

ArcStrike introduces the Aquasol® range

Sean Blake, technical director of ArcStrike, talks about the new range of Aquasol® purging solutions and portable oxygen monitors being introduced into South Africa to help fabricators achieve clean and oxidation free root weld seams on the inside of pipes of all sizes.

“Traditional purge systems tend to be inefficient, costly and labour-intensive,” begins Sean Blake, technical director of ArcStrike. “To enable them to be removed, they must be placed several metres away from the weld zone, which results in large volumes of an inert purge gas being used to protect the narrow inner seams of weld joints. This adds unnecessary inconvenience and cost to the welding process,” he explains. In addition, not much science is applied which results in variable results.

To overcome these limitations, Aquasol® introduced water soluble paper and tape. Together, these components can be constructed by hand into unique purge dams. They can be conveniently placed close to the weld zone, which increases the efficiency of the welding process thereby reducing the volume of purge gas and reducing oxygen levels faster. And, water soluble paper provides an excellent gas barrier for retaining inert gases, such as argon and helium, within the weld zone during welding.

Made from sodium carboxyl methyl cellulose and wood pulp, Aquasol® Water Soluble Paper is 100% biodegradable and dissolves quickly and completely in most liquids – including water – leaving no residue behind in the pipeline. It is available in a wide range of grades and sizes for the construction of purge dams for any pipe diameter. It is easy to store, non-toxic and environmentally friendly.

“The Aquasol® system is ideal for any root welding of piping in steels, stainless steels, aluminium and any exotic material alloys in the nuclear, petrochemical and food and beverage industries,” says Blake. “In its basic form it comes in sheets of water-soluble paper that can be cut with a fold allowance to match the pipe diameter exactly, before being taped in place close to both sides of the pipe weld seam, to create an air-tight seal. Construction is simple, fast and customisable to fit various pipe schedules and sizes,” he notes.

“However, this basic form comes with the cut-to-size inconvenience, so Aquasol® has patented a more practical, EZ Purge®

range of pre-formed, self-adhesive purge dams to enable operators to save time on weld preparation and improve overall project efficiency,” Sean Blake continues.

EZ Purge® has tapered side walls to fit a variety of pipe schedules and its flat design enables equal distribution of gases across the body of the dam. “These purge dams come with EPA approved ZAP® – Zero Air Permeability – technology that maximises gas retention and reduces gas costs. They are also made of Aquasol’s water soluble material, though, so they can be washed out of the pipe after welding, leaving no contamination whatsoever, he says.

With EZ Purge®, the operator simply peels, inserts and presses the purge dam into place. “No other purge dam product on the market can provide such a reliable, efficient and environmentally sound solution to pipe purging needs,” Blake says.

Once a purge dam has been installed, and before welding, Blake recommends the outside of the joint first be covered with Aquasol® EZ Zone® welding tape, which can easily be peeled back as welding proceeds. The tape features a zone with no adhesive to prevent contamination of the weld joint. “First, though, the purge gas must be introduced using a purge needle connected to the inert gas supply, which needs to be able to displace the air, either from the underside or the top side, depending on the purge gas being used.

At this point, Blake advises, it is essential to monitor the oxygen level in the purge gas inside the pipe. “To fully protect a root weld seam from oxidation, the oxygen levels typically need to be reduced to below 100 ppm, as per the recommendations in AWS D18.1.

“I have used many oxygen analysers in my welding career, but the new Aquasol POM®-100B and POM®-5B offer a whole new level of performance and ease of use. They stabilise to an accurate reading far more quickly than previous models and the readings are precise.

“They come with built-in Bluetooth low energy capability (BLE), and a state-of-the-



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art App enables the unit to communicate with any smart device, so you can check the reading from 30 m away. It also comes with a remote logging capability, so the records of the purging quality can be made available for reporting purposes,” Blake tells African Fusion.

Key features of Aquasol POMs include:

- Compatibility with any device with Bluetooth connectivity: Android, iOS and Windows phones, tablets, laptops, and PCs.
- Real time remote monitoring.
- Intelligent colour notification system of acceptable oxygen levels.
- A live chart view of the purge gas is presented, and the completed chart can be saved for simple reporting.

“All the raw data can also be saved, downloaded and stored, and each reading is date and time stamped,” adds Blake. “Aquasol POM monitors are capable of meeting the strictest quality control requirements of the most highly regulated industries in the world,” he assures.

“We already have a number of clients in the power sector and stainless steel-fabrication market interested in Aquasol products, and we are looking forward to these purging systems being adopted more widely to achieve the integrity needed on the inside of high integrity and food-safe pipe welds,” he concludes.

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