

## 9. E-Max



# Eco- Aluminum



Aluminum company E-MAX produces aluminum profiles (extrusion) and processes scrap into billets, the raw material for aluminum profile producers. Aluminum scrap is recycled at the own foundry in Kerkrade, the Netherlands. And this is an important green trump, because as a result the producer of semi-finished products can now also produce its own raw material starting from scrap. It developed a set of eco-aluminum alloys with which E-MAX closes the aluminum materials cycle. “The recycled aluminum that we can now turn out has the same material properties as other aluminum but it is won in a far more sustainable way”, says Dimitri Fotij, Managing Director of E-Max. Sustainable aluminum gets the name: X-ECO.

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Aluminum extrusion processes thick aluminum bars or billets into aluminum profiles with the aid of moulds. The profiles are semi-finished products that in turn are processed into other applications such as vehicles, industrial machines or all kinds of products in the construction sector. “We all know aluminum window and door profiles and those are made with the extrusion process”, says Commercial Director Robert Zegveld, who together with his Dutch compatriots Piet Smeets and Frits Bours helped found the company. “This company has staked a lot on the automation of the presses with which the aluminum can be formed into profiles; automation with an eye to efficiency and better products.”

The investments made in the fleet of machinery since 1997 are leading to sharp growth of the company. In 2001 the external financier who had helped found them, got out leaving the door open for Jos Vaessen, the famous entrepreneur from Limburg. “That’s important, because Jos Vaessen is an expert and above all owns a

number of other companies that are a good fit with our activities. Vasco, the company that he makes radiators with, also uses aluminum profiles, so that was a significant step for E-Max”, Dimitri Fotij continues.

Aluminum is a raw material that is very sensitive to the economic climate and its price changes every day. It requires a great deal of energy to win from bauxite or ore. “It takes almost four tonnes of bauxite to produce a tonne of pure aluminum. That gives you an idea of how energy-intensive it is to win aluminum. Link global demand to the supply and you have greatly fluctuating prices that place an enormous burden on your operations. You have to arm yourself against that,” he says. They found that weapon when Jos Vaessen took over the Alcoa Cast House aluminum foundry in Kerkrade, the Netherlands in 2007. A strategic acquisition, because the foundry was lodged under the wings of E-Max and in this way was able to provide the raw material for the E-MAX profiles.

The foundry has gigantic potential because if you can melt your own aluminum, you no longer need aluminum won from nature. “Recycling aluminum is no easy thing, after all you have to search for an alloy with the same high-quality properties. And in the meantime we have finished searching”, he says with pride. In cooperation with a number of universities, E-MAX has developed a set of alloys which can serve as fully-fledged alternatives for primary produced aluminum. The patented composition was named X-ECO, making the phonetic connection with the Latin ex aequo which means ‘the same’ or ‘without loss’. “We have been optimising the technology since the take-over in 2007 and after two years we were able to book results that exceeded our expectations. Now the technology really is sufficiently mature to be commercialised and communicated. At present the degree of recycling of our X-ECO varies from around 85% up to as far as 97%”, says Dimitri Fotij. “And our ambition is to eventually produce the X-ECO alloys from 100 % recycled aluminum.”

E-MAX's story like no other proves that sustainability is an economic catalyst. With a closed cycle of aluminum, E-MAX has guaranteed its future because the figures from the IAI, the international branch organisation, are really something. Winning aluminum already means a loss of 3/4 of your raw material, because you only retain a quarter of all your bauxite in the form of pure aluminum. It is processed and 33% of it ends up in the construction sector. At present only a small part of it returns in the cycle. "Aluminum has such material properties that it lasts for a very long time or is durable", Robert Zegveld adds. "Nowadays demolition companies jump at the chance to recover aluminum from the construction sector, because they know that they can get a lot of money for it. The aluminum is separated by the metal dealers and it is offered to our foundry so now we can put it back into circulation."

## The patented composition was named X-ECO.

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The other major sectors which buy aluminum are transport and industry; both of which account for a 28% share of the total purchase of aluminum. "Transport amongst other things means cars, but the trailers of lorries also contain a lot of aluminum because they have to be strong and light so they can carry maximum loads. A lot more aluminum is already coming back to the foundry from that sector. The lifecycle of aluminum in industry is far longer. The profiles or parts that serve to operate machines circulate the least quickly. This in contrast to the packaging industry that only accounts for 1% of the total amount of aluminum, but it can be put back into circulation far quicker", says Fotij. He therefore argues for more sustainability in this sector, because that can contribute to the closed cycle economy. Just consider how many cans consumers use every year. Then it's clear that this waste flow means more profit as a raw material than winning new aluminum can yield.





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E-MAX now wants to start communicating its trump card of recycled aluminum more actively with a new logo with a green accent. “We want to adopt a clear profile that maximises both the Ecological and the Economic return”, he says. “E-Max was really a visionary company name that refers not only to extrusion. With our X-ECO alloys we guarantee aluminum with all the known properties, but with ecological added value.”

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An order that is completely in line with this new vision of E-Max came from Abu Dhabi. After all, work is in full swing on Masdar City, an ecological megaproject in which the Gulf state is constructing an entire new city that has to be CO2-neutral. “We are going to deliver 1000 tonnes of eco-aluminum to them. We were selected because they preferred completely recycled aluminum. After all, our eco-aluminum requires less energy in recycling than other materials and can be used to build just a well.”

Although E-Max did experience a brief relapse in its turnover due to the economic crisis, the company’s growth curve since its foundation is impressive. They are therefore convinced that with the foundry and increasing recycling there is enormous growth potential. Naturally, it is driven by figures, but the ecological aspect is coupled to this. The aluminum sector is not an open sandals and woolly socks type sector, but if E-Max can convince an increasing number of companies to use the eco-aluminum, it will have an impact on a more sustainable economy and society that cannot be ignored.

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Christophe De Schauvre for REcentre  
Interviewee / Dimitri Fotij, Managing director and Robert Zegveld, Commercial director

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Sector • Non-ferrous metal

Year of foundation • 1997

Number of employees • 190

Turnover (2009) •  
79,2 million EUR