

# Introducing eco concrete

AfriSam has announced the introduction of a suite of environmentally responsible, application-branded, best cost ready mixed concrete products. In the past contractors have gone for fairly mediocre clinker substitution products but AfriSam has taken a huge leap forward. This is a paradigm shift for the industry as the new concrete products have roughly half the world average Carbon Footprint for typical concretes used in these applications.



Victor Bouguenon, marketing manager of AfriSam.

**THESE PRODUCTS CAN** be ordered according to the strength requirement for specific applications. One of the most important aspects is that performance is not compromised. AfriSam is also able to produce ultra high performance Eco concretes with compressive strengths in excess of 70 MPa.

The company has not stopped blazing its trail when it comes to providing contractors and construction companies with viable solutions when it comes to construction materials that are environmentally friendly and will assist companies in meeting the requirements for green buildings. This is not a quick fix solution but part of a well orchestrated initiative from this company that started many years ago.

## History

Many companies 'green wash' when it comes to environmentally friendly products, but AfriSam has put its money where its mouth is with major investment in its operations to ensure that they are able to provide sustainable solutions.

Although it may appear as if the green building initiative has only gathered momentum in the last few years, AfriSam started its green cement project in 2000 when they started producing composite

cements, effectively utilising less CO<sub>2</sub> intensive materials.

Being involved in green building initiatives necessitates a large investment. AfriSam was the first cement producer to develop an environmental policy and this was introduced in 1994, long before environmental and green building issues were on agendas. Apart from the time and effort over the years, AfriSam has invested in excess of R1-billion since 2004 in upgrading its operations with initiatives such as minimising the use of non-renewable resources such as coal, reducing dust emissions, improving energy efficiencies and introducing technology which has increased the company's ability to produce composite cements.

"With concrete being the most widely used material on earth after water, the reduction of our carbon footprint is a vitally important environmental target for AfriSam. Since 1990 we have managed to reduce the CO<sub>2</sub> footprint per ton of cement by more than 34%. The CO<sub>2</sub> in cement production is generated by three processes: the burning of fossil fuels, use of electricity and the decarbonation of limestone. The active ingredient of cement is a compound called clinker, and the production of clinker is a very CO<sub>2</sub> intensive process. When clinker is replaced with a suitable

alternative material, the amount of CO<sub>2</sub> per ton of cement produced is effectively reduced, resulting in a reduced carbon footprint," says Victor Bouguenon, marketing manager at AfriSam.

Suitable cementitious materials like slag and fly ash are produced as by-products from the iron making and electrical power generating processes. "Using these materials in our cement not only prevents them from being dumped but ensures that they have a useful purpose, gives our products the performance for which we are renowned and assists us in reducing our carbon footprint," adds Bouguenon.

## Measuring leads to action

Measuring its Carbon Footprint led to AfriSam's Green Cement programme in 2000. "We extend cement by using slag-gement, fly ash, limestone and even silica fume instead of CO<sub>2</sub> expensive clinker. The result is products which conform to SABS standards have improved durability and workability and sacrifice none of the strength and quality of traditional cement," says Bouguenon.

AfriSam has reduced the specific CO<sub>2</sub> per ton of cement by 37% between 1990 and 2008. "This amounts to some 600 000 tons below the 1990 figure. At the same time, we have increased the amount of cement produced by 53%. The success of this measurement methodology prompted AfriSam to extend it to all its aggregate and readymix operations," says Bouguenon.

## Progression and obligation

Extending the system from cement to aggregate and ready-mix was not only a natural progression for the organisation, but a moral obligation too. AfriSam does not consider itself the exclusive owner of the methodology, and is presenting the model to other aggregate and sand producers as well as various other bodies in the industry, such as the Institute of Quarrying, ASPASA and the SA Readymix Association, encouraging others to come on board so all can join forces in reducing the total carbon footprint.



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