

Tomorrow's anti-corrosion material. Today.

Applied Graphene Materials proves its value in high performance anti-corrosion coatings

Industry leading performance with AGM's Genable® 3000 series, graphene based, active non-metallic, anti-corrosion additives

Earlier in 2018 Applied Graphene Materials (AGM) launched their latest, ground-breaking, dispersion range – the **Genable® 3000 series**. **Genable® 3000** dispersions are graphene based, active non-metallic, anti-corrosion additives, which are proven capable of delivering leading performance through numerous extensive test programmes. Like all **Genable®** dispersions, they are formulated to enable the full benefit of graphene materials to be accessed by coating industry formulators seeking a step change anti-corrosion performance.

AGM is now reporting results from further testing, which not only underlines the potential for significant anti-corrosion performance gains but also the products **commercial attractiveness** – particularly under harsher C4/C5 corrosive environments.

Incorporated into the formulation of an industry standard C3 epoxy primer system, and tested under representative cyclical salt spray testing (ASTM G-85-94 Prohesion), **Genable® 3000 series** materials have been shown to deliver a 5-fold extension in coating lifetime, based on a single 60µm dry film thickness (see images below). These exciting results are supported by a detailed mechanical dataset and studies incorporating combination with a PU topcoat exploring intercoat adhesion and overcoating intervals. All results confirm the products attractiveness for development into commercial anti-corrosion systems.

Further investigating **Genable® 3000 series'** potential for applications in harsher C4/C5 environments, AGM has embarked on another extensive test programme looking at the performance of a higher-build primer system. The thickness of this high-build primer is around 110µm, and is therefore typically thinner than many comparative industry standard systems in the C4/C5 category (ISO12944).

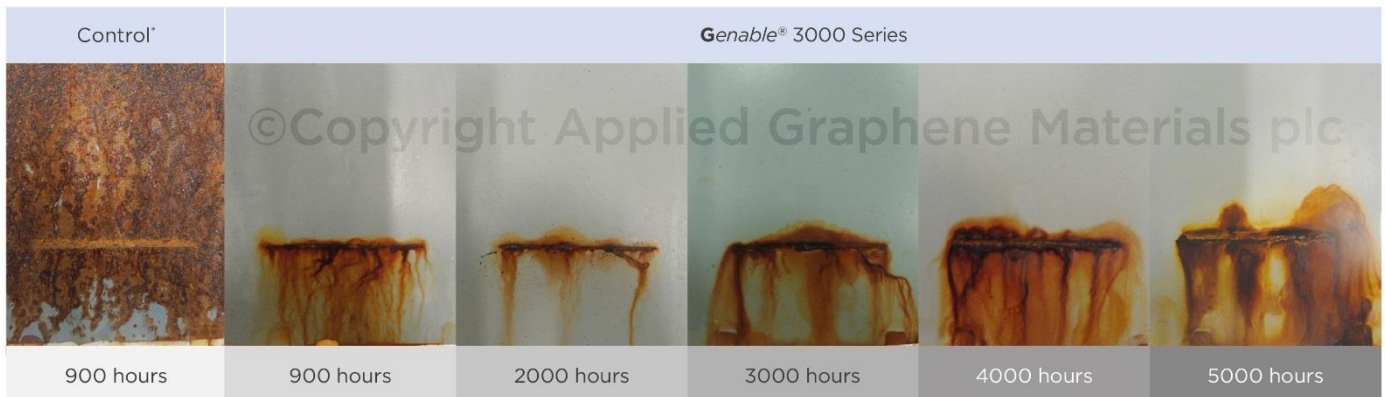
The properties of the **Genable® 3000 series** make it an ideal tool-box additive for formulators seeking to significantly enhance coating performance in a range of environments. As an additive capable of offering metal-free systems with extended durability it is anticipated that **Genable® 3000** should find multiple applications in industrial areas subject to high humidity and aggressive atmosphere, including inshore areas of medium to high salinity. Extended durability and thinner flexible coatings are directly equatable to significant cost savings in both initial coating system application, as well as maintenance and repair for commercial end users.

Genable® 3000 series dispersions are available initially in epoxy resins but with a range of solvent and water based dispersions under near-term development.

All AGM's **Genable®** dispersions are formulated for long term stability and engineered to aid easy incorporation into existing manufacturing processes. The new range follows on the heels of the recent launches of the **Genable® 1000 series** (for enhancing existing anti-corrosive additive performance) and the **Genable® 2000 series** (specifically for corrosion inhibition on aluminium substrates).

Prohesion Testing

Over 5 times extension to the primer coating lifetime under cyclic salt spray (ASTM G-85-94 Prohesion) with the use of **Genable® 3000**, AGM's formulation ready active corrosion inhibitor, in place of zinc phosphate:



*Control is an in-house primer typical of a standard industrial C3 ZnPO₄ based system

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About Applied Graphene Materials

Applied Graphene Materials works in partnership with their customers using its knowledge and expertise to provide custom graphene dispersions and formats to deliver enhancements and benefits for a wide range of applications. The Group's strategy is to target commercial application in three core markets: coatings, composites and polymers and functional fluids.

The Group has developed proprietary bottom-up processes which are capable of producing high-volume graphene nanoplatelets using a continuous process. The manufacturing processes are based on sustainable, readily available raw materials and therefore do not rely on the supply of graphite, unlike a number of other graphene production techniques. Applied Graphene Materials owns the intellectual property and know-how behind these processes.

Applied Graphene Materials was founded by Professor Karl Coleman in 2010 with its operations and processes based on technology that he initially developed at Durham University. The Group was admitted to AIM in November 2013.