging the waste from the booth, collect it regularly and deliver it to an authorised hazardous waste manager	The legal problem of wastewater discharge is avoided	Costs of managing the discharge
5. Have a wastewater treatment plant installed	The legal problem of wastewater discharge is avoided	System involving high investment and operating costs which is not justified by the minor quantities of discharge generated by the finishing booths

T.6 Alternatives for discharge from the footwear booth with water curtain

Next, the company has to consider each of the alternatives together with its financial and technical capacity and its business strategy. To continue with the example, the company FABRICALZADO S.A. rules out alternative 1 as this only entails transferring the pollution from one environment to another (instead of going to the water, the pollution is discharged into the atmosphere); it also rules out alternatives 2 and 5 as its current financial situation does not allow it to make investments involving a high cost. So the company decides to put forward an objective based on alternatives 3 and 4, as alternative 3 makes it possible to improve the impact on the environment while alternative 4 means a guarantee of compliance with discharge regulations.

Now is the time to define the environmental objective and the company FABRICALZADO S.A. establishes it as follows:

OBJECTIVE: To reduce the consumption of finishing products based on organic solvents by 10% in weight in respect of the previous year by replacing them with water based products, and managing 100% of the wastewater from the finishing booth through an authorised manager.

Also, the indicator that is going to be used for assessing the degree of compliance with the objective established must be established with absolute clarity. The wide variety of indicators available makes it difficult to define their basic characteristics, but nevertheless, some of them are listed below:

- The indicators must be exact, unambiguous and specific.
- They must be understandable and easy to interpret.
- They must be accessible and easy to obtain, avoiding requiring endless mathematical and statistical calculations to interpret them
- They must be significant and relevant; they must represent the reality of a system in order to be able to act accordingly.
- They must be sensitive to change; only this way can the implementation of environmental actions be evaluated quickly, simply and continuously.

- They must be valid, scientifically reliable, verifiable and reproducible.
- They must be useful tools for the action. They must be able to give a quick view for improving the status of the environmental objectives established by the footwear factories.

Continuing with the example, and as FABRICALZADO had used 1,000 litres of finishing products based on organic solvents the previous year, a 10% reduction would mean that during the present year the consumption of this type of product would not be above 900 litres. However, it is not wise to use this type of absolute indicators as they could be misleading because FABRICALZADO might have reduced its output from 100,000 pairs to 75,000 pairs which, consequently, would reduce the consumption of organic solvent-based finishes to 750 litres, which would appear to be meeting the objective, but in reality they would be maintaining the same consumption rate of 1 litre for every 1,000 pairs. In this respect, indicators should be used that will not be affected by the ups and downs of production and therefore relative indicators should be used. In the example in question, instead of proposing a 10% reduction to bring consumption down from 1,000 to 900 litres of product, what could be done is to link the data to output. This way we would have the fact that in the previous year 1,000 litres had been used to obtain 100,000 pairs, that is to say that the consumption ratio of solvent-based finishing products was 1 litre for every 1,000 pairs, so the 10% reduction in weight established for the objective could be proposed as a reduction of the consumption ratio to 0.9 litres for every 1,000 pairs in the current year. This way, the indicator would be defined as follows:

INDICATOR: consumption ratio of organic solvent based products (in litres) divided by the annual output (in pairs of shoes) less than or equal to 0.9 litres for every 1,000 pairs.

The next step, once the objectives and their corresponding indicators are defined, consists of establishing the environmental targets that need to be met, and which will be seen in the following subsection.

Establishing environmental targets

The environmental targets consist of dividing the objective into more specific individual actions that need to be attained in order to comply with the objective. As a simple simulation, let's imagine that the objective is to reach the peak of the Everest, while the targets could be simple: 1) reach base camp, 2) go on to the intermediate camp, 3) get to the advanced camp, and 4) reach the summit.

It will not always be necessary to establish environmental targets. The need to establish environmental targets will depend on the degree of complexity of the objective established. The more complex the objective, the greater the need to clearly define which are to be the paths for achieving it and, consequently, the corresponding targets.

Continuing with the example of the objective established for FABRICALZADO S.A, the following targets could be established for achieving it:

OBJECTIVE: To reduce the consumption of finishing products based on organic solvents by 10% in weight in respect of the previous year by replacing them with water based products, and managing 100% of the wastewater from the finishing booth through an authorised manager

TARGET 1: Remove the liquid waste from the finishing booth through an authorised manager no later than every 3 months. Have at least three quotes from management companies authorised for handling the liquid waste from finishing booths in the footwear sector, and contract the most suitable one.

TARGET 2: Select FABRICALZADO footwear models that could be finished using water-based products, accounting for at least 10% of the annual production.

TARGET 3: Programmed purchase of the water-based products necessary for FABRICALZADO's output.

TARGET 4: Training in water-based finishings for 100% of the workers employed in the finishing stage.

TARGET 5: Finishing 100% of the models selected using water based products.

This process must be subsequently repeated for each of the environmental objectives established by the footwear factory, and once this stage has been complete, the environmental programme can begin to be prepared.

Establishing the environmental programme

Once the objectives and targets have been established, it is the time for defining the logistics necessary for attaining them by establishing an environmental programme. The environmental programme of a company must respond to the questions: What has to be done and how? Who has to do it? When does it have to be done? What technical, human and financial resources do we have? How is our degree of compliance (indicators) going to be assessed?

To illustrate this stage of the planning process and continuing with the example of the objective established for FABRICALZADO, the content of the environmental programme could be put forward as follows:

OBJECTIVE: To reduce the consumption of finishing products based on organic solvents by 10% in weight in respect of the previous year by replacing them with water based products, and managing 100% of the wastewater from the finishing booth through an authorised manager.

TARGET 1: Remove the liquid waste from the finishing booth through an authorised manager no later than every 3 months. Have at least three quotes from management companies authorised for handling the liquid waste from finishing booths in the footwear sector, and contract the most suitable one. Person responsible: Head of Maintenance. Time period: from week 1 to week 10 of the current year. Resources: maximum 1 € per litre to assume the management costs. Indicator: provision of the documents of having removed the liquid waste from the footwear finishing booth (in this case the indicator is of the type "all/nothing", that is to say, the removal is either being carried out or not by an authorised manager and as an indicator, the company must have the corresponding documentary evidence in the form of the pertinent collection document).

TARGET 2: Select FABRICALZADO footwear models that could be finished using water-based products, accounting for at least 10% of the annual production. Person responsible: Chief footwear designer. Time period: from week 1 to week 4 of the current year. Resources: backup from the Production Manager. Indicator: ratio of pairs of shoes that can be given a water-based finish / total pairs higher than 10%.

TARGET 3: Programmed purchase of the water-based products necessary for FABRICALZADO’s output. Person responsible: Purchasing Manager. Time period: from week 1 to week 52 of the current year. Resources: backup from the Production Manager, financial resources for covering the cost of replacing the solvent-based products with water-based products. Indicator: delivery dockets or bills for water-based finishing products purchased during the year.

TARGET 4: Training in water-based finishings for 100% of the workers employed in the finishing stage. Person responsible: Production Manager. Time period: week 5 of the current year. Resources: workers in the finishing stage, products with water-based finish. Indicator: ratio of number of workers in the finishing stage trained divided by the number of total workers in the finishing stage must be 100%.

TARGET 5: Finishing 100% of the production using water based products. Person responsible: Production Manager. Time period: from week 5 to week 52 of the current year. Resources: workers in the finishing stage, products with water-based finish. Indicator: ratio of pairs of shoes with a water-based finish / total pairs higher than 10%.

Nevertheless, it is recommended to submit the content of the environmental programmes in a format that is more visual, simple and diagrammatic, with frequent use of tables. Table 7 shows a possible example of format for the environmental programme of a footwear factory.

ENVIRONMENTAL PROGRAMME FOR FABRICALZADO FOR THE YEAR XXXX

OBJECTIVE 1: To reduce the consumption of finishing products based on organic solvents by 10% in weight in respect of the previous year by replacing them with water based products, and managing 100% of the wastewater from the finishing booth through an authorised manager.

INDICATOR: ratio of consumption of organic solvent based products (in litres) divided by the annual production (in pairs of shoes) less than or equal to 0.9 litres for every 1,000 pairs.

TARGET	PERSON RESPONSIBLE	TIME PERIOD Week	RESOURCES	INDICATOR
1. Remove 100% of the liquid waste from the finishing booth through an authorised manager no later than every 3 months	Head of Maintenance	1 to 10	Max 1 €/litre	Removal documents
2. Select FABRICALZADO footwear models that could be finished using water-based products, accounting for at least 10% of the annual production	Chief footwear designer	1 to 4	Backup from the Production Manager	$I = A/T * 100 > 10\%$ A = pairs of shoes that can be given a water-based finish T = total pairs
3. Programmed purchase of the water-based products	Purchasing Manager	1 to 52	Backup from the Production Manager Replacement cost	Delivery dockets and bills

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TARGET	PERSON RESPONSIBLE	TIME PERIOD Week	RESOURCES	INDICATOR
4. Training in water-based finishings for 100% of the workers employed in the finishing stage	Production Manager	5	Workers in the finishing stage Products with water-based finish	$I = \text{OAF/OAT} = 100\%$ OAF= Trained workers employed in the finishing stage OAT= Total workers employed in the finishing stage
5. Finishing with at least 10% of the production using water based products	Production Manager	1 a 52	Workers in the finishing stage Products with water-based finish	$I = \text{PA/PT}$ PA= Pairs shoes with water-based finish PT= Total pairs of shoes

OBJECTIVE 2:...

INDICATOR:...

TARGET	PERSON RESPONSIBLE	TIME PERIOD Week	RESOURCES	INDICATOR
1. ...				
Etc. ...				

Lastly, the dates and the possible frequency for reviewing objectives and targets has to be established, according to the nature and time periods established for each one. On those dates all the established indicators must be updated, which will serve for detecting any possible deviations and correcting actions for attaining the final objective or even the objective itself if this turns out to be too ambitious for real possibilities of the company.

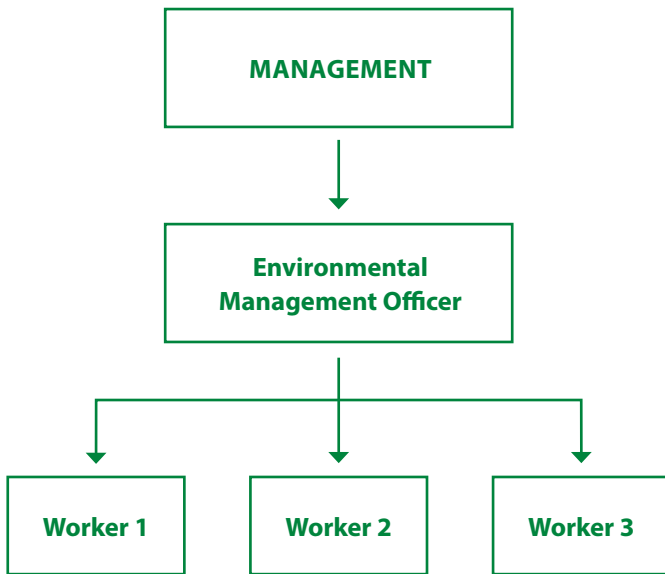
In the example of FABRICALZADO, a first review should be set for week 11, as it is assumed that it will have achieved targets 1, 2 and 4. Subsequently there could be a review mid-year and at the end of the year to check the results obtained from the rest of the targets, and also for the overall objective.

9.6. Structure and responsibilities in environmental management

For successful environmental management in a company, not only must all the members of Management be involved, but also all the workers, and must measures must be adopted aimed at improving the environmental aspects of the company. Therefore, environmental responsibility cannot be limited to the personnel in the Environment Department of the company, but it can be put into action by personnel from other areas, although this could be complicated for footwear factories given their reduced size (15 workers per company as an average in Spain).

To this end, this unit will explain which are the principal responsibilities for correct environmental management, and how they can be distributed within the company. In this way, encouraging the integration and collaboration of the workers could lead to a more direct involvement and more effective waste management.

The present business structure for implementing environmental management includes not only the technical staff responsible for monitoring emissions, discharges, waste generated, etc., but also includes a higher organisational level: senior management (see Figure 1).



F.1 Example of company environmental structure organised from higher to lower hierarchical level

As the commitment to carry out correct environmental management must begin with the senior executives of the company, it will be the Management who, as part of that commitment, shall appoint a specific Management representative with responsibility and authority defined for being able to carry it out (for example the Environmental Management Officer). It is also important that the responsibilities in respect of environmental management, apart from being defined, are also communicated to the corresponding members of staff.

The main steps to follow for correct management are described below, and also the principal duties to be performed by the various members of staff involved in the company's environmental management.

Establishing the personnel who are to handle environmental management

In the first place, a person must be appointed to ensure that the company's environmental management is carried out. As mentioned above, this should be someone at Management level in the company, and his responsibilities will centre on the implementation, review and continuance of the conditions which enable the company's environmental policy to be complied with. He must also provide and assign the human, technological and financial resources necessary for complying with that environmental policy. His principal responsibilities are as follows:

- Define, develop and implement the company's environmental policy, and also the objectives and environmental targets proposed.
- Provide personnel and resources for environmental management and handle communications or training for such personnel (see subsections 3 and 4 of this unit).
- Encourage environmental audits to be made.
- Review and evaluate the results obtained from the current environmental situation of the company, including aspects for continuous improvement.
- Participate actively in communicating environmental issues, both internal and external, and also in the training activities
- Appoint a person responsible for the environmental management of the company and delegate the corresponding responsibilities to that person.

The responsibilities that can be delegated to the Environmental Management Officer are:

- Begin actions in order to comply with the company's environmental policy.
- Define fields of action, specifying objectives and targets.
- Promote and encourage environmental awareness amongst the staff of the company.
- Regularly assess the degree of compliance with applicable regulations.
- Describe and implement preventive and corrective actions as required for rectifying any deviation that might have an effect on the environment.
- Ensure the professional skill of members of staff and their training with regard to environmental issues, in line with the action that is to be carried out.

Amongst the responsibilities conferred upon the Environmental Management Officer, he shall also have to identify all the environmental aspects generated by the industrial activity (shoe manufacturing), because, as seen in the previous units, a correct management requires monitoring the different activities carried out, such as: the frequency with which the different environmental aspects arise; annual figures for the company on materials and energy consumptions, discharges, waste and emissions; responsibilities and workplace hierarchies, etc. Therefore, it would be advisable for the Environmental Management Officer to be someone with good knowledge of the business and production process involved in the footwear factory.

