

Rising to the sustainable challenge

— Sustainability is an evolving issue which requires new ideas and fresh thinking. Here we see how the aluminium foil sector has responded to these challenges.



Aluminium foil has always been regarded as one of the most resource efficient packaging materials. But the rules on what represents sustainable packaging are changing continuously as more is understood about Life Cycles and what really constitutes environmentally friendly practices and products. In this issue we take a look at how the alufoil sector has responded to meet these new challenges.

The industry has been at the forefront of downgauging. Several examples are explored here (see p2). But the industry has never stopped innovating and continues to deliver new products which take this important aspect of sustainability to undreamed of levels.

Very important is that downgauging has been achieved without reducing, and even improving, functionality and performance of the alufoil packaging – major achievement in itself.

But the industry has not been satisfied with just doing what it already does well. The recent trend towards more flexible packaging solutions, and away from rigid packaging, has required a fresh look at how best to serve environmental needs.

A recent study by ifeu – Institut für Energie und Umweltforschung – investigated the waste prevention potential in Europe by replacing non-flexible packaging with flexible packaging (with, or without, aluminium foil) for food products.

The results, reviewed by Carbotech AG, demonstrate that due to lightweighting and waste prevention benefits, even without recycling, flexible packaging can save up to 26 million tonnes of packaging material; 42 million tonnes of greenhouse gas emissions; and 276 million m³ of water use, in comparison to non-flexible packaging with 100% recycling.

These findings clearly offer a different sustainable route for some packaging. It shows a more holistic approach is required, which includes recycling and downgauging, lightweighting and so on, but also encompassing other solutions. These can serve the same purpose, but use significantly less material and resources to achieve a much lower environmental impact. It will also require a period of re-education for consumers who have been told repeatedly over the last 20 plus years that recycling is the only effective solution.

Even if flexible packaging is generally the most resource efficient solution with zero recycling, the flexible packaging industry seeks to increase the recycling and recovery rates for these materials by supporting the development of technologies to treat multi-layer packaging.

Likewise recycling has seen the alufoil sector respond with highly original initiatives. These not only make it easier to recycle the more obvious products, but also offer consumers and retailers the chance to bring back others, such as tea light containers or coffee capsules. We explore some of these in the coming pages.

Of course it helps that if any alufoil product can be collected it is fully recyclable! This could be helped by more harmonized waste collection and treatment system than currently exists in Europe. ///

Last call for awards entries

Don't miss your last chance to enter the Alufoil Trophy 2016. The closing date for entries is 4 December 2015. To find out more and enter this prestigious competition visit: www.alufoil.org ///



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Sustainability - Downgauging & Lightweighting

Ever thinner, ever lighter, ever better

The aluminium foil industry has a long history of responding positively to the increasing demands for more sustainable packaging. Through downgauging and lightweighting, continuous innovation has kept the sector at the forefront of the development of resource efficient packs. This has been achieved while maintaining, and even improving, performance and functionality. Here we take a look at some of the best examples seen across the past five years.

Leadership in lidding

Alufoil lidding manufacturers have been particularly active in meeting the challenges of reducing material consumption. Al Pack developed a special technique allowing embossed yoghurt lids, usually made from 37µ foil by needle embossing, to be switched to 29µ. "Exclusive Embossing", a combination of edge and 3D embossing, avoids the potential for pinholes caused by this type of embossing on the lower gauge lid foils, while still retaining full barrier properties.



Another lidding example, from Constantia Flexibles, is the Die Cut Lid 2020, a coextrusion coated die cut lid composed of a thin aluminium layer of 20µ and a proprietary co-extrusion coating. The downgauging claims to achieve saving in materials as high as 50% along with the lidding material's high speed machinability and excellent barrier properties.



Yet another down gauged lid product comes from Huhtamaki. The Foil Pillow Lid® features an embedded polymer cushion between two thin aluminium foils. This allows the lid to be ultra-flexible compared to rigid aluminium foil, enabling it to compensate for any unevenness during the sealing process. As well as using less foil the Foil Pillow maintains machinability and maximum barrier properties. ///



CE 137 R EASYTIN



Kelly's Portion Pack

Container performance & style

The rapid expansion of convenience foods has triggered many advances in the alufoil container supply sector. Constantia Flexibles developed a container system for Kelly's Portion Pack Luncheon Meats, which provides an alufoil format but is designed to be similar to traditional tin cans, retaining comparable features such as stability, rectangular format and height. Plus adding features such as easy opening while at the same time as using less packaging material. These containers offer a shelf life of 18 months, thanks to the barrier properties of aluminium, even at these thin gauges.



Portion pack downgauging project

Another container format, this time for pastry speciality desserts comes from Ecopla. The CE 137 R EASYTIN N/B is a smoothwall alufoil cup, claimed to be 17% thinner and 16% lighter than the traditional alufoil typically used for this type of application. This is due to the alloy used, which Ecopla says offers better mechanical characteristics and resilience. By using a different alloy a harder temper was achieved in the annealing process.

