

Premium welding products enable rapid growth

African Fusion talks to ESAB South Africa's MD, Chris Eibl, about premium products and the advantages of focusing on the costs of deposited weld metal rather than the cost per kg of a consumable or the comparative costs of a quality welding solution.



“ESAB South Africa has made massive strides in regaining lost market share and we are well on our way to getting back to where we were prior to the dissolution of ESAB Africa Welding and Cutting,” begins Eibl. “We are striving to regain our market leading position in cutting-edge welding and cutting technology and more and more customers are moving over to ESAB because of our ability to offer complete welding and cutting solutions,” he adds, citing a new relationship with Air Liquide as a national distributor for the entire ESAB product range.

“The ESAB brand is back to where we want it to be. In the last six months we have experienced 25% growth compared to the same period in 2017, and that in a declining economy, which we think is remarkable,” Eibl tells *African Fusion*.

How has this been achieved? “Many of our competitors have introduced cheaper products to try to retain market share, but we have taken the opposite approach. Low cost products tend to increase costs in the long term, so we have chosen to offer real value to clients instead. Our strategy is to target the total cost of ownership of welding and cutting operations, which directly affects fabrication profitability. Some believe that a lower R/kg for consumables will do this, but this is seldom the case. At

the end of the day, a customer needs to be successful in all aspect of fabrication, by reducing all of the input costs at the same time,” Eibl argues.

By way of a demonstration, ESAB ran a comparison between its premium AristoRod ASC (Advanced Surface Characteristic) welding wire and a lower-cost alternative. “Even at double the price of the cheaper wire, we still managed to achieve a 10% reduction in the total cost of the fabrication,” Eibl reports.

How? “Through improved efficiency of the whole welding process. There is less downtime associated with our premium quality copper-free ASC wire: less stopping to clean liners and feed rollers clogged with copper; and significantly less spatter, which saves on clean up time, grinding discs and labour. In short, the arc-on time is higher when using AristoRod ASC wire, leading to much lower total costs,” he explains.

“So a fabrication shop with 20 bays can reduce to 18, simply by switching to this premium quality wire, and as a bonus, the fume generation will be reduced to a third of what it was. This makes the process more environmentally friendly, and has the added benefit of reducing the risk of non-welding personnel suffering from arc-eye, which is often

caused by reflected light off welding fume,” he says. “So as well as reducing total fabrication costs, the use of ESAB's AristoRod ASC results in better health and safety and a more welder-friendly workplace.”

A similar premium quality consumable strategy has been applied to ESAB's OK MMA electrode range. Eibl lifts out the low

hydrogen (LH) OK 55.00 with AWS classification of E7018-1 H4R electrode as an example. “The key benefit of this product is that it has a recovery of 125%, which means every kg of core wire in the consumable can produce around 1.25 kg of deposited weld metal. Our nearest competitor can only deliver 1.1 kg due to them having only 110% recovery, which means that our LH consumables are over 13% more efficient with respect to deposition than the best of the rest,” Eibl calculates.

“Once again, this benefits customers through improved productivity and more arc on time. Total costs are not only about the price per kg paid for consumables, but about the cost of the material deposited – and more arc time along with reduced clean-up and lower reject rates all make using a premium electrode such as our OK 55.00 the most cost-effective option,” he points out.

ESAB's OK 55.00 consumables also features low moisture absorption (LMA) coating technology, “which is now incorporated into all of our basic LH, stainless and low- and high-alloy electrode ranges. This effectively means

that moisture pick up is dramatically reduced. “As well as having a lower initial moisture content, re-absorption of moisture is much slower with ESAB's LMA coating than with normal basic electrodes. After six hours in 80% humidity at 28 °C, the moisture content of typical LH electrodes will double from just over 0.2% to 0.4% within six hours, and reaches 1.0% within 24 hours. In the same 24 h period, exposed ESAB's LMA electrodes remain very close to the 0.2%

level, which means that even after 24 hours of exposure, they may not need to be baked

before use when there are no baking facilities available.

“In addition, the H4 means that these electrodes are guaranteed to produce less than 4 mg of hydrogen per 100 g of deposited weld metal. In fact, we strive to produce only half of that, 2 mg/100g of hydrogen, which is only 25% of the hydrogen produced by standard H8 low-hydrogen electrodes,” Eibl tells *African Fusion*.