Professional skills and Training

To define the knowledge available now and what is going to be required in the near future is of no less importance. To accurately describe what are the potential resources and limitations in terms of training the workers in the footwear factory, is an essential step in establishing which training strategies will be most suitable.

Activities of workers that might have an adverse effect on the environment, whether directly or indirectly, are those which, taken as a whole, are going to establish the scale of those environmental effects. The three factors that will basically influence the development of those activities are:

- The training received by the persons involved in each activity so that they may perform them correctly, both from a technical and environmental point of view.
- The technical procedures and instructions that explain how each activity should be carried out.
- The attitude of the worker himself, linked directly, amongst other factors, to his degree of awareness of environmental problems in general.

This subsection sets out the importance of training the members of staff involved in environmental management for footwear factories. This way the active involvement and participation of the workers will make them aware of their responsibilities and tasks and also of what the consequences of their actions could have for the environment.

As mentioned in previous units, the staff involved in environmental management must have full knowledge of all activities, products and services offered by the company, so that they will then be sufficiently competent to begin analysing each of the environmental aspects resulting from each of their activities. Especially so that they are aware of the potential effects of their activities on the environment, if they are not carried out correctly.

Assessment of the training received

All workers in a footwear factory can assume their duties efficiently if they have been trained to have the skill, knowledge and experience necessary in matters that they do not know about or if they do not have sufficient experience required for performing those duties correctly.

Good environmental management requires Management to establish procedures and keep them updated to help identify training requirements, to meet those needs and evaluate the results, whether for all or part of the members of staff whose actions could have a specific effect on the environment. This way all workers can actively participate in the process of adequate environmental management for the company.

Once it has been ascertained what training is needed it can take place; this will ensure:

- That all members of staff are made aware of the company’s environmental policy and of the objectives and environmental targets established (see unit 3).
- That all members of staff will be aware of and understand the environmental aspects and of the potential effects associated with the activities, the premises, products and services of the company.
- That all members of staff will be aware of what their functions and environmental responsibilities are.
- That tasks and activities are performed by staff with adequate professional skills.

Therefore, the principal objectives that are sought through in-house training are the following:

- To motivate the participation of the staff involved in environmental management activities.
- To alter the behaviour, attitude and point of view of workers towards the environment.

- To ensure a culture of protecting the environment within the footwear factory.
- To make the staff involved aware of their functions and responsibilities with regard to environmental management.
- To convince workers that environmental tasks are an opportunity to improve their working conditions and contribute to enhancing the image of a company that respects and cares for the environment.

Definition of training requirements and suitable skills

In a footwear factory, a number of steps can be followed to define the training requirements and skills needed:

- Identification of the work having an effect on the environment (see Table 1).
- Description of the profile required for carrying out that work, for example: knowledge on handling waste or hazardous substances, use of computer software, etc.
- Selection of the personnel who will handle that work.
- Identification of training requirements. The training received by company staff must be recorded and evaluated.
- Drawing up a training programme.

EXAMPLE	WORK THAT CAN AFFECT THE ENVIRONMENT
1	Cutting pieces of leather for instep and lining
2	Gluing and sticking soles
3	Finishing footwear
4	Machinery maintenance

T.1 Examples of work that can affect the environment in a footwear factory

UNIT 1 - STANDARDISATION AND CERTIFICATION SYSTEMS

To draw up a training programme it would be advisable to use a summary table such as the example shown in Table 2 for FABRICALZADO, S.A.:

FABRICALZADO S.A.	ENVIRONMENTAL TRAINING			YEAR: _____
TRAINING PROGRAMME				
ACTIVITY N°	ACTION	DATE ANTICIPATED	AIMED AT	
1	Environmental regulations applicable to footwear factories	January	Environmental Management Officer	
2	Application of the REACH Regulation to footwear factories	February	Environmental Management Officer	
3	Course on hazardous waste management	March	All	
4	Course on clean technology in footwear factories	April	Heads of department	
5	Course on gluing with adhesives not containing organic solvents	April	Workers in the gluing department	
6	Course on Environmental Responsibility	May	Environmental Management Officer	

Approved _____ date __/__/__
(Manager)

T.2 Example of a Training Programme in the company FABRICALZADO, S.A.

The environmental training requirements will vary depending on the various levels or jobs carried out in the company. Therefore, the training has to be specific and adequate for the needs of each worker, according to his job and level. Generally speaking, training can be divided into three clearly differentiated groups: persons in charge of environmental management; heads of departments and workers.

Below, the type of training that each group could receive is shown:

Persons in charge of environmental management

- Information on environmental management
- Environmental regulations applicable to the footwear sector
- Treatment of wastewater, emissions, etc.
- Waste management
- Measures for minimising the impact generated or significant environmental aspects identified.

Heads of departments

- Basic environmental legislation applicable to their area of work.
- Knowledge of existing documents and registers (for example the environmental training programme, see Table 2)
- Environmental objectives and targets and also the responsibilities of the staff involved in attaining them.
- Environmental aspects arising from their area of responsibility
- Importance of complying with the provisions in the procedures for action.

Workers

- Knowledge of the technical instructions that could apply to them for each specific job position.
- Completing the records that are within their competence.
- Knowledge of the importance of correctly performing the tasks assigned to them and the consequence that improper action can have on the environment .

Environmental training does not necessarily have to be given outside of the factory but it is often possible to make the most of the knowledge of the company employees who, as they are working every day with the staff involved, are those who best know the shortcomings in the training for each job position.

In this respect, it is vital to have good communication between the in-house staff of the company. Therefore, the following subsection goes more thoroughly into how environmental management can be communicated.

Communication of environmental management

Environmental communication is one of the main pillars on which a company must base its “day-to-day” life. Environmental communication is related to the values of the company itself and to ensure the success of the communication processes it is important that the business or company is considered as a responsible member of society and that it takes into account the environmental expectations of the stakeholders who could be affected by its environmental performance.

The most effective form of environmental communication includes continuous contact between the company and the internal and external stakeholders as part of its general communication strategy. Therefore, environmental communication serves to inform the employees and the stakeholders about the results of the company’s environmental performance, and to that end, two types of communication can be distinguished: internal and external communication respectively.

Regardless of whether a company has decided to externally communicate information on its environmental performance, it must record that decision. If it wishes to externally communicate its environmental performance, the company should investigate which channels to use to communicate that information. External communication mainly arises in cases of interested third party stakeholders, for example: requisites from the Public Administration, or from ecological groups, or complaints from affected neighbouring parties.

UNIT 1 - STANDARDISATION AND CERTIFICATION SYSTEMS

Both internal and external communications should be made clearly, simply, objectively and should transmit reliability. The same as for any other environmental management measures, the communication also must

be recorded. Someone should therefore be appointed to record both the internal and external communications (see Tables 3 and 4).

FABRICALZADO S.A.		INTERNAL ENVIRONMENTAL COMMUNICATION			YEAR: _____
TRAINING PROGRAMME					
Date	From	To	Type	Subject	
10 January	Environmental Management Officer	Workers	e-mail	Meeting > Course on Waste	
06 April	Manager	Workers	e-mail	Environmental behaviour in FABRICALZADO, S.A.	
17 April	Environmental Management Officer	Workers	e-mail	Paper saving	
22 June	Maintenance Staff	Environmental Management Officer	e-mail	Placing signs indicating hazardous waste	

T.3 Example of how to record internal communications

FABRICALZADO S.A.		EXTERNAL ENVIRONMENTAL COMMUNICATION			YEAR: _____
TRAINING PROGRAMME					
Date	From	To	Type	Subject	
03 March	Management	Supplier	letter	Acceptance of the waste management contract	
11 March	Town Hall	FABRICALZADO S.A.	letter	Requirement for presenting water analysis	
18 May	FABRICALZADO, S.A.	General Public	website	Environmental Policy published on the website	
04 July	FABRICALZADO, S.A	Town Hall	e-mail	Reply to Town Hall requirement dated 11 March	

T.4 Example of how to record external communications

Internal communication

When making internal environmental communications in a company it is important for the personnel involved to express their opinion on actions, activities or messages they are receiving and for Management to be made aware of other opinions. This way, good two-way interaction is achieved and the overall management of the company is improved.

Within a company there are two options:

- 1. Upstream communication:** so that workers can communicate their suggestions, complaints, possible deficiencies observed, improvement proposals, training requirements, etc. relating to the environmental management of the company.
- 2. Downstream communication:** so that Management can send communiqués on the environmental management of the company to the workers involved.

There are certain advantages to upstream communication such as contributing to stimulate workers' creativity, encourage their development on a personal level or increase their commitment with the company. However, it can also give rise to inconvenience or difficulty such as:

- Generating mistrust from Management towards the workers.
- Communicating only positive messages while omitting the negative ones.
- Increasing communication of any problems between work colleagues due to lack of confidence with superiors, for fear of penalties or possible reprisals, etc.

With regard to the downstream communication, it should be said that this normally has a very specific content, it transmits information concerning the execution and assessment of the tasks, instructions and indications for work in relation to the functions that are to be performed, the objectives to be attained or the level of completion of the task.

As for the case of upstream communication, it can give rise to ambiguity or inaccuracies in messages and also to contradictions of orders given. Therefore, great care should be taken when transmitting environmental messages in order to prevent misunderstandings.

The means for establishing communication can be very varied, such as for example:

- Internal communiqués.
- Internal emails.
- Publication of documents on the notice-board and places of transit within the premises.
- Verbal communication.

External communication

The same as for internal communication, the information communicated externally should be clear, simple and objective. Generally speaking, external communication is used to inform on the company's environmental management to subcontractors, customers, public institutions and society in general, and for them to express their comments to the company.

The fact that a company externally communicates its environmental performance, demonstrates its commitment to the environment and serves as a stimulus for improvement.

There are a number of advantages to external communication, such as, for example:

Confidence on the part of investors, shareholders, etc.

- it facilitates dialogue with the parties concerned
- it improves competition in respect of customers and consumers.

For environmental communication with the external parties concerned, there are also several channels, for example, letters sent to customers, informative leaflets, through the company web site.

9.7. Documentation and records in environmental management, operational control, follow-up and measuring. Audit and revision by the management

All of what has been said above is of little value if it is not documented. **Environmental documentation**, whether on paper or digitalized, provides evidence to show third parties our commitment to the environment, our policy, our environmental objectives and also the procedures for attaining them. The environmental documentation falls into two important groups of information: environmental documents and **environmental records**, which we shall look at below.

Amongst the environmental documents, the **procedures of operational control** are important, these being the documents which will provide pertinent instructions for action to prevent environmental impacts (for example, how hazardous waste should be managed, or how to act in the event of an accidental spillage).

In order to keep a company's whole system of environmental management active and updated, the corresponding actions for **monitoring and measuring** need to be carried out. They will enable us to detect in time any possible deviation from our proposals for environmental management and correct them in time.

These actions are supplemented by an **audit**, which consists of making a regular check (normally with a yearly frequency) of all items making up the company's environmental management system, evaluating the results obtained, detecting any possible deviation and also any possible improvements, and finally transmitting all this information to the senior executive(s) of the company for **managerial review**.

Documentation for environmental management

An organisation that has opted for environmental management should establish and keep the relevant information, either on paper or in digital format, in order to describe the grounds on which they base their actions for environmental management and related documents, to make them easier to understand.

The documentation should be sufficiently detailed to guarantee an adequate understanding of the environmental management performed within the Organisation, and also to inform on where to obtain more detailed information in respect of specific aspects of the environmental action.

The documentation shall be legible, dated (indicating review dates) and easily identifiable, kept in an orderly fashion and held for a specified period.

The relevant documentation may include:

- information on procedure
- organisational charts
- internal regulations and operating procedures;
- company contingency planning.

The documentation concerning the environment could include the following basic aspects :

- Description of the footwear production process.
- Legislation, rules, regulations or other possible environmental requirements applicable.
- Inventory and description of sources of pollutants.
- Organisational diagrams of environmental management.
- Internal rules and procedures for functioning.
- Information on the products used in the footwear factory.
- Action plans in the case of emergencies that could have an adverse effect on the environment (for example, in the case of a fire)
- Environmental permits and surveys
- Operating instructions for the management of effluents and liquid waste
- Operating instructions for the management of emissions into the atmosphere
- Instructions for solid waste management
- Maintenance plans for the equipment involved in the system

All these documents must be monitored to ensure that:

- they can be located;
- they are periodically examined, reviewed when necessary and approved by the members of staff authorised to modify them;
- the current versions of the corresponding documents are available on all aspects in which operations are performed that could have an impact on the environment;
- obsolete documents should quickly be removed from all points of edition and use, making sure that they cannot be unintentionally used;
- all obsolete documents kept for legal purposes and/or for safeguarding information should be properly identified.

Recording the environmental management

Another feature of the environmental documentation is what is known as a record. Records contain information that reflects a specific situation at a specific moment and, consequently, cannot and may not be altered.

To give a simple illustration of the difference between a document and a record, let's imagine that a footwear company sends a written "instruction" to the sales representative of the factory that he should note down on a "form" every day the mileage travelled. The "form" with the details of the mileage done every day forms a "record" and cannot be altered. However, the "instruction" that is given to the sales rep is a "document" and, consequently, this can be reviewed and modified, for example, let's imagine that the company decides to use a GPS system that captures the data automatically, so there would be a change to the "instruction" sent to the footwear sales rep.

The environmental records must be legible, identifiable and traceable to the activity, product or service in question. The records will be filed and updated so that they can be immediately recuperated and they are protected from harm, deterioration or loss. The length of time for keeping them will be set and recorded, respecting the time periods established by law for records arising under legal requisites.

The environmental records may include:

- information on environmental legislation or other applicable requisites
- complaints from third parties
- environmental training records
- information on processes
- information on products
- records of inspection, maintenance and calibration
- information pertaining to contractors and suppliers
- incident reports
- information on measures for preparing and responding to emergencies
- information on significant environmental aspects

- establishing and complying with environmental objectives
- results of audits
- management reviews

Operational control

It is recommended that any operations that might have an effect on the environment should be planned to ensure that they are carried out under specific conditions, avoiding any possible environmental impacts. At the very least, operational controls should be put in place for activities related to the significant environmental aspects identified, to attaining objectives and targets or those related to legal requirements or other requisites to which the company is subject. For example, in a footwear company the containers of hazardous waste might have been identified as a significant environmental aspect, so it would be advisable for some operational control to be carried out on the management of hazardous waste.

In order for a footwear company to establish operational control of specific operations it would be advisable to document how these should be done by:

- Establishing, implementing and maintaining one or more documented procedures for monitoring situations in which their absence could result in deviations from the policy, objectives and environmental targets.
- Establishing operational criteria in procedures.
- Establishing, implementing and maintaining procedures related to identified significant environmental aspects of the goods and services used by the organisation, and communicating the procedures and requirements applicable to suppliers, including contractors.

