

Med *Clean* *Propre* *Limpio*



Regional Activity Centre
for Cleaner Production



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

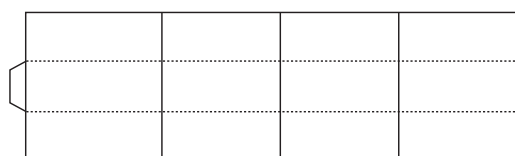
No. 8

Pollution prevention case studies

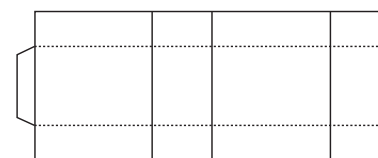
Reduction of cardboard packaging by means of redesign

Company	Baxter Ltd. (Malta)
Industrial sector	Production of Health care products
Environmental considerations	In Malta solid waste is landfilled. This situation creates particular challenges in a small island state. Packaging waste mainly in the form of paper and cardboard represents about 10% of the total industrial waste deposited on the landfill. The Cleaner Technology Centre, the Malta RAC/CP National Focal Point, has been campaigning for waste management problems brought about by over-packaging for some time.
Background	The company, ever mindful of the impact of its activities on the environment, embarked on a programme to investigate the possibility of reducing its use of packaging material. It was important not to compromise the protective function of the packaging, as the boxes were to contain health care products, which needed special handling. This was achieved by redesigning the carton in such a way as to have a smaller flap, while maintaining the internal volume and carton density.
Summary of actions	In conjunction with its supplier of shipping cartons, the company attempted to cut down on the average weight of the carton while maintaining the same density cardboard all over the box, for uniform protection of the product. By simply re-designing the cardboard box, the same volume and density characteristics are maintained.

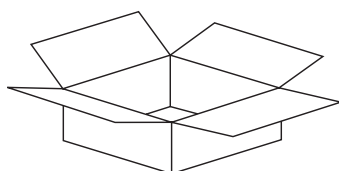
Diagrams



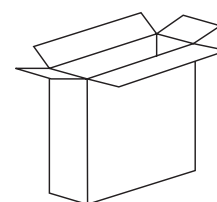
2-D View of unassembled box



2-D View of unassembled box



3-D View of assembled box



3-D View of assembled box

Balances	Original inner cardboard box	Redesigned inner cardboard box
Weight of Box	0.45 kg	0.34 kg
Inner Box Volume	27.336 m ³	27.336 m ³
Material	Single Corrugated (C Flute) Cardboard (K150/F112/L125) g/m ²	Single Corrugated (C Flute) Cardboard (K150/F112/L125) g/m ²
Weight savings		36,000 kg/year
Total savings		30,300 USD/year

Conclusions

This is a practical example of cleaner technology application. The adapted package design maintained the original box capacity and effectively reduced the amount of cardboard utilised for box assembly (approximately 24% reduction in weight).

As a consequence, substantial economical savings are obtained as well as the annual elimination of 36 tonnes of cardboard from the waste stream and considerable energy savings.

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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