



# BWG Germany – 60 years of solutions for the aluminium industry

In 2015 the German company BWG Bergwerk- und Walzwerk-Maschinenbau GmbH is celebrating its 60th anniversary in Duisburg.

Over this period the company's many innovative technological developments in the treatment of rolled strip have made a significant contribution to the high level of equipment in advanced aluminium strip rolling mills.

BWG thermal processing lines, i.e. continuous annealing lines for the automotive and aerospace applications, strip levelling systems with Levelflex® technology, lithographic strip processing lines and high performance coil coating lines are now to be found all over the world, particularly in Europe, North America and China.

Equipment for the aluminium industry represents about one half of the business volume of this medium-sized company with around 150 employees. In addition to supplying complete strip processing lines, BWG has also specialized in supplying single machines such as side trimmers or roll coaters, as well as the modernisation of existing lines or plants. BWG attribute

their success to their deep understanding of the processes and technology involved, and their ability to gain the trust of discerning customers by providing them with tailored solutions.

As Dr. Andreas Noé, BWG's managing director, explains: "Due to the process models and systematic problem analyses that we have developed, we have acquired a deep understanding of what is happening inside the material. That means we can always devise a solution for our customers that meets their specific requirements. It creates the necessary security and transparency of risks, both for us and the customer, when to accomplish a task involves having to go one step beyond what has previously been achieved."

One of BWG's early pioneering innovations was for improving the flatness of rolled strip. To do this the company developed a novel strip levelling technology with a special kind of tension levelling process. Together with the

associated plant, it was marketed under the name 'Levelflex®' technology. The first BWG delivery for aluminium strip was shipped as long ago as 1978 – to what was then VAW Aluminium in Grevenbroich, Germany. The Levelflex® machine was one part of an entire stretching, degreasing and pre-treatment line, for which BWG supplied the complete mechanical installation.

In subsequent years BWG developed and patented another strip levelling process: the Pure-Stretch-Levelflex® process, in which the strip is effectively elongated by pure strip tension as it passes around large-diameter rollers in several stretching zones. The process is characterised by the superior surface quality achieved and the minimal residual tensile stresses in the levelled strip.

This technology has since been installed in many BWG lithographic strip lines, e.g. in three plants for VAW/Hydro, two for Alcoa and two for Bridgnorth Aluminium.

Customer satisfaction with BWG's levelling technology is demonstrated by the delivery to date of 11 Levelflex machines to Alcoa alone. So far BWG has delivered a total of 76 Levelflex® lines, predominantly for aluminium strip, but also some for carbon steel, stainless steel, zinc and titanium strip.

### Thermal strip processing lines

Today thermal processes play an important

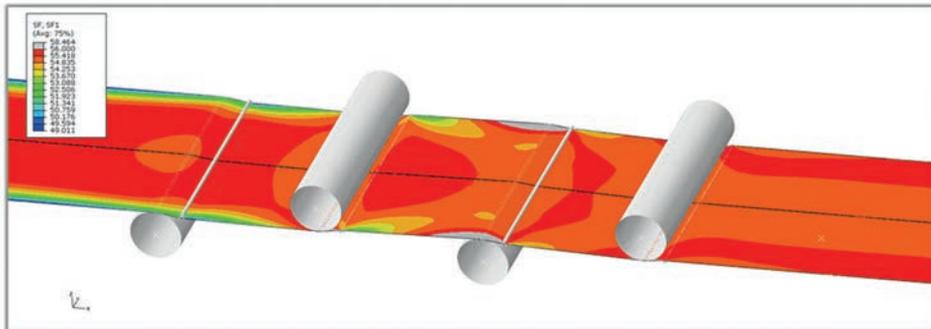
role in achieving the required strip quality in continuous strip treatment lines, whether for the drying of coatings or for heat treating strip through annealing and quenching. In order not to be dependent on what was available from external suppliers, BWG entered a technology transfer with the well-known furnace manufacturer, VITS. This created the precondition to enable BWG to offer

its customers integrated line designs from a single source, or as Dr. Noé sees it: "In the intervening period thermal strip processing has undergone decisive further development in our company, and has consolidated our market position, particularly in the aluminium industry."

In addition to supplying strip travel adapted to the required treatment process, BWG also supplies heat treatment as a core component, i.e. the strip floatation furnaces with subsequent water/air cooling and associated process models. BWG's expertise, which includes LAY-ON-AIR® floatation technology forms the basis for a high quality end product which meets the high standards required by the automotive and aviation industries. BWG's experience in the field of continuous annealing lines has grown over many years. By the end of the 1990s the company was already supplying British Steel as it then was, (later Corus, now Tata), in Port Talbot, South Wales with the mechanical equipment for a continuous annealing line for automotive grade steel strip. On the strength of this contract, BWG was successful as preferred supplier, when two years later, Corus (now Aleris) were awarded the contract for a new highly automated annealing and pre-treatment line for their plant in Duffel, Belgium. BWG were responsible for supplying the extensive mechanical equipment for this ambitious line, which can produce automotive aluminium strip up to 2300 mm wide.

In addition to deliveries to China, in 2007 BWG supplied the mechanical equipment for a continuous annealing line (AL2) at Hydro Aluminium in Grevenbroich. In a second phase in 2013, BWG extended this line with BWG oven technology. Currently BWG is working on the contract to supply a further continuous annealing line (AL3), with an annual capacity of 150,000 tonnes, which is due to become operational in 2016.

BWG is experienced in plant modernisations and can also provide operators with tailored consultancy solutions. As a premium equipment supplier, BWG continues to work on new developments, to enable it to continue providing its customers with further improved strip processing lines for high quality finished products in both the steel and aluminium industries. In doing so, particular attention is also paid to the development of process models with which the company can present itself not only as a turnkey provider, but also as a process provider. ■



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