

Air Liquide's simple electrode and wire choices

African Fusion talks to Air Liquide's product manager, Corrie Olivier, about the company's house brand welding consumables, namely Gemini and Ultra Arc™ filler materials. As with Air Liquide's ARCAL™ welding gas range, these two brands of filler materials have been developed to offer welding clients a set of simple options that can be used for over 80% of all welding applications.



Well known for its welding gas offering, most notably the ARCAL™ New Generation range of gas mixtures, Air Liquide's welding filler material brands are just as competitive. "To accompany our comprehensive welding offering, which includes several premium consumable brands, Air Liquide South Africa has been carefully developing a mid-tier range of exclusive, certified and cost-effective consumables for over two decades," says Air Liquide product manager Corrie Olivier.

Gemini and Ultra Arc™ are the two brands, the former being a range of stick (SMAW/MMA) welding electrodes while the latter is a range of MIG/MAG welding wires for the gas shielded and flux-cored arc welding processes (GMAW/FCAW). "These brands are exclusive to Air Liquide and together they can meet the majority

of the filler material needs for welding in the general industry," Corrie Olivier tells *African Fusion*.

Air Liquide's Gemini range of electrodes

Introducing the Gemini range, he says that these electrodes provide the industry with a cost effective and quality option. "Our AWS A5.1 E6013 general purpose Gemini RB36 electrodes, for example, offer very smooth welding, easy slag removal and low spatter in all positions," he explains, adding that they carry international certifications from the Lloyd's Register; American Bureau of Shipping (ABS); Bureau Veritas and Nippon Kaiji Kyokai.

The next consumable in the range is the basic low hydrogen AWS A5.1 E7018-1 electrode – simply called the Gemini LH 7018-1 – for use on thicker section base materials

to minimise hydrogen-induced cracking and achieve the desired mechanical properties. "We also offer high deposition rate Gemini E7024 electrodes, with iron powder in their flux coating, which are widely used for high deposition and have a recovery rate of approximately 160%," Olivier informs *African Fusion*.

"One of the best-performing Gemini products in our South African range is the nickel coated electrode, used for repairing and welding cast iron components," he continues. "We have two in our range, the Gemini Nickel Cast Ni 98 and the Nickel Cast Ni 55, with the 98 used universally for all types of cast iron. These electrodes are specially designed to operate at low currents, producing crack-resistant welds that are fully machinable."

For welding stainless steels, the Gemini range includes 308L, 309L and 316L welding electrodes to cover a comprehensive range of the corrosion resistant CrNiMo steels. These offer easy arc striking and restriking, excellent slag detachment, smooth arc performance and they produce clean weld edges. "For welding some of the higher alloyed austenitic stainless steels and Ni alloys, we have the Gemini 680, which is also ideal for welding dissimilar metals and/or difficult to weld steels. These are AWS A5.4 E312-16 electrodes that produce weld metal with a 29-9 Ni-Cr ratio," says Olivier.

For hardfacing applications, he cites the Gemini H600R, which is a general purpose hardfacing electrode that produces deposited metal in the Rockwell hardness range of 52 to 55 HRC. It is ideal for producing wear surfaces with excellent abrasion and medium impact resistance and is typically used to build up worn rollers in the cement industry, for tools in the agricultural industry and for surfacing of worn parts in the mining and civil engineering sectors – without the need for post weld machining.

Ultra Arc™ welding wires

As with almost all wire consumable sup-

pliers, Air Liquide's Ultra Arc™ ER70S-6 wire is the core of its in-house Ultra Arc™ brand. "This standard copper-coated wire is widely used for everyday MIG/MAG welding of carbon steels. But we also have Rec-Man, a premium bronze-coated alternative for this wire for those seeking to optimise torch consumable life," Olivier continues, adding that the bronze coated wire also delivers better electrical characteristics.

The Ultra Arc™ wire consumables are also highly competitive in terms of performance and price and the ER70S-6 wires are available in 15 kg spools and 250 kg drums, the latter being for automated welding. These are available in all the most popular wire diameters.

"Furthermore the Ultra Arc™ ER100, which is a wire for use on high-strength low-alloy steels (HSLA), has a high yield strength with good impact toughness at low temperatures. It is widely used for structural and earthmoving equipment manufactured from materials such as S690 QL," he adds.

As with the Gemini electrode range, Ultra Arc™ 308LSi, 309LSi and 316LSi filler wire are also available for all common stainless steel welding applications. "We offer a E71T-1 flux-cored welding wire for those looking to raise the deposition rate, as well as weld quality," says Olivier.

"For each of these wires, we have a matching ARCAL™ New Generation shielding gas: ARCAL™ Speed for the ER70S-6 wires on thinner section steels; ARCAL™ Force on thicker sections and for the higher yield strength ER100 wire; ARCAL™ Chrome for the 308, 309 and 316 stainless wires; and for the flux-cored E71T1 wire, we can use either ARCAL™ Force or INARC 25, which is excellent for flux-cored welding," he tells *African Fusion*.

"Locally, the ER100 and the E71T-1 wires are independently verified in the SAIW's



Air Liquide's general purpose Gemini RB36 electrodes offer very smooth welding, easy slag removal and low spatter in all positions.



Gemini Nickel Cast Ni 98 and the Nickel Cast Ni 55 electrodes for welding cast iron, along with the 308L, 309L and 316L stainless steel range, are available as sealed packs or tubes.

17025-accredited Materials Testing Laboratory, where qualified welders prepare test samples with the SAIW engineers and technicians overseeing consumable testing and certification. To this end we know that the integrity of the product is important; fabricators need stringent testing requirements to be met, which we are happy to do.

With this relatively simplified range of filler materials, our Air Liquide Gemini and Ultra Arc™ consumables complement our ARCAL™ gas offering by striving to exceed the expectations of the industry. It is part of our 'Simply High Performance' value proposition," Olivier concludes.

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