This conduct will allow the activities, processes and services of the company to be carried out under control, making it easier to detect any possible incidents that might occur, and also to introduce suitable corrective action.

In general, the procedures related to operational control usually involve the following aspects:

- Use of machinery, processes or equipment in normal functioning conditions or in special operative situations, and also start-up and shutdown, and any expected failures or emergencies.
- Storage and handling of hazardous materials, waste, etc.
- Performing inspections, tests, maintenance and cleaning work.
- Approving processes and equipment that are expected to be used.

It is advisable to establish the following for each of the activities or processes subject to operational control:

- How, when and where the activity is to take place, that is to say, a description of the activity indicating, where appropriate, inputs and outgoings (raw materials, emissions, waste, etc.)
- Staff in charge of performing the operations.
- What are the criteria for control (values for acceptance of variables such as temperature, pressure, etc., quantities of incoming products, condition of the equipment, establishing timetables, etc.)
- Planning the activity that will be carried out for attaining the objectives set.
- What is the expected outcome of the operational control.
- How will that activity or process be evaluated
- What are the records resulting from the operational control for supervising the proper functioning of the activity to be monitored.

For example, the procedures for the operational control of waste management in footwear companies, usually consist of aspects such as:

- Separation at source of the different types of waste
- Conditions for collection, manipulation and internal storage.
- Labelling and identification of the storage areas.
- Conditions for delivering waste to authorised management companies.
- Supervisory actions

Monitoring and measuring

It is important to distinguish between “operational control” and “monitoring and measuring”. Operational control is based on planning specific actions of control of activities (guidelines to follow, parameter control limits, etc.), to guarantee that those activities fall between the parameters desired. However, with monitoring and measuring the intention is to check that the company complies with what was planned, in the corresponding procedures of operational control, through readings (analyses of discharges, atmospheric emissions, etc.) and/or checks (compliance with applicable environmental regulations, etc.)

The same as for operational control, it is recommended that footwear companies establish, implement and maintain one or more procedures for regularly monitoring and measuring the activities that could have a significant impact on the environment.

The objective of monitoring and measuring is to regularly assess the environmental performance of the company and the environmental commitments that have been put into operation. This way it can be checked that the organisation is functioning in accordance with the environmental management programme established, and also with applicable environmental regulations.

In a footwear company, the aspects to be monitored and measured will vary depending on:

- The environmental aspects of the activities, products or services and their significant effects.
- The requirements contained in applicable environmental regulations (see Unit 2).
- The environmental requirements of customers or the market. This aspect is particularly important for companies manufacturing products related to eco-labelling systems.
- Current objectives and environmental targets and their measurement indicators (see Unit 3).
- The information supplied by the company in its internal and external communications regarding its environmental performance.

This way, some of the elements subject to monitoring and measuring could be:

- Consumption (of raw materials, energy, water, etc.)
- Features of the atmospheric emissions through the various focal points of the company, obtained through measurement or analysis.
- Characteristics of liquid effluents (quality, volume, etc.)
- Characteristics of the waste generated by the activity or production process.
- Level of noise emitted by the plant to the exterior.

Once the items to be monitored and measured have been established and determined, a study must be made as to what methods are going to be used for collecting data or samples. In order for the data capture to be effective, it should take into consideration the following aspects, as an example:

- Appoint someone to handle sample-taking
- Points of measurement or sampling
- Type of sampling to be performed
- Frequency of measurement or sampling.
- Equipment used for measuring (calibrated or verified).
- Methodology for analysis
- Treatment of the data obtained.
- Registration of the data obtained.
- What is the admissible value, providing that it has been previously defined.

Once the necessary data is available, the results obtained shall be evaluated to see if they are satisfactory or whether, to the contrary, any problem is detected and actions have to be implemented as necessary to rectify that circumstance.

Audit

To assess the introduction of environmental management practices in a footwear company, it is recommended to make environmental audits periodically and objectively. Those environmental audits will quantify the degree of compliance and the environmental status of the company and will define the activities or requirements for maintaining or improving the environmental management introduced in the company. This way a company can be made aware whether its environmental management procedures are effective and if it is meeting all the requirements of those procedures, thus abiding by the policy and achieving the environmental objectives established.

There are two types of audits:

- **Internal Audits:** these audits can be performed by the company's own staff or they can be subcontracted, but always at the company's initiative and using the methodology established by it. In either case, the auditor carrying out the audit must be completely impartial and objective when performing it.
- **External Audits:** this type of audit is performed by bodies independent from the company. This type of audit is carried out when the company needs to obtain an environmental management certificate such as the ISO 14001 or EMAS, so the auditor will take the environmental management systems standard as a basis, depending on the certificate that the company intends to obtain.

The same as for other aspects of environmental management, for the audit the company is recommended to establish, implement and maintain one or several procedures which will include information such as:

- The responsibilities.
- The requirements for planning and performing the audits.
- Communicating the results obtained in the audits.
- Maintaining the associated records.
- Determining the criteria for the audit, its scope, frequency and method.

- The activities and the departments to be considered in the audits.
- The frequency of the audits. They are normally performed annually, but any other frequency can be established
- The competency of the auditors.
- Examining the records, procedures and other documents of environmental management.
- Checking compliance with the criteria for determining the effectiveness of the environmental management actions.
- Collecting evidence of any deviation or non-compliance.

Prior to having an internal audit carried out it is advisable to plan and prepare for it, and in this way to review the environmental management actions introduced into the company, and also to study the results of previous audits, where appropriate. This planning will also make it possible to check that the company has the resources necessary for carrying out the audit, and also enable each individual in the company to understand his or her function and responsibility.

Among the tasks of preparing for the internal audit we would mention the following:

- Scheduling visits to the factory:
 - A tour of the whole of the company premises.
 - Visit to laboratories, warehouses, maintenance areas, operating areas, etc.
 - Discharge area for solid, liquid and gaseous waste.
 - Area of hazardous materials and waste.
 - Waste storage area.
 - Area for storing raw materials, etc.
- Selection of personnel who will participate in the evaluation.
- Development of the audit plan to include the technical scope, the departments to be assessed, the approximate duration, etc.
- Compiling and reviewing the environmental management documentation.

Subsequently, during the audit, actions such as the following are usually implemented:

- Interviews with company staff members.
- Inspection of the operating conditions and of the premises.

Once the audit has been performed, the auditor will evaluate the results, prepare the conclusions of the audit, and communicate the results and conclusions to the Management. To this end it is recommended having a written report drawn up to record any deviation detected and also recommendations for improvement.

Review by Management

With a view to maintaining continuous improvement and to adapt and keep the environmental management of the footwear company functioning effectively, it is recommended that Management should make regular reviews and assessments, because only the Management of the company has the power and capacity to make any decisions or changes

For the Management to be able to make such review, it needs to be provided with the following items:

- results of the internal / external audits
- assessments of compliance with legal requirements and other requisites to which the company subscribes.
- communications from external interested parties, including complaints.
- the environmental performance of the organisation
- the extent to which objectives and targets have been met
- status of corrective and preventive actions
- follow-up actions from previous management reviews
- changing circumstances, including developments of the legal and other requirements related to its environmental aspects.
- recommendations for improvement.

With all this information, Management will evaluate the opportunities for improvement and the need to implement changes in environmental management, including the environmental policy and the environmental objectives and targets.

It is also recommended that the results of the management review are conserved and recorded in some way. These results include all the decisions and actions taken by Management in relation to any possible changes in the environmental policy, objectives, targets and other aspects of environmental management, consistent with the commitment to continuous improvement.

After this process, Management will communicate its conclusions and results to the company's Environmental Management Officer so that the pertinent measures or changes, as the case may be, can begin to be introduced.

EMAS

EMAS is a voluntary tool designed by the European Commission for the public registration and recognition of companies and organisations that have introduced a system of environmental management which enables them to evaluate, report and improve their environmental performance, thereby ensuring an outstanding performance in this respect.

The organisations with EMAS recognition –whether industrial companies, small and medium businesses, organisations in the service sector, public institutions, etc.- have a defined environmental policy, use an environmental management system and regularly report the functioning of that system through an environmental statement verified by independent bodies. Those companies are recognised with the EMAS logo, which guarantees the reliability of the information given by that company.

Therefore, the steps to be taken by a company wishing to join EMAS would be:

- To make an environmental diagnosis of the company. To do this, the degree of compliance with the environmental regulations in force in that company have to be checked.
- Evaluate how the company's activities affect the environment (effects produced by the manufacturing processes, products and services provided).
- Prepare an environmental statement which demonstrates that the company has introduced an environmental management system to minimise its environmental impacts.
- Have that environmental statement validated by an independent auditor (defined as environmental verifiers).
- Present the environmental statement validated by the verifier to the competent Public Administration so that it can be registered in the European database for EMAS Registration in European, if everything is in order.

The years that have elapsed since the approval of the first Community regulations on the subject, Council Regulation (EEC) N° 1836/93 of 29 June 1993, allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme, have made it possible to see the effectiveness of this system for improving the environmental performance of the organisations that have introduced it.

With the new Regulation (EC) N° 1221/2009 of the European Parliament and of the Council, of 25 November 2009, on the voluntary participation by organisations in a Community eco-management and audit scheme) known as EMAS III), the intention is to register all improvements and modifications that have been developing since the publication of the first Community regulation. Two principal innovations have been added in respect of the previous legislation, first, the possibility that both European and non-European organisations can participate in the EMAS system, in two circumstances:

- Organisations with centres located in one or more third countries having bilateral agreements with Spain (EMAS Global Registration).
- Organisations with centres located in one or more Member States and simultaneously having centres located in one or more third countries, having bilateral agreements with Spain (EMAS Global Corporate Registration).

Secondly, this piece of Community legislation contains a new regulation on the supervision of environmental verifiers, and on the adaptation of their accreditation under Regulation (EC) N° 765/2008 of the European Parliament and of the Council, of 9 July 2008, setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) N° 339/93.



F.1 Logotype EMAS

10. Test of knowledge

Choose the correct option:

Q1. The Environmental Policy:

- Includes a compilation of continuous improvement actions
- Is issued and circulated among the company staff members only
- Implies a commitment of the Board of Directors to carry out the suitable environmental management of company
- Must be a document allowing for recording and filing all actions performed within the company for the identification and assessment of environmental aspects.

Q2. An accidental spillage in a footwear factory would be:

- A normal environmental aspect
- A potential environmental aspect
- An environmental aspect derived from a past activity
- An environmental aspect derived from an emergency situation

Q3. One type of hazardous waste produced in footwear industries corresponds to:

- Leather wastes
- Empty containers of organic solvent based adhesives
- Printer cartridges

Q4. Ambient noise in footwear factories:

- Is a matter for Health and Safety at the workplace
- Must be considered for the identification of environmental aspects
- Mainly results from footwear finishes booths
- Mainly results from the operation of stitching machines

Q5. The assessment of environmental aspects

- When completed, should allow for the identification of all environmental aspects as significant
- Should be carried out in accordance with subjective assessment criteria
- Should be carried out considering assessment criteria such as "approach to limit", "magnitude" or "frequency".
- Is carried out using standard provisions

Q6. Among the following criteria, which do you think would be suitable to assess frequency?

- Very often: several times a month
Often: sometimes
Infrequently: occasionally
- Very often: 10 or more times a month
Often: less than 10 times a month, but more than 3 times every 6 months
Infrequently: 3 times or less every 6 months
- Very often: more than 10 times a month
Often: less than 10 times a month
Infrequently: less than 3 times a month

Q7. With regard to atmospheric emissions... (please tick the correct sentence):

- Footwear industries cannot exceed the emission of 25 g VOC/pair
- Footwear industries cannot exceed the emission of 25 g VOC/pair, provided their annual consumption of solvents is higher than 5 tonnes.
- Footwear industries cannot exceed the emission of 25 g VOC/pair, provided their annual consumption of solvents is not higher than 5 tonnes.
- Footwear industries cannot exceed the emission of 50 mg TOC/Nm³, provided that the annual consumption of solvents is not higher than 5 tonnes.

Q8. With regard to waste water discharge, please indicate which of the following statement(s) apply:

- All companies discharging waste water to public waterways must meet the discharge limits in compliance with the municipal ordinance, applicable in the town where such companies are located.
- All companies discharging to the sewage system must meet the discharge limits in compliance with the municipal ordinance, applicable in the town where such companies are located.
- An administrative authorisation from the Water Confederation is required by all companies generating waste water.

Q9. Among the following statements, indicate which one is true:

- Non-significant environmental aspects should be considered in order to establish environmental objectives.
- Both, significant and non-significant environmental aspects should be considered in order to establish environmental objectives.
- In order to establish environmental objectives, the following should be considered: significant environmental aspects, legal requirements and the environmental policy, regardless of the strategy or financial capacity of the company.
- In order to establish environmental objectives, the following should be considered: significant environmental aspects, legal requirements, the environmental policy, alternative technology alternatives, the financial capacity of the company and its corporate strategy.

Q10. Among the following statements, indicate which one is true:

- Environmental objectives are always associated with environmental targets.
- At least 3 environmental targets should be set for each environmental objective.
- Environmental objectives are not always associated with environmental targets.

Q11. To achieve the suitable environmental management of a footwear company:

- An external consultancy specialised in environmental management issues must be involved.
- The top management of the company must be involved, in addition to the technical staff.
- Only the top management of the company must be involved, as they are the decision makers.

Q12. In view of the environmental management of a footwear factory:

- There are common and mandatory procedures regarding the applicable structure and management responsibilities.
- The environmental structure applicable to footwear factories is prescribed by law.
- Every factory is free to choose its own structure and management responsibilities.

Q13. The environmental training plan:

- Sets out all training actions that take place in the factory.
- Sets out only the training actions that are necessary to perform any activity within the factory, regardless of whether they will be carried out or not.
- Sets out training actions without which performing an activity within the factory may cause unwanted environmental impacts.

Q14. Environmental communication within the company:

- Takes place exclusively among the workers and the Environmental Management Officer.
- Is aimed at providing the general public and stakeholders with information about the environmental conditions of the company. Although, communicating the environmental impacts of the company may create a certain level of distrust.
- Is aimed at providing workers and stakeholders with information regarding the company environmental behaviour.

Q15. In order to achieve suitable environmental management, the company should:

- Recruit additional staff members who will be in charge of quality control.
- Determine and update the related information and documents – for better understanding – describing the foundations on which their environmental management actions are based.
- Inform all staff members on the company's profit-and-loss statement.

Q16. The register is...

