

OBJECT OF INTEREST SEPTEMBER 2021

LEWIS AND TOWERS BEER BOTTLE



2 litre moulded glass beer bottle produced by Lewis and Towers in Fircroft Way, Edenbridge, c1980/90. On display at Eden Valley Museum until the end of February 2022.

The clatter of breaking glass was once a familiar sound in Fircroft Way. The noise came from Lewis and Towers, a factory which produced moulded glass bottles for the drinks and pharmaceutical industries. The plant at Edenbridge stopped producing bottles in 2005 and closed in 2006. The company remains operative in Rotherham in South Yorkshire.

The product lines at the Edenbridge plant included bottles and jars of all sizes, including lightweight whisky bottles and Winchester bottles for medicines, poison and cosmetics. The name Winchester is thought to derive from a set of standards called Winchester Measures which date from the time of King Edgar.

The 2 Litre beer bottle shown here was made by Julie Evans' father, a former employee of Lewis and Towers in Edenbridge. The marking on the base of the bottle indicates that it was a first moulding and was made on machine 'A' which took larger bottles. The bottle is commonly known as a 'growler' and produced for a brand called Muster Geschützt. The finished article had a ceramic flip top and aluminium handles attached to a strap around its middle (hence the profiled banding on the bottle.)

The process of moulded glass bottle making

The raw materials for making glass are stored in hoppers within the batch house. Bottles for liquor are generally made from soda lime glass, a mixture of silica sand, soda ash and limestone for durability. Broken recycled glass known as 'cullet' is also added to the mix.

The amber colour of Mr Evans' beer bottle was achieved by adding small amounts of iron, sulphur and carbon to the mix. Brown or green glass is commonly used for beer bottles because the liquor eventually turns sour if continually exposed to light.

The material is then loaded into the furnace for smelting.

After several hours, the required temperature is reached and molten glass runs from the furnace to the 'gob' where the correct amount of glass for the mould is cut by mechanical sheers.

At the next stage, the glass is dropped about twenty feet from the gob to the primary mould to form parisons.

The solid forms of glowing white hot glass are then dropped into the secondary mould where compressed air blows the bottle into the final shape. Martin Frost, whose father managed the Edenbridge plant explains the process further;

"The 'gob' would drop a lump of molten glass every one or two seconds, so there would be between two and six secondary moulds on machine heads to catch and shape them all. It was very noisy, hot and dangerous for the machinists who ran it and they had soundproofed huts to escape the noise."

Still glowing, the orange hot bottles are sprayed with a coating which prevents the finished glass from scratching. They then run through a hot oven called an annealing lehr which gradually reduces in temperature as the bottles pass along the conveyor belt. Larger bottles might be on the belt for two hours, whