

MedClean Propre Limpio


No. 79
Pollution prevention case studies

Cleaner production in the industry of electrometal and chemical products

Company

The Meboš Company was founded in 1946 and it deals with the production of electrometal products. Meboš employs 152 workers, and the production range consists of:

- Electric heaters for water (accumulation) boilers, with a capacity ranging 8 to 200 l: a total of 8,241 pieces.
- Steel wrapping-material barrels, with a capacity of 25 to 225 l: a total of 19,958 pieces.
- Booster pump containers, with a capacity of 90, 130 and 180 l: a total of 2,400 pieces.
- Construction wheelbarrow, buggies (for buildings under construction), insulation material-Styrofoam, tools and services.

Industrial sector

Metal industry, production of electrometal and chemical products.

Environmental considerations

As the factory deals with the production of boilers, booster pumps and barrels for which it is necessary to carry out the procedure of cleaning and degreasing and coating of containers prior to dying, it faces the legal requirements of the adequate storage of generated waste and monitoring of emissions into the water and air. The factory already reduced the waste from cutting the sheet metals by using it for by-products. Moreover, the zinc-plating process is outsourced, as it was not possible to find a cost-effective treatment, so this service was carried out in other companies. The project implemented focused on the barrel production line. Namely, when analysing the barrel production line in Meboš, the expert team detected a problem of complaints and increased returns of finished products from the buyers. More than 2% of finished products (400 pieces) per year had been returned, requiring reprocessing which increased the consumption of raw materials (paint and solvent), energy (oil and electricity) and wastewater generation.

Background

Within the EC LIFE Third Countries project "Capacity Building in Cleaner Production", 2002-2005, an environmental diagnosis of the production process was carried out, focusing on analysing and removing the causes of the complaints. Each phase of production was analysed, from the procurement of raw materials, to the storage and final delivery of products. It was concluded that the main cause of paint damage on barrels was inadequate storage. Final products were stored in the open, exposed to the elements, which prevented the paint from adhering to the barrels, which were easily damaged. The analysis showed that due to the reprocessing of the barrels, 163 m³ of additional wastewater were generated, as well as the consumption of raw materials was increased (paints and solvents, electric energy and oil), and also additional working power must be involved due to which the company lost around €6,000 per year.

Summary of actions

The management of Meboš decided to construct a covered storage area that would enable better fixation of paint. Thus, the raw material would be saved as well as the working power necessary for the reprocessing of the steel barrels. Likewise, the quantity of wastewater would be reduced, along with the financial losses.

Applied measure

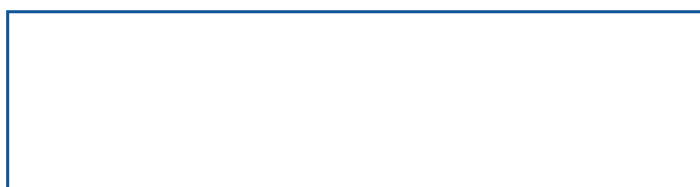
	Investment (€)	Annual savings (€)
Construction of eaves (200 m ² for storage of 1,000 pieces of steel barrels)	18,000	6,000
Payback period	About 3 years	

Conclusions

With the construction of roofs, a better fixation of paint with the product was achieved, and the quality of the final product was improved. In this way, not only was the percentage of claims on the final product reduced, but significant savings in raw materials were also achieved, as follows: the quantity of used paint for at least 120 kg, solvents for 50 l, oil for 400 l and about 400 kWh/per year of electric energy as well as the quantity of wastewater. Although it was calculated that the total saving was €6,000 per year, the contribution to the improvement of the Meboš company image as a reliable business partner delivering high quality products to its customers was not included in achieved benefits.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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