

Sustainable readymix concrete

Cement and concrete suppliers associated with the South African Readymix Association (Sarma) are continuing to move towards a sustainable and greener environment for future generations. This was made evident during this year's Sarma Conference in Kempton Park recently where members participated in a panel discussion on concrete's role in a greener society. Initiatives taken by members ranged from recycling truck wash water, optimising manufacturing processes to become less energy intensive, and recycling old concrete to name just a few.

Despite concrete making up only 15% of a building's carbon footprint, panelist Bryan Perrie of the Concrete and Cement Institute (C&CI) says that decreasing the overall footprint of concrete is still very important. "The closer you get to zero net energy, zero wastage, etc, then you are getting closer to true sustainability."

He says the C&CI's mandate is to grow the market for architectural, human settlements, roads and structural concrete, while also concentrating on sustainability issues. The Institute has already produced a booklet on practical usage of concrete towards a sustainable environment and is in the process of producing others that will focus on issues such as producing energy-efficient concrete roads and efficient human settlements, etc.

"It is important to remember that concrete is a sustainable product. It is how we use the built structures that has the biggest impact on the environment and changes the carbon footprint dramatically. Reducing the need for lighting and heating/cooling of a building can have a dramatic effect on its overall energy consumption," Perrie adds.

Participants from the three major cement producers that supply the readymix industry, namely PPC, Lafarge and Cimpor NPC, contributed numerous examples of initiatives they are undertaking to produce greener cement. Examples included building more efficient plants, using alternative fuels in kilns and vehicles, recycling concrete at aggregate plants and reducing energy consumption at every step of the way.

Kevin Quayle of Cimpor NPC supports the idea that recycling concrete from old structures at the end of the lifecycle contribute to mitigating a large portion of the structure's original carbon footprint. He believes that in addition to documented initiatives undertaken by the company and the industry, there is more that can be done.

Panelist Egmont Ottoman of PPC points out that studies reveal that energy consumption of the company is about 25% of the total operational cost in terms of electricity, coal and fuel. Projections show that it will soon account for more than 40% of cost, thereby adding further impetus to saving energy. "We can't do much about the fact that cement production is carbon intensive, but we can help find solutions to making our houses and buildings more energy efficient. For example, inhabitants of low income houses may soon not be able to afford electricity to heat and cool houses. That's why it is important to make houses that are energy efficient right from the start," he urges.

Lafarge is actively seeking better energy efficiency worldwide and new techniques are constantly being introduced locally and abroad. Danie Jordaan also embraces the idea of

recycling concrete and says that a number of aggregate plants are already processing recycled concrete.

Companies like Sika, which supplies grinding aids for cement production, as well as supplying admixtures for improved concrete performance, also contributes to better and more efficient concrete production. Chryso chemicals and admixtures also have solutions that assist readymix concrete suppliers, as well as the general construction industries that can be incorporated into products to provide better performance and usage of concrete. Fly ash is an important extender of cement and is widely used in the readymix industry. Ongoing work by companies like Ash Resources are contributing to better grades that not only extend the cement, but enhance the performance of concrete in a wide range of applications.

In summary, panel chair Sean Rodrigues, energy consultant of SDR Group, says great strides have already been made towards sustainability and greening of the environment, but challenges the readymix and associated industries to find further innovations. "Let's challenge conventional thinking and push the boundaries. The use of concrete by architects, engineers and contractors within the realms of green building is the key issue. The most critical is the idea of helping construction companies to perform better all-round. Sustainability is a cycle where funds are sustainable, jobs are created and maintained, etc, while at the same time doing good for the planet," he says.

John Sheath, CEO of the Concrete Society believes that the best way to negate the impact of concrete on the carbon footprint of a building is to get it right first time and to make sure that concrete is used effectively from the beginning; thereby underpinning the requirement to use quality accredited readymix from Sarma members.

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Panelist Egmont Ottoman of PPC; the C&CI's Bryan Perrie; and Sean Rodrigues, energy consultant of SDR Group, discuss the role of sustainable readymix concrete at this year's Sarma Conference.