

MedClean Propre Limpio Mediterranean



No. 85 Examples of waste and admission minimisation initiatives

Elimination of discharges – Minimisation of hazardous waste – Ecodesign

Company	EL TINTER, Barcelona (Spain) - www.eltinter.net
Industrial sector	Graphics industry.
Environmental considerations	<p>The main environmental effects of the sector are:</p> <ul style="list-style-type: none"> – High water and energy consumption. – Generation of a large volume of wastewater with a variable pollutant load and colour. – Generation of expired or end-of-use colourings, auxiliary and chemical products. – Generation of empty packs and remains of packaging. – Atmospheric emissions of volatile organic compounds when colourings, auxiliary products or sizings incorporate these.
Background	<p>EL TINTER, which specialises in design, assembly and offset printing and audiovisual services, has 18 workers and a turnover of €1,400,000 in 2006. In 2000, it implemented an environmental management system and was the first printer in Catalonia to be both ISO14001 certified and EMAS registered. Noteworthy improvements have been made to the most severe environmental impacts of its production process (wastewater and minimisation of hazardous wastes).</p> <p>It has developed a line of research into ecodesign and focuses on the design of reusable or multipleuse products.</p>
Summary of actions	<p>The improvements proposed by EL TINTER can be summed up in 3 lines of action:</p> <ol style="list-style-type: none"> 1. Implementation of a system to recirculate wastewater from the printer and management of waste liquids by an authorised manager (zero wastewater discharge to the municipal sewer). 2. Minimisation of waste, particularly hazardous waste, in the production process through material substitution, training and continuous improvement. 3. Application of ecodesign criteria and creation of reusable products.
Outline of the process	<p>The process has yielded noteworthy results:</p> <ol style="list-style-type: none"> 1. 100% reduction of wastewater from the production process discharged into the municipal collection network by means of recycling water and sending development baths and liquid solvents to a waste manager.

2. Reduction of waste fractions corresponding to dry ink, baths and solvents, and photoliths, and a reduction in the consumption of raw materials.
3. Ecodesign criteria were applied to production work in paper and audiovisuals, with the creation of 6 more multiple-use products: calendar, school diary, flowerpot holder and ecocase for DVDs and CDs.

Balance

The yearly balances for 2005 featured the following results:

1. Zero discharge of wastewater into the municipal collection network and 100% of waste managed through an authorised manager.
2. Reduction of waste fractions: dry ink (–68%), photoliths (–13%) and solvents (–38%). And reduction in the consumption of raw materials (–1.45%).
3. Creation of a total of 6 multiple-use products, two of which were registered industrially and 1 patented.

	1999	2000	2001	2002	2003	2004	2005
Water (m ³)	178	181	155	151	137	160	172

Total waste	Units	1998	1999	2000	2001	2002	2003	2004	2005
Paper	kg	3,000	11,976	13,363	12,070	14,090	17,970	18,076	14,650
White	kg					1,320	1,640	1,656	2,120
Colour	kg					12,770	16,330	16,330	12,530
Panels	kg	750	1,910	2,060	1,660	3,170	2,434	950	3,696
Photoliths	kg	140	247	113	68	99	56	113	98
Toners	kg			12	7.5	4	10	4	14
Development baths	Litres		30	1,125	1,605	1,260	975	735	450
Wetting liquids and solvents	Litres	100	100	1,105	1,400	1,440	1,220	870	860
Plastic packs	kg			40	112	200	160	300	450
Fluorescent products	kg			5	2	4	0	2	3.5
Dry ink	kg		10	97.5	80	67	59	71	75
Compressed gases in containers	kg		191.3	265	341	232	469	341	416
Rubber	kg			14	32	53	48	34	74
Plastic cans	kg			19	27	43	135	128	129
Ink-stained cloths	kg		30	179	322	493	157	20	151
Packs of ink	kg						7	12	13
IT material	kg						60	0	70
Drums	number					12	17		

COSTS

Equipment	€1,125.00
Human resources	€3,333.33
Environmental services	€3,778.33
R+D	€3,650.00
Environmental communication	€1,338.89
Average yearly cost	€13,225.56

REVENUE

Sale of by-products (panels)	€2,747.78
Average yearly revenue	€2,747.78
Payback period	4 years

Conclusions

The application of a system of environmental management and ongoing improvement has made EL TINTER the leading company in the application of ecodesign techniques in graphic products. It can therefore manage environmental aspects that are key in reducing its impact on the local environment, under the premise of eliminating its use of the municipal waste and wastewater services for waste (solids and liquids) from the production process.

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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