

VOLUNTARY EUROPEAN UNION ENVIRONMENTAL MANAGEMENT TOOLS FOR CERAMIC COMPANIES

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ABSTRACT

The Eco-Management and Audit Scheme (EMAS) is a voluntary system, regulated by (EC) Regulation No.1221/2009, which allows member organisations to assess and improve their environmental performance and disseminate relevant information to the public and to stakeholders.

One of the innovations introduced in the EMAS III Regulation compared to its predecessor EMAS II is the **incorporation of environmental performance indicators**, which provide data on the actual input/consumption of the organisation. By using the indicators as a tool for environmental monitoring and control, the organisation is able to learn the status and progress of its major environmental aspects, thus aiding those responsible for promoting continuous improvement in their decision-making, integrating these decisions into other frameworks and communicating these results.

Moreover, (EC) Regulation No.66/2010, concerning the EU Ecolabel, lays down rules for the establishment and implementation of this voluntary eco-labelling system, which aims to **promote products with a reduced environmental impact throughout their life cycle**, and provide consumers with accurate, non-deceptive and scientifically-based information about their environmental impact, by means of labelling.

The latest revision of the ecological criteria of the EU eco-label applied to **hard floor coverings**, which includes ceramic, terrazzo and fired clay tiles among others, aims to encourage the reduction of impacts on habitats and associated resources, the reduction of energy consumption, the reduction of discharges of toxic or polluting substances into the environment, the reduction of the use of hazardous substances in materials and finished products, a risk-free and safe living environment, and dissemination of information that allows consumers to use the product in an efficient manner that minimises its overall impact on the environment.

Both tools, the EMAS and EU Ecolabel, in addition to opening up new doors to other markets, improve the corporate image of an organisation, and reduce the pressure from environmental authorities, while offering ceramic sector companies the opportunity to improve relationships with customers, suppliers, administrations and other interested parties.

1. INTRODUCTION

Commitment to the environment is an aspect that is taking on a growing strategic value for organisations, since these find themselves faced with increasing environmental requirements from different areas that they have to respond to.

Organisations that consider commitment to the environment as a strategic element that adds value to the products and services they offer, and that makes them stand out from their competition, are pioneers whose managers recognise the importance of incorporating environmental commitment into their management as part of their corporate responsibility. This vision leads to the incorporation of the most advanced instruments, environmental management tools and techniques: clean technologies, tools for environmental management and communication, etc. These are voluntary tools that directly influence the improvement of perception, of the corporate image, and in general of the intangible aspects of the products or services they offer to their customers or users.

The EMAS and EU Eco-label are two effective voluntary environmental tools developed with the support of both European and national authorities. Along with green public procurement, they form an important and current EU action plan on sustainable consumption and production and sustainable industrial policy.

The main goal of the EU Ecolabel and the EMAS is to promote products and services that respect the environment, by providing a distinctive symbol of environmental quality and continuous improvement of the environmental performance of organisations.

2. THE EU'S ECO-MANAGEMENT AND AUDIT SCHEME (EMAS)

January 11th 2010 saw the entry into force of (EC) Regulation No. 1221/2009 of the European Parliament and the Council, of November 25th, concerning the voluntary participation of organisations in an EU Eco-Management and Audit Scheme (EMAS III), repealing the previous (EC) Regulation No. 761/2001 (EMAS II) and Commission Decisions 2001/681/EC and 2006/193/EC.



One of the new features introduced in EMAS Regulation III that distinguishes it from its predecessor EMAS II is the incorporation of **environmental performance indicators**¹ which provide data on the organisation's actual consumption/impact. (In the event of the disclosure adversely affecting the confidentiality of a commercial or industrial organisation, where such confidentiality is provided for by national or EU law in order to protect legitimate economic interests, the information may be included by establishing a reference year on which the development of the actual consumption/impact would appear).

Applying indicators makes it possible to learn the status and progress of key environmental aspects of the organisation, and to aid decision-making by those responsible for promoting continuous improvements, to integrate these decisions in other settings, and lastly, to aid in communicating these results and thus offer an objective view of the situation.

The indicators should give an accurate assessment of the organisation's environmental performance, enabling a comparison from year to year in order to assess its progress. They also need to allow comparison at an industry, national or regional level, where appropriate, and a comparison with regulatory requirements. Clearly, they need to be understandable and unambiguous.

The data included in the indicators should be traceable through documented records such as invoices, delivery notes, procedural records, etc. In the case of data from analyses, the organisation will need to ensure that the inspection, measurements and testing equipment is properly calibrated and/or checked, regardless of whether it is an internal or external laboratory, and records should be kept.

