ASX ANNOUNCEMENT

29th January 2026

First production of graphene enhanced concrete roof tiles by FP McCann

Highlights

- **FP McCann (UK) produces initial run of PureGRAPH® enhanced roof tiles**
- **Utilised 10 tonnes of graphene enhanced cement produced by FGR's partner Breedon in December 2025**
- **Conducted using FP McCann's standard roof tile manufacturing methods, requiring no changes to normal production methods**
- **Confirms viability of FGR's product as a solution to growing demand for low-carbon, high-performance graphene enhanced cement and concrete in the UK housing sector**
- **Up to 40 tonnes to be utilised by FP McCann over coming months for production testing**
- **Marks FGR's entry into US$7.67b concrete roof tile industry segment, which accounts for more than 40% of global tile volume.**
- **First Graphene targets demand for more than 1 million affordable and sustainable new homes in the UK, using lower-carbon cement and concrete, required and supported by the UK Government to solve housing shortages**
- **Multiple other projects with concrete product manufacturers in progress, using 600 tonnes of First Graphene's graphene-enhanced cement produced by Breedon**
- **Recent engagement with cement and concrete industry participants in Australia, South Africa, Thailand and Europe**

First Graphene Limited (ASX:FGR, OTCQB:FGPHF, FRA:M11) ("First Graphene"; "FGR" and/or the "Company") provides an update on developments in its UK concrete product manufacturing industry projects utilising the Company's PureGRAPH® graphene.

FP McCann completes production of an initial batch of PureGRAPH® enhanced concrete roof tiles

As announced to the ASX on 18 December 2025, First Graphene's commercial partner Breedon Group plc (LON:BREE) produced approximately 600 tonnes of graphene enhanced cement at one of its manufacturing facilities in England for use in trials by Breedon's manufacturing partners.

Breedon completed batch production within one day. First Graphene had supplied approximately three tonnes of PureGRAPH® graphene nanoplatelets to Breedon, and that material was utilised in the production run of graphene enhanced cement.

Breedon – a commercial and development partner of FGR's since 2023 – is a leading vertically-integrated international construction materials group in Great Britain, Ireland and the United States. It produces over 2 million tonnes of cement from its two cement plants in England and Ireland annually, is one of the four largest UK cement manufacturers, and is a supplier of concrete to a wide range of manufacturers utilising concrete in their products.

First Graphene announced at the time that the 600 tonnes of the graphene-enhanced cement produced by Breedon would be used in three projects (with multiple manufacturers) in the UK.

The first of those involves Breedon's customer FP McCann using 30 to 40 tonnes of graphene-enhanced cement for trial production of concrete roof tiles at one of its UK manufacturing facilities. FP McCann is the UK's largest manufacturer and supplier of precast concrete.

FP McCann has now completed production of the first trial batch of 2,500 roof tiles for testing using PureGRAPH®-enhanced cement supplied by Breedon. The trial production campaign utilised approximately 10 tonnes of the graphene-enhanced cement.

This inaugural production places FP McCann, Breedon and First Graphene at the forefront of the UK concrete roof tile industry, as First Graphene is not aware of any other roof tile manufacturer producing graphene-enhanced roof tiles.

This is the first of multiple trial manufacturing runs planned by FP McCann. First Graphene expects the overall trial production volume to be in the order of 10,000 tiles and the entire FP McCann testing program to occur over the next five months.

