

# First Graphene Limited Announces Cement & Concrete Segment Update

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## Highlights

- Production of 600 tonnes of low carbon PureGRAPH® enhanced cement to go ahead in December targeting several applications
- Concrete roof tiles containing PureGRAPH® enhanced cement to be trialed by specialist precast concrete manufacturer FP McCann
- Morgan Sindall to use graphene enhanced cement for ground slabs in London railway infrastructure project
- Breedon to construct concrete demonstration site at Hope Cement Works for EV charging infrastructure

[First Graphene Ltd.](#) (ASX:FGR; "First Graphene" or "the Company") is pleased to announce a raft of new trial projects throughout the UK containing PureGRAPH® enhanced cement produced by commercial partner Breedon Group PLC ("Breedon").

Breedon will produce approximately 600 tonnes of cement incorporating circa three tonnes of PureGRAPH® CEM at its Hope Cement Works in Derbyshire, UK.

This will in turn be distributed to numerous material, construction and academic partners in the UK looking to benefit from performance improvements and carbon reduction associated with graphene enhanced cement (GEC) and concrete products.

It is anticipated CO<sub>2</sub> emissions associated with cement production will reduce by approximately 16% thanks to the partial replacement of carbon intensive clinker.

Several other organisations have requested material to be tested in their respective applications.

## FP McCann to test graphene in concrete roof tiles

FP McCann is utilising between 40 and 60 tonnes of graphene enhanced cement in the production of thousands of roof tiles at its Cadeby manufacturing plant in Leicestershire, which will then be tested at the company's R&D facility at Knockloughrim.

This aspect of the trial forms part of a successful application for a Contracts for Innovation with the Department for Energy Security and Net Zero (DESNZ) and Defra: Resource Efficient Construction Impacts project funded by UK Government, under which A\$30,000 is for the supply of graphene enhanced cement and other raw materials.

Cadeby has traditionally used large quantities of CEM I and fine aggregate in the production of millions of concrete roof tiles annually. Manufacturing at this scale relies on strict process control, where even small variations can have a negative impact on production efficiency.

The trial project will replace CEM I with GEC, which incorporates graphene nanoplatelets to reduce carbon without compromising product strength.

Testing and tile quality assessment will be carried out for approximately five months following their manufacture looking to realise material use efficiencies and reducing waste.

FP McCann's trial has partially been designed in response to the UK housing shortage crisis and Government's plan to build 1.5 million affordable, sustainable new homes.

This involves combatting rising material cost constraints by making cost effective, low carbon construction solutions available to the construction market.

Morgan Sindall gears up to lay graphene ground slabs

Meanwhile the high-end infrastructure division of Morgan Sindall Group PLC plans to use concrete batched by Capital G in the construction of railway infrastructure ground slabs in London.

Morgan Sindall has previously successfully tested graphene enhanced concrete containing PureGRAPH® to build a high speed train wash bay on a motorway in the UK.

This new collaboration will involve two tonnes of cement for a concrete batch, which will be used primarily in ground slab construction. A smaller test slab will be poured for durability testing, monitoring and measuring. Remaining concrete will be used to produce test samples for a suite of standard strength tests.

Breedon trial reflects decarbonisation targets

As the manufacturer of graphene enhanced cement, Breedon plans to conduct pre-trial equipment inspections at Hope Cement Works this month with production to commence December 2025.

Having already proven up carbon emissions reduction and performance improvements of cement produced with PureGRAPH, Breedon is a valued commercial partner of First Graphene and has strong commitments to manufacturing more sustainable construction materials.

Some of the trial material will be used in the construction of a concrete slab at Hope Cement Works integrating EV charging infrastructure for staff and visitors.

First Graphene Managing Director and CEO Michael Bell said:

"This is a dynamic approach to trialling graphene enhanced construction material formulated by First Graphene and produced in collaboration with our strategic commercial partner Breedon.

We know the cement and concrete sector has one of the highest volume potentials for graphene integration into production and we're proud to supply three tonnes of our Aqua Dispersed PureGRAPH® to build the foundation of this 600-tonne cement trial.

While there has been some delay to trial production at this scale, it has allowed our partners to secure appropriate infrastructure projects and construction schedules to put Breedon's GEC to use.

Naturally, we're very excited to be working alongside some of the UK's premier construction and materials organisation Morgan Sindall and FP McCann - with ongoing support from the University of Manchester to bring this trial to fruition."

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, sealants 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 reduction in output of these harmful greenhouse gases or lower energy usage requirements in manufacturing, or indirectly through 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.

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.

First Graphene Ltd is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Sydney. The Company is incorporated in the UK as First Graphene (UK) Ltd where it has a strong R&D capability.

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