

Recycled glass proves a hit with U.S. Army

The US Army Field Support Battalion Unit, based in Hythe, Southampton, is a US Army Centre of Excellence for the maintenance of land vehicles and watercraft. Military support equipment – including mobile cranes, generators, trailers and watercraft – is shipped in from war zones across the world to be completely stripped and cleaned before being released again into service.

As part of this maintenance process, drive engines and running gear are replaced and chassis are stripped to bare metal for repainting in the appropriate camouflage colour, depending on the intended destination of the vehicle. Many of the vehicles have suffered significant war damage so it is necessary to strip back all the paint to see what metal damage has been caused.

Until recently, the Unit had used copper slag as the blasting media for cleaning and surface preparation of the vehicles prior to painting. However, following the introduction of US HAZMAT regulations governing the use of hazardous materials, the Unit decided to investigate more environmentally friendly alternatives to the copper slag. It was also important to identify a suitable alternative without compromising on performance requirements or incurring additional costs.

Finding a suitable solution

Having heard about the previous success stories of recycled glass used as glass grit, the Unit decided to investigate its suitability for the army's vehicles and equipment and approached glass reprocessor Krysteline to undertake a trial of TruGrit, a 100% recycled glass grit abrasive.

Over the past three months, the Unit has switched to using recycled glass grit as its only blast media with impressive results.

Currently, it uses three tonnes of medium grade (0.75 – 1.5mm) glass grit every week, at a pressure of 200 PSI. Two forms of equipment are used during the blasting process – a standard shot blasting system and a portable, lightweight, blasting gun which enables the paint to be stripped off layer by layer.

Achieving results

As well as offering significant environmental benefits, the glass grit results in a much cleaner and controlled cleaning process and environment. Colin Buchanan, Paint Supervisor and HAZMAT Officer, explains: "The Unit has been particularly impressed with the fact that significantly less dust is created during the blasting process, which had been a problem for us in the past. Any dust that is generated is easily controlled."

"Another benefit we have identified is that, in addition to complying with the new US HAZMAT regulations, the glass



grit can be disposed of in a number of ways, without presenting an environmental hazard. In terms of costs, the glass grit has proved to be more cost-effective than many of the other alternative materials we investigated."

"By sharing the results we have achieved in our maintenance projects here in the UK, we hope to encourage other army sites across the world to consider switching to glass grit. The benefits it offers in terms of cleanliness, ease of control, cost effectiveness and

environmental performance all add up to make glass grit an ideal product for shot blasting."

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Key Facts

The United Kingdom WRAP (the Waste & Resources Action Programme) aims to develop stable, high value markets for recycled products and materials. It has identified the use of glass grit for shot blasting as a rapidly developing market and is currently funding trials of its use in the UK Ministry of Defence, Highways Agency, Marine and Network Rail applications.

Glass grit abrasives:

- Can be used to clean and prepare a wide range of materials by firing the granular or powdered abrasive at the substrate using high-pressure air or water.
- Can remove paint and corrosion from steelwork, clean masonry, renovate equipment and restore woodwork as effectively, and in many cases more successfully, than traditional abrasives such as copper slag, olivine, garnet or stone grit.
- Are created by crushing, cleaning, processing and grading recycled glass to produce a high quality blast media which can be used as a wet or dry abrasive.

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