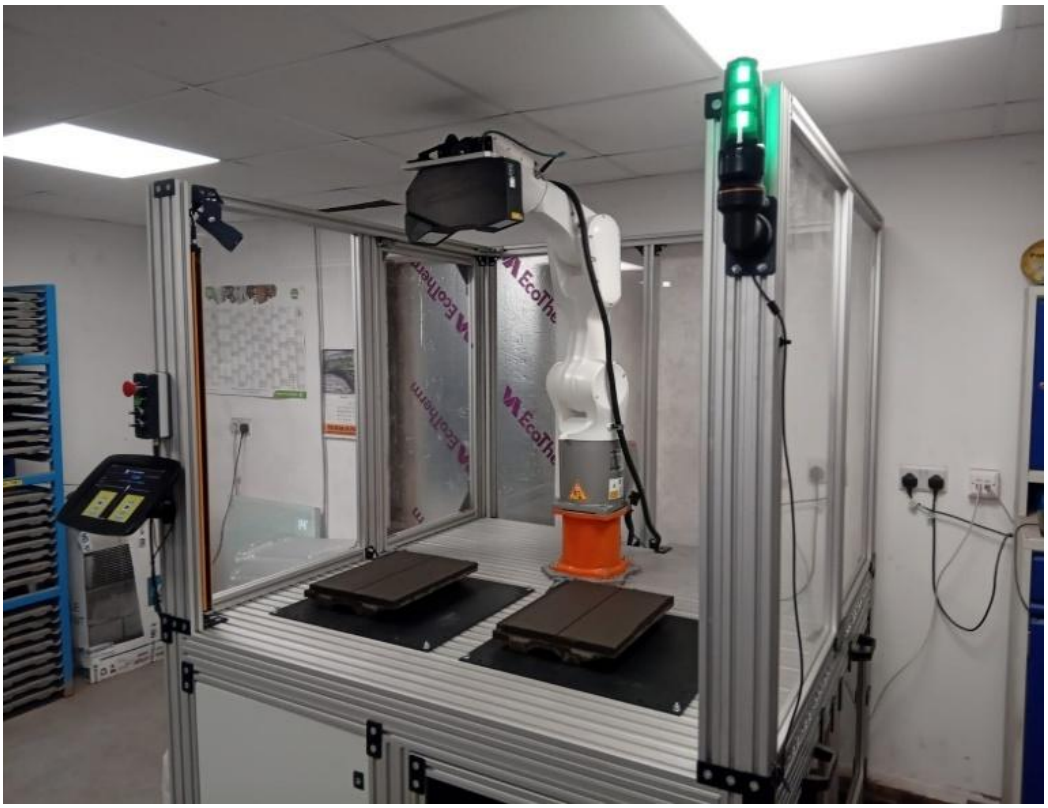

Image: Tiles in testing, postproduction.

First Graphene-enhanced cement in commercial use

FP McCann's initial production confirms that graphene has transitioned from laboratory validation to commercial-scale deployment within mainstream products made by leading producers and manufacturers in the cement and concrete industry.

PureGRAPH®-enhanced cement replaced traditional cement in this production. The cement was manufactured in a proprietary mortar formulation, specifically for roof tile production (mortar is used in cement production as a bonding agent, sealant and cushioning agent). The PureGRAPH®-enhanced cement is classified as CEM-II (as opposed to traditional CEM-I cement).

CEM-I cement (also known as 'Ordinary Portland Cement') utilises 95% to 100% 'clinker' (broadly, clay and limestone). In contrast, CEM-II cement blends about 65% clinker with about 35% supplementary materials. As one of the largest contributors to global carbon emissions, the construction sector is actively seeking greener materials.

The addition of FGR's graphene results in CEM-II cement production using significantly reduced amounts of carbon-intensive clinker.

PureGRAPH®-enhanced cement also offers important durability and performance advantages, which are particularly relevant for concrete roof tiles exposed to long-term environmental stressors.

That is because, among other things, it refines the microstructure of the concrete products manufactured from that cement. PureGRAPH®-enhanced cement:

- Reduces moisture absorption, limiting water ingress that can lead to freeze/thaw damage and long-term degradation.
- Improves resistance to sulphate attack, protecting tiles from chemical deterioration in aggressive atmospheric and environmental conditions (investigated outside this project).

For roof tiles specifically, these properties are critical to ensuring long-term performance, reduced maintenance requirements and improved whole-of-life sustainability, particularly in the UK's climatic conditions.

A product brochure explaining PureGRAPH® and its application to the cement and concrete industry is annexed to this announcement.

Cement and concrete manufacturing is one of the industries of focus for First Graphene

While First Graphene's PureGRAPH® graphene product has a wide range of applications, and the Company is focused on multiple industries, First Graphene's areas of focus include the construction industry, in particular, the cement and concrete industry, thermal insulation manufacturing, coating systems manufacturing, and fire retardancy product manufacturing.

First Graphene's focus includes the cement and concrete industry because of the following factors.

- **Size**. Within the cement and concrete industry, the concrete roof tile manufacturing segment

alone is forecast to grow to US$11.7 billion by 2034. It was valued at approximately US$7.6 billion in 2025.[1]

- **Industry requirements**. The construction industry is experiencing rapidly growing demand for lower-carbon cement and concrete product (driven by national net-zero targets and embodied carbon requirements in planning and procurement, in multiple country markets).

- **Adoption readiness**. The industry is ready for adoption of effective products that enable it to achieve production of lower-carbon cement and concrete products and, specifically as to graphene-enhanced products, recognises their capabilities.

