

# North East bulletproof shield maker reveals role in US military footwear project

Nano-materials engineering firm Graphene Composites is involved in a project to develop the next generation of US military footwear.

The County Durham-based creator of bulletproof shields and air filter technology, which has US offices in Providence, Rhode Island, is taking part in the Supporting Warfighters through Innovative Footwear Technologies (SWIFT) programme. It will see Graphene Composites extend its patented GC Composite graphene and aerogel technology to create ultra-lightweight materials that offer insulation in extreme cold weather.

The firm's expertise will be used to create footwear that offers greater protection, comfort and durability, that are to be manufactured in the US. Graphene Composites says its work will attempt to overcome the significant scientific obstacle that comes in enhancing thermal capabilities of footwear in severe conditions.

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Other partners in the project, which comes via the Harnessing Emerging Research Opportunities to Empower Soldiers (HEROES) initiative, include DEVCOM Soldier Center, the US Army's efforts to create technologies for soldiers; University of Massachusetts Lowell and Natick MA.

Mox Weber, VP GC USA , said: "GC Composites stand out due to

their unique combination of low density, better insulative abilities, and robust durability. We will apply our nanomaterials and advanced materials engineering expertise to graphene and aerogel composites to achieve super thermal insulation and enhanced durability of the nano-porous structure.”

Ramaswamy Nagarajan, distinguished university professor, co-director of HEROES, added: “HEROES is excited to embark on this university-industry-government partnership with cutting technologies from industry partners such as Graphene Composites. We are proud to contribute to DEVCOM SC’s mission of developing high-performance footwear for our Warfighters and onshoring manufacturing capabilities to the US.”

For Graphene Composites, the work follows the announcement of a supply partnership with Canadian graphene producer [Black Swan Graphene](#) – itself a joint venture involving North East chemicals manufacturer Thomas Swan & Co, which developed the processing technology behind the company. Black Swan hopes to set up a large scale factory in Québec, and is producing the material for Graphene Composite’s GC Shield product, a bulletproof and stab-proof shield sold to law enforcement organisations and to schools for protection against shootings.

Michael Edwards, chief operating officer of Black Swan, said: “We have been collaborating with Graphene Composites for some time and are delighted that their GC Shields products are being adopted in high-profile global safety applications. We look forward to continuing our partnership and developing further innovative solutions together.”