

# PureGRAPH<sup>®</sup> Incorporated into Steel Blue Safety Boots

## HIGHLIGHTS

- Steel Blue has made prototype safety boots incorporating PureGRAPH<sup>®</sup>10 into the sole and polyurethane foam innersole
- Incorporating PureGRAPH<sup>®</sup> into a thermoplastic polyurethane (TPU) masterbatch is a significant milestone
- Boot samples will now be subjected to extensive laboratory trials and future field trials
- PureGRAPH<sup>®</sup> enhanced metatarsal guards are being developed

Advanced materials company, First Graphene Limited (“**FGR**” or “**the Company**”) (ASX: FGR) is pleased to advise that in conjunction with Steel Blue have manufactured prototype sets of safety boots incorporating PureGRAPH<sup>®</sup>10.

The boots were made last week at Steel Blue’s Malaga WA factory and incorporated PureGRAPH<sup>®</sup> into the safety capped boot TPU soles and polyurethane foam innersole.

Full boots and the sole samples will be exposed to extensive laboratory tests which are expected to exceed current industry standards for safety footwear. Following laboratory testing it is anticipated extensive field trials, will be conducted, lasting approximately six months.

The incorporation of PureGRAPH<sup>®</sup> into a thermoplastic polyurethane (TPU) is a major advance for FGR. Previously, the successful dispersion of graphene into a TPU masterbatch has been a major graphene industry issue. Extensive research by FGR has resulted in a manufacturing method which has overcome what was previously seen as a real issue.

While existing TPU’s already possess high abrasion resistance and tensile strength it is anticipated the incorporation of PureGRAPH<sup>®</sup> will improve mechanical properties while providing additional benefits in thermal heat transfer, chemical resistance and reduced permeability.

### First Graphene Limited

ACN 007 870 760  
ABN 50 007 870 760

### Registered Office

1 Sepia Close  
Henderson WA 6166

Tel: +61 1300 660 448

### Directors

Warwick Grigor  
Craig McGuckin  
Peter R Youd

### Joint Company Secretaries

Peter R Youd  
Nerida Schmidt

E: [info@firstgraphene.net](mailto:info@firstgraphene.net)  
W: [firstgraphene.net](http://firstgraphene.net)

### ASX Symbol

FGR  
FGROC  
Frankfurt Stock Exchange  
FSE:M11



FGR Managing Director, Craig McGuckin (left) with Steel Blue Founding Director, Ross Fitzgerald, and a new PureGRAPH® safety boot

FGR will be conducting extensive laboratory tests on the PureGRAPH® infused TPU and polyurethane foam inner sole in Australia and Manchester.

Steel Blue safety boot properties are being enhanced by PureGRAPH® in the Metatarsal Guard (Steel Blue's Met-Guard), which is specially designed to protect the metatarsal area of the foot that extends from the toes. This is a popular choice for mining workers, factory hands and drillers, who often need the extra protection the Met-Guard affords.



The incorporation of PureGRAPH® in the Met-Guard will improve both flexibility and strength of the product.

*"The development work with Steel Blue provides yet another example of FGR working on real industrial applications" said Craig McGuckin, Managing Director First Graphene Ltd. "Like FGR, Steel Blue is an Australian company and the world leader in its field of safety boots systems. These developments continue to enhance that reputation."*

Garry Johnson, Chief Executive Officer of Steel Blue said *"Steel Blue is committed to developing innovative solutions for our customers. We're excited by these recent developments with FGR and look forward to delivering these solutions to our market."*

### **About First Graphene Ltd (ASX: FGR)**

*First Graphene Ltd. is the leading supplier of high-performing, graphene products. The company has a robust manufacturing platform based upon captive supply of high-purity raw materials and an established 100 tonne/year graphene production capacity. Commercial applications are now being progressed in composites, elastomers, fire retardancy, construction and energy storage.*

*First Graphene Ltd. is publicly listed in Australia (ASX:FGR) and has a primary manufacturing base in Henderson, near Perth, WA. The company was recently incorporated in the UK as First Graphene (UK) Ltd. and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.*

### **About Steel Blue**

*Steel Blue is a 100% Australian-owned premium safety footwear manufacturer that continually innovates to provide comfortable, safe and durable work boots. Featuring patented Trisole® Comfort Technology, Ortho Rebound® Footbed and supple leather, all Steel Blue boots are backed by a 100% Comfort Guarantee.*

*Established in 1995, Steel Blue is Australia's leading supplier of safety boots and the only one to receive the Australian Physiotherapy Association endorsement. Steel Blue began exporting in 1996 and now services New Zealand, Europe, USA, Papua New Guinea, South-East Asia, West Africa, the Middle East, Trinidad and Tobago.*

### **PureGRAPH® Range of Products**

*PureGRAPH® graphene powders are available in tonnage volumes with lateral platelet sizes of 20µm, 10µm and 5µm. The products are high performing additives, characterised by their high quality and ease of use.*

*For further information, please contact*

*Craig McGuckin  
Managing Director  
First Graphene Limited  
+ 61 1300 660 448*

*Warwick Grigor  
Non-Executive Chairman  
First Graphene Limited  
+61 417 863187*