World class lab at CHRYSO providing solutions

Upgrading its Jet Park laboratory has given CHRYSO Southern Africa the capacity to expand its solutions to customers in fields including aggregates, concrete aesthetics and cement.

Mpume Mlalazi, research & development manager at CHRYSO Southern Africa.

Staffed by specialist engineers in interface physical chemistry, the CHRYSO Southern Africa laboratory conducts both research and development (R&D) and testing. It also designs its own molecules for industrial-scale production.

"There are a number of challenges facing our customers, including energy costs, environmental regulations and the recently introduced carbon tax," Mpume Mlalazi, R&D manager at CHRYSO Southern Africa says. "By enhancing our world class laboratory facility, CHRYSO can develop solutions that mitigate these challenges."

Among the capabilities of the laboratory is a recently launched sand and clay diagnosis tool (patent pending) for accurate quantification of delirious clay minerals in aggregates, says Mlalazi. This helps customers address the growing issue of problematic aggregates in a cost-effective and environmentally responsible way.

"Our solutions, rheology robustness enhancers and clay enablers, use polymer science to allow customers to make use of readily available aggregates without having to wash the material extensively with water," she says. "The environmental benefits of this technology are substantial, especially in water-scarce areas."

The facility has an extensive colour testing capability to support CHRYSO's new concrete aesthetic range. Accurate measurement of colour can be conducted, allowing customers to easily match the colours that are required for a particular project. The expansion of technology also means that the laboratory can scientifically test demoulding oils, another important aspect of the company's offering.

Mlalazi highlights that the laboratory has expanded its expertise into cement testing as well. "As part of our R&D function, we have acquired additional equipment to facilitate testing of cement," she says. "This can now be done in a pure molecular chemistry environment."

In addition, micro-concrete evaluation is used to optimise admixture selection to cement performance.

She emphasises that this work has put the company "ahead of the game" in finding energy saving solutions and meeting the impact of carbon tax legislation. The laboratory can assist with testing and R&D related to both extended cement and concrete.

"All work is conducted within stringent standards," she says. "These include the ISO 9001 quality system, ISO 14001 for environmental protection and ISO 18000 for safety. We also test water quality to ensure we only discharge clean water and recycle water wherever possible."

CHRYSO Southern Africa's commitment to R&D is enhanced by research collaborations with local universities. The laboratory also engages graduates from these universities, who are mentored by CHRYSO specialists as part of their professional development. ❑

Polymer synthesis for rheology and clay enablers.

New laboratory equipment for wet cement chemistry testing.