Production Expansion at SAG

Rheocasting for Leightweight Components in Vehicles

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Innovative technologies for processing light metal alloys have undergone enormous development in recent years. These include rheocasting – a special casting process in which liquid aluminium is cooled and stirred until it reaches semi solid. The SAG (Salzburger Aluminium Group) uses this foundry process to manufacture components such as safety cab suspensions for trucks or air reservoirs for the automotive industry.

SAG is investing 3.6 million EUR in a rheocasting system as a result of major orders from the automotive industry.
(Source: SAG Salzburger Aluminium Group)

The demand for these lightweight and particularly robust components is rising strongly, and production capacities at SAG's Lend site have recently been greatly expanded thanks to strong demand from the passenger car industry. A total of more than EUR 3.6 million has been invested in the expansion of the rheocasting facilities in recent months.

The advantages of **rheocasting** are versatile: The parts can be manufactured in all shapes – specifically adapted to the respective installation space. This is extremely cost-efficient due to the elimination of mechanical post-processing. In addition, the parts are extremely robust and have a low weight. Another important feature that distinguishes rheocasting from standard die casting is that the components are very easy to weld.

Less Weight for more Efficiency

The achievable weight **reduction of up to 60 %** compared to steel components is particularly interesting for vehicle construction – and this with the same load capacity and service life of the elements. Thus, the net weight of vehicles, which tends to increase due to the design, can be massively reduced by using weight-optimizing SAG rheocasting components. This reduces fuel consumption and thus CO_2 emissions (with a weight saving of 120 kg, approx. 0.3 tons less CO_2 per year and truck*). This is a total package of advantages for which VOLVO awarded an innovation prize to SAG in 2018.

Rising Demand of Rheocasting Parts

The SAG plant in Sweden produces more than 250,000 rheocasting components annually for major truck manufacturers such as VOLVO and Scania. Rheocasting parts for the automotive industry are produced at the Lend/Salzburg site. Demand is rising steadily. Not least because weight reduction is becoming an increasingly important issue for the automotive industry due to the strict EU climate targets. The SAG development team in Lend and Ronneby (Sweden) works together with the OEMs on the ongoing further development of the application areas of rheocasting. For example, more than EUR 3.6 million was recently invested in a new rheocasting plant at the SAG site in Lend, Salzburg, in order to cover the increasing production for the automotive industry.

That's why Rheocasting is profitable

- Parts can be manufactured in all shapes with exact final dimensions. No need for mechanical post-processing, thus extremely cost-efficient production
- Weight reduction of up to 60 % for the same load capacity and service life of the elements compared to steel components

- thereby significantly reducing fuel consumption and CO2 emissions
- Very good weldability

*3 rheocasting parts = 0.3 t CO_2 saving per truck and year

With a 120 kg reduction in weight (3 rheocasting parts for trucks) during operation, approx. 0.4 % fuel savings with an average annual mileage of 100,000 km in long-haul heavy goods traffic and an average consumption of 30 l/100 km, approx. 120 l diesel per year fuel savings or 0.3 tonnes CO_2 savings per truck and year. In addition, the lower dead weight means that more payload can be loaded and the freighter can save entire journeys, which in turn reduces the volume of traffic.