The EMAS Regulation III divides indicators into two types: core indicators related to the direct environmental aspects of the organisation and other existing environmental performance indicators that are relevant. It is a requirement of EMAS III for organisations to include the results of both indicators in their environmental statement.

The **core indicators** should apply to all types of organisations, and focus on environmental performance in the key areas of energy efficiency, efficiency in the consumption of materials, water, waste, biodiversity and emissions.

When an organisation considers that one or more core indicators are not applicable to its direct significant aspects, that organisation will not be able to report on those key indicators. In this event, the organisation will need to provide a justification referring to its environmental analysis.

The core indicator report consists of three figures: Figure A shows the total annual impact/consumption in the field under consideration, Figure B shows the overall annual output of the organisation, and Figure R indicates the ratio of A to B. Each organisation will have to report the figures for each indicator.

¹ Environmental performance indicator: a specific expression that enables an organisation's environmental performance to be measured (Art. 2.28 of the EMAS III Regulation)

The way in which Figure A should be reported, indicating as it does the total annual impact/consumption in the field in question, is set out below:

a) Energy efficiency:

- in terms of the 'total direct energy consumption', the total annual energy consumption, expressed in MWh or GJ;
- in terms of the 'total renewable energy consumption', the percentage of total annual energy consumption (electricity and heat) produced by the organisation from renewable energy sources.

b) Efficiency in the consumption of materials:

- the 'annual mass-flow of different materials used' (excluding energy carriers and water) must be expressed in tonnes.

c) Water:

- the 'total annual water consumption' must be expressed in m³.

d) Waste:

- the 'total annual generation of waste', broken down by type, must be expressed in tonnes.
- the 'total annual generation of hazardous waste' must be expressed in kilograms or tonnes.

e) Biodiversity:

- the 'land occupation' must be expressed in sq. metres of built-upon area.

f) Emissions:

- the 'total annual emissions of greenhouse gases', including at least emissions of CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ must be expressed in tonnes of CO₂ equivalent;
- the 'total annual air emissions', including at least emissions of SO₂, (sulphur dioxide), NO_x (nitrogen oxides) and PM (particulate matter), expressed in kilograms or tonnes.

In the case of Figure B, the indication of the organisation's overall annual output for organisations operating in the production sector (industry), the total annual gross added value expressed in millions of euros (EUR Millions) or the annual physical production expressed in tonnes per year, or, in the case of small organisations, the total annual turnover or the number of employees.

It should be noted that in addition to the indicators defined above, an organisation may also use other indicators to express the total annual impact/consumption in the area concerned.

The second group of indicators, **other relevant environmental performance indicators**, covers those related to the specific environmental aspects of an organisation, which are also required to be reported annually. When available, the documents referring to the sector and prepared by the Commission must be taken into account.

In order to help organisations focus better on key environmental issues in a given sector, and to aid interested parties in interpreting the environmental performance of organisations, the European Commission will draw up the aforementioned industry reference documents, which will include best practices in environmental management, environmental performance indicators for specific sectors, and where appropriate, benchmarks of excellence and rating systems that identify different levels of environmental performance. To this end, the Commission will take into account reference documents and environmental performance indicators that are currently valid and have been developed under other Community policies and instruments regarding the environment, or other international standards.

The establishment of a control and monitoring system using indicators enables the environmental impacts and aspects of the organisation to be analysed on a regular basis in order to provide rapid information on the environmental management carried out and the legal compliance of its obligations, in order to take the necessary steps, if any.

In short, when the information regarding an organisation's environmental performance is based on indicators, it is seen more clearly and therefore gives external interest groups more confidence, be they administrations, customers and suppliers, insurance companies, the public, consumer associations, NGOs, the media, etc., thereby presenting a better environmental image to the general public.

Lastly, in order to give greater credibility and objectivity to the environmental performance information made available to the public, the EMAS regulation requires the organisation's statement, and its updates, to be validated by an accredited environmental auditor prior to publication. This step is what gives credibility to the environmental management system, since it is a body that is independent of the organisation which gives an objective approval of the organisation's compliance with the EMAS requirements. For its part, the environmental auditor, in its role as an assessment body providing approval, is accredited by an authorised third party, which in the case of Spain is the National Accreditation Body (ENAC).

