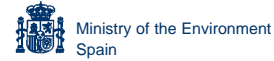


# Mediterraneum

## Clean Propre Limpio



n. 8

## Pollution prevention case studies

## Reduction of carton packaging by means of redesign

**Company** Baxter Ltd. (Malta)

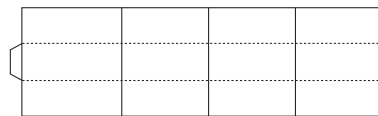
**Industrial sector** Production of Health care products

**Environmental considerations** In Malta solid waste is land filled. 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.

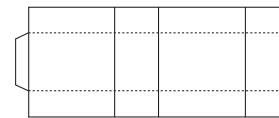
**Background** The company, ever mindful of the impact of its activities on the environment, embarked on a programme to investigate the possibility of reducing its use of packaging material. It was important not to compromise the protective function of the packaging, as the boxes were to contain health care products, which needed special handling. This was achieved by re-designing 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 carton all over the box, for uniform protection of the product. By simply re-designing the carton box, the same volume and density characteristics are maintained.

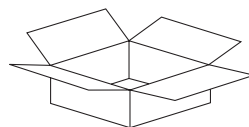
## Diagrams



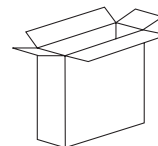
2-D View of unassembled box



2-D View of unassembled box



3-D View of assembled box



3-D View of assembled box

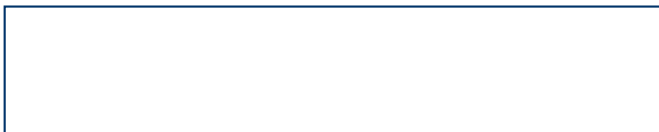
### Balances

	Original inner carton box	Redesigned inner carton box
Weight of Box	0,45 kg	0,34 kg
Inner Box Volume	27,336 m <sup>3</sup>	27,336 m <sup>3</sup>
Material	Single Corrugated (C Flute) Cardboard (K150/F112/L125) g/m <sup>2</sup>	Single Corrugated (C Flute) Cardboard (K150/F112/L125) g/m <sup>2</sup>
Weight savings		36,000 kg/year
Total savings		30,300 US\$/year

### Conclusions

This is a practical example of cleaner technology application. The adapted carton package design maintained the original box capacity and effectively reduced the amount of carton utilised for box assemblage (approximately 24% reduction in weight). As consequence, substantial economical savings are obtained as well as the annual elimination of 36 tonnes of carton from waste stream and considerable energy savings in transporting this weight the long distance to the export market.

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



**Regional Activity Centre for  
Cleaner Production (RAC/CP)**  
Trav. de Gràcia, 56, 1  
08006 Barcelona (Spain)  
T. (+34 93) 414 70 90  
F. (+34 93) 414 45 82  
e-mail: prodneta@cipn.es