- **Product readiness**. First Graphene's PureGRAPH® product, applied in cement manufacturing and concrete product manufacturing, responds to that demand, and, importantly, is ready for commercial use in the industry (as indicated by FP McCann's initial production run).

- **First Graphene's leadership position**. FGR is uniquely positioned at the forefront of the graphene industry. It is one of the very few graphene companies that have a revenue-generating product and a product that has been commercially adopted in several industries (e.g. cement and concrete, defence, solar panel manufacturing, footwear, composites, lubricants, coatings and polymers).

- **Scalability**. Concrete roof tiles are a high volume, repeatable building product, making them a scalable application for graphene-enhanced cement. Put into context, FP McCann can produce more than 120,000 tiles per day. Concrete roof tiles are only one of the multiple applications of graphene-enhanced cement in concrete manufacturing. Others include precast applications which span piping and prefabricated construction components.

First Graphene continues to progress existing and new sales opportunities with cement producers, concrete manufacturers and construction partners in the UK and internationally, to meet demand for low-carbon, high-performance building materials.

Among other projects, the prominent UK construction and regeneration company Morgan Sindall is planning to use First Graphene-enhanced cement in several scheduled rail infrastructure projects.

As demand for graphene-enhanced cement and concrete crystalises, industry participants in Australia, South Africa, Thailand and Europe have recently requested that FGR provide, and FGR provided, to them samples of graphene-enhanced cement.

First Graphene's product responds to housing shortages and government requirements

At the same time as the construction industry has been transitioning to sustainable materials, multiple countries, including the UK, are experiencing housing shortages.

The UK Government has committed to deliver more than 1 million affordable and sustainable new

[1] Industry Research, Roofing Tiles Market Size, 12 January 2026

homes in the next three years, to solve the housing shortages. At the same time, it seeks to do so in a sustainable manner, using innovative construction materials capable of reducing carbon emissions, while maintaining or enhancing performance.

FP McCann's roof tile manufacturing capability equates to approximately 170 homes per day.

As part of its environmentally focused response to housing shortages, the UK Government provides funding programs to industry and supports graphene enabled low-carbon construction technologies, specifically.

As a result, FP McCann's trial of First Graphene-enhanced concrete roof tiles is supported by a grant of £114,000 via 'Contracts for Innovation' with the UK Department for Energy Security and Net Zero (DESNZ) and the 'Resource Efficient Construction Impacts' programme by the UK Department for Environment, Food and Rural Affairs' (DEFRA).

As a go-to-market product readily available for the cement and concrete sector, FGR's PureGRAPH® additive range is being actively marketed to end users (refer attached use case overpage).

First Graphene Managing Director and CEO, Michael Bell, said:

"Completion of this inaugural roof tile production run with renowned manufacturer FP McCann is a strong validation of graphene-enhanced cement application at commercial scale.

Beyond carbon reduction, graphene delivers important durability benefits to concrete, including improved resistance to moisture ingress, sulphate attack and chloride penetration, which are all critical for long-life roofing products in UK weather conditions.

With the construction sector seeks to reduce embodied carbon while delivering durable, high-quality housing, graphene enhanced cement represents a compelling solution for both cement makers and concrete product manufacturers striving to achieve emission reduction targets."

-Ends-

This announcement has been approved by the Chairman.

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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, 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 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.

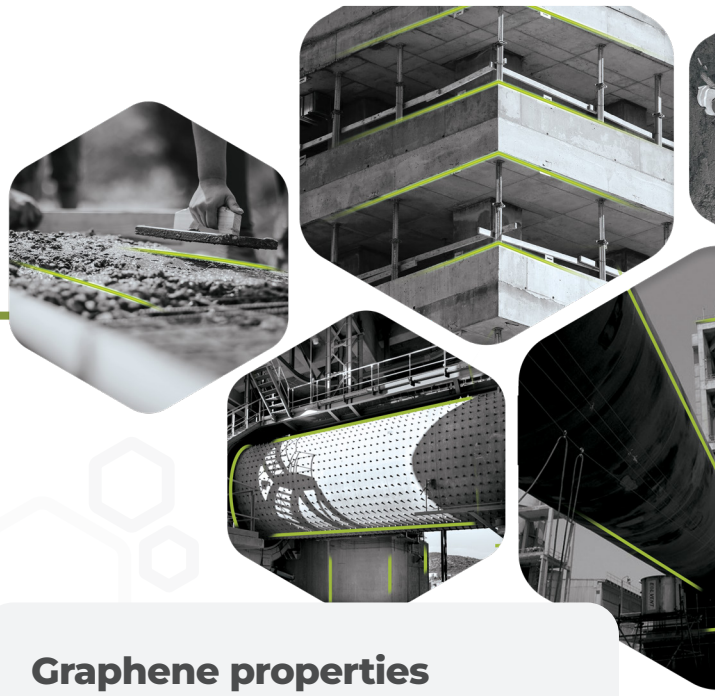
First Graphene Ltd is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The Company is incorporated in the UK as First Graphene (UK) Ltd where it has a strong R&D capability.