In conclusion, with the publication of the new Regulation, EMAS III remains the most demanding environmental management tool, while becoming more accessible, thanks to new tools and procedures, and more attractive for organisations, since it can be implemented and recognised outside of the European Union.

As of June 2011, the updated details from the European EMAS register reveal over 7,800 registered centres belonging to some 4,400 organisations within the

European Union and European Economic Area (http://ec.europa.eu/environment/emas/index_en.htm).

In Europe there are 13 organisations from the ceramic sector registered in EMAS. Spain, which is second only to Germany in terms of EMAS registrations, currently has 1635 registered centres, belonging to 1,262 organisations.

3. THE EU ECOLABEL FOR HARD COVERINGS

The EU Ecolabel is an official and voluntary European Union label created in 1992, and regulated by EC Regulation 66/2010 of November 25th 2009, denoting that a product or service has been assessed to be more efficient from an environmental standpoint than other similar products or services in its category, i.e. it allows people to identify products and services that are kinder to the environment, with lower environmental impact throughout their useful life.



Products or services eligible for the EU eco-label are those which have published their respective ecological criteria in the Official Journal of the European Union (OJEU), and are arranged into the following groups and categories:

GROUPS	PRODUCT CATEGORIES
CLEANING	General purpose, kitchen and bathroom cleaning products. Dishwasher detergents. Hand dishwashing detergents. Detergents for linen. Soaps, shampoos and conditioners for hair.
CLOTHING	Textile products. Footwear.
D.I.Y.	Interior paints and varnishes. Exterior paints and varnishes.
ELECTRONIC EQUIPMENT	Personal computers. Laptop computers. Televisions.
FLOOR COVERINGS	Hard coverings. Wooden floor coverings. Textile floor coverings.
FURNITURE	Wooden furniture.
GARDENING	Soil amendment. Growing media.
PAPER	Paper for copying and graph paper. Tissue paper.
SERVICES	Camping service. Tourist accommodation services.
OTHER PRODUCTS	Electric light bulbs. Heat pumps driven by electricity, by gas or by gas absorption. Lubricants. Mattresses.

Table 1. Product categories eligible for the EU Ecolabel.

3.1. Status of the eu ecolabel for hard coverings

In Europe, there is considerable interest in products with the EU Ecolabel. Proof of this is the exponential growth in the number of licences issued since its creation (in 1992) until today, reaching more than 1,150 licences by the end of 2010. Italy, France and Spain are the countries with the highest number of licences, with 359, 244 and 83 licences respectively.

Currently the EU Ecolabel can be awarded for 26 product categories. The "tourist accommodation service" represents 37% of the total licences in the EU, followed by "cleaning products for general use and for kitchens and bathrooms" (13.5%) and "exterior paints and varnishes" (8%). **Hard coverings account for 1.4% in the EU, with 17 licences.**

This information can be consulted via the following link:

http://ec.europa.eu/environment/ecolabel/about_ecolabel/facts_and_figures_en.htm

In Spain a total of 108 EU Eco-label licences been awarded (up to August 2011), 27 of which have been granted in the Community of Valencia (464 products), and these have been distributed as follows according to the categories of products:

PRODUCT CATEGORIES	NUMBER OF LICENCES	NUMBER OF PRODUCTS
Tissue paper	1	5
Interior paints and varnishes	1	125
Dishwasher detergents	1	8
Footwear	5	138
Hand dishwashing detergents.	6	12
General purpose, kitchen and bathroom cleaning products	10	108
Hard coverings	2	62
Soaps, shampoos and conditioners for hair.	1	6

Table 2. Distribution of products and licenses granted in the Community of Valencia.

3.2. Ecological criteria for hard coverings

The ceramic industry has been within the scope of the EU eco-label since March 2002, with the approval of Commission Decision 2002/272/EC, which established the ecological criteria for the EU Eco-label award for HARD FLOOR COVERINGS. The ecological criteria and the assessment and verification requirements established in that decision were valid until March 31st 2010. Currently in force is the 2009/607/CE Commission Decision of July 9th 2009, which establishes the ecological criteria for the granting of the EU Eco-label for HARD COVERINGS (OJ L 208

of 12/08/2009), revising, expanding and improving the ecological criteria established for this product category. The ecological criteria, together with the assessment and verification requirements established in this Decision are in principle valid until July 10th 2013.

This category of products, which has been assigned Code Number "021", includes the following products (for indoor/outdoor use and lacking any structural function): natural stones, agglomerated stones, concrete pavers, **terrazzo tiles, ceramic tiles and fired clay tiles**. The criteria can be applied both to floor coverings and wall coverings, providing the manufacturing process is the same and uses the same materials and manufacturing methods.

