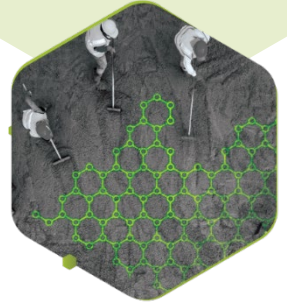


28th June 2023

World-leading graphene enhanced cement trials commence using PureGRAPH[®]



Highlights

- **First Graphene led consortium commences graphene enhanced cement and concrete trials, aimed at validating industrial scale manufacturing**
- **1.2 tonnes of PureGRAPH[®] to be used through varying dispersion methods and loadings**
- **Global partners in the trial include Breedon Group, Morgan Sindall Construction and University of Manchester**
- **Approximately 2,000 tonnes of graphene enhanced cement will be produced for demonstration in construction applications**
- **Trial creates further potential to support commercial scale solutions to reduce CO₂ emissions in the construction sector**

First Graphene Limited (“ASX: FGR”; “First Graphene” or “the Company”), is pleased to announce trials using the Company’s PureGRAPH[®] product have commenced at Breedon Group’s Hope Cement Works in the United Kingdom.

Approximately 2,000 tonnes of graphene enhanced cement will be produced at the Derbyshire plant, which is the largest in the UK (refer to Figure 1). The volume of cement is thought to be among the highest produced globally by trials using graphene to enhance cement properties.

The trial provides the opportunity to further validate and showcase the CO₂ reduction benefits provided by adding graphene into the cement production process on an industrial scale.

About 1.2 tonnes of PureGRAPH[®] 50 is being used in the trial, testing multiple dispersion methods and dosage rates to determine the most effective and beneficial application process. The graphene will first be formulated into a grinding aid and then introduced into the cement grinding mill feed.

Dispersion into the cement production line will occur over a 24-hour period using traditional grinding aid dosage lines, with minimal operational or mechanical change required to the existing plant.

Cement produced will be validated by Breedon’s Quality team to assess its performance enhancement.



Figure 1 - Breendon Group's Hope Cement Works Facility in Derbyshire, United Kingdom.

Results from the trial will be used to build on data obtained from smaller scale trials previously conducted at an accredited concrete processing laboratory in the United Kingdom. These small-scale trials have generated positive results.

Recent work carried out by the University of Manchester confirmed the potential for PureGRAPH[®] enhanced cement to reduce CO₂ emissions and deliver a range of mechanical benefits in concrete-based systems, at very low graphene loading levels.

The graphene enhanced cement produced through the trial will be supplied to leading British construction and regeneration group Morgan Sindall Construction, which will use it in real world construction demonstrations.

The company is renowned for its cutting-edge approach to carbon reduction, sustainable material use and building methods in the construction sector.

First Graphene Managing Director and CEO Michael Bell said:

“This industry collaboration led by First Graphene is an example of world leading research and a significant jump in trial size to demonstrate the value of graphene in greening the cement and concrete industries.

“To our knowledge the volume of graphene-enhanced cement being produced is among the biggest ever trialed globally.

“We’re aiming to determine a simple, low-cost method of introducing graphene to industrial scale

cement production to drive the sustainability and decarbonisation of one of the highest emitting industries on the planet.

“Having involvement from leading manufacturer Breedon and sustainability innovator Morgan Sindall adopting this cement into real-world applications gives the trial extreme credibility, showcasing the potential of green cement products powered by First Graphene’s PureGRAPH®.”

Breedon Cement Managing Director Jude Lagan said:

“We are truly excited to be part of this consortium led by First Graphene. The role graphene can play in helping to decarbonise the cement industry could be significant, and we are keen to contribute to this process by facilitating what is set to be one of the largest global trials of this kind at our Hope Cement plant in Derbyshire.

“The construction industry can play an essential role in the creation of a sustainable built environment, as long as we continue to embrace innovation.

“We look forward to working with Morgan Sindall and the University of Manchester to showcase some brilliant real-world applications for this innovative graphene product.”

This release has been approved for release by the board.

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About First Graphene Ltd (ASX: FGR)

First Graphene Limited is focused on the development of advanced materials to help industry improve. The Company is a leading supplier of graphitic materials and product formulations with a specific commercial focus on large, high-growth global markets including cement and concrete; composites and plastics; coatings, adhesives, silicones and elastomers (CASE); and energy storage applications.

One of the key outcomes these advanced materials offer is the reduction of carbon dioxide emissions, whether directly through a reduction in output of these harmful greenhouse gases or lower energy usage requirements in manufacturing, or indirectly due to enhanced performance characteristics and extending the usable life of products.

First Graphene has a robust manufacturing platform based on captive and abundant supply of high-purity raw materials, and readily scalable technologies to meet growing market demand. As well as being the world’s leading supplier of its own high performance PureGRAPH® graphene product range, the Company works with multiple industry partners around the world as a supplier of graphitic materials and partner to research, develop, test and facilitate the commercial marketing of a wide range of sector-specific chemical solutions.

ASX ANNOUNCEMENT



First Graphene Ltd is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The company is incorporated in the UK as First Graphene (UK) Ltd and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK, where it has a strong marketing and R&D capability.

With authority of the board, this announcement has been authorised for release by Aditya Asthana, Chief Financial Officer and Company Secretary.