

As your partner in glass recycling, Viridor provides outstanding quality, and personalised service. Our expertise, professionalism and vision are focused on ensuring great value and the best environmental benefits for glass manufacturers and recyclers, now and over the long-term.



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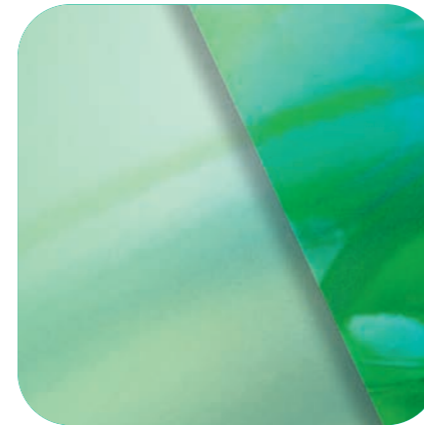


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50180/04/07

Designed and produced by Remarkable Group. Tel: 023 8071 3020

Viridor
GLASS RECYCLING



Clear Thinking, Glass Recycling Solutions



A clear opportunity

Glass recycling delivers benefits for a broad range of manufacturing industries, consumer and service outlets, local authorities, communities and the environment. It saves money and energy; helps to reduce the emissions that contribute to global warming; provides jobs; and supplies an important raw material.

As one of the UK's leading glass recyclers, Viridor Glass Recycling is an innovative, forward thinking company. It provides a first class service collecting, processing and recycling flat and bottle glass for customers throughout the UK. Its watchwords are quality, partnership and tailored service.

Quality is important. It begins with collecting clean glass, separated from general waste, and ensuring that every load arriving at Viridor's production units is free of contamination. Deliveries of processed cullet are made on time and to the required high quality. A strong focus on quality is deeply embedded in the company's ethos and all its business processes.

Partnership is a matter of working closely with both suppliers and customers so that the needs of each are met effectively and consistently.

Tailored service means satisfying the long-term operational and commercial needs of major waste glass suppliers and users of recycled cullet. Similarly, the company works closely with small-scale waste glass producers ensuring efficient and flexible collections, as they are also valuable sources of material for recycling.

An excellent pedigree

Viridor Glass Recycling was established in 2002 when Viridor Waste Management, one of the UK's top five recycling and waste management companies, acquired an existing market leader in glass recycling. The glass recycling company was further strengthened by the acquisition of Scotland's leading independent glass recycling business in 2004.

Viridor Glass Recycling now has its headquarters and main production plant in St Helens, Lancashire, the heart of the UK glass manufacturing industry, and a further substantial production plant at Bonnyrigg, just south of Edinburgh serving Scotland. A comprehensive transport network supports both facilities as logistical efficiencies are key to good service, and benefit suppliers and customers alike.



A forward-thinking parent

Viridor Waste is part of the Pennon Group, a major plc with assets of over £2.7 billion. It is known for its strong environmental focus and commitment to partnership working with numerous public and private sector customers. Importantly, it is market-led, innovative and a good business partner. By putting its financial muscle behind a highly successful glass recycler, it is enabling important development in the recycling of a valuable resource.

Glass recycling services

There are two aspects to Viridor Glass Recycling's business. Flat and bottle glass recycling make up the bulk of the activity, and account for a total annual production capacity of 300,000 tonnes a year and rising.

Reprocessing flat glass...

Viridor Glass Recycling's original core business was in flat glass and this continues to be an important element of the business although the company has now expanded strongly into bottle glass recycling. With this now representing more than 50 per cent of its total volume. There is a huge demand for high quality recycled flat glass cullet in the UK, where Viridor works closely with some of the largest float glass producers, and even greater potential in Europe.

Viridor supplies quality recycled cullet to the manufacturers so they can benefit from lower energy and production costs as a result of replacing new raw materials with high grade recyclates.

...and the bottles

Viridor has particular expertise in recycling container glass, and this area of the business has, and continues to expand rapidly.

