Breedon Group, First Graphene and Others to Develop Graphene-enhanced Cement

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Breedon Group, together with Australia-based First Graphene, Morgan Sindall Construction & Infrastructure and the University of Manchester, is developing a new reduced-CO2 graphene-enhanced cement.

The consortium is currently formulating the cement using varying doses of First Graphene's PureGRAPH graphene-enhanced grinding aid. The project received a research grant from the UK government earlier in 2022. First Graphene says that the study involves one of the largest commercial trials of its kind to date globally. It is simultaneously collaborating on another similar trial with a Europe-based speciality chemicals producer.

On 29 September 2022, First Graphene launched its latest range of graphene-enhanced cement grinding aids and concrete additives. These join recent launches PureGRAPH AM, an admixture developed in collaboration with South Africa-based Nanoproof/Glade Chemicals, and HexMortar, a dry mortar mix which will be distributed by New Zealand-based GtM Action.

First Graphene says that its cement and concrete segment's order pipeline totals US$113m in value. Managing director and CEO Michael Bell said "It is pleasing to see our efforts, and those of our collaboration partners, coming to fruition at a commercial scale. One of the primary drivers for the adoption of graphene solutions in this segment is the reduction of CO2 emissions.

We're seeing considerable benefits both in the immediate reductions that can be achieved through the use of graphene-enhanced grinding aids, as well as the potential reductions in concrete usage because of the enhanced physical properties these products provide." Bell concluded "Working with industry-focused partners such as Nanoproof/Glade Chemicals, GtM Action, Breedon Cement and Fosroc opens the way to an estimated addressable market of

more than 12,000t of PureGRAPH across the medium to long term.”

Read the [original article](#) on Global Cement.