Plus Pack's "Portion pack downgauging project" was the culmination of two years of extensive development. This included material optimization, cost saving, carbon emission reduction and product improvement of a whole container product range. Together with its material supplier Plus Pack developed a new alloy with improved mechanical properties. Besides reducing the raw material usage, Plus Pack's Carbon Footprint Calculator showed a total CO₂ reduction of 11%. ///

Alufoil steps up to SAVE FOOD



During the SAVE FOOD meeting 2015, hosted by Nestlé at its HQ in Switzerland, Stefan Glimm, Chief Executive Director of EAFA, presented "The Role of Packaging in reducing food waste and ensuring resource efficient food consumption globally".

This examines the functionality of flexible packaging and, in particular, aluminium foil, highlighting the pressing need to communicate to consumers the role of packaging in reducing food waste. Several projects are already underway.

Leading the way in Italy is an interesting initiative for reducing food waste, offering restaurant diners an opportunity to pack up their leftovers in alufoil

containers and take them home. The campaign, Tenga il Resto (Keep the Rest), was launched in Monza. One hundred thousand aluminium foil containers, branded with the campaign message, were supplied by the CIAI Consortium and distributed to the city's 26 participating restaurants. This



number is expected to rise and will undoubtedly set an example that can be used by other Italian cities.

Reinforcing the message that providing food in effective and appropriate portions not only lowers environmental impact, but also helps reduce food

waste, came from a new study by Quantis Canada, conducted for PAC (Packaging Association of Canada). The study compares the impacts of an individual coffee produced from a single-serve coffee capsule system in North America (including the manufacture of the machine and the coffee) with an 8oz serving of a widely used filtered coffee system. It concludes that "Overall, the single-serve best case scenario posts a better environmental performance than the drip brew system from the perspective of these systems' full life cycles."

PAC's findings support the Coffee LCA commissioned by FPE, a division of EAFA, which also looked at two coffee packaging systems: an instant coffee single serve stickpack and a ground coffee family size pouch system. ///

Sustainability – Recycling

Recycling around Europe

— *Infoil takes a look at some of the interesting and clever schemes to increase recycling rates and broaden the number of products made from alufoil reaching waste collection centres.*

Many countries have recycling schemes to encourage collection, recycling and recovery of a product's packaging. Rates around Europe have risen steadily in the last decade. But, particularly with regard to aluminium foil, the diversity of products and their different uses means that not every pack or container is seen as an obvious candidate for recycling – even though aluminium is fully recyclable.

We take a look at three countries which have recently come up with a range of local, regional and national campaigns which are both highly original and help to keep awareness of the benefits of recycling aluminium foil very much in the public eye.

Tea light collection campaign

Alupro Ireland, major retailer IKEA and WEEE Ireland have launched a tea light campaign in the Dublin area, which began on 22 September 2015, aims to encourage school children as well as consumers to recycle used tea light holders at IKEA.



Second to Fourth classes in the greater Dublin area are being challenged to collect as many tea light holders as possible. Children will also be given the opportunity to enter a colouring competition with an overall prize of IKEA vouchers to spend in store.

Tea lights are one of IKEA's best selling products. Their popularity means that there are millions of

small aluminium containers being disposed of each year – usually in landfill sites.

Alupro Ireland manager, Karen Mahon, explained, "The aluminium from a tea light holder weighs five grams and recycling the holder corresponds to an equivalent energy saving to that used by a 40-watt light bulb for two hours. It's therefore well worth the effort to get this recyclable material back into the value chain."

Grainne Breen, regional sustainability manager, IKEA said, "Sustainability is at the core of everything that we do at IKEA, from the build and operation of our stores to the manufacturing of our product. We strive to build and maintain sustainable relationships with suppliers and co-workers. Also we want to work with organisations like Alupro Ireland and WEEE Ireland in areas of environmental and social responsibility".

Consumers can recycle their used tea light holders, either in their green recycling bin at home, or at a deposit bin at IKEA's Dublin store. ///

Multi-channel approach to recycling

Aluminium recycling in Italy continues to improve year on year and much of this is down to consumer cooperation and agreements with CiAI (the Italian Consortium for the Recovery and Recycling of Aluminium Packaging) and local authorities.

Remarkably 83% of Italy's local authorities undertake the separate collection of aluminium packaging. This involves 52.5 million inhabitants. In 2014 recovery of aluminium packaging reached 79.2% of the total quantity on the market.

Further initiatives have now been put into place and these include an awards programme initiated and funded by CiAI – "Premio Resa" (Performance

Award) – a financial incentive aimed at encouraging intensive waste separation models to enhance the full potential of individual catchment areas.