- A set of all the information and supporting documents (paper, electronic format, etc) that report on obtained results or give evidence on activities carried out.
- A license or permit issued by the competent Authority to carry out the activity being assessed.
- A document certifying that it has been revised and approved by authorised personnel.

Q17. All documents must be:

- Legible, dated (including dates of review), easy to identify, organised and archived for a specified period of time.
- Legible, dated (without dates of review), easy to identify, organised and archived for a specified period of time.
- Legible, dated (including dates of review), easy to identify, kept under lock and key by the top management of the company, organised and archived for a specified period of time.

Q18. The control of documents must ensure that...

- Scanned copy of all documents is available.
- All documents can be regularly checked.
- Out-of-date documents are removed.

Q19. Which of the following statements is true regarding operational control?

- Operational controls should be established on those activities related to significant environmental aspects identified.
- Operational control must be established on adhesives used for footwear finishing.
- Operational control must be established on waste water from finishing booths.

Q20. Among the following sentences, indicate which one is true:

- Control and monitoring is based on planning certain actions for activity control, and operational control consists in verifying compliance with what was planned.
- Operational control consists in planning certain actions for activity control, whereas control and monitoring verifies compliance with what was planned.
- Control and monitoring is based on planning certain actions for activity control, and measurement consists in verifying compliance with what was planned.

Q21. Tick the correct sentence:

- In-house audits can only be carried out by staff from the company to be audited.
- In-house audits can only be carried out by external experts under subcontract with the company to be audited.
- In-house audits can be carried out both by external experts under subcontract and by own personnel from the company to be audited.

Q22. The final Audit Report must include:

- The planning of training activities.
- External and internal communications of the company.
- Any deviation detected, as well as recommendations for improvement.

Q23. The Top Management of the company must have the following information available for the review of the environmental management system implemented in the company:

- Results of in-house audits, environmental performance, list of staff members in charge of addressing eventual problems, register of documents, etc.
- Results of in-house audits, environmental performance, the frequency of periodic audits, register of documents, etc.
- Results of in-house audits, environmental performance, degree of fulfilment of objectives and targets, recommendations for improvement, etc.

Q24. Tick the correct sentence:

- Top Management monitoring is not necessary for the effective functioning of the in-house environmental management system. Nevertheless, it is needed for continuous improvement.
- Monitoring and measurement assess the environmental performance of the company on a regular basis, as well as the environmental commitments set out.
- All documents related to the company environmental management system result from operational control actions.

Q25. Tick the correct sentence

- Compulsory registration under EMAS is required for all companies and organisations with an implemented environmental management system.
- Organisations willing to register under EMAS do not have to carry out the environmental diagnosis of the company.
- EMAS registered organisations have defined their environmental policy, implemented an environmental management system and regularly report on said system through the submission of an environmental statement verified by an independent body.

Q26. The essential patents:

- are the most important patents in the patent system.
- are those patents included in technical standards.
- are those patents that further support the development of a technology.

Q27. Tick the correct sentence:

- A patent must allow for the use of the invention during a limited period of time, even if the patent holder does not agree.
- Standards never use technologies that are protected by one or more patents.
- Patents and standards boost and support innovation and technology dissemination.

Q28. What is a harmonized standard?

- It is a binding standard, but by no means does it constitute preferential presumption of conformity for those products that comply with it.
- It is the instrument providing presumption of conformity as it represents the “state-of-the-art” with regard to essential safety requirement set out in the Directives.
- It is a European Standard (EN) that is not necessary published in the Official Journal of the European Union, but it must be CEN approved in accordance with the corresponding legal requirements covered by the related Directive

Q29. When does a Directive enter into force?

- From the moment when it is accepted by all the countries in the European Union.
- When it is published in the Official Journal of the EU
- When it is transposed in all EU Member States to their own national law.

Q30. Tick the correct sentence:

- Standardisation contributes to the selection of the most suitable products according to the intended target use, although it does not guarantee design and production of safe products.
- Standardisation allows the validation of production methods, but it does not guarantee safety of workers.
- In addition to product innovation, anticipation and improvement, standardisation allows a company to be more competitive as it provides the required weapons to conquer new markets, thus obtaining better knowledge of the markets and their trends.

Q31. Tick the correct sentence:

- The Mutual Recognition Agreement (MRA) eliminates duplication of assessments and inspections. It represents the less expensive assessment procedure as it is carried out by a body located in the same country of origin, thus avoiding problems in the country of destination.
- The MRA implies a reduction in costs and delays in obtaining the product certification, but it does not avoid duplication of conformity assessment or the possible uncertainty regarding the obtaining of product certification in a third country.
- The MRA facilitates trade but it does not guarantee health and safety for the consumer and the environment.

Q32. Tick the correct sentence:

- Legislative alignment is limited to the essential requirements that those products commercialised in the Community market have to fulfil to circulate freely within the Community.
- The implementation of standards – either harmonised or not – is voluntary and the manufacturer cannot apply other technical specifications for the fulfilment of requirements.
- Manufacturing products in compliance with harmonised standards does not give presumption of conformity with the corresponding essential requirements.

Q33. Tick the correct sentence regarding the “Conformity Assessment”:

- The Conformity Assessment does not guarantee that the technical characteristics of a product or service are in accordance with the requirements laid down in the respective technical regulation.
- The Conformity Assessment, in the mandatory field, shows consumers or users that a product, process or service complies with regulations initially agreed as regards those criteria mainly related to health and safety of consumers and protection of the environment.
- The Conformity Assessment, in the voluntary field, is carried out by two different organisation categories: first, the “Statement by the Manufacturer” or “Statement by the Provider” and secondly, the statement by the buyer or final user.

Q34. Standardisation bodies are...

- State bodies
- Non-profit private entities
- Private companies

Q35. How long does a CEN enquiry take?

- 1 year
- 1 year and a half
- 6 months

Q36. National bodies that are member of a regional body and also of an international body...

- are required to adopt as national (UNE, in the case of Spain) not only all regional standards, but also international standards (ISO)
- are required to adopt as national the regional (EN) standards published, but they are under no obligation to adopt international standards as national, although they can adopt those that they consider to be interesting.
- are under no obligation to adopt all regional and international standards published, only those that they consider to be interesting.

Q37. ISO Committee Members:

- Actively participate in standardisation activities.
- Compile information only related to those issues in which they are interested.
- Only monitor work, with no obligation to comment or give their opinion. They are just observers.

Q38. Standards:

- Can be voluntarily applied.
- Are mandatory.
- Some of them can be voluntarily applied and others are mandatory.

Q39. Tick the correct statement:

- In-house audits are carried out by external personnel subcontracted by the company, but they are performed at the company's initiative and following the methodology established by the company for that aim.
- External audits can be carried out by the company's own personnel or by independent bodies.
- In the environmental audits, the degree of compliance and the environmental condition of the company are quantified and also, activities or company needs required to maintain or improve the environmental management system implemented in the company are identified.

Q40. Tick the correct sentence:

- A management system is a tool allowing for optimisation of results and improvement of productivity, although costs are escalated.
- Management systems are based on international standards that monitor only the quality of products or services provided by a company.
- A management system is especially recommended for any type of organisation or activity aimed at the production of goods or services, which require a useful tool to improve management within the company.

Open questions:

1. What management system controls...

- service/product quality within the company? **ISO 9001**
- health and safety of workers? **OMSAS 18001**
- environmental impact resulting from a product/service? **ISO 14001**
- social justice and rights of workers? **SA 8000**

2. What is a notified body?

It is an impartial body with competence and responsibility required to issue Conformity Certification in accordance with procedural and management rules set out.

3. What are the benefits that standardisation brings to....

• **Manufacturers?**

1. Reduction in types and varieties of products.
2. Reduction in stocks and production costs.
3. Streamlined order processing.
4. Advantages for product marketing and export.

• **Consumers?**

1. Guaranteed quality and safety level for products.
2. Information about the product characteristics.
3. Advantages to compare among different offers.
4. Simplified purchase management.

• **the Administration?**

1. Easy-to-understand legal texts with reference to standards.
2. Boost to economic development.
3. Trade facilitation.

4. What is the result of a MRA?

1. The simplification and speeding up of Conformity Certification procedures.
2. A reduction in costs for employers who will be able to save the procedure in export markets.
3. Smoother trade flows between member countries, stimulating competition.

5. What is the mission of standardisation bodies?

A standardisation body is aimed at carrying out activities – on a national level – related to the preparation of standards, unifying criteria on particular subjects and making it possible to use of a common language in certain fields of activity.

6. Classification of standards, scope and example:

1. National standards > Scope: national. Ex: UNE Standards. Standardisation body: AENOR
2. Regional standards > Scope: continental. Ex: in Standards. Standardisation body: CEN
3. International standards > Scope: worldwide. Ex: ISO Standards. Standardisation body ISO
4. Sectoral standards > Promoted or prepared by sectoral or industrial associations or groups.

Answer Key:

Q1.	Implies a commitment of the Board of Directors to carry out the suitable environmental management of company
Q2.	A potential environmental aspect
Q3.	Empty containers of organic solvent based adhesives
Q4.	Must be considered for the identification of environmental aspects
Q5.	Should be carried out considering assessment criteria such as "approach to limit", "magnitude" or "frequency".
Q6.	Very often: 10 or more times a month Often: less than 10 times a month, but more than 3 times every 6 months Infrequently: 3 times or less every 6 months
Q7.	Footwear industries cannot exceed the emission of 25 g VOC/pair, provided their annual consumption of solvents is higher than 5 tonnes.
Q8.	All companies discharging to the sewage system must meet the discharge limits in compliance with the municipal ordinance, applicable in the town where such companies are located.
Q9.	In order to establish environmental objectives, the following should be considered: significant environmental aspects, legal requirements, the environmental policy, alternative technology alternatives, the financial capacity of the company and its corporate strategy.
Q10.	Environmental objectives are not always associated with environmental targets.
Q11.	The top management of the company must be involved, in addition to the technical staff.
Q12.	Every factory is free to choose its own structure and management responsibilities.
Q13.	Sets out training actions without which performing an activity within the factory may cause unwanted environmental impacts.
Q14.	Is aimed at providing workers and stakeholders with information regarding the company environmental behaviour.
Q15.	Determine and update the related information and documents – for better understanding – describing the foundations on which their environmental management actions are based.
Q16.	A set of all the information and supporting documents (paper, electronic format, etc) that report on obtained results or give evidence on activities carried out.
Q17.	Legible, dated (including dates of review), easy to identify, organised and archived for a specified period of time.
Q18.	All documents can be regularly checked.
Q19.	Operational controls should be established on those activities related to significant environmental aspects identified.
Q20.	Operational control consists in planning certain actions for activity control, whereas control and monitoring verifies compliance with what was planned.
Q21.	In-house audits can be carried out both by external experts under subcontract and by own personnel from the company to be audited.
Q22.	Any deviation detected, as well as recommendations for improvement.
Q23.	Results of in-house audits, environmental performance, degree of fulfilment of objectives and targets, recommendations for improvement, etc.
Q24.	Monitoring and measurement assess the environmental performance of the company on a regular basis, as well as the environmental commitments set out.

Answer Key:

Q25.	EMAS registered organisations have defined their environmental policy, implemented an environmental management system and regularly report on said system through the submission of an environmental statement verified by an independent body.
Q26.	are those patents included in technical standards.
Q27.	Patents and standards boost and support innovation and technology dissemination.
Q28.	It is the instrument providing presumption of conformity as it represents the “state-of-the-art” with regard to essential safety requirement set out in the Directives.
Q29.	When it is published in the Official Journal of the EU
Q30.	In addition to product innovation, anticipation and improvement, standardisation allows a company to be more competitive as it provides the required weapons to conquer new markets, thus obtaining better knowledge of the markets and their trends.
Q31.	The Mutual Recognition Agreement (MRA) eliminates duplication of assessments and inspections. It represents the less expensive assessment procedure as it is carried out by a body located in the same country of origin, thus avoiding problems in the country of destination.
Q32.	Legislative alignment is limited to the essential requirements that those products commercialised in the Community market have to fulfil to circulate freely within the Community.
Q33.	The Conformity Assessment, in the mandatory field, shows consumers or users that a product, process or service complies with regulations initially agreed as regards those criteria mainly related to health and safety of consumers and protection of the environment.
Q34.	Non-profit private entities
Q35.	6 months
Q36.	are required to adopt as national the regional (EN) standards published, but they are under no obligation to adopt international standards as national, although they can adopt those that they consider to be interesting.
Q37.	Actively participate in standardisation activities.
Q38.	Can be voluntarily applied.
Q39.	In the environmental audits, the degree of compliance and the environmental condition of the company are quantified and also, activities or company needs required to maintain or improve the environmental management system implemented in the company are identified.
Q40.	A management system is especially recommended for any type of organisation or activity aimed at the production of goods or services, which require a useful tool to improve management within the company.

