

AINA CASE STUDY

THE NATURAL ENVIRONMENT

Recycled glass: environmentally friendly shot blasting



Shot blasting using recycled glass grit on a steel lock balance beam at Devizes on the Kennet and Avon Canal

A safe alternative means of removing paint from lock structures on the Kennet and Avon Canal

The Kennet and Avon Canal was reopened in 1990 and since then further restoration and maintenance work has taken place. At Caen Hill, west of Devizes, the canal is famous for the 28 locks which rise dramatically up the hillside over a distance of three kilometres. The adjacent large side ponds are of recognised wildlife interest.

British Waterways has to annually repaint the lock balance beams and paddle standards to ensure that the system remains in good repair. A high quality shot blast abrasive is required that can be safely and effectively used near water to remove previously applied multiple layers of paint, enabling a more durable coat to be applied with minimal environmental impact. Concerns were expressed that spent abrasive might fall into the canal, and as a result a glass grit – made from recycled glass – has been used. This has become the preferred solution since it meets the strict requirements of British Waterways' Environmental Code of Practice.

Whilst grit blasting is used to clean and prepare a wide range of materials by firing a granular or powdered abrasive using high-pressure air or water, glass grit is increasingly recognised as a safe, sustainable and environmentally responsible and cost effective alternative. It can effectively remove paint and corrosion from steelwork, clean masonry, and restore woodwork, and using 9.5 tonnes of recycled glass grit, graded between 0.75 and 1 mm, a two-man team takes ten days to clean and repaint 500 square metres of steel.

Environmental benefits accrue since it is a non-toxic and inert material without the heavy metal residues present in some other applications. Other benefits include a lower bulk density compared to traditional materials, with no additional disposal costs as the spent glass grit can be left safely on the ground. There is also a plentiful national supply and straightforward equipment is used which requires no major capital expenditure. Raw material costs are comparable with traditional abrasives.

The innovative use of sustainable glass grit has enabled British Waterways to undertake blasting in an environmentally sensitive location which also satisfies the need to obtain an excellent surface finish to the lock structures.