



RAW MATERIALS

Iron Makers' Waste is Glass Makers' Gain

The waste product from one industry is turned into a valuable ingredient for glass manufacture. Calumite is a stringently controlled material which offers glass manufacturers energy savings and improved finished product quality.

■ Blast furnace slag is a byproduct from ironmaking. The Appleby Group processes this material into useful products - cement extender, abrasives and, for the glass industry, Calumite.

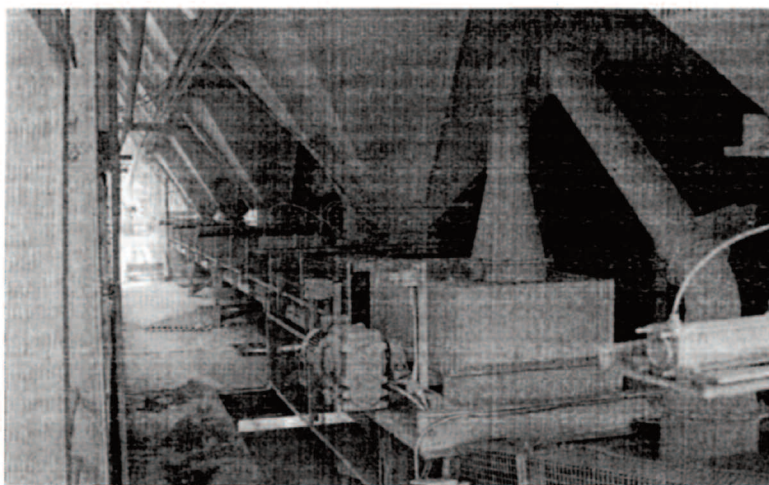
Appleby Calumite Ltd is jointly owned by the Appleby Group and the American company, Calumite International. Its sole product is Calumite and its only market is the glass industry.

Calumite is basically lime, silica and alumina in a vitreous form. It is often used as a source of alumina. However, its particular advantage is that, having been fused in the blast furnace, it is already in a glassy phase and fuses easily, taking the silica into solution. It also contains a small amount of sulphur - about 1% but in the form of a sulphide and so helps to refine the melt. In amber glasses it has another advantage in that the iron and sulphide in Calumite are in a form which, when harnessed, improves the stability of the amber colour.

This year has seen over 60,000 tonnes sold, of which 10,000 tonnes will be exported. In the UK the container sector is the largest user. However, in the export arena float glass customers are the largest users where the high delivered cost is more than offset by the enhanced quality and melting improvements.

The company exports material to South East Asia, the Middle East (it has recently had orders from Beirut), Scandinavia, Ireland and Chile.

The material is sieved through two layers of mesh.



The processing plant, completely rebuilt this year, has a capacity of 100,000 tonnes/year.

New plant

The processing plant has been completely rebuilt this year in order to improve the plant capacity, product quality and environmental impact of the operation. The plant was closed for a month and completely rebuilt. Capacity is now in the region of 100,000 tonnes/year.

The slag comes in moist, is dried, crushed and then screened in a manner typical of many processed minerals. However, selection of the slag and the precise sizing of the product are the key to its success. Iron levels are then reduced by the use of rare earth magnets and the finished product is conveyed to silos for either bulk loading via lorries or bagging for containers.

The process is carefully controlled and monitored throughout and the company has been awarded the quality certification ISO 9000. All batches are tested in the laboratory to make sure they conform to specifications.

The company has an extensive laboratory which is able to carry out research and development with customers or prospective customers. It typically carries out test melts in the laboratory furnace, first with a customer's existing raw materials and then, under the same conditions, with Calumite. The resulting glass discs indicate clearly that, with the same melting regime, the glass quality is higher when Calumite is used in a controlled manner. Therefore, the use of Calumite demonstrates that more efficient melting is possible and thus considerable savings in fuel and increases in furnace tonnage or glass quality are available to the customers.

It would appear that more and more companies worldwide are becoming aware of the advantages

of melting with Calumite. Even with the increase in recycling around the world, the sales of Calumite are still growing as current users start to use its benefits to a greater extent and new customers see it as a raw material with many economic advantages.

As well as enabling energy savings for the glass industry, Calumite is produced from what is basically a waste material from another industry so its environmental credentials are impeccable. ■

Appleby Calumite Ltd, Scunthorpe, UK. Fax 0724 270435.

The material is abrasive so to save on wear, the screening equipment is lined with glass bricks.

