



Benefits of using glass abrasives for shotblasting

Performance

- Glass sand performs as well, if not better in some cases, than conventional shotblast abrasives;
- Glass sand particles are angular to subangular and have the ability to cut many coatings exceptionally well when used in abrasive blasting;
- Glass sand can produce a "white metal" finish which may be superior to other abrasives;
- Low "rustback" finishes can be produced by using glass. Unlike other abrasives, glass does not contain significant chlorides or other salts which can accelerate the corrosion of cleaned surfaces;
- Using glass can have the potential for lower dust generation than other abrasives during use. Not only does this have many H&S benefits, it can also reduce the number of complaints received ;
- With less dust generation, glass may leave less abrasive residues on cleaned surfaces thereby reducing post-blast cleanup costs;
- Unlike many conventional blast abrasives like copper slag, recycled glass is not classed as hazardous waste, therefore reducing the disposal costs.
- Glass abrasives may be reused more than some other lower cost abrasives before becoming "spent";
- Glass is slightly less dense than other abrasives, producing more volume per ton, which may be favorable for productivity (i.e., more abrasive particles directed at the surface to be cleaned for a given weight);
- In addition to this, due to a lower bulk density there are more glass particles per unit weight, so you effectively you get more glass for your money.
- Possibly because it is less dense, glass may produce lower surface embedment than other abrasives;



Environment

- Recycled glass is non-toxic and inert, unlike copper and other metal slags that contain heavy metal residues. Heavy metals can be harmful to the environment, particularly plant life. This has major benefits especially when working in and around environmentally sensitive areas such as watercourses.
- Disposal of “spent” glass will have fewer negative environmental impacts than slag-based abrasives as glass is not classed as hazardous waste - Unlike slag-based abrasives, glass contains essentially no heavy metals which can potentially increase potential environmental contamination when the spent abrasive must be disposed;
- Glass abrasives can also be reused more than some other lower cost abrasives before becoming "spent", therefore having environmental benefits as well as financial ones;
- Using recycled glass abrasives utilises local waste and creates a resource. Currently there is a huge surplus of green glass, due to an imbalance between production and collection. Using recycled glass for shot blasting provides the opportunity to correct this imbalance and saves it going to landfill;
- Glass is recycled from waste materials predominantly produced in the local area, whereas slag-based abrasives, by example, are copper and nickel smelter wastes produced outside the region.



Health & Safety

- Unlike many other mineral based abrasives, glass has no detectable "free" or "crystalline" silica, greatly reducing the potential for worker health hazards from silicosis, a lung damaging disease which can be fatal;
- Glass has the potential for lower dust generation than other abrasives during use, therefore being safer to use in public areas. It can also help decrease the amount of complaints received;
- Unlike slag-based abrasives, glass contains essentially no heavy metals which can potentially increase occupational exposure during abrasive use;
- Recycled glass is a clean, safe to handle material. Glass below 5mm presents no special hazards as at this particle size no sharp edges are present. However as with other shotblasting abrasives protective gloves should be worn to handle when in use.

Information adapted from:

CWC (1997). *Testing and Certification of Industrial Abrasives Manufactured From Recycled Glass*. Report available at www.cwc.org/glass/gl9711rpt.pdf

Remade Network. *Fact Sheet: Recycled Glass for Shotblasting*. Available at www.remade.org.uk/documents/reports/Abrasives%20Fact%20Sheet_27111130474.pdf

WRAP (2004). *Fact Sheet: Recycled Glass – the Abrasive Facts*. Available at www.wrap.org.uk/downloads/AbrasiveFactsMay04Amended.b18aebfc.pdf