11. ANNEX: International Standards Inventory for the footwear industry

The International Standardisation Organisation (ISO) is an independent non-governmental body responsible for the development and publication of international standards. International standards applicable to the footwear and related industries are listed below:

- **Technical Committee TC94 “Personal safety, protective clothing and equipment”. SC 3 “Footwear for professional use”**
 - **ISO 2023:1994/Cor 1:2001** Rubber footwear-Lined industrial vulcanized-rubber boots-Specification TECHNICAL CORRIGENDUM 1
 - **ISO 4643:1992** Moulded plastics footwear -- Lined or unlined poly(vinyl chloride) boots for general industrial use – Specification
 - **ISO 5423:1992** Moulded plastics footwear -- Lined or unlined polyurethane boots for general industrial use – Specification
 - **ISO 13287:2012** Personal protective equipment -- Footwear -- Test method for slip resistance
 - **ISO 17249:2013** Safety footwear with resistance to chain saw cutting
 - **ISO/TR 18690:2012** Guidance for the selection, use and maintenance of safety and occupational footwear and other personal protective equipment offering foot and leg protection
 - **ISO 20344:2011** Personal protective equipment -- Test methods for footwear
 - **ISO 20345:2011** Personal protective equipment -- Safety footwear
 - **ISO 20346:2014** Personal protective equipment -- Protective footwear
 - **ISO 20347:2012** Personal protective equipment -- Occupational footwear
 - **ISO 20349:2010** Personal protective equipment -- Footwear protecting against thermal risks and molten metal splashes as found in foundries and welding -- Requirements and test method
- **Technical Committee TC120 “Leather”**
 - **ISO 2820:1974** Leather -- Raw hides of cattle and horses -- Method of trim.
 - **ISO 2820:1974/Amd 1:1996** Leather — Raw hides of cattle and horses — Method of trim AMENDMENT 1
 - **ISO 2821:1974** Leather - Raw hides of cattle and horses -- Preservation by stack salting
 - **ISO 2821:1974/Amd 1:1996** Leather — Raw hides of cattle and horses — Preservation by stack salting AMENDMENT 1
 - **ISO 2822-1:1998** Raw cattle hides and calf skins -- Part 1: Descriptions of defects
 - **ISO 4683-1:1998** Raw sheep skins -- Part 1: Descriptions of defects
 - **ISO 4683-2:1999** Raw sheep skins -- Part 2: Designation and presentation
 - **ISO 5431:2013** Leather -- Wet blue goat skins – Specification
 - **ISO 5432:2013** Leather -- Wet blue sheep skins – Specification
 - **ISO 5433:2013** Leather -- Bovine wet blue – Specification
 - **ISO 7482-1:1998** Raw goat skins -- Part 1: Descriptions of defects
 - **ISO 7482-2:1999** Raw goat skins -- Part 2: Guidelines for grading on the basis of mass and size
 - **ISO 7482-3:2005** Raw goat skins -- Part 3: Guidelines for grading on the basis of defects
 - **ISO 11396:2012** Crocodile skins -- Presentation, description of defects, grading on the basis of defects, size (length) and origin
 - **ISO 11398:2012** Raw ostrich skins -- Description of defects, guidelines for presentation and grading on basis of defects
 - **ISO 14930:2012** Leather -- Leather for dress gloves – Specification

- **ISO 14931:2015** Leather -- Guide to the selection of leather for apparel (excluding furs)
- **ISO 16131:2012** Leather -- Upholstery leather characteristics -- Selection of leather for furniture
- **ISO 28499-1:2009** Buffalo hides and buffalo calf skins -- Part 1: Description of defects
- **ISO 28499-2:2009** Buffalo hides and buffalo calf skins -- Part 2: Grading on the basis of mass and size
- **ISO 28499-3:2009** Buffalo hides and buffalo calf skins -- Part 3: Grading on the basis of defects
- **Technical Committee TC137 “Footwear sizing designations and marking systems”**
 - **ISO 9407:1991** Shoe sizes -- Mondopoint system of sizing and marking
 - **ISO/TS 19407:2015** Footwear -- Sizing -- Conversion of sizing systems
 - **ISO/TS 19408:2015** Footwear -- Sizing -- Vocabulary and terminology
- **Technical Committee TC216 “Footwear”**
 - **ISO 10717:2010** Footwear -- Test method for slide fasteners -- Burst strength
 - **ISO 10748:2011** Footwear -- Test method for slide fasteners -- Slider locking strength
 - **ISO 10748:2011** Footwear -- Test method for slide fasteners -- Slider locking strength
 - **ISO 10765:2010** Footwear -- Test method for the characterization of elastic materials -- Tensile performance
 - **ISO 10768:2010** Footwear -- Test method for the determination of the resistance of elastic materials for footwear to repeated extension -- Fatigue resistance
 - **ISO 16177:2012** Footwear -- Resistance to crack initiation and growth -- Belt flex method
 - **ISO/TR 16178:2012** Footwear -- Critical substances potentially present in footwear and footwear components
 - **ISO/TS 16179:2012** Footwear -- Critical substances potentially present in footwear and footwear components -- Determination of organotin compounds in footwear materials
 - **ISO/TS 16181:2011** Footwear -- Critical substances potentially present in footwear and footwear components -- Determination of phthalates in footwear materials
 - **ISO/TS 16186:2012** Footwear -- Critical substances potentially present in footwear and footwear components -- Test method to quantitatively determine dimethyl fumarate (DMFU) in footwear materials
 - **ISO 16187:2013** Footwear and footwear components -- Test method to assess antibacterial activity
 - **ISO/TS 16189:2013** Footwear -- Critical substances potentially present in footwear and footwear components -- Test method to quantitatively determine dimethylformamide in footwear materials
 - **ISO/TS 16190:2013** Footwear -- Critical substances potentially present in footwear and footwear components -- Test method to quantitatively determine polycyclic aromatic hydrocarbons (PAH) in footwear materials
 - **ISO 17693:2004** Footwear -- Test methods for uppers -- Resistance to damage on lasting
 - **ISO 17694:2003** Footwear -- Test methods for uppers and lining -- Flex resistance
 - **ISO 17695:2004** Footwear -- Test methods for uppers -- Deformability
 - **ISO 17696:2004** Footwear -- Test methods for uppers, linings and insoles -- Tear strength
 - **ISO 17697:2003** Footwear -- Test methods for uppers, lining and insoles -- Seam strength
 - **ISO 17698:2003** Footwear -- Test methods for uppers -- Delamination resistance
 - **ISO 17699:2003** Footwear -- Test methods for uppers and lining -- Water vapour permeability and absorption
 - **ISO 17700:2004** Footwear -- Test methods for uppers, linings and insoles -- Colour fastness to rubbing

- **ISO 17701:2003** Footwear -- Test methods for uppers, lining and insoles -- Colour migration
- **ISO 17702:2003** Footwear -- Test methods for uppers -- Water resistance
- **ISO 17703:2003** Footwear -- Test methods for uppers -- High temperature behaviour
- **ISO 17704:2004** Footwear -- Test methods for uppers, linings and insoles -- Abrasion resistance
- **ISO 17705:2003** Footwear -- Test methods for uppers, lining and insoles -- Thermal insulation
- **ISO 17706:2003** Footwear -- Test methods for uppers -- Tensile strength and elongation
- **ISO 17707:2005** Footwear -- Test methods for outsoles -- Flex resistance
- **ISO 17708:2003** Footwear -- Test methods for whole shoe -- Upper sole adhesion
- **ISO 17709:2004** Footwear -- Sampling location, preparation and duration of conditioning of samples and test pieces
- **ISO 18454:2001** Footwear -- Standard atmospheres for conditioning and testing of footwear and components for footwear
- **ISO 18895:2006** Footwear -- Test methods for shanks -- Fatigue resistance
- **ISO 18896:2006** Footwear -- Test methods for shanks -- Longitudinal stiffness
- **ISO 19952:2005** Footwear -- Vocabulary
- **ISO 19953:2004** Footwear -- Test methods for heels -- Resistance to lateral impact
- **ISO 19954:2003** Footwear -- Test methods for whole shoe -- Washability in a domestic washing machine
- **ISO 19956:2004** Footwear -- Test methods for heels -- Fatigue resistance
- **ISO 19957:2004** Footwear -- Test methods for heels -- Heel pin holding strength
- **ISO 19957:2004/Cor 1:2005**
- **ISO 19958:2004** Footwear -- Test methods for heels and top pieces -- Top piece retention strength
- **ISO/TR 20572:2007** Footwear -- Performance requirements for components for footwear -- Accessories
- **ISO/TR 20573:2006** Footwear -- Performance requirements for components for footwear -- Heels and top pieces
- **ISO 20863:2004** Footwear -- Test methods for stiffeners and toepuffs -- Bondability
- **ISO 20864:2004** Footwear -- Test methods for stiffeners and toepuffs -- Mechanical characteristics
- **ISO 20865:2002** Footwear -- Test methods for outsoles -- Compression energy
- **ISO 20866:2001** Footwear -- Test methods for insoles -- Delamination resistance
- **ISO 20867:2001** Footwear -- Test methods for insoles -- Heel pin holding strength
- **ISO 20868:2001** Footwear -- Test methods for insoles -- Abrasion resistance
- **ISO 20869:2010** Footwear -- Test method for outsoles, insoles, linings and insoles -- Water soluble content
- **ISO 20870:2001** Footwear -- Ageing conditioning
- **ISO 20871:2001** Footwear -- Test methods for outsoles -- Abrasion resistance
- **ISO 20872:2001** Footwear -- Test methods for outsoles -- Tear strength
- **ISO 20873:2001** Footwear -- Test methods for outsoles -- Dimensional stability
- **ISO 20874:2001** Footwear -- Test methods for outsoles -- Needle tear strength
- **ISO 20875:2001** Footwear -- Test methods for outsoles -- Determination of split tear strength and delamination resistance
- **ISO 20876:2001** Footwear -- Test methods for insoles -- Resistance to stitch tear
- **ISO 20877:2011** Footwear -- Test methods for whole shoe -- Thermal insulation
- **ISO/TR 20879:2007** Footwear -- Performance requirements for components for footwear -- Uppers
- **ISO/TR 20880:2007** Footwear -- Performance requirements for components for footwear -- Outsoles

- **ISO/TR 20881:2007** Footwear -- Performance requirements for components for footwear – Insoles
- **ISO/TR 20882:2007** Footwear -- Performance requirements for components for footwear -- Lining and insoles
- **ISO/TR 20883:2007** Footwear -- Performance requirements for components for footwear – Shanks
- **ISO/TR 22648:2007** Footwear -- Performance requirements for components for footwear -- Stiffeners and toepuffs
- **ISO 22649:2003** Footwear -- Test methods for insoles and insoles -- Water absorption and desorption
- **ISO 22650:2002** Footwear -- Test methods for whole shoe -- Heel attachment
- **ISO 22651:2002** Footwear -- Test methods for insoles -- Dimensional stability
- **ISO 22652:2002** Footwear -- Test methods for insoles, lining and insoles -- Perspiration resistance
- **ISO 22653:2003** Footwear -- Test methods for lining and insoles -- Static friction
- **ISO 22654:2002** Footwear -- Test methods for outsoles -- Tensile strength and elongation
- **ISO 22774:2004** Footwear -- Test methods for accessories: shoe laces -- Abrasion resistance
- **ISO 22775:2004** Footwear -- Test methods for accessories: Metallic accessories -- Corrosion resistance
- **ISO 22776:2004** Footwear -- Test methods for accessories: Touch and close fasteners -- Shear strength before and after repeated closing
- **ISO 22777:2004** Footwear -- Test methods for accessories: Touch and close fasteners -- Peel strength before and after repeated closing
- **Technical Committee IULTCS - International Union of Leather Technologists and Chemists Societies**
 - **ISO/NP 2417** Leather -- Physical and mechanical tests -- Determination of the static absorption of water
 - **ISO 2417:2002 (IULTCS/IUP 7)** Leather -- Physical and mechanical tests -- Determination of the static absorption of water
 - **ISO 2417:2002 (IULTCS/IUP 7)** Leather -- Physical and mechanical tests -- Determination of the static absorption of water
 - **ISO 2418:2002 (IULTCS/IUP 2)** Leather -- Chemical, physical and mechanical and fastness tests -- Sampling location
 - **ISO 2419:2012 (IULTCS/IUP 1, IULTCS/IUP 3)** Leather -- Physical and mechanical tests -- Sample preparation and conditioning
 - **ISO/DIS 2420** Leather -- Physical and mechanical tests -- Determination of apparent density and mass per unit area
 - **ISO 2420:2002 (IULTCS/IUP 5)** Leather -- Physical and mechanical tests -- Determination of apparent density
 - **ISO 2588:2014 (IULTCS/IUP 110)** Leather -- Sampling -- Number of items for a gross sample
 - **ISO/NP 2589** Leather -- Physical and mechanical tests -- Determination of thickness
 - **ISO 2589:2002 (IULTCS/IUP 4)** Leather -- Physical and mechanical tests -- Determination of thickness
 - **ISO 3376:2011 (IULTCS/IUP 6)** Leather -- Physical and mechanical tests -- Determination of tensile strength and percentage extension
 - **ISO 3377-1:2011 (IULTCS/IUP 40-1)** Leather -- Physical and mechanical tests -- Determination of tear load -- Part 1: Single edge tear
 - **ISO/NP 3377-2** Leather -- Physical and mechanical tests -- Determination of tear load -- Part 2: Double edge tear
 - **ISO 3377-2:2002 (IULTCS/IUP 8)** Leather -- Physical and mechanical tests -- Determination of tear load -- Part 2: Double edge tear
 - **ISO 3378:2002 (IULTCS/IUP 12)** Leather -- Physical and mechanical tests -- Determination of resistance to grain cracking and grain crack index
 - **ISO 3379:1976 (IULTCS/IUP 9)** Leather -- Determination of distension and strength of grain -- Ball burst test
 - **ISO/FDIS 3379** Leather -- Determination of distension and strength of surface (Ball burst method)

- **ISO/FDIS 3380** Leather -- Physical and mechanical tests - Determination of shrinkage temperature up to 100 °C
- **ISO 3380:2002 (IULTCS/IUP 16)** Leather -- Physical and mechanical tests -- Determination of shrinkage temperature up to 100 degrees C
- **ISO/DIS 4044** Leather -- Chemical tests -- Preparation of chemical test samples
- **ISO 4044:2008 (IULTCS/IUC 3)** Leather -- Chemical tests -- Preparation of chemical test samples
- **ISO 4045:2008 (IULTCS/IUC 11)** Leather -- Chemical tests -- Determination of pH
- **ISO 4047:1977 (IULTCS/IUC 7)** Leather -- Determination of sulphated total ash and sulphated water-insoluble ash
- **ISO 4048:2008 (IULTCS/IUC 4)** Leather -- Chemical tests -- Determination of matter soluble in dichloromethane and free fatty acid content
- **ISO 4098:2006 (IULTCS/IUC 6)** Leather -- Chemical tests -- Determination of water-soluble matter, water-soluble inorganic matter and water-soluble organic matter
- **ISO/DIS 4098** Leather -- Chemical tests -- Determination of water-soluble matter, water-soluble inorganic matter and water-soluble organic matter
- **ISO 4684:2005 (IULTCS/IUC 5)** Leather -- Chemical tests -- Determination of volatile matter
- **ISO 5397:1984 (IULTCS/IUC 10)** Leather -- Determination of nitrogen content and "hide substance" -- Titrimetric method
- **ISO 5398-1:2007 (IULTCS/IUC 8-1)** Leather -- Chemical determination of chromic oxide content -- Part 1: Quantification by titration
- **ISO 5398-2:2009 (IULTCS/IUC 8-2)** Leather -- Chemical determination of chromic oxide content -- Part 2: Quantification by colorimetric determination
- **ISO 5398-3:2007 (IULTCS/IUC 8-3)** Leather -- Chemical determination of chromic oxide content -- Part 3: Quantification by atomic absorption spectrometry
- **ISO 5398-4:2007 (IULTCS/IUC 8-4)** Leather -- Chemical determination of chromic oxide content -- Part 4: Quantification by inductively coupled plasma - optical emission spectrometer (ICP-OES)
- **ISO 5400:1984** Leather -- Determination of total silicon content -- Reduced molybdosilicate spectrometric method
- **ISO/DIS 5402-1** Leather -- Determination of flex resistance -- Part 1: Flexometer method
- **ISO 5402-1:2011 (IULTCS/IUP 20-1)** Leather -- Determination of flex resistance -- Part 1: Flexometer method
- **ISO/FDIS 5402-2** Leather -- Determination of flex resistance -- Part 2: Vamp flex method
- **ISO 5403-1:2011 (IULTCS/IUP 10-1)** Leather -- Determination of water resistance of flexible leather -- Part 1: Repeated linear compression (penetrometer)
- **ISO 5403-2:2011 (IULTCS/IUP 10-2)** Leather -- Determination of water resistance of flexible leather -- Part 2: Repeated angular compression (Maeser)
- **ISO 5404:2011 (IULTCS/IUP 11)** Leather -- Physical test methods -- Determination of water resistance of heavy leathers
- **ISO 11640:2012 (IULTCS/IUF 450)** Leather -- Tests for colour fastness -- Colour fastness to cycles of to-and-fro rubbing
- **ISO 11641:2012 (IULTCS/IUF 426)** Leather -- Tests for colour fastness -- Colour fastness to perspiration
- **ISO 11642:2012 (IULTCS/IUF 421)** Leather -- Tests for colour fastness -- Colour fastness to water
- **ISO 11643:2009 (IULTCS/IUF 434)** Leather -- Tests for colour fastness -- Colour fastness of small samples to solvents
- **ISO 11644:2009 (IULTCS/IUF 470)** Leather -- Test for adhesion of finish
- **ISO 11646:2014 (IULTCS/IUP 32)** Leather -- Measurement of area
- **ISO 13365:2011 (IULTCS/IUC 29)** Leather -- Chemical tests -- Determination of the preservative (TCMTB, PCMC, OPP, OIT) content in leather by liquid chromatography
- **ISO 14087:2011 (IULTCS/IUP 54)** Leather -- Physical and mechanical tests -- Determination of bending force