This category can be divided into "natural products" and "processed products", in accordance with the following classification:

HARD COVERINGS	NATURAL PRODUCTS	NATURAL STONES	Marble
			Granite
			Others (sandstone, quartzite, slate, tuff, shale)
	PROCESSED PRODUCTS	HARDENED PRODUCTS	Agglomerated stones
			Concrete paving slabs
			Terrazzo tiles
		FIRED PRODUCTS	Ceramic tiles
			Fired clay tiles

Table 3. Products covered by the "hard coverings" category.

The ecological criteria are based on the environmental performance of the products, taking into account the latest strategic objectives of the Community in the field of environmental protection. They are determined scientifically, taking into account the entire lifecycle of the products. These criteria establish the environmental requirements to be met by the product in order to be able to display the EU Ecolabel. Below is a table summarising the criteria established for hard coverings:

EXTRACTION AND PROCESSING OF RAW MATERIALS
EXTRACTION OF RAW MATERIALS: - NATURAL PRODUCTS - ALL HARD COVERINGS SELECTING THE RAW MATERIALS: - ALL HARD COVERINGS FINISHING OPERATIONS: - NATURAL PRODUCTS
PRODUCTION PROCESS
ENERGY CONSUMPTION: - AGGLOMERATED STONES AND TERRAZZO TILES - CERAMIC AND CLAY FIRED TILES
CONSUMPTION AND USE OF WATER: PROCESSED PRODUCTS
EMISSIONS TO THE ATMOSPHERE: - AGGLOMERATED STONES - CERAMIC TILES - FIRED CLAY TILES - TERRAZZO TILES AND CONCRETE PAVING SLABS
EMISSIONS TO WATER: PROCESSED PRODUCTS
CEMENT MONITORING: PROCESSED PRODUCTS
WASTE MANAGEMENT: - ALL HARD COVERINGS - NATURAL PRODUCTS - PROCESSED PRODUCTS

USE OF THE PRODUCT AND END OF LIFE
USAGE PHASE: GLAZED TILES
PACKAGING: ALL HARD COVERINGS
SUITABLE FOR USE: ALL HARD COVERINGS
CONSUMER INFORMATION: ALL HARD COVERINGS
INFORMATION DISPLAYED ON THE ECOLABEL: - NATURAL PRODUCTS - PROCESSED PRODUCTS
FURTHER INFORMATION: COMMISSION DECISION (2009/607/CE), for establishing the ecological criteria for awarding the EU Ecolabel for hard coverings http://eur-lex.europa.eu/

Table 4. Table summarising the criteria established for "hard coverings".

4. CONCLUSIONS

Organisations' environmental systems and product eco-labels are tools for promoting the environmental responsibility of the different players in society and improving the level of environmental protection.

The EMAS system is a useful tool for many organisations, and adopting it allows them to benefit in a variety of ways: lower environmental impact, cost savings (in energy and waste), security in complying with environmental legislation, strengthening their activities, etc. By definition, a company registered in the EMAS system is managed in a way that systematically takes into account the environment, and their environmental performance is constantly being improved above and beyond minimum regulatory requirements.

The EU Ecolabel is a permanent labelling system, complying with ISO 14024 and guaranteed by a third party. The progressive increase of the products and services available to consumers which meet the criteria required for obtaining the EU Eco-label is a priority goal. This increase needs to be encouraged by supporting the development of methodologies for designing products capable of complying with the criteria established for the different product groups throughout their useful life. Thus programmes should be established to promote eco-design, based on the ecological criteria for EU eco-labels that are already approved, among others, to provide support in this area and to encourage the development of pilot projects.

A product bearing the EU eco-label is clearly one of the most ecologically-friendly in its class. A company listed in the EMAS system may therefore benefit if it uses the criteria of the EU eco-label in its environmental policy as a clear and positive environmental goal for its products. Applying the Eco-label criteria may lead to precise goals emerging in terms of environmental performance.

In addition, companies participating in the EMAS system that also have the EU Ecolabel benefit from good management and maintenance of compliance with all environmental criteria to be met, while at the same time discovering further marketing opportunities.

The Office of Environmental Quality, via the Centre for Clean Technologies, is the body in the *Comunitat Valenciana* charged with performing the duties and carrying out the functions regarding the EMAS Regulations and the EU Eco-label, in addition to managing the corresponding registrations.

For further information:

www.cma.gva.es/ctl

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