



Connected Store chosen for Project Vulindlela

Air Liquide's Connected Store is currently being used at the Sappi Saiccor Mill in Umkomaas to service onsite contractors involved with the Vulindlela Project. Mwali Kawawa shares his excitement about the first commercial deployment of this modern and proudly South African delivery and stock management solution for welding contractors.

Developed to help welding maintenance and construction contractors to easily access and control the gas, consumables, equipment and supplies they need for their daily welding and cutting work, Air Liquide's Connected Store has been in operation on Sappi's Umkomaas site in KwaZulu-Natal since the start of Project Vulindlela in August 2019.

The Vulindlela Project is Sappi's R2.7-billion capacity expansion project, which is kicking off an investment in the Saiccor plant of R5-billion over five years. Sappi's Saiccor Mill is the world's largest producer of dissolving pulp, which is widely used all over the world to produce viscose staple fibres for the textile industry and microcrystalline cellulose for manufacturing pharmaceuticals as well as beauty and many other household products.

Sappi's investments will secure the mill's future by increasing its global cost competitiveness and significantly reducing its environmental footprint. CO₂ emissions will be cut in half, SO₂

emissions by 35%, waste to landfill will reduce by 48% and water use efficiency will increase by 17% – all while increasing earnings by at least R300-million per year.

Air Liquide's Connected Store was initially established to help onsite welding contractors to comply with ISO 3834 quality requirements in terms of the management and traceability of the consumables and equipment used for fusion welding. For portability and easy deployment, the store is housed in a customised container – and 20 ft or 40 ft size options are available depending on the site's needs.

A permanent person is employed to manage each store using a fully online stock management system to issue and control transactions, which are immediately uploaded and accessible in the cloud in real time. This enables easy remote control and management of the consumables used, with batch numbers being recorded against specific jobs and people utilising for traceability.

In addition, the Connected Store incorporates humidity and temperature controls, which are continuously monitored to create the ideal environment for the storage of welding consumables. This ensures sensitive stock is stored correctly, fit for use and overcomes the need for welders to reheat/dehumidify electrodes.

All of these features make the use of the Connected Store an ideal addition for ISO 3834-certified fabricators and welding contractors who need to collect records of compliance and traceability to retain certification and ensure ongoing quality conformity.

"At Saiccor, the Connected Store is routinely utilised by the appointed welding contractors at the construction project," Kawawa tells *African Fusion*.

While mostly supplying Air Liquide packaged gases – Arcal Prime for the TIG welding, along with oxygen and acetylene or LPG cutting and heating gases – the store also stocks the ESAB TIGROD 2209 for use on the duplex stainless steel fabrication work across the plant. "Also being used are Harris gas equipment, torches and consumables as well as our Premium Arcal™ Prime with Exetop™ gas solution, which some contractors prefer. In principle, we can include anything that the contractors ask us to, even welding machines," he adds.

As well as the full Air Liquide gas range, ESAB welding electrodes, wires and machines; Gemini welding electrodes; TBI Industries MIG and TIG torches; the Hypertherm Plasma cutting range; Migatron welding machines; Harris Gas Equipment; Ultra Arc MIG welding wires; and Tyrolit abrasives are core product brands of Connected Store's offering.

The online portal

Kawawa logs onto the Connected Store's online portal via the homepage, www.connectedstore.co.za.



Left: Air Liquide's Connected Store is being used to service Vulindlela Project welding contractors at Sappi Saiccor. Right: Fingerprint IDs are used for authentication of the authorised person collecting goods. Purchase information is then immediately uploaded and stored for security and management purposes.



connectedstore.co.za: "Anyone who has access to any Internet connection can log on to the site, via a smartphone, tablet, laptop or computer, for access to purchase and use information for any or all of their requisitions," he says.

In terms of authorisations, there is a hierarchy of logon information that utilises biometric system access control. "The owner is Sappi, who appoints and authorises various contractors, who can then upload their own authorised representatives with access to separate accounts," he explains. "We can set different terms and conditions for each contractor and each one can upload any number of welders, boilermakers or supervisors to access the site and use the store. This ensures sufficient traceability of purchases: which products were issued, the respective quantities, when and for which contract and job.

"For onsite validation, we rely on fingerprint IDs, which then authenticate the authorised person collecting goods. All of this information is then immediately uploaded and stored for security and management purposes so that any authorised manager can monitor how the project budget is being spent," he explains.

Shopping for products and their selection is simplified via the search function at the point of use. A welder or welding supervisor can search for all the items needed for the tasks ahead and add them to the shopping basket. Once ordered and authenticated, the store manager will collect all the items needed, ready for dispatch to the customer.

With regard to receipts, Kawawa says paper receipts are still being issued to the artisan collecting the goods, but these and associated acquisition reports

are also uploaded to the system and immediately made available to management and back office staff.