- **ISO 14088:2012 (IULTCS/IUC 32)** Leather -- Chemical tests -- Quantitative analysis of tanning agents by filter method
- **ISO 14268:2012 (IULTCS/IUP 15)** Leather -- Physical and mechanical tests -- Determination of water vapour permeability
- **ISO 15700:1998 (IULTCS/IUF 420)** Leather -- Tests for colour fastness -- Colour fastness to water spotting
- **ISO 15701:2015 (IULTCS/IUF 442)** Leather -- Tests for colour fastness -- Colour fastness to migration into polymeric material
- **ISO 15702:1998 (IULTCS/IUF 435)** Leather -- Tests for colour fastness -- Colour fastness to machine washing
- **ISO 15703:1998 (IULTCS/IUF 423)** Leather -- Tests for colour fastness -- Colour fastness to mild washing
- **ISO 17070:2015 (IULTCS/IUC 25)** Leather -- Chemical tests -- Determination of tetrachlorophenol-, trichlorophenol-, dichlorophenol-, monochlorophenol-isomers and pentachlorophenol content
- **ISO 17071:2006 (IULTCS/IUP 46)** Leather -- Physical and mechanical tests -- Determination of fogging characteristics
- **ISO 17072-1:2011 (IULTCS/IUC 27-1)** Leather -- Chemical determination of metal content -- Part 1: Extractable metals
- **ISO 17072-2:2011 (IULTCS/IUC 27-2)** Leather -- Chemical determination of metal content -- Part 2: Total metal content
- **ISO 17074:2006 (IULTCS/IUP 47)** Leather -- Physical and mechanical tests -- Determination of resistance to horizontal spread of flame
- **ISO 17075:2007 (IULTCS/IUC 18)** Leather -- Chemical tests -- Determination of chromium(VI) content
- **ISO/DIS 17075-1** Leather -- Chemical determination of chromium(VI) content in leather -- Part 1: Colorimetric method
- **ISO/DIS 17075-2** Leather -- Chemical determination of chromium(VI) content in leather -- Part 2: Chromatographic method
- **ISO 17076-1:2012 (IULTCS/IUP 48-1)** Leather -- Determination of abrasion resistance -- Part 1: Taber method
- **ISO 17076-2:2011 (IULTCS/IUP 48-2)** Leather -- Determination of abrasion resistance -- Part 2: Martindale ball plate method
- **ISO 17130:2013 (IULTCS/IUP 55)** Leather - Physical and mechanical tests - Determination of dimensional change
- **ISO 17131:2012 (IULTCS/IUP 56)** Leather - Identification of leather with microscopy
- **ISO 17186:2011 (IULTCS/IUP 41)** Leather -- Physical and mechanical tests -- Determination of surface coating thickness
- **ISO 17226-1:2008 (IULTCS/IUC 19)** Leather -- Chemical determination of formaldehyde content -- Part 1: Method using high performance liquid chromatography
- **ISO 17226-2:2008 (IULTCS/IUC 19-2)** Leather -- Chemical determination of formaldehyde content -- Part 2: Method using colorimetric analysis
- **ISO 17226-2:2008/Cor 1:2009 (IULTCS/IUC 19-2)**
- **ISO 17226-3:2011 (IULTCS/IUC 19-3)** Leather -- Chemical determination of formaldehyde content -- Part 3: Determination of formaldehyde emissions from leather
- **ISO 17227:2002 (IULTCS/IUP 35)** Leather -- Physical and mechanical tests -- Determination of dry heat resistance of leather
- **ISO 17228:2015 (IULTCS/IUF 412)** Leather -- Tests for colour fastness -- Change in colour with accelerated ageing
- **ISO/NP 17229** Leather -- Physical and mechanical tests -- Determination of water vapour absorption
- **ISO 17229:2002 (IULTCS/IUP 42)** Leather -- Physical and mechanical tests -- Determination of water vapour absorption
- **ISO 17230:2006 (IULTCS/IUP 45)** Leather -- Physical and mechanical tests -- Determination of water penetration pressure
- **ISO 17231:2006 (IULTCS/IUP 37)** Leather -- Physical and mechanical tests -- Determination of water repellency of garment leather

- **ISO 17232:2006 (IULTCS/IUP 38)** Leather -- Physical and mechanical tests -- Determination of heat resistance of patent leather
- **ISO/DIS 17232** Leather -- Physical and mechanical tests -- Determination of heat resistance of patent leather
- **ISO/DIS 17233** Leather -- Physical and mechanical tests -- Determination of cold crack temperature of surface coatings
- **ISO 17233:2002 (IULTCS/IUP 29)** Leather -- Physical and mechanical tests -- Determination of cold crack temperature of surface coatings
- **ISO 17234-1:2015 (IULTCS/IUC 20-1)** Leather -- Chemical tests for the determination of certain azo colorants in dyed leathers -- Part 1: Determination of certain aromatic amines derived from azo colorants
- **ISO 17234-2:2011 (IULTCS/IUC 20-2)** Leather -- Chemical tests for the determination of certain azo colorants in dyed leathers -- Part 2: Determination of 4-aminoazobenzene
- **ISO/FDIS 17235** Leather -- Physical and mechanical tests -- Determination of softness
- **ISO 17235:2011 (IULTCS/IUP 36)** Leather -- Physical and mechanical tests -- Determination of softness
- **ISO 17236:2002 (IULTCS/IUP 43)** Leather -- Physical and mechanical tests -- Determination of extension set
- **ISO/NP 17236** Leather -- Physical and mechanical tests -- Determination of extension set
- **ISO 17489:2013 (IULTCS/IUC 33)** Leather -- Chemical tests -- Determination of tan content in synthetic tanning agents
- **ISO 17502:2013 (IULTCS/IUF 472)** Leather -- Determination of surface reflectance
- **ISO 18218-1** Leather -- Determination of ethoxylated alkylphenols -- Part 1: Direct method
- **ISO 18218-2** Leather -- Determination of ethoxylated alkylphenols -- Part 2: Indirect method
- **ISO/FDIS 18219** Leather -- Determination of chlorinated hydrocarbons in leather -- Chromatographic method for short-chain chlorinated paraffins (SCCP)
- **ISO/DIS 19070** Leather -- Chemical determination of N-methyl-2-pyrrolidone (NMP) in leather
- **ISO/DIS 19071** Leather -- Chemical tests -- Determination of Chromium (VI) and the reductive potential for chromium tanning agents
- **ISO/FDIS 19074** Leather -- Physical and mechanical tests -- Determination of water absorption by capillary action (wicking)
- **ISO/DIS 19076** Leather -- Measurement of leather surface -- Using electronic techniques
- **ISO/DIS 20136** Leather -- Determination of degradability by micro-organisms
- **ISO/DIS 20137** Leather -- Chemical tests -- Guidelines for testing critical chemicals in leather
- **ISO 20433:2012 (IULTCS/IUF 452)** Leather -- Tests for colour fastness -- Colour fastness to crocking
- **ISO/NP 20655** Leather -- Chemical tests -- Pre-ageing for chemical determination of hexavalent chromium
- **ISO/CD 20699** Leather - Chemical tests -- Pre-ageing for chemical determination of hexavalent chromium
- **ISO/CD 20701** Leather -- Tests for colour fastness -- Colour fastness to saliva
- **ISO 22288:2006 (IULTCS/IUP 39)** Leather -- Physical and mechanical tests -- Determination of flex resistance by the vamp flex method
- **ISO 23910:2007 (IULTCS/IUP 44)** Leather -- Physical and mechanical tests -- Measurement of stitch tear resistance
- **ISO/DIS 23910** Leather -- Physical and mechanical tests -- Measurement of stitch tear resistance
- **ISO 26082-1:2012 (IULTCS/IUP 53-1)** Leather -- Physical and mechanical test methods for the determination of soiling -- Part 1: Rubbing (Martindale) method
- **ISO 26082-2:2012 (IULTCS/IUP 53-2)** Leather -- Physical and mechanical test methods for the determination of soiling -- Part 2: Tumbling method
- **ISO 27587:2009 (IULTCS/IUC 26)** Leather -- Chemical tests -- Determination of the free formaldehyde in process auxiliaries

It is worth mentioning that INESCOP has participated in the above-mentioned ISO Technical Committees, as well as in the preparation and review of standards.

12. Glossary

A

Accreditation: It is a specific organization's process of certification.

Admissible emission limits: Limits maximum emission of gaseous pollutants laid down by applicable law.

AENOR: AENOR is the body recognised by the Spanish Administration to develop standardisation activities in Spain (Royal Decree 2000/1995).

AFNOR: French Association for Standardisation (Association Française de Normalisation).

Annual Declaration on Packaging: Annual statement to the competent body reporting the amount of packaging that a company has introduced in the market.

ANSI: American National Standards Institute.

Approval stage (FDIS): It is the final draft International Standard (FDIS). FDIS circulate to all ISO member bodies by the ISO Central Secretariat for a final Yes/No vote within a period of two months. If technical comments are received during this period, they are no longer considered at this stage. The text is approved as an International Standard.

Aspect Relevance: It is calculated by the following formula
 $\text{Aspect relevance (AR)} = \text{Magnitude (M)} + \text{Compliance with limits (CL)}$.

ASPRO: Standards Association of Romania (Asociația de Standardizare din România).

ASTM: American Society for Testing and Materials.

Audit: Auditing refers to a systematic and independent examination of books, accounts, documents and vouchers of an organization to ascertain how far the financial statements present a true and fair view of the concern. It also attempts to ensure that the books of accounts are properly maintained by the concern as required by law. Auditing has become such an ubiquitous phenomenon in the corporate and the public sector that academics started identifying an Audit Society. The auditor perceives and recognizes the propositions before him/her for examination, obtains evidence, evaluates the same and formulates an opinion on the basis of his judgement which is communicated through his audit report. Audit can be internal or external audit.

Azo compounds: They are compounds bearing the functional group R-NN-R, in which R and R can be either aryl or alkyl. IUPAC defines azo compounds as: Derivatives of diazene (diimide), HNNH, wherein both hydrogens are substituted by hydrocarbyl groups, e.g. PhNNPh azobenzene or diphenyldiazene. Azo dyes that could release any of the 22 amines, as shown in Appendix 8 of the REACH Regulation, in detectable quantities ($> 30 \text{ mg/kg}$), may not be put on the market or used in textile or leather articles that may come into direct, prolonged contact with the skin or oral cavity, such as for example, footwear, gloves, handbags, etc.

Atmospheric emissions: It refers to the air pollution caused by footwear companies. It is mainly due to volatile organic compounds (VOCs) that emitted into the atmosphere through booths or exhaust systems. VOCs are found in solvent based products, such as adhesives, finishing chemicals and halogenated products, so the major emitting source of footwear companies will be areas where the application of adhesives, the halogenation of soles, and the application of lacquers and polishes for footwear finishing are carried out.

C

CEN: The European Committee for Standardization (CEN, French: Comité Européen de Normalisation) is a nonprofit standards organization whose mission is to foster the European economy in global trading, the welfare of European citizens and the environment by providing an efficient infrastructure to interested parties for the development, maintenance and distribution of coherent sets of standards and specifications.

CENELEC: (European Committee for Electrotechnical Standardization). It is the standardisation body responsible for European standardization in the area of electrical engineering. Together with ETSI (telecommunications) and CEN (other technical areas), it forms the European system for technical standardization. Standards harmonised by these agencies are regularly adopted in many countries outside Europe which follow European technical standards.

Certification: It is the confirmation of certain characteristics of an object, person, or organization. This confirmation is often, but not always by some form of external review, assessment, or audit.

CE Marking: The CE marking symbolises the conformity of a product with the applicable Community requirements imposed on the manufacturer. It indicates that the product conforms to all the Community provisions providing for its affixing.

Chloroalkane: An organochloride, organochlorine compound, chlorocarbon, chlorinated hydrocarbon, is an organic compound containing at least one covalently bonded atom of chlorine as the dominant functionality, of which chloroalkane and chlorinated solvent as examples are major members. Their wide structural variety and divergent chemical properties lead to a broad range of names and applications. Many such compounds are controversial because of the effects of these compounds on the environment and on human and animal health. Chloroalkanes C10-C13 shall not be put on the market or used as substances or components of other substances or mixtures in concentrations higher than 1 in weight (10,000 mg/kg), if the substance or the mixture is to be used in metalworking or for fat liquoring of leather.

Commercial or industrial packaging: Containers which are for the exclusive use and consumption of industry, shops or services and which, therefore, are not likely to be used and consumed in private homes, for example, packaging waste of footwear companies coming from finishing products, glues, etc., large cartons containing several boxes of shoes for distribution from the companies to the shops, etc.

Committee Draft (CD): A document (considered as a draft International Standard) that is distributed among members of the TC for voting and approval. This process can take three to six months, usually three months.

Compliance with limits: Emissions legal limits set by legislation.

