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**CHRYSO SOUTHERN AFRICA SEES INCREASING USE OF PIGMENTED OR COLOURED CONCRETE
FOR A WIDE RANGE OF CONSTRUCTION AND INFRASTRUCTURE APPLICATIONS**

Pigmented or coloured concrete is being used increasingly in a broad range of construction applications in South Africa, from pipelines to roads and even stadia, Hannes Engelbrecht, General Manager: Marketing, Chryso Southern Africa, says. "The government's commitment to a massive infrastructure development rollout over the coming years presents a singular opportunity for the South African construction industry. While the use of pigmented concrete in this regard is still in its infancy, we are finding that contractors, architects and consultants are showing an increasing interest as well as coming up with more and more novel applications," Engelbrecht says.

Chryso Southern Africa is the sole distributor of Lanxess inorganic iron oxide Bayferrox® pigments for the construction industry in Southern Africa. This German company is a global manufacturer and distributor of inorganic pigments. These are all UV-stable and comply with EN 878 (the use of pigments for colouring building materials) and ASTM C 979 (pigments for integrally coloured concrete). Chryso Southern Africa supplies all the major readymix manufacturers such as AfriSam and Lafarge.

A recent success story for Chryso Southern Africa was the application of Bayferrox® pigments for concrete roads at the R220 million Sunward Lifestyle Centre shopping complex in Sunward Park, Boksburg as an alternative to traditional asphalt pavement. Engelbrecht says that Bayferrox® 330 black pigment was specified so that tyre marks and oil spills would not be too conspicuous on the concrete road surfaces.

The developers were on the lookout for the exceptional durability and extended life that concrete roads can provide for a shopping complex with a catchment area of 340 000 people, which meant higher than normal traffic. The 17 000 m² shopping complex has a road network leading to 1 000 parking bays constructed from interlocking concrete blocks without pigmentation.

Engelbrecht explains that the Sunward project specified a mix of 16.6 kg of Bayferrox® pigmentation per cubic metre of concrete. In total, the 3 000 m³ of concrete required a staggering 47 t of pigment to achieve the requisite black shading of the road network, built by main contractor Mikon

Construction of Boksburg. The mix was designed by AfriSam's Technical Department, with Matthews Sethlodi, AfriSam Team Production Manager, revealing that 80 m³ to 100 m³ of readymix was delivered to the project site over eight months. This translated into 500 concrete mixer loads.

Engelbrecht says that a recent similar application was the bunded concrete areas surrounding the fuel storage tanks on Transnet's new Multi Product Pipeline (NMPP) project between Durban and Heidelberg in Gauteng. Here large quantities of Bayferrox® 330 black pigmentation were used to conceal spillage staining the bunded concrete areas.

Another striking example was the use of red coloured concrete for the demarcation of bus lanes for Cape Town's Bus Rapid Transit (BRT) project, which specified Lafarge's Artevia™ decorative concrete, based on pigments supplied by Chryso Southern Africa. The Steyn City urban precinct development in Fourways, Johannesburg also features exposed coloured concrete and surface retarders using products from Chryso Southern Africa.

Another landmark application was Soccer City, not only one of the most recognisable features on the Johannesburg skyline, but the largest soccer stadium built in South Africa for the 2010 FIFA Soccer World Cup. Architectural firms Populous and Boogertman Urban Edge + Partners created a new hi-tech façade made of glass fibre reinforced concrete coloured with Bayferrox® pigments. This striking design set a new benchmark for innovative architecture in South Africa.

The challenge for the concrete industry is that urban planners, architects and contractors now have a wider range of building materials to choose from. "The use of pigmented or coloured concrete has the definite advantage of positioning concrete as an aesthetically pleasing and modern building material. In addition, our wide reference base showcases the versatility of pigmented or coloured concrete in an increasingly diverse range of applications," Engelbrecht comments.

From a sustainability point of view, Engelbrecht points out that Bayferrox® pigments are produced in Germany using modern processes that reduce the environmental impact. "These pigments are neither toxic nor an irritant to the skin or mucous membranes," he adds. Another critical factor is consistency of the pigments produced, which Lanxess prides itself on. "This means that there are no colour variances, pointing to the high quality of the end product. This is often a major problem with cheaper alternative products such as those sourced from China."

Engelbrecht says that Chryso Southern Africa has sophisticated equipment such as a Colourimeter that provides a quantitative measurement of the colour strength of the pigmentation. “Our colour laboratory supplies us with specifications that allow us to colour-match available concrete masonry production lines at a competitive rate.”

Looking to the future, he says that concrete admixtures, which are becoming increasingly popular as concrete technology itself advances, “provide a natural intervention for pigments. Depending on the specific customer requirements, we can blend any colours accordingly.” For example, Chryso Southern African mixes colours used exclusively by Lafarge for products such as its Artevia™ decorative concrete.

Engelbrecht says that Chryso Southern Africa has been conducting intensive research and development on pigmented or coloured concrete for nearly a decade. “There is a big push by readymix companies as it is seen as adding value to their own product, while architects and specifiers are increasingly becoming aware of the possibilities as they advance its future development and application.”

PIGMENTED CONCRETE PIC 01: Hannes Engelbrecht, General Manager: Marketing, Chryso Southern Africa, says urban planners, architects and contractors now have a much wider range of building materials to choose from.

PIGMENTED CONCRETE PIC 02: Chryso Southern Africa is the sole distributor of Lanxess inorganic iron oxide Bayferrox® pigments, which comply with EN 878 (the use of pigments for colouring building materials).

PIGMENTED CONCRETE 03: The use of pigmented or coloured concrete showcases it as an aesthetically pleasing and modern building material.

PIGMENTED CONCRETE 04: The versatility of pigmented or coloured concrete is being applied to an increasingly diverse range of applications.

PIGMENTED CONCRETE 05: Bayferrox® pigments from Lanxess of Germany are produced utilising modern processes that reduce the environmental impact.

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FROM : CORALYNNE & ASSOCIATES
TEL : +27 011 849 3142
EMAIL : communicate@coralynne.co.za
WEBSITE: www.coralynne.co.za

FOR : KIRSTEN KELLY
CHRYSO SOUTHERN AFRICA (PTY) LTD
TEL : +27 11 395 9700
EMAIL : kirsten@chrysosa.co.za
www.chryso.com