FIRSTGRAPHENE

ASX: FGR | FSE: M11 | OTC: FGPHF

PUREGRAPH® FOR CEMENT & CONCRETE

Unlocking strength, durability and sustainability in construction materials



The challenge

Cement is essential for modern infrastructure, but it comes at a cost. Each tonne of Portland cement emits roughly one tonne of CO_2, with the sector contributing around 7% of global carbon emissions.

The industry must deliver lower-carbon, high-performance concrete that meets future sustainability and durability

The solution

Graphene-enhanced cementitious systems

Reduced carbon footprint

- Replace cement without compromising performance
- A 20% strength gain equals up to 100 kg CO_2 saved per tonne of cement reduced

Superior mechanical strength

- +30–35% compressive strength at 28 days
- +30% tensile strength in tested samples
- Early-age gains of ~10% within the first 7 days

Enhanced durability

- 17.5% lower water absorption
- 33.5% reduction in oxygen permeation
- ~30% less chloride penetration
- Improved sulphate resistance - up to 60% less expansion under attack

Microstructural benefits

- Graphene platelets act as nucleation sites, densifying CSH formation
- Stronger filler–matrix bonding creates a tighter, more resilient structure

Graphene properties

- **Strength** - 200 times stronger than steel
- **Flexibility** - stretches up to 20%
- **Electrical conductivity** - 1 million times more conductive than copper
- **Thermal conductivity** - 5,000 w/mK in all directions (isotropic)
- **Impenetrable** - fully impermeable barrier, even to helium gas
- **Exceptionally thin** - 0.345nm, or one carbon atom, thick

HIGH PERFORMING | EASILY DISPERSED | VARIED PRODUCT RANGE | DIVERSE APPLICATIONS

HOW TO USE PUREGRAPH® IN CEMENT & CONCRETE

Graphene additives provide a commercially scalable solution to improving strength and durability of cement and concrete, while reducing carbon emissions from the production process.

ADMIXTURES

- Disperse graphene using high energy mixers alongside a dispersant
- Add immediately to prevent re-agglomeration
- Optimal dosage: <0.1 wt% relative to binder
- Best performance with PureGRAPH® 50

Ideal for high-specification projects demanding maximum performance

DRY MIXING

- Use PureGRAPH® 50 powder, a cost-effective additive, dry and ready for blending
- Simplifies integration with minimal equipment needs
- Strength gains observed at <0.1 wt%

Practical for dry packed mortar and concrete

GRINDING AIDS

- Introduce graphene during cement production alongside existing grinding aids
- Consistent 10%+ strength gains observed
- Blaine fineness increase of >10%, accelerating hydration and boosting early strength

The most reliable and scalable pathway for tonnage-level cement production

Performance gains

17.5%
lower water absorption

33.5%
reduction in oxygen permeation

30%
less chloride penetration

60%
improvement in sulphate resistance

Scan to visit the FIRST GRAPHENE website

Why choose First Graphene

Proven technology – PureGRAPH® nanoplatelets with controlled particle sizes (5–70 µm)

Patented production – Electrochemical exfoliation delivers superior dispersion and bonding

Tailored solutions – PureGRAPH® CEM paste designed specifically for cementitious systems

Scalable supply – Tonnage-level manufacturing with rigorous quality control

Industry partnership – Technical support for integration across admixtures, dry mixing, and grinding aids

Cost-effective – Priced to meet the demands of the construction industry

The value proposition

By adopting PureGRAPH®, producers and end users get:

Sustainability – Lower cement content, reduced CO_2 footprint

Performance – Higher compressive and tensile strength

Durability – Longer service life, reduced maintenance costs

Flexibility – Multiple routes of implementation

Competitive Edge – Deliver greener, stronger, longer-lasting concrete

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