CiAI also continues to support Giffoni (Italy's youth film festival), dedicated to the protection of the environment and in particular to recycling aluminium. High school students were asked to produce a movie on one of two topics: "The Aluminium around us" and "The role of Aluminium in Environmental Protection". The ten scholarship winners then joined the official Giffoni Festival jury which awarded the CiAI Prize for the Environment.

On a national level, an environmental protection



RECYCLING IS GOLD
333 liver paté containers contain enough aluminium for a new bike. Sort your waste, it's worth its weight in gold

Worth its weight in gold

The City of Copenhagen produces nearly 1 million tons of waste per year, which equates to about 5kg of waste per day per person. The sorting campaign RECYCLING IS GOLD, launched at Amager and then rolled out across Copenhagen helped to make city dwellers more aware of the value of the waste they throw away. The goal is that 45% of Copenhagen's household waste is recycled by 2018.

The purpose of the campaign is to ensure that more people in Copenhagen sort more of their waste and the city authorities are making it easier to do that. The campaign message is that it helps to sort you waste – and everyone can contribute. ///



A clip from the "Environmental Natives" TV commercial

campaign, "Environmental Natives", was launched in September. Created to stimulating responsible consumer behaviour, allowing future generations to grow up in a society where good environmental practices – such as separate waste collection and recycling – are natural and instinctive. The campaign appears in national and regional newspapers and on local TV, radio, the web and billboards. ///

Sustainability – Recycling

Alufoil in Europe's circular economy

We all have heard the question many times, “but can you recycle it?” An especially important question today as Europe seeks to move towards a more circular economy, which reflects the need to be much more resource efficient. However, aluminium foil packaging is already, generally, a very resource efficient packaging solution, even at low recycling rates.

But still the question remains, “can they be recycled?” The short answer is that both alufoil packaging and most flexible packaging containing foil can be recycled and are already being collected by an increasing number of countries in Europe.

Once collected, alufoil packaging is sorted into its

respective fractions, using either eddy current technology (a sort of magnet for aluminium) or Near Infra-Red (NIR) optical sorters, before going into the aluminium, the mixed poly-olefin or mixed plastics stream. These are then baled and sent to the respective recyclers for further processing.

In a circular economy, the longer term ambition of the industry would be to collect all packaging, post-industrial and post-consumer, and to be able to recycle all the respective materials that are combined. To achieve this the industry continues to seek out and review new collection, sorting and recycling technologies that may have the potential to enable more cost efficiencies and to raise awareness of them.

Some of these new technologies include Saperatec's flexible packaging layer separation, using micro-emulsions to allow multi-layer packaging to be delaminated; Magnetic Density Separation which separate flakes of different polymers at high speed; and Erema's double degassing extrusion that “purifies” the recycled polymer in the final stage of recycling by removing adhesives, inks and other ‘sticky’ contaminants.

For various reasons some alufoil and flexible packaging containing foil is best incinerated for energy recovery. Waste to energy produces both heat and electricity and the remaining aluminium element is increasingly being recovered from the incinerator bottom ashes using eddy current technology. ///

Container recycling improves

New data released by EAFA confirms that recycling rates in Europe for alufoil trays and semi-rigid containers in 2013 reached almost 55%. The previous reporting period (2010) saw that figure rise above 50% following concerted efforts by the industry to promote the benefits of resource efficient and sustainable packaging options.

Continued work to promote the value of collection and recycling, along with national campaigns (see page 3) are having significant effects. Increased awareness has seen consumers recognise that all

aluminium foil trays and containers can be recycled and this includes, not only those used as primary packaging but also kitchen products such as disposable alufoil BBQ and oven trays.

The recycling rates are calculated on the basis of publicly available national aluminium recycling rates and consumption data. The data also shows the considerable extent to which consumption volumes and recycling rates vary from one country to another. Depending on the instructions to consumers and the collection and sorting infrastructure in place,



estimated recycling rates for containers vary and range from 85% in Germany to 65% in Italy, 40% in the UK and 35% in France and Spain. ///

The life of a friendly aluminium closure



Originally I started life as a small piece of aluminium, a member of the increasingly large population of aluminium closures used on wine, spirits, water and olive oil bottles. I was handsomely decorated and put on a bottle, which was quickly purchased because my bottle looked as good as the wine inside tasted.

That could have been the end of my story. But, thanks to the great recycling opportunities, I joined at least 50% of my friends, ready to be made into something new. I was still attached to my original bottle when I began the recycling process. New technologies mean it is simple to separate me from the glass and put us both back in the value chain.

After recycling I became part of a light and sporty bicycle frame. I hope to live here for some time. But I feel certain that when that's over I can go back to the recycling centre and come out as good as ever – in fact in exactly the same condition as before – and, who knows, I might end up riding with you on your new aluminium bike. ///



— Find out more about alufoil! —

Visit www.alufoil.org where you can find out all about every EAFA member, make business enquiries and see the latest news about alufoil applications and the industry.

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