Bottle banks and kerbside collection boxes are a feature of most villages, towns, and cities in the UK as part of municipal waste management services. In addition pubs, clubs, and others see real commercial and operational benefits in using recyclers like Viridor Glass Recycling to deal with empties. Both the supply of bottles for recycling and the demand for new glass is growing fast on the back of a strong economy.



Satisfying a demanding sector

Flexibility is important to Viridor Glass Recycling and to its customers and suppliers – who range from major quoted and international companies to small, environmentally-conscious organisations that see the considerable benefits in recycling waste glass.

Viridor's response is to provide a fully tailored service with

- Long-term contracts for its major suppliers and customers
- Flexible and reliable collections to suit the needs of the thousands of smaller customers that it is happy to serve.

Flat glass collection

Viridor works with two main sources of flat glass. One comprises manufacturers of glass and glass products for architectural, automotive and other purposes who, of necessity generate a certain amount of waste in their processes. The other includes vehicle recyclers and those involved in demolition and the removal of waste architectural glass.

Viridor offers advanced recycling technologies to facilitate the recovery of important flat glass products including

- Float glass
- Automotive glass
- Sealed units
- Laminated glass
- Figured glass (rolled plate)
- Georgian wired glass
- Toughened (tempered) glass.

Collections are scheduled to work seamlessly with the waste producers' needs; and specifically Viridor Glass Recycling's service forms an integral part of the glass-makers manufacturing systems.

Bottle glass collection

Whereas there are comparatively few sources of waste flat glass, bottle and container glass is recovered from thousands of outlets. Throughout the country Viridor's highly trained drivers service this important market with tailor made collection services and a flexible range of containers to suit individual locations and customers' needs.

The inventory comprises

- 120 to 1280 litre wheeled bins
- Bottle bank 'igloos'
- 8 to 14 cubic yard skips
- 15 to 40 cubic yard roll-on roll-off skips
- Bespoke containers.

Viridor Glass Recycling also provides a service for Viridor Waste, which manages some 73 household waste recycling sites, over 30 major municipal recycling, treatment and disposal contracts and 22 regional materials recycling facilities across the UK. In addition, it takes all the shredded waste glass from the parent company's in-container product destruction unit in Sheffield.

Recycling the cullet

Glass reprocessing is a highly sustainable source of energy-saving secondary material for growing and extremely demanding markets.

The main features of Viridor Glass Recycling's processing are decontamination, screening, picking, separation, crushing and grading. Quality assurance, lies at the heart of the business and has earned ISO 9002 and ISO 14001 accreditation across the sites at St Helens and Bonnyrigg.

Production staff are all highly trained in quality control, and the quality culture, with its focus on attention to detail and continuous improvement is all pervasive. Viridor's investment in quality control laboratories provides support to the production plants, contributes to continuous improvement and provides reassurance to customers that the product they purchase from Viridor Glass Recycling is to customer specifications.

Viridor's quality control processes cut in prior to the acceptance of loads of cullet for recycling at the factory gates in St Helens and Bonnyrigg process. The company has developed in-house technology, which it uses together with proprietary techniques to decontaminate incoming cullet. It employs various on-line systems for metal detection, removal of ceramics and colour separation, using fully proven and extremely sensitive state of the art equipment.

Product range

Recycled cullet is available in a range of grades from A, which is top quality clear glass for use in the production of new float glass, to flint glass and mixed bottle glass.

The recycled cullet can be provided in particle sizes from sub 2mm up to as much as 15mm. The former – termed fine grind – is converted into fibreglass reinforcement and thermal insulation material for use by the building industry. This application is particularly important in view of the recent recognition that overall, domestic properties in the UK are not as energy efficient as they could be and there is a huge national need for retro-fitting roof insulation.

