

## **SPARC TEST WORK CONFIRMS SIGNIFICANT PERFORMANCE IMPROVEMENT IN GRAPHENE BASED COATINGS**

### **HIGHLIGHTS**

- **Test work confirms a range of Sparc graphene additive formulae added to coatings significantly improves anti-corrosive performance**
- **The results, when compared to a control coating (without graphene), showed:**
  - **Up to 73% performance improvement in scribe creep (corrosion); and**
  - **Up to 19% performance improvement in adhesion**
- **Results further optimise Sparc's proprietary Graphene additive formulae**
- **Further test work to continue to validate commercial applications**

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Sparc Technologies Limited (**ASX: SPN**) (**Sparc** or the **Company**) is pleased to announce further positive results from its ongoing coatings test work performed with the University of Adelaide. These results deliver another milestone in the development of a range of graphene based additives for use in Marine and Protective Coatings.

Using ISO testing methodology, Sparc has evaluated the performance of a range of graphene based additives produced using variations of raw material sources, processing methods and graphene quantities. The current test work addressed adhesion<sup>#</sup> and scribe corrosion creep<sup>\* ^</sup>.

### **Sparc Managing Director, Tom Spurling, commented:**

*"The results from this round of test work are extremely encouraging. Test work has been undertaken to conform to ISO standards which enables us to target our vast industrial customer base to assess the results objectively.*

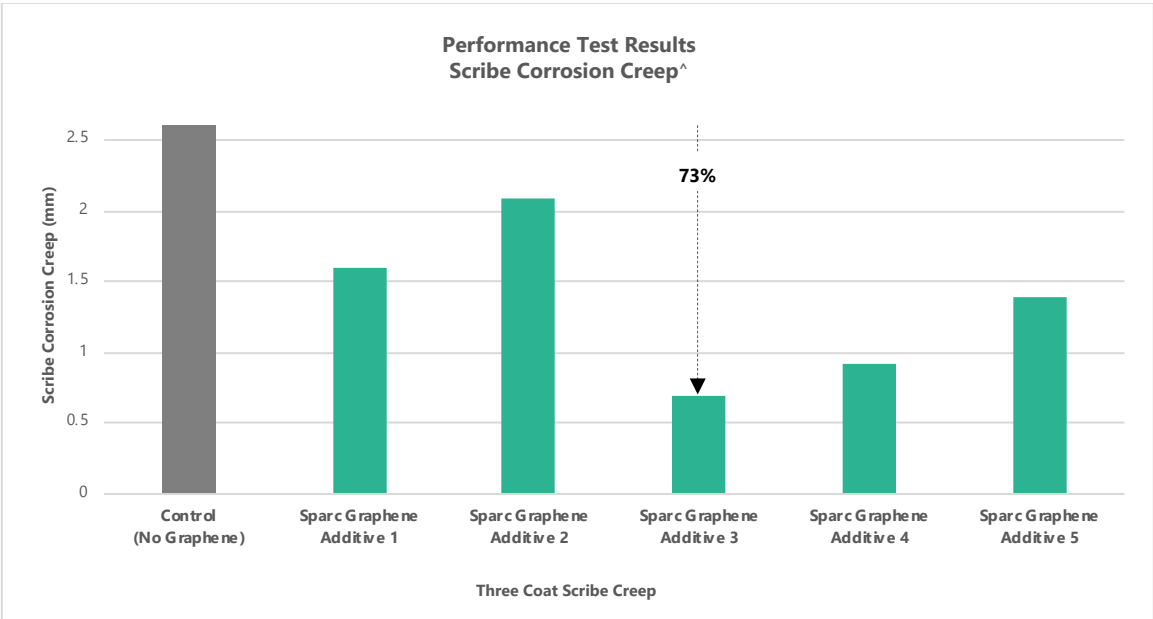
*Sparc will now use the data derived from this test work, build on it, and continue to refine the optimal graphene formulation for the coatings additive so as to maximise performance."*

The work has highlighted the performance benefits of graphene additives in general, with a number of the additives generating significant improvement in adhesion and/or scribe creep results at very low graphene additive levels. Improvement in adhesion of up to 19% was observed in single coat systems and reduction in scribe creep of up to 73% in three coat systems.

In the context of Sparc's targeted customer industries, these results represent a potential for substantial cost efficiencies and performance improvements.

