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Regional Activity Centre for Cleaner Production

GOBIERNO DE ESPAÑA · MINISTERIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO

Generalitat de Catalunya
Government of Catalonia
Department of the Environment and Housing

No. 103 Pollution prevention case studies

Reduction of VOC's use and VOC's waste in furniture painting

Company	Mopo (Grupo Morenilla)
Industrial sector	Furniture manufacturer
Environmental considerations	The reduction of the environmental impact of the painting process thanks to the decrease of waste that needs to be managed due their high contaminant potential needs to be tackled. This contaminant potentially brings a high cost in waste management. Also, the potential savings in paint use and time in cleaning processes and sludge collection must be underlined. All these mean a very important saving.
Background	The lead motives to invest in this change are: - Better finishing results at furniture, more product quality. - In the near future the business as usual seems to be "prosecuted" due to a new environmental legislation. This old process emits VOC's to the atmosphere. Thus, it can be said it was an adaptation to new coming times and at the same time a technical adaptation.
Summary of actions	Progressive substitution of the liquid paint used to coat metal by powder paint coat with the clear objective of avoiding waste generated by the liquid paint. Also to improve the quality of pieces due to the better final result of powder paint bigger thickness with the same paint consumption. Installation of 6 new powder paint equipments with their correspondent 6 cabin paints. This installation takes 1800 square meters and its all automatic working in chain, a big dimensions dry oven and a fully clean installation to remove the metal filth. All the production is now going through this installation in order to improve the quality of the final product. This company only uses the old process (liquid paint) for special cases or orders.

Image of the installation

Balance

	Old process	New process
Raw material		
Paint	47 liquid paint Ton	7 powder paint Ton
Waste	16 Ton (7 Ton paint waste + 9 Ton water and solvent)	1.05 Ton (2010 target) (only powder paint)
Costs		
Paint	3 euro/ Kg liquid paint	3 euro/Kg powder paint
Waste management	438 euro/Ton	438 euro/Ton
Working hours collecting sludge	16	8
Total investment (€)		700,000 euro
Total savings (The main savings came from the decreasing use of paint and, in an important way, from the savings in waste management)		80.000 euros/year
Payback period		8.75 years

Now is not possible to determine exactly the savings this installation is bringing due to the lack of time to know it. This system was installed less than one year ago. The figures are estimated.

It's important to note that with this investment the company looks especially for:

1-The accomplishment of the now a days and future environmental law. A change on it may cause a huge damage to the company (in case a chemical product is prohibited or use limited...)

2-The improvement on the quality of the final product (to improve competitiveness of the company in this case with an improvement in the company's environmental performance)

Conclusions

This substitution brings the reduction in paint wastes from 15% with the old process to 3% waste related with the total amount of paint used with this new equipment.

High quality improvement at the final product without an increase in raw material costs.

Less needed time in paint operations.

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