

theaxionnewsletter

WELCOME to the Axion Newsletter. This issue includes articles about a new WRAP-funded technical study aimed at improving the quality and volume of construction waste so that it can be recovered and Axion Polymers' new black HDPE grade, developed as a result of in a 'closed loop' recycling collaboration with TDG, Leeds.

NEW WRAP-FUNDED PROJECT AIMS TO IMPROVE QUALITY AND QUANTITY OF RECOVERED CONSTRUCTION WASTE.

Axion Consulting has been engaged in a WRAP-funded (Waste & Resources Action Programme) technical study aimed at identifying improved segregation techniques used to process construction waste, with a view to increasing the quality and volume of waste which can be recovered. The study focuses on new, improved and emerging segregation technologies for separating and recycling construction waste at Material Recovery Facilities (MRFs).

The study has been split into two phases. Phase one of the study identified technologies that have the potential to be widely used in the UK. The project focussed on the recovery of non-inert waste from the waste stream. As Jane Gardner, Axion Senior Consultant explains: "We undertook a characterisation study in order to assess, measure and categorise typical mixtures of materials handled by construction waste MRFs. We worked with five MRFs to obtain samples of material and sorted this material by hand into key categories."

The initial phase of the research study confirmed that most construction waste MRFs are very effective in recovering inert material but improvements can be made for recovery rates for the non-inert fractions. In addition, it provided a detailed understanding of the in-feed materials at construction waste MRFs and assessed output streams to identify contaminants in output materials. As Jane Gardner explains: "Wood is a particularly problematic stream for MRFs, as it tends to become distributed across all output streams. The study also indicated that increased screening of material is likely to help improve the separation of the non-inert fraction."

The second phase of the study involves demonstration trials of the following technologies, identified during phase one of the study:

- Redox Windshifter
- Bezner Bucket Screen
- Bezner inclined sorting Machine
- IFE heavy duty waste screen

Trials of these technologies have now been completed at MRFs using them in Germany, the Netherlands and the UK. Samples have been taken and are currently being analysed in more detail to obtain information regarding the output purity and separation efficiency of each of the technologies.

In addition to trialing these technologies, Axion is looking at the effect of improving the working conditions for pickers on sorting lines at MRFs to assess the impact on productivity and landfill diversion. As Jane explains:

"We observed that the conditions on the sorting line at construction waste MRFs can be very poor: sorting sheds are often very draughty, dusty and noisy with poor lighting conditions. Although the picked material streams are pure, a lot of recyclables still end up in the residue fraction which is sent to landfill."



Axion is currently running a trial at a construction waste MRF, putting in place improvements to the sorting line environment in order to see whether enhancements to the welfare of the workers has a direct influence on the efficiency and quality of the manual sorting process and quality of output materials. These improvements include:

- Lighting making it easier for operatives to distinguish the different materials to be picked;
- Music through a radio specifically designed for noisy environments such as factories and construction sites; and
- Anti-fatigue matting to reduce the vibrations felt by the operatives at the picking line and helps to prevent physical fatigue and swollen joints.

The technical study is due for completion in the Autumn.

AXION AND TDG COLLABORATION PRODUCE NEW BLACK HDPE GRADE.

Following the recent launch of new blue and 'natural' HDPE development grades, Axion Polymers is now able to offer a new black HDPE development grade. The material has been recycled from used drums and containers through collaborative arrangements with TDG in Leeds.

Axion and TDG offer a fully integrated take-back scheme involving TDG collecting waste cleaning agent containers which are then recycled back into high-grade HDPE applications at Axion Polymers' processing facility in Salford.

Axion Consulting developed the technical solution, and provided technical support for the design, layout and project management for a shredding and washing unit within TDG's existing tanker cleaning and effluent treatment plant.



Axion Director, Roger Morton says tracking individual drums using TDG's sophisticated computer system is the key to making the whole 'responsible recycling' scheme work.

"This means we can be certain of what's been in the drums before they get shredded so we can ensure the polymer is safe when it's recycled," he explains. "Demand is high for HDPE and we've had a lot of interest from the packaging sector, which is keen to minimise its carbon impact and reduce cost by using high-grade recycled content in new containers."

For TDG, recycling its end-of-life containers offers a significant environmental and alternative disposal

route, as well as an added-value service to their customers, differentiating them from other haulage companies.

According to Ann Dawson, TDG's General Manager for Tank Cleaning and Industrial Packaging Operation at the Batley site, it is the first open-market recycling scheme undertaken by the company. It is also setting up similar packaging recycling schemes to operate alongside it with two other major commercial cleaning and hygiene services customers, Johnson Diversey and Ecolab.



"We're delighted to be involved as we strongly believe in this recycling concept that makes sound environmental and economic sense for all," comments Ann. "Offering this 'one-stop shop service' helps our customers with a viable disposal service for their old containers and prevents a lot of recyclable waste going into landfill as just one 25 litre container generates 1 kg of HDPE."

"We strongly believe in this concept and are also actively encouraging other drum manufacturers to use recycled content in new containers."

Substantial co-investment by Axion and European logistics giant TDG will now see more than a million HDPE (high density polyethylene) chemical drums and containers recycled every year.

For further details of Axion's black HDPE grade, including material properties, download the Product Specification Sheet from our website: www.axionrecycling.com/products.cfm

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