



Public Relations | Public Affairs Department

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PRESS RELEASE

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Saudi Aramco introduces new Volucon concrete technologies to Master Gas System pipeline project

Saudi Aramco's Pipelines Projects Department (PPD) is currently executing the construction of a Master Gas System (MGS) pipeline mega-project along the East/West Pipeline corridor in Saudi.

The project consists of a 56-inch diameter pipeline that will transfer conventional gas from the eastern to the central and western areas of Saudi Arabia, to be used mainly in power generation. The project requires the use of massive amounts of concrete in remote areas for valve stations, pump station foundations, and pipeline anchor blocks.

David Macauley, co-founder of Volucon, the Saudi company that developed the solution for Saudi Aramco said, "The current model of concrete delivery in the Middle East and African (AFME) is the fixed location batch plant. Concrete batch plants offer restricted geographical coverage by their very nature. Saudi Aramco needed concrete in remote areas to very exacting standards, and we supplied our volumetric-measuring and continuous-mixing concrete equipment and expertise to provide the needed concrete."

Macauley added, "In addition Saudi Aramco wanted to utilise a new "green" concrete using natural crete to replace the conventional fly-ash or micro-silica additives. The addition of pozzolan crete provided multiple benefits such as temperature control, workability, and strength.

Volucon's co-founder and executive director, Eng. Shinawi, explained that there are several benefits from using Volucon's unique delivery model and crete based concrete, amongst these are:

- Continuous availability of fresh concrete at the site
- Ease of switching between different concrete mix designs
- Ease of moving to different locations in remote areas
- Eliminating concrete waste and environmental impact
- Less cementous material required for mixes, which result in a reduction of carbon dioxide emissions to the atmosphere
- Cost savings due to less cement required
- Cost savings achieved due to the difference between mobile and fixed batch plants for remote areas."

Shinawi added, “Volucon can offer you exactly this solution today. Volucon gives you the freedom to build what you want, where you want and importantly when you want, shattering the construction paradigm that has constrained regional operations for too long.”

“Other examples, and typical applications, for Volucon’s unique volumetric delivery model and speciality cements include:

- Pozzolan, GGBFS and micro-silica blending using Volucon’s dual bin units;
- Fiber concretes: replacing the requirement to use costly rebar, can be produced to save time and project costs;
- Marine and subsea concretes: produced fresh from units mounted on ocean going barges;
- Polymer concretes, for bridge decks, dams, swimming pools etc. to provide low permeability to water and chemical resistance;
- Coloured concretes can easily be produced to provide aesthetically pleasing results;
- Fluorescent aggregate can be utilised to provide self-illuminating surfaces and demarcation paths;
- Chemically resistant concrete that is thermally stable;
- Shotcrete and gunite: specially adapted units can be used in underground mining and tunnelling operations and even for lining sewage drains using URH concrete because of its chemical resistance and long life.”

Shinawi explained that, “By combining the best volumetric-measuring and continuous-mixing concrete equipment, specialist cements and admixture components, Volucon facilitates faster and more economic development of key infrastructure projects, including the strategically important; oil & gas; renewables; paving and defence sectors.

“The aviation sector is a strength, where our business model allows us to rehabilitate and maintain airport runways, without the need for the airport operator to suspend flights. This is achieved by utilising evening or off peak working to repair and hand back the runway in hours rather than weeks, as is typically the case.

“The ability to offer proponents, engineers and contractors on demand structural strength concrete within hours rather than days or weeks, opens hitherto unthinkable possibilities, unlocking value, financial and logistical savings in small, medium and large-scale projects.”

Macauley ended by saying, “Volucon’s volumetric units can be quickly deployed on land, rail or sea, to deliver an almost unlimited number of concrete design mixes. Our delivery model produces zero waste concrete with the smallest environmental footprint.”

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