Conformity assessment (CA): It is an activity to determine that a product, process, system, individual or body meets relevant technical requirements.

Consumption: It is one of the environmental aspects that apply to the footwear industry.

Continuous improvement: A continual improvement process, also often called a continuous improvement process (abbreviated as CIP or CI), is an ongoing effort to improve products, services, or processes. These efforts can seek incremental improvement over time or breakthrough improvement all at once. Delivery (customer valued) processes are constantly evaluated and improved in the light of their efficiency, effectiveness and flexibility.

Corrective actions: Corrective actions are improvements to an organizations processes taken to eliminate causes of non-conformities or other undesirable situations. Corrective action is a concept within good manufacturing practice, and numerous ISO business standards. It focuses on the systematic investigation of the root causes of identified problems or identified risks in an attempt to prevent their recurrence. Corrective actions are implemented in response to customer complaints, unacceptable levels of product non-conformance, issues identified during an internal audit, or adverse or unstable trends in product and process monitoring such as would be identified by statistical process control. To ensure that corrective actions are effective, the systematic investigation of the root causes of failure is pivotal.

CSNI: Czech Standards Institute (Český normalizační institut).

Council Regulation (EEC) N° 1836/93 of 29 June 1993: First Council Regulation allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme.

D

DIN: German Institute for Standardization (Deutsches Institut für Normung).

Directive: It is a legal instrument that obliges all EU Member States to achieve a certain result, but leaves them free to choose how to do so. It is a legal act under the Treaty on the Functioning of the EU States (TFEU). It is legally binding and Member States are obliged to transpose it to their national legislation by the set deadline. Directives are enforced when they are published in the Official Journal of the European Union (OJEU).

Documentation for environmental management: Relevant information, either on paper or in digital format, in order to describe the grounds on which they base their actions for environmental management and related documents, to make them easier to understand. The documentation shall be legible, dated (indicating review dates) and easily identifiable, kept in an orderly fashion and held for a specified period.

E

Eco-labels: Ecolabels are labeling systems for food and consumer products. Ecolabels are voluntary. They are a form of sustainability measurement directed at consumers, intended to make it easy to take environmental concerns into account when shopping. Some labels quantify pollution or energy consumption by way of index scores or units of measurement, while others assert compliance with a set of practices or minimum requirements for sustainability or reduction of harm to the environment. Many ecolabels are focused on minimising the negative ecological impacts of primary production or resource extraction in a given sector or commodity through a set of good practices that are captured in a sustainability standard. Through a verification process, usually referred to as certification, a footwear company can show that it complies with a standard and earn the right to sell its products as certified through the supply chain, often resulting in a consumer-facing ecolabel.

EMAS: The Eco-Management and Audit Scheme (EMAS) is a voluntary environmental management instrument, which was developed in 1993 by the European Commission. It enables organizations to assess, manage and continuously improve their environmental performance. The scheme is globally applicable and open to all types of private and public organizations. In order to register with EMAS, organisations must meet the requirements of the EU EMAS-Regulation. Currently, more than 4,600 organisations and more than 7,900 sites are EMAS registered. EMAS is a voluntary tool designed by the European Commission for the public registration and recognition of companies and organisations that have introduced a system of environmental management which enables them to evaluate, report and improve their environmental performance, thereby ensuring an outstanding performance in this respect.

ENAC: It is the Spanish National Accreditation Body.

Enquiry stage (DIS): It is the draft International Standard (DIS). This project is circulated to all ISO member bodies by the ISO Central Secretariat for voting and technical comment within a period of five months. It is approved for submission as a final draft International Standard (FDIS).

Environmental: The environment is the environment biophysical biotic and abiotic surrounding of an organism or population, and consequently includes the factors that have an influence in their survival, development and evolution. The biophysical environment can vary in scale from microscopic to global in extent. It can also be subdivided according to its attributes. Examples include the marine environment, the atmospheric environment and the terrestrial environment. The number of biophysical environments is countless, given that each living organism has its own environment.

Environmental aspect: An environmental aspect is an element or characteristic of an activity, product, or service that interacts or can interact with the environment.

Environmental audit: It is a general term that can reflect various types of evaluations intended to identify environmental compliance and management system implementation gaps, along with related corrective actions. In this way they perform an analogous (similar) function to financial audits. There are generally two different types of environmental audits: compliance audits and management systems audits. Environmental audit can be external or internal environmental audit.

Environmental document: An environmental document is a detailed letter about any action which includes analysis, evaluation and discussion of the potential environmental impacts associated with this action.

Environmental impact: An environmental impact is a change to the environment that is caused either partly or entirely by one or more environmental aspects of an organisation.

Environmental indicators: Environmental indicators are simple measures that tell us what is happening in the environment. Since the environment is very complex, indicators provide a more practical and economical way to track the state of the environment than if we attempted to record every possible variable in the environment. For example, concentrations of ozone depleting substances (ODS) in the atmosphere, tracked over time, is a good indicator with respect to the environmental issue of stratospheric ozone depletion. An environmental indicator is a numerical value that helps provide insight into the state of the environment or human health. Indicators are developed based on quantitative measurements or statistics of environmental condition that are tracked over time. Environmental indicators can be developed and used at a wide variety of geographic scales, from local to regional to national levels. The indicators can be absolute indicators and relative indicators.

Environmental issues: Environmental issues are harmful effects of human activity (especially industry), on the biophysical environment.

Environmental legislation: Environmental law (or environmental and natural resources law) is a collective term describing the network of treaties, statutes, regulations, and common and customary laws addressing the effects of human activity on the natural environment.

Environmental management system: Environmental management system refers to the management of an organization's environmental program in a comprehensive, systematic, planned and documented manner. It includes the organizational structure, planning and resources for developing, implementing and maintaining policy for environmental protection. More formally, EMS is a system and database which integrates procedures and processes for training of personnel, monitoring, summarizing, and reporting of specialized environmental performance information to internal and external stakeholders of a firm. The most widely used standard on which an EMS is based is International Organization for Standardization (ISO) 14001. Alternatives include the EMAS. An environmental management information system (EMIS) is an information technology solution for tracking environmental data for a company as part of their overall environmental management system.

Environmental Management Officer: Management representative with responsibility and authority defined for being able to carry out the environmental management and his responsibilities will centre on the implementation, review and continuance of the conditions which enable the company's environmental policy to be complied with.

Environmental objectives: These are the intentions that a company is marked in the environmental field to define an operating commitment and an improvement in the company's environmental action. Those objectives should be in line with the environmental situation, company strategy and the resources available to it. The environmental objectives are the general environmental goals that a company sets itself for successfully improving a specific environmental aspect over a specific period of time. It is recommended that the objectives be quantifiable, wherever this is possible.

Environmental policy: It refers to the commitment of an organization to the laws, regulations, and other policy mechanism concerning environmental issues. These issues generally include air and water pollution, solid waste management, biodiversity, ecosystems management, the protection of natural resources, wildlife and endangered species. Policies concerning energy or regulation of toxic substances including pesticides and many types of industrial waste are part of the topic of environmental policy. This policy can be deliberately taken to direct and oversee human activities and thereby prevent harmful effects on the biophysical environment and natural resources, as well as to make sure that changes in the environment do not have harmful effects on humans.

Environmental programme: It is a program that includes objectives and environmental targets. Should also be included as part of an environmental program a time for the achievement of each objective and target, and in which, in addition to the deadlines, also established the resources allocated for the fulfilment of them (both human and financial, resources and technical), and corresponding indicators of achievement will also be defined. The environmental programme contains the actions or specific actions anticipated for attaining the objectives and targets, the people who are to implement them, the time limits and the resources assigned.

Environmental record: It is a type of environmental documentation which contains information that reflects a specific situation at a given time and, consequently, cannot and may not be altered. The records will be filed and updated so that they can be immediately recuperated and they are protected from harm, deterioration or loss.

Environmental targets: Environmental targets are detailed action requirements, quantified where possible, applicable to the organisation or to part of it, based on the environmental objectives. The environmental targets consist of dividing the objective into more specific individual actions that need to be attained in order to comply with the objective. It will not always be necessary to establish environmental targets. The need to establish environmental targets will depend on the degree of complexity of the objective established.

Environmental training requirements: It is to identify which are the shortcomings of the workers of a company in the field of environment. The environmental training requirements will vary depending on the various levels or jobs carried out in the company. Therefore, the training has to be specific and adequate for the needs of each worker, according to his job and level.

ETSI: The European Telecommunications Standards Institute is an independent, not-for-profit, standardization organization in the telecommunications industry (equipment makers and network operators) in Europe, headquartered in Sophia-Antipolis, France, with worldwide projection. ETSI produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, broadcast and internet technologies.

European Standard (EN): European document prepared by CEN members aiming at overcoming technical barriers to commerce, on the basis of consensus, and approved by weighted voting procedure.

External audits: this type of audit is performed by bodies independent from the company. This type of audit is carried out when the company needs to obtain an environmental management certificate such as the ISO 14001 or EMAS, so the auditor will take the environmental management systems standard as a basis, depending on the certificate that the company intends to obtain.

External communication: External communication is used to inform on the company's environmental management to subcontractors, customers, public institutions and society in general, and for them to express their comments to the company. Information communicated externally should be clear, simple and objective.

F
FRAND: term which means fair, reasonable and non-discriminatory conditions and that refers to securities which are ordered to patent holders to commit themselves to certain license terms for patents.

Frequency: This term it refers to rates the occurrence of a given environmental impact.

H
Harmonised Standard: It is a technical specification (an EN European standard or a HD harmonisation document) developed by a recognised European Standards Organisation, e.g. CEN, following a request from the European Commission according to the provisions of the Directive for which it has been prepared. Harmonised standards are voluntary and provide a presumption of conformity with the essential requirements of technical harmonisation directives.

Hazardous substances: Dangerous goods or hazardous goods are solids, liquids, or gases that can harm people, other living organisms, property, or the environment. They are often subject to chemical regulations. In general, prohibited or restricted substances can be found in footwear and its components because they have been used in the production process, because they are present as impurities of other compounds used, or due to contamination during conservation, storage or transportation.

Hazardous waste: In the footwear industry are mainly waste of Hazardous waste containers, contaminated materials (clothes, brushes, paper, gloves, etc.), used oils, batteries and button cells and fluorescent tubes.

I
IEC: The International Electrotechnical Commission is a non-profit, non-governmental international standards organization that prepares and publishes International Standards for all electrical, electronic and related technologies – collectively known as "electrotechnology". IEC standards cover a vast range of technologies from power generation, transmission and distribution to home appliances and office equipment, semiconductors, fibre optics, batteries, solar energy, nanotechnology and marine energy as well as many others. The IEC also manages three global conformity assessment systems that certify whether equipment, system or components conform to its International Standards.

INESCOP: Spanish Footwear Technology Institute. It is the Notified Body No. 0160 for the following Directives: 89/686/EEC Personal Protective Equipment and Council Directive 89/106/EEC of 21 December 1988, on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products.

Infringements: Failure to comply with an environmental requirement.

Inputs: It refers to raw materials, energy, etc.

Integrated Management System (IMS): System implemented to achieve the objective of reducing packaging and packaging waste in Spain. are non-profit making organisations through which the packers and traders organise themselves for managing the packaging waste and used packaging, ensuring regular collection and compliance with the objectives of recoverability and recycling set out in the Law. An integrated system works basically on the principle of paying the IMS an amount for each item of packaging placed on the market for the first time, thus obtaining the right to use an identifying symbol indicating that the packaging forms part of an IMS.

Internal communication: Refers to communication within a company, and can be of two types:

1- Upstream communication: so that workers can communicate their suggestions, complaints, possible deficiencies observed, improvement proposals, training requirements, etc. relating to the environmental management of the company.

2- Downstream communication: so that Management can send communiqués on the environmental management of the company to the workers involved.

Internal environmental audit: Internal environmental audit is a regular check (normally with a yearly frequency) of all items making up the company's environmental management system, evaluating the results obtained, detecting any possible deviation and also any possible improvements, and finally transmitting all this information to the senior executive(s) of the company for managerial review. These audits can be performed by the company's own staff or they can be subcontracted, but always at the company's initiative and using the methodology established by it. In either case, the auditor carrying out the audit must be completely impartial and objective when performing it.

IPQ: Portuguese Institute for Quality (Instituto Português da Qualidade).

ISO: The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from various national standards organizations.

ISO 9000 (Series): European standards relative to quality assurance.

ISO 9001: A quality management system based on the ISO 9001 standard is a business tool that allows the control of all the critical points of the company to be improved, reducing production costs and improving the productivity of the company.

ISO 14001: It is a voluntary instrument aimed at companies or organisations who want to achieve a high level of environmental protection in the development of their activities. The ISO 14001 standard allows the assurance of compliance with legal requirements, the reduction of environmental risks, cost savings (optimising raw materials or energy consumption), as well as the improvement of the company's position and enhancement of the corporate image.

L

Legal requirements: They are the requirements imposed by the environmental legislation in force. A legal requirement refers to each of the requirements of a given regulation. For example, Law 10/1998 relative to Waste is a "regulation" while the obligation to deliver waste to an authorised waste manager or the obligation to maintain waste in appropriate health and safety conditions, or the prohibition of abandonment, dumping or uncontrolled disposal of waste, may be examples of legal requirements arising from that regulation.

M

Magnitude: This term it refers to rates the size or dimension of the environmental impact.

Management System Standards: It is a tool that allows a company to optimize resources, reduce costs and improve its productivity. This management tool reports data in real time, allowing the company to make decisions to correct errors and prevent unnecessary expenses. A management system is especially recommended to any organisation or activity aimed at the production of goods or services, which needs a management system as a useful tool to improve the company.

Market economy: It is an economy in which decisions regarding investment, production, and distribution are based on supply and demand, and prices of goods and services are determined in a free price system. The major defining characteristic of a market economy is that investment and production decisions and the allocation of producer goods are mainly made by negotiation through markets. This is contrasted with a planned economy, where investment and production decisions are embodied in a plan of production.

Monitoring and measuring: It is to check that the company complies with what was planned, in the corresponding procedures of operational control, through readings (analyses of discharges, atmospheric emissions, etc.) and or checks (compliance with applicable environmental regulations, etc.). The objective of monitoring and measuring is to regularly assess the environmental performance of the company and the environmental commitments that have been put into operation. Some of the elements subject to monitoring and measuring could be: consumption, features, characteristics of liquids effluents, characteristics of the waste generated by the activity or production process and level of noise emitted by the plant to the exterior.

N

Nature: This term it refers to rates the dangerousness, severity and toxicity of an environmental aspect.

NBN: Belgium Bureau for Standardisation.