Stock levels in the store are continuously monitored and alerts are sent as soon as any individual stock item falls below pre-established thresholds. "Over time, we can adjust critical stocking levels to best suit usage trends. We can even perform data analytics on the stock flow of a project, for trending and costing, for example. For future projects, this can be a powerful tool in ensuring that our local contractors remain cost effective and competitive," he adds.

It is also possible to filter acquisitions in various ways: for a day, a year or for the contract to date, for example. For the EPC or for Sappi, they can sort expenditure by contractor, by welding process, by employee or directly by an acquisition number, and both detailed and summary reports are immediately available.

"For ISO 3834 traceability, job/project numbers, order numbers, names of employees, employee numbers, item descriptions, batch numbers for consumables, serial numbers of equipment, ISO classifications for gases and all other data required by the quality controller is made available for reporting purposes," Kawawa assures.

"This is a sophisticated database that is available live online as soon as anything is taken from the store. It makes controlling costs and quality requirements incredibly easy," he adds.

"This whole system has been developed in South Africa by us at Air Liquide along with local development partners. It has now been identified by the Air Liquide Group as suitable for global deployment for construction, fabrication, maintenance and refurbishment projects," Kawawa tells *African Fusion*.

"Our Connected Store offers ideal

opportunities for organisations to band together to get access to everything they need without having to invest in their own stock, stores and inventory control systems. Together with Air Liquide, we will establish the combined needs, employ a Store Coordinator and then deploy the Connected Store onto the site.

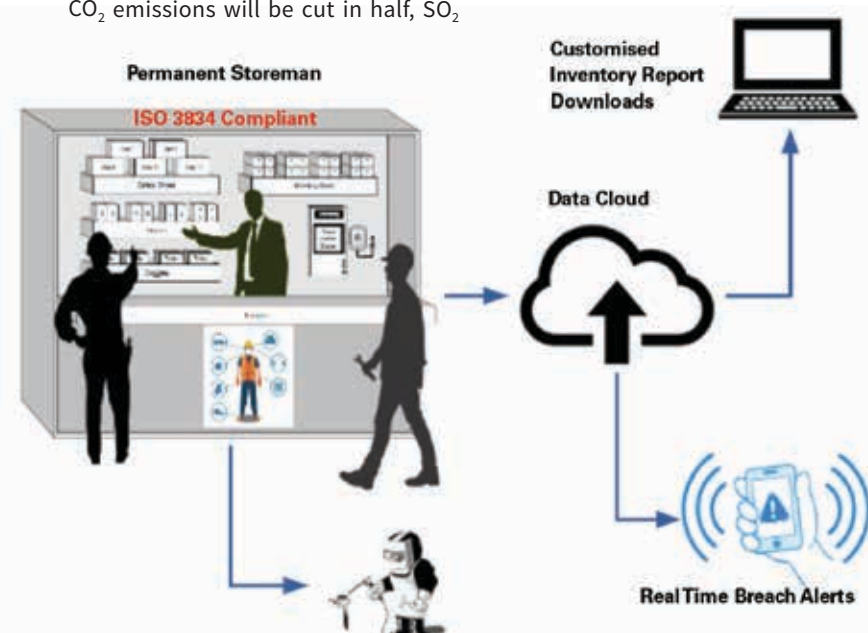
"The digital and IIoT (Industrial Internet of Things) aspect of our Connected Store solution is a big differentiator for us. By combining the supply needs for several contracting companies, significant cost and security benefits accrue for everyone. It is even suitable for OEM-managed projects that offer free-issue materials. Using our Connected Store, we at Air Liquide can take on the responsibility for issuing, controlling and tracking these materials in a modern, transparent, secure and cost effective way," Kawawa concludes. ■

Comments from Project Vulindlela contractors

Luke Perumal, Project Vulindlela contractor: Air Liquide's Connected Store is a great idea. Having the store on site makes it very easy and convenient to access gas when needed. This saves us time and the well trained and helpful staff are always there to assist us.

Gareth Paul, Project Vulindlela contractor: It is very convenient to have gas and consumables at the construction site, five days a week from 7.30 to 16.00. This means there is no lost time waiting for gas deliveries and the security is very good, as only certain employees can collect the gas, with their fingerprint being used to register their identity. Extra gas is available if we work on the weekend and the store's forklift enables us to load and offload all the gases we need.

Tara Stannard, Project Vulindlela contractor: Using the Connected Store means there are no delays in waiting for product, therefore no disruptions to the job. The system is very easy to use, the staff very helpful and efficient and Air Liquide strives to ensure that it always has stock available, which is the most important thing.



Air Liquide's Connected Store an ideal addition for ISO 3834-certified fabricators who need to collect records of compliance and traceability.