“Our entire LH, low alloy, stainless, cast iron and nickel alloy range is also available in vacuum packs, which totally eliminates the need for baking before welding and enables welders to use electrodes directly from stores. This saves on baking furnace electricity costs and significantly reduces delays, increases arc-on time and minimises the total costs of welding,” he argues.

On the equipment side ESAB has also chosen to focus on premium products, which can reduce the real costs of welding through improved safety, better deposit efficiencies, higher final weld quality and less rework.

“Our EDGE regulators for oxy-acetylene cutting, for example, are not only easy to use, accurate and reliable, they are also robust and significantly safer.



ESAB's entire LH, low alloy, stainless, cast iron and nickel alloy electrode range is available in vacuum packs, which totally eliminates the need for baking before welding and enables welders to use electrodes directly from stores.

They include SLAM™ (shock limitation and absorption mechanism), which removes the possibility of the neck shearing off, which would transform the cylinder into a missile that can cause serious injury or even death considering it can pass straight through a double brick wall,” notes Eibl, adding that EDGE regulators are also available for controlling welding shielding or purging gases – and they come pre-calibrated to suit the gas being used.

WeldCloud: ESAB's online data management system

To be launched at Electra Mining next month, ESAB's WeldCloud™ is a secure, robust and scalable welding data management platform that provides insight to facilitate continuous improvement in welding operations by efficiently tracking key parameters for each weld seam produced.

“As well as managing welding procedures, WeldCloud-enabled welding machines to do self diagnostics and produce service alerts – and it can even alert welders and managers to potential weld defects, in real time,” says Eibl.

“It is also now possible to establish a welding procedure specification (WPS) via a weld test in a laboratory anywhere in the world, and then to push the approved welding parameters down to all of the welding machines required to do the work,” he adds.

While many of ESAB's machines are now available with WeldCloud built in, ESAB has taken a ‘top-box’ approach that ensures that any electronic welding machines can be retrofitted with the technology. “And this also applies



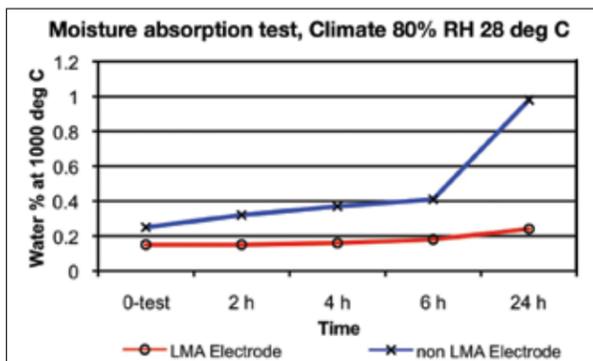
ESAB EDGE regulators with SLAM™ technology are not only easy to use, accurate and reliable; they are also robust and significantly safer.

to non-ESAB machines. So a fabricator with machines from different OEMs can still manage all of its welding on the WeldCloud platform,” Eibl informs *African Fusion*.

Particularly suited to track and trace applications, WeldCloud can collect and store data on every weld produced, making it ideal for meeting weld quality requirements. “It is also 100% scalable, which means that it can be used on one machine or a thousand: and new features and functionality are constantly being developed and updated on the platform,” he says, adding that ESAB's CutCloud™, is also under development to support and monitor cutting activities.

On the welding machine side, Eibl says that the top-of-the range Aristo™ Mig 4004i Pulse welding machine will be the flagship product on show at Electra Mining. “Particularly suited to aluminium and stainless steel applications, the new Aristo 4004i Pulse power source provides substantially improved arc welding performance. It is designed for high productivity and high quality welding applications; it comes with WeldCloud™ and can be connected via Wi-Fi, mobile/cellular networks or via hard-wired Ethernet links.

“These machines are brilliant for welding advanced materials where heat input needs to be reduced, for example, helping fabricators to achieve the best possible end weld quality,” Eibl concludes. ■



In 80% humidity at 28 °C, the moisture of most LH electrodes will reach 1.0 % within 24 hours. In the same 24 h period, exposed ESAB LMA electrodes remain very close to the 0.2% level.