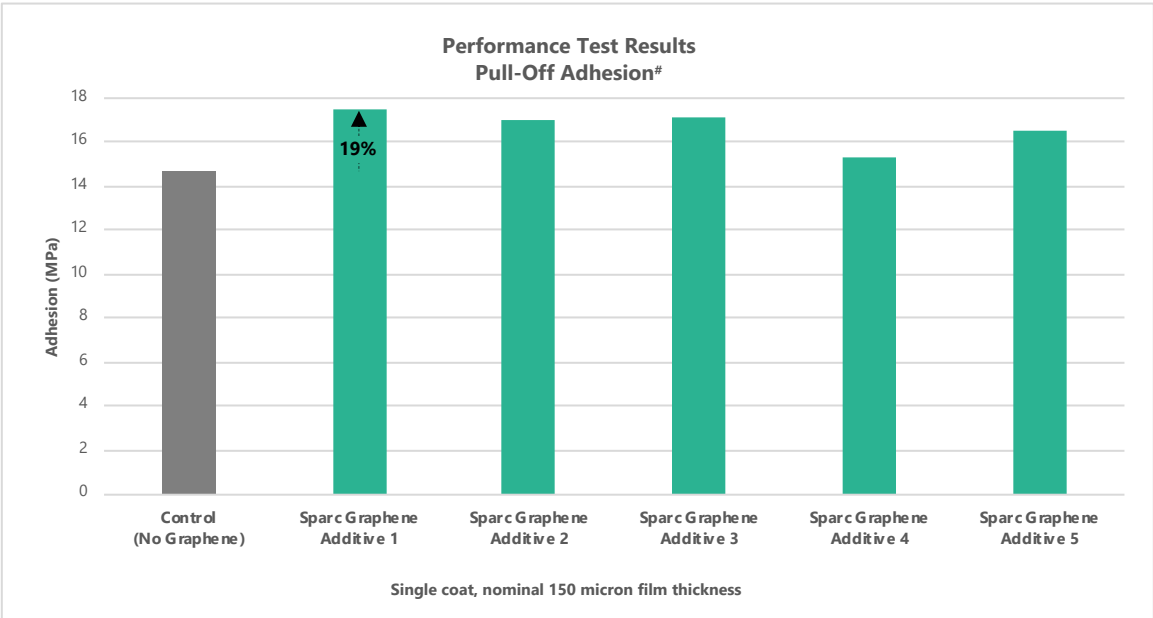


Figure 1 below illustrates scribe corrosion creep performance. A lower value indicates better performance. Tests performed on coatings that had a Sparc Graphene additive, showed up to 73% performance improvement in scribe corrosion creep (i.e. less corrosion), when compared to a control coating that did not have graphene.



**Figure 1: Test results showing anti-corrosion performance of coatings with a Sparc Graphene additive. Lower values demonstrate better performance**

Figure 2 illustrates adhesion performance, where a higher value indicates better performance. Tests performed on coatings that had a Sparc Graphene additive, showed up to 19% performance improvement in adhesion, when compared to a control coating that did not have graphene.



**Figure 2: Test results showing adhesion performance of coatings with a Sparc Graphene additive. Higher values demonstrate better performance**

\* Scribe Creep describes the scribing of coated samples through the coating layer and into steel panels using a scribe tool and the resultant corrosion. The less corrosion creep on either side of the scribe, the higher the corrosion resistance performance.

^ ISO12944 test regime 2 involves a weekly cycle under hot UV, condensing moisture, neutral salt spray and freezing. The 10 week (1680 hour) cycle employed in this test program is intended as indicator of long term coating performance in highly corrosive environments (C4 and C5).

# Adhesion Testing ISO4624:2016

Measures the force required to remove a "dolly" glued to the coating surface.

Calculation based on surface area of the dolly face gives a pressure result expressed as Megapascals (MPa).

Samples tested in a single coat of 150 microns thickness applied over abrasive blast cleaned steel. 6 mm thick panels required.

**-ENDS-**

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**About Sparc Technologies**

Sparc Technologies Limited (ASX: SPN) is a South Australian based company that is focussing on the development of innovative technology solutions using the unique properties of graphene. Graphene, which can be extracted from graphite, is a 2-dimensional nano material made of carbon atoms arranged in a hexagonal pattern, giving it unique and powerful properties that, with the right technology, can be imparted on products to improve performance. Sparc Technologies has licenced graphene-based technologies from the University of Adelaide, a leading institution in the field of graphene research, and will focus on commercialising graphene-based technologies for large industrial markets for marine and protective coatings, environmental remediation and bio-medical applications.