

# Waste not want not

## A Case Study from Linpac Rotational Mouldings Ltd

*Manufacturing and environmental improvement*

### Keywords

Waste reduction, raw material reduction, process improvement

### Summary Detail

Linpac Rotational Mouldings Ltd, based in Corsham, manufacture moulded plastic products using rotational moulding techniques. Linpac has used waste minimisation good practice to improve efficiency of raw material usage in their processes. Linpac have developed a number of innovative process techniques in order to reduce plastics waste generation. These include heat shielding, and Granulate recycling and ongoing experimentation to improve mould performance.

This case study looks how signing up to a waste minimisation programme with **envolve business** led to increased waste reduction activities and actions to help them toward ISO14001 certification.

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*Manufacturing and environmental improvement*

Waste Reduction  
Improved plastics recycling  
The benefits of process improvement  
Future initiatives

### Introduction

LINPAC Rotational Mouldings Ltd, based in Corsham, manufacture moulded plastic products using rotational moulding techniques. The company by the nature of its business has always had a continual improvement strategy. The company is presently focussed on improving the production process through waste minimisation and energy efficiency. To consolidate existing efforts and generate more ideas they signed up to a waste minimisation programme run by **envolve business**.

The outcome of this programme has been the establishment of a multi-functional waste minimisation project team. A waste mapping exercise has also been completed, identifying the main inputs, outputs and potential waste creation points for the Site. This case study looks at the results of this partnership in terms of waste reduction activities which will help achieve ISO14001 certification.

### Background

LINPAC has pioneered many initiatives in the field of waste recovery and recognise this can improve economics as well as helping the environment. They are currently looking at improving efficiency of material usage. The aim is to shift the emphasis away from recycling toward waste reduction.

- 1) **Waste section reduction.** Eliminating or reducing the amount of material formed at waste sections.
- 2) **Granulate recycling.** Improving the process of putting recycling granulated scrap directly back into the manufacturing of products

### The benefits of process improvements

#### **Waste Section reduction**

This project aims to reduce the amount of waste available for recycling from the 'waste section'. The material efficiency of the moulding process relies on the temperature of the mould surface, the hotter the surface the greater the quantity of material that is attracted. Strategically placed heatshields reduce local mould 'hotspots', leading to less material being attracted. This results in no waste or a reduced waste section. The full Corsham product range is in the process of analysis to reduce the amount of waste section material that needs to be granulated and sent for recycling. This project has identified raw material **savings to date of £25k p.a.**

#### **Use of recycled granulate**

Wastage of moulded plastic may occur through trim, offcuts, spoilage and rework. At the Corsham plant approximately 60 tonnes of granulated scrap are produced each year. This waste is sold at £170 per tonne to LINPAC Recycling. They then process it

and sell it back to LINPAC Remoulding for £600 per tonne. This is less expensive than new product at £1000 per tonne but does not include the costs of rework or process inefficiencies.

A project designed to reduce waste processing costs has been implemented. By reducing the size of the mesh in the granulator the granulated scrap can be mixed with standard powder material. This mix can be charged straight back into a mould rather than being sent for processing. A limited number of trials have been carried out to find out how easy/difficult it is to process the mix. Initial results have been encouraging and it is hoped to process annually 35 – 40 tonnes of waste.

**Successful trials will see annual savings of approximately £20k.** It will also reduce transport costs and allow the recycling plant to be used for other purposes.

## Future Improvements/ Initiatives

The activities carried out by LINPAC Rotational Mouldings Ltd have resulted in significant reduction of environmental impact and cost savings. The following details some of company's future improvement activities: -

- Determining the true cost of rework to identify improvement activities
- Establishing processes across the business where improvements can be made to help the company achieve ISO14001 certification
- Trialling new materials, especially ceramics, to determine their effectiveness as inserts within the mould to allow reductions in post moulding operations, i.e. routing

## Conclusion

This case study highlights the savings that can be made when processes are looked at through 'waste minimisation eyes'. The investment to realise savings of £45k are minimal. However, these would not have been realised without the company's commitment to reducing their environmental impacts. Investment in training and workforce development has helped them realise the benefits of this dedication.

**Development Technician Richard Hiscock says: -**

*“Reducing and eliminating waste has proved more cost effective than recycling. Mapping these principles into the rest of the business will bring even more benefits.”*

## Contact information and other detail

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**Type of Business:** Manufacture of plastic rotational mouldings

**No of employees:** 90