



ALUMINIUM DUFFEL
mind over metal

Internship for

Materials Science/Chemical Engineers

What is so special about aluminum?

Aluminum is strong, light, durable, flexible, extremely versatile, impermeable, corrosion resistant, an excellent conductor of electricity, non-magnetic, non-flammable, an abundant element in the earth's crust and infinitely recyclable.
Aluminum has unlimited potential to be part of solutions that move society forward.
Its freedom enables people and businesses to create a better future by innovatively using the versatility that aluminum offers.

Your field of work

Since the innovation center is linked to the factory, there is a close collaboration between R&D and production. We can already offer you an insight into different positions where an engineer can end up in industry (R&D, quality service, technical customer support, process technology, etc.).

We can offer you interesting research topics that will help make even better products.

Some examples include corrosion studies coupled with electrochemical measurements, MSA analysis of certain measuring equipment, mapping of influence factors on color and gloss of anodized material, effect of method of quenching after annealing on mechanical properties, 2nd phases, grain structure and texture analyses, etc.

Your duties and requirements

- Gather information, both from literature and through collaborators, usually coupled with lab tests or attending industrial trials.
- Analytical mindset and able to work systematically in a team environment.
- Good knowledge of Dutch and English.

Interested?

Then send your CV attn.
Els Verboom (Manager R&D),
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Aluminium Duffel B.V.

is a European leader in manufacturing and marketing aluminum rolling products for a wide variety of markets (automotive, architectural, construction, consumer products, etc.) worldwide. It has state-of-the-art technology, including the widest cold rolling mill in Europe and a CALP (Continuous Annealing Line with Pre-Treatment) production line.

The Innovation Center in Duffel, Belgium, therefore, focuses on segments such as the automotive and industrial sectors.

Analysis of the corrosion resistance of aluminium for automotive body application

Internship for student in Master level

Location: Aluminium Duffel, Duffel, Belgium

Aluminium has become over the last decades the material of choice to reduce the automotive body weight to reduce energy consumption or raw material usages when it comes to electric vehicles.

One aspect in the material qualification at the car manufacturer is the corrosion resistance of the aluminium panels.

After being produced, aluminium sheets are subjected to various changes when they are at the automotive production plant: stamping to get the right design of the car, sanding to remove any defects on the car surfaces… However, all these materials alterations may have influence on the material properties. Therefore, different aluminium grades have been collected and painted in a real automotive painting line. These samples have been subjected to accelerated corrosion testing according to automotive manufacturers procedures to simulate in-service conditions.

Corrosion resistance in terms of paint delamination performance will be investigated with various microscopy and imaging techniques to evaluate the pros and cons of available techniques in the industry. In addition, microstructural analyses would also be performed to study the morphology of corrosion and propose corrosion process mechanisms.

To understand the performance of the various tested alloys, electrochemical analysis techniques would be evaluated to potentially discriminate the various techniques in chloride containing media to simulate and predict the results of the accelerated corrosion tests.