Large particle size cullet close to 15mm is suitable for use in aggregates such as the ballast on the national rail network. Mixed bottle glass is the normal raw material in this case. Flint is made from clear bottles and containers which are free of colour contamination and other contaminants. There is a high level of demand for this grade for the manufacture of new bottles and jars, as most glass made in the UK is clear. In addition Viridor can supply cullet to customers' specifications.

Notwithstanding the tremendous demand for recycled cullet, Viridor also supplies material to various research projects that are seeking new applications, and hosts trials at its own facilities, for recycled glass.



Transport and the environment

There are significant benefits to be gained from recycling glass.

The main benefits of glass recycling comprise

- Energy savings in the production of new glass as recycled feedstock requires less power for processing
- Reductions in the amount of sand that has to be quarried as the raw material for glass, to the benefit of the countryside and everyone who enjoys it
- Better national recycling rates resulting in less waste being landfilled.

However the re-processing element in glass recycling is only part of the picture. To achieve maximum environmental benefit, it is important that both deliveries of recycled, high grade cullet and the collection of waste glass for processing are achieved as efficiently as possible.

This means ensuring that material is carried over the shortest possible distances and keeping vehicle emissions to the absolute minimum. At the same time Viridor Glass Recycling ensures that it meets customers' specific delivery requirements for just-in-time or other manufacturing systems.

Road transport fleet

Viridor Glass Recycling's fleet of trucks ranges from 18 tonne single skip vehicles to three skip road trains, tankers and 44 tonne bulk carriers. The entire fleet is maintained to an exceptionally high standard and is updated as appropriate to meet the needs of the business and match and satisfy customers' expectations.

Vehicles are based across a network of depots, with bulking facilities in many cases, so that waste glass collected from suppliers is only carried over longer distances in the most efficient manner. In addition to having trucks based at St Helens and in Scotland at Bonnyrigg, Viridor Glass Recycling has depots or transfer stations at

- Birmingham
- Cwmbran
- Faversham
- Glasgow
- Liskeard
- Manchester
- Oxford
- Peterborough
- Plymouth
- Sheffield
- Taunton

- As well as being able to use other Viridor depots throughout the UK.



Health and safety

Like every other successful company, Viridor Glass Recycling recognises that its workforce is its greatest asset, and the health and safety of all employees is of the utmost importance.

It embraces Viridor Waste's Health and Safety Policy, which clearly states how the company protects the health and safety of its employees, customers and contractors, and all who come into contact with its services.



Quality in, quality out

Stringent quality control at every stage is the key to Viridor Glass Recycling's business.

There is a world of difference between clean, uncontaminated waste glass and contaminated material. The former is a valuable raw material that can be recycled almost indefinitely. The latter is often only used as a low grade material.

Typical contaminants that are found in cullet include, heat resistant glass, cutting paste, quallage, bricks, borosilicates, pyrostop, putty, general rubbish, wood, soil, metal, pyrex, pyroguard, ceramics, plastic, stones, paper, robax and lead.

Heat resistant glass – such as that used for microwave oven plates and windows, and Pyrex dishes – and ceramics cannot be recycled with other glass. It has a much higher melting point than normal glass and can potentially damage processing in certain applications.

The plastic laminate layer in safety glass that prevents windscreens from shattering and injuring drivers or passengers in traffic accidents can be recovered during a shredding process. Windscreens can therefore be fully recycled.

While Viridor has processes in place to remove impurities or contaminants from the loads it receives, suppliers are encouraged to ensure that their material is clean and fully acceptable. Regular customer liason supports this quality control.

Definitions

Cullet: any broken or waste glass available for recycling

Recycled cullet: uncontaminated cullet that has been crushed and graded to the required particle size, and can be used to replace up to 70 per cent of the fresh sand and silica used to make new glass

Grade A cullet: top quality cullet suitable for re-use in the manufacture of clear glass

Mixed bottle: means clear, brown, and green bottle glass

Flint glass: clear bottle glass

Flat glass: primarily window glass, glass used in other architectural, domestic or commercial applications and automotive windscreens

Container glass: includes bottles, jars and any other types of glass containers