Noise emissions: The environmental aspects to be taken into account include also those related to the environmental noise that can be emitted by footwear companies. The noise emission sources in footwear companies are usually generators, compressors, punch presses, etc.

Non hazardous waste: In the footwear industry are mainly waste of Leather, waste non-hazardous waste containers, waste similar to urban waste (wood, plastic, metal, textile waste, etc.), and ink cartridges and toners.

Normative: In law, this term, is used to describe the way something ought to be according to a value position.

O

Official gazettes: official journal devoted to the publication of certain laws, provisions and acts of mandatory inclusion.

OHSAS 18000: This is a management system of safety and health in the workplace. This system is a key factor for any organization. A management system of safety and health in the workplace based on OHSAS 18001 (within the OHSAS 18000 standard) helps protect the company and workers, provides mechanisms to comply with all legal requirements in this field, improving staff awareness of accident prevention, and improving the use of tools and machinery to prevent accidents.

Operational control: It is one of the managerial functions like planning, organizing, staffing and directing. It is an important function because it helps to check the errors and to take the corrective action so that deviation from standards are minimized and stated goals of the organization are achieved in a desired manner. Operational controls should be put in place for activities related to the significant environmental aspects identified, to attaining objectives and targets or those related to legal requirements or other requisites to which the company is subject. Operational control is based on planning specific actions of control of activities (guidelines to follow, parameter control limits, etc.), to guarantee that those activities fall between the parameters desired.

Organization: It is an entity comprising multiple people, such as an institution or an association that has a collective goal and is linked to an external environment.

Outputs: It refers to emissions, waste, etc, generated by a footwear company.

P

Packaging Waste Prevention Plan (PWPP): Plan that includes targets for the reduction of packaging and packaging waste and which is compulsory for companies of footwear if these put in the market more than 14 tonnes of packaging per year.

Patent: a patent confers an exclusive right to prevent others, without consent of the owner of the patent, from making and using the patented invention during a limited period of time. Such an exclusive right enables the patent owner to choose whether, for example, to (i) make or use the patented invention himself/herself and prevent others from doing so; (ii) grant a license to (a) third parties; or (iii) sell the patent to (a) third parties.

Presumption of conformity: Products that comply with national standards transposing harmonised standards which are published in the Official Journal of the European Union are presumed to meet the relevant essential requirements.

Preventive actions: A preventive action is a change implemented to address a weakness in a management system that is not yet responsible for causing nonconforming product or service.

Procedures of operational control: Those are the documents which will provide pertinent instructions to prevent environmental impacts (for example, how hazardous waste should be managed, or how to act in the event of an accidental spillage).

Production stages: each of the phases in which the production process is divided.

Public Water Domain: It is the public water domain:

- a. Inland waters, both the surface and the underground renewable.
- b. Natural, continuous or discontinuous current runways.
- c. The beds of lakes and ponds and shallow reservoirs in public channels.
- d. The underground aquifers.
- e. Water from desalination of sea water once, outside the production plant, joining any of the elements referred to in the preceding paragraphs.

The Regulation of the Public Water Domain establishes the characteristic parameters and the maximum values permitted in discharges.

Q

Quality: Quality is the degree to which a set of inherent characteristics of a product fulfils requirements.

Quality of design: It is the degree in which a product or service is reflected in its design.

Quality of conformance: It is the ability of a product, service or process to meet its design specifications.

R

RAND: term which means reasonable and non-discriminatory conditions and that refers to securities which are ordered to patent holders to commit themselves to certain license terms for patents.

REACH: Registration, evaluation, authorisation and restriction of chemicals substances. Principal environmental regulation on the restrictions on the manufacture, marketing and the use of specific substances, mixtures and hazardous articles. This is a piece of legislation with the force of a Regulation. It is directly applicable in all Member States of the European Union without the need to be incorporated into the legal system of any specific country.

Regulation: A regulation is a legal norm intended to shape conduct that is by-product or imperfection.

Regulation (EC) N° 1221/2009: Regulation allows the voluntary participation by organisations in a Community eco-management and audit scheme (known as EMAS III).

Regulation (EC) N° 765/2008: This Regulation established the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) N° 33993.

Review by Management: Regular reviews and assessments carried out by the senior management of the company in order to maintain continuous improvement and to adapt and maintain the environmental management of the business functioning effectively.

Regulatory schemes: It refers to goods or services that may pose dangers to health, security or the Environment.

S

SA8000: SA8000 is a voluntary certification that was created by the American organization Social Accountability International (SAI), with the purpose of promoting better working conditions. The SA8000 Certification is based on international agreements on working conditions, which include issues such as social justice and the rights of workers. It lays down measurable and observable guidelines to certify the development of companies in key areas of social responsibility. The SA 8000 certification is a guarantee that the certified company develops its production processes under welfare, respect for the rights of workers and social justice conditions.

Safeguard clause: Member States are obliged to take all appropriate measures to prohibit or restrict the placing on the market of products bearing CE marking (or to withdraw them from the market) if these products could compromise the safety and health of individuals.

SIST: Slovenian Institute for Standardization (Slovenski Inštitut za Standardizacijo).

Soil contamination: Soil contamination or soil pollution is caused by the presence of xenobiotic (human-made) chemicals or other alteration in the natural soil environment. It is typically caused by industrial activity, agricultural chemicals, or improper disposal of waste. The most common chemicals involved are petroleum hydrocarbons, polynuclear aromatic hydrocarbons (such as naphthalene and benzo(a)pyrene), solvents, pesticides, lead, and other heavy metals. Contamination is correlated with the degree of industrialization and intensity of chemical usage.

Standard: It is a document design for voluntary use which results from consensus, based on the results of experience and technological development and approved by a recognised national, regional (EU) or international standardisation body. Standards are prepared for the benefit of the community, are not mandatory, and are at the disposal of the general public.

Standardisation: This term it refers to the process of implementing and developing technical standards. Standardisation can help to maximize compatibility, interoperability, safety, repeatability, or quality. It can also facilitate commoditization, of formerly custom process, i.e. consists in the preparation, dissemination, and implementation of standards in scientific, industrial, or economy activities with the aim of ordering and improving them.

Standardisation body: Standardisation bodies are non-profit private entities in charge of developing activities related to the preparation of standards at a national level, in order to unify criteria with regard to a certain activity. It is an organization whose primary activities are developing, coordinating, promulgating, revising, amending, reissuing, interpreting, or otherwise producing technical standards that are intended to address the needs of some relatively wide base of affected adopters. Most standards are voluntary in the sense that they are offered for adoption by people or industry without mandated in Law. Some standards become mandatory when they are adopted by regulator as legal requirements in particular domains.

System of Deposit, Return and Refund System (DRRS): System implemented to achieve the objective of reducing packaging and packaging waste. The DRRS establishes a financial incentive for guaranteeing the collection of packaging waste. This system obliges companies to comply with specific conditions such as charging their customers, down to the end consumer, and in the form of a deposit, an individual amount for each item of packaging forming part of the transaction, and also to accept the refund or return of the packaging waste and used packaging, refunding the same amount that had been charged.

T

Technical Committees (AEN/CTN): The Technical Committee is a group within AENOR of technical experts that standardisation activities are performed. All stakeholders participate in said technical committees, the composition of which must be balanced, in order to guarantee that all interested parties are correctly represented.

Technical Report (TR): Information document relating to technical contents of standardisation, prepared by a European standardisation body and approved by one of their technical committees, of which the adoption is not mandatory.

Technical Specification (TS): European document prepared by CEN members (who are only obliged to announce their existence at national level and ensure their availability) in order to:

1. Publish aspects related to a specific field, supporting progress and development of the European market.
2. Establish guidelines for the market by means of specifications and the corresponding test methods.
3. Be applied to those technical areas with a significant component of technology innovation or the urgent need for clear guidance.

Technical standards: It is an established norm or requirement in regard to technical systems. It is usually a formal document that established uniform engineering or technical criteria, methods, processes and practices.

The Official Journal of the European Union (OJEC): The Official Journal of the European Union is the gazette of record for the European Union. It has been published in 22 official languages (23 when Irish is required) of the member states, every working day since the Treaty of Nice entered into force on 1 February 2003. The OJEU superseded the earlier Official Journal of the European Community (OJEC) with the establishment of the European Union.

U

UNI: Italian Authority for Standardization (Ente Italiano di Normazione).

V

Vienna Agreement: Agreement establishing the bases for technical cooperation in the development of joint standardisation between ISO and CEN, where there is a common European and international interest. It allows the adoption of International standards as European standards, and their parallel preparation (EN ISO standards), thus promoting international standardisation in European countries for the preparation of International standards that will also be European at the same time, with the resulting obligation for CEN members to adopt them also as National standards.

Volatile organic compounds (VOCs): They are organic chemicals that have a high vapour pressure at ordinary room temperature. Their high vapour pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublime from the liquid or solid form of the compound and enter the surrounding air. For example, formaldehyde, which evaporates from paint, has a boiling point of only -19°C (-2°F).

Voluntary schemes: It refer to goods or services that not may pose dangers to health, security or the Environment.

W

Waste: Residues and wastes are unwanted or unusable materials. Waste is any substance which is discarded after use, or is useless, defective and unused. The waste industry can be divided into hazardous and non-hazardous wastes. Footwear companies' waste is one of the factors to be considered in the phase of identification of environmental aspects.

Wastewater discharge: Wastewater coming from footwear companies can be of different origin, mainly: Black water (toilets, cleansing water, sinks, etc.) and water-curtain finishing booths.

Waste management: It is all those activities and action required to manage waste from its inception to its final disposal. This includes amongst other things, collection, transport, treatment and disposal of waste together with monitoring and regulation. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling etc.

13. Bibliography

UNIT 1. SUB-UNIT 1 - STANDARDISATION & CERTIFICATION SYSTEMS

Concepts and definitions

- **Standardization guidelines for IST research projects interfacing with ICT standards organizations**

<http://www.w3.org/2004/copras/docu/D15.html#benefits>

- **ISO web site**

<http://www.iso.org/iso/home.html>

National and international standardization

- **Standardisation CEN & CENELEC**

<https://www.cen.eu/Pages/default.aspx>

<http://www.cenelec.eu/>

- **AENOR web site**

<http://www.aenor.es/aenor/inicio/home/home.asp>

- **Standards classification and ISO Members bodies**

<http://www.feim.org/es/clases-de-normas>

http://api.eoi.es/api_v1_dev.php/fedora/asset/eoi:45581/componente45580.pdf

http://www.iso.org/iso/about/iso_members.htm

Conformity assessment

- **Concept, types and strategies**

<https://www.enac.es/acreditacion>

<http://icontec.org/index.php/ec/inicio/conformidad>

<http://www.iec.ch/conformity/>

- **Official Journal of the European Community (OJEC)**

<http://www.ojec.com/>

- **Directive new approach and CE marking**

http://www.seguridadsalud.ibermutuamur.es/IMG/pdf/INTRODUCCION_AL_MARCADO_CE_-_Directivas_de_Nuevo_Enfoque.pdf

- **Search engines of Spanish and European legislation**

<http://boe.es/legislacion/legislacion.php>

<http://eur-lex.europa.eu/homepage.html?locale=es>

European directives and harmonized standards

- **European standards & harmonized standards**

http://europa.eu/youreurope/business/product/standardisation-in-europe/index_es.htm

- **Patents & Norms**

<http://www.oepm.es/es/index.html>

<http://ec.europa.eu/DocsRoom/documents/7163/attachments/1/translations/en/renditions/native>

Management systems standards

- **Quality management**

http://www.iso.org/iso/home/standards/management-standards/iso_9000.htm

- **Environmental management**

<http://www.iso.org/iso/home/standards/management-standards/iso14000.htm>

- **OSHAS 18000**

http://www.conectapyme.com/files/publica/OHSAS_tema_5.pdf

- **SA 8000**

<http://www.sa-intl.org/index.cfm?fuseaction=Page.ViewPage&PageID=937>

UNIT 1. SUB-UNIT 2.- Environmental Management Systems: ISO 14001 and EMAS

Environmental Management System based on the UNE-EN ISO 14001

http://www.iso.org/iso/theiso14000family_2009.pdf

<http://www.iso.org/iso/home/standards/management-standards/iso14000.htm>

<http://www.microsofttranslator.com/bv.aspx?ref=IE8Activity&a=http%3A%2F%2Fwww.ceres.org%2Froadmap-assessment%2Fsector-analyses%2Ffootwear-apparel>

<http://www.fibre2fashion.com/industry-article/textile-industry-articles/impact-of-textiles-and-clothing-industry-on-environment/impact-of-textiles-and-clothing-industry-on-environment1.asp>

http://www.cma.gva.es/areas/educacion/educacion_ambiental/educ/ed_amb_empresa/pdf/CalzadoC.PDF

http://subsites.bp.com/caspian/ACG/Eng/Phase3_v2_nov_04/03%20Methodology_ENG_FINAL_Oct%2004.pdf

UNIT 1 - STANDARDISATION AND CERTIFICATION SYSTEMS

<http://cdam.minam.gob.pe/publielectro/politica%20ambiental/definicionpoliticaambiental.pdf>

http://ec.europa.eu/environment/emas/pdf/spain/environmentalstatementhandbook_es.pdf

<http://www.nueva-iso-14001.com/2015/04/iso-14001-la-importancia-de-la-politica-ambiental/>

<http://boe.es/legislacion/legislacion.php>

<http://eur-lex.europa.eu/homepage.html?locale=es>

http://biblioteca.usac.edu.gt/tesis/08/08_1363_IN.pdf

<http://www.publicacionescajamar.es/pdf/publicaciones-periodicas/cuaderno-interdisciplinar-de-desarrollo-sostenible-cuides/7/7-463.pdf>

http://ec.europa.eu/environment/emas/pdf/es_library/18.2_es_adolfo_domingues_06.pdf

<http://repositorio.utp.edu.co/dspace/bitstream/11059/1199/1/333715G569d.pdf>

<http://praxiom.com/iso-14001-2004.htm>

[http://www.uv.es/villalba/politicamed/Tema%2007%20\(auditoria%20medioambiental\).pdf](http://www.uv.es/villalba/politicamed/Tema%2007%20(auditoria%20medioambiental).pdf)

<http://www.monografias.com/trabajos46/auditoria-ambiental/auditoria-ambiental.shtml>

EMAS

<http://www.clubemas.cat/es/queeselemas/queeselemas.html>

http://ec.europa.eu/environment/emas/index_en.htm

<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:342:0001:0045:ES:PDF>

<http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-comunitario-de-ecogestion-y-ecoauditoria-emas/>



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Project Duration:
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www.step2sustainability.eu