

Implementation of an Environmental Management System in Ceramica Esempio S.p.A.

La Ceramica Esempio S.p.A. is a medium-sized manufacturer of floor and wall tiles (a total of about three hundred employees), located in the Sassuolo-Scandiano District and with organizational, management, production and technological characteristics common to many other companies in the sector. Summary information regarding the results of the Initial Analysis conducted within the company is provided.

The Ceramica Esempio is particularly attentive to the environmental issues related to its business. In the last year, this sensitivity has led the Management to mature the decision to obtain an environmental certification (ISO14001). The company has thus decided to undertake a path of implementation of an environmental management system.

The assessment phase

The Ceramica Esempio completed the initial analysis in March 2014. The reference period adopted for the analysis was the previous calendar year, ie the period 01-01-13 ÷ 31-12-13.

The person in charge of Cer. Esempio, having direct responsibility for conducting the analysis and initial assessment, has collected the information described below.

Territorial and competitive context

The Ceramica Esempio carries out its business within the Sassuolo Scandiano ceramic district; the presence of many companies belonging to the same sector operating in the same area produces significant pressure on the environment. The analysis of the problems encountered highlighted the following territorial criticalities:

- Water system: the intertemporal analysis of the level of the water table shows a progressive lowering that has induced problems of subsidence in recent years on most of the district's territory. Industrial withdrawals have been identified as the main culprits of the problem.
- Air system: the data on the concentrations of pollutants monitored by control units in the district by the ARPA Emilia Romagna highlighted levels of ozone and PM10 very close to quality standards; the main culprit was identified the traffic
- Noise: some production plants are located very close to urban centers and the trend of complaints by citizens to the control authorities has been progressively increasing in the last three years
- Waste system: the value relating to the amount of special waste produced within the district has grown in the last three years both in absolute and relative terms (per unit of product); the percentage of special waste sent for recovery also decreased.

- The product of CERAMICA ESEMPIO is a quality product with a high craftsmanship value. In the area where the CERAMIC ESEMPIO is located there are many companies that make similar products, and the differentiation from the others, also based on the green characteristics of the processes,

STAKEHOLDER MAPPING AND RELEVANCE NEEDS:

The mapping of stakeholders has identified some privileged stakeholders, from which some needs considered strategic have been identified:

1. Market customers: ceramic distributors, whose main offices operate mostly in the district. Needs are linked to the enhancement on the sales markets and differentiation of products from the district as “with greater environmental compatibility”.
2. Other companies in the ceramic district and the local trade association: many of the companies are developing management systems and the local trade association has gathered all the most innovative companies to stimulate an EMAS recognition approach of the whole ceramic sector (which would simplify the adhesion to the community scheme also of Cer. Eempio). The needs are related to the commitment required of the companies in the district to make themselves available to the district "certification".
3. Local communities: noise and vibrations related to company activities are perceived as the most critical. The needs are linked to establishing interventions to improve their impacts.

DESCRIPTION OF THE ORGANIZATION

The Ceramica Eempio has only one production site; there is a Chairman and a Chief Executive Officer who is also the Plant Manager. The Communication Service is on staff at the Management. Under the A.D. you will find the specific functional directions:

- Technical management (which has the following functions: Production, Quality, Logistics, Laboratory, Prevention and Protection Service)
- Technical development of plants (which has under it: Research and Development, Maintenance, New Projects)
- Commercial Management (which is divided into: Sales abroad, Sales in Italy, Marketing)
- Administrative Management (which is divided into: Financial Management, Purchasing, Accounting, Management Control)
- Human Resources Department (which includes: Personnel Department, Information Systems)

MAIN RESULTS OF THE ANALYSIS CONDUCTED ON THE PRODUCTION PROCESS

1) BUDGET OF MATERIALS

The analysis shows that the specific consumption of glazes is a significant aspect, as the loss of glaze is positioned at appreciably higher levels than the sector average (which is around 12%).

This aspect is considered significant:

- both from an environmental point of view (the enamel residues, even if fully recycled, contain heavy metals, and therefore, with a view to improving environmental performance, they must be kept at the lowest possible levels);
- both from an economic point of view, as the glazes have an average cost of about 2.0 Euro / kg. By recycling the glaze waste in the mixture, only a minimal part of their value is recovered (the average cost of raw materials per support is in fact about 0.4 cents / kg).

The problem of the high level of glaze waste was analyzed. The cause identified as presumably decisive is the particularly high level of breakage of tiles during the application of the glaze, with the consequent elimination, as raw waste, of already glazed tiles.

2) WATER BALANCE

From the examination of the data collected in the initial analysis, a very favorable and advanced picture emerges in some aspects of the performance of Example Ceramics as regards the protection of water resources.

The most significant aspect, in positive terms, is represented by the fact that the wastewater is fully recycled, with the following consequences:

- absence of any discharge of waste water outside the site;
- strong reduction in consumption, which represented, in 2013, only 52% of the plant's water requirements.

In the course of the analysis, however, an aspect deemed significant emerged, relating to the monitoring of water withdrawals from wells: the data used for the budget derives from an estimate based on some impromptu measures. The Well, in fact, is not equipped with a meter. The reliability of the water balance is strongly conditioned by this cognitive limit.

Given the importance of the plant's water consumption - despite the progress made through the recycling of waste water - water withdrawals from the well are considered as particularly significant environmental aspects.

3) ENERGY BALANCE

An examination of the indicators shows a situation substantially in line with the average values for the sector: indeed, Cer. Example is considered well positioned with respect to production units of the same type.

The Cer. esempio, aware of this, intends to continue on this path of attention and control of energy consumption, in order to enhance its commitment to protecting the environment and resources.

For the moment, there are no significant opportunities or margins for further improvement.

4) EMISSIONS IN THE ATMOSPHERE

From the processing of data relating to self-checks of gaseous emissions, it emerged that:

1. Most of the abatement plants operate correctly and reliably, with efficiency in line with the average sector data and with fully satisfactory compliance factors (0.6 on average).

2. With regard to the fume purifier, and more particularly the abatement of fluoride, it was observed during the analysis that:

- the compliance factor was on average, in 2012, equal to 0.88;
- during 2013, various operating anomalies occurred. In particular, the critical point of the flue gas purifier was the lime circuit. The main anomalies were the clogging of the distribution valve and the formation of lumps.

Therefore, fluoride pollution is considered a significant environmental aspect.

EXERCISE You are the Senior Management of Ceramica Esempio S.p.A .:

I) On the basis of the results of the Initial Environmental Analysis, indicate which topics the Environmental Policy document of Ceramica Esempio S.p.A. should focus on

II) Identify how, within the current organization, the Environment Function could be inserted (organization chart, hierarchical and functional relationships, relationships with other Services involved in environmental management)

III) What operational and operational control procedures would you expect to find in the EMS? Related to which environmental aspects?

IV) What training initiatives should be planned for the next three years in order to ensure adequate skills for company personnel with respect to the possibility of adequately managing the identified environmental problems?

V) What are the salient features of a communication strategy that you would like to adopt towards the stakeholders assessed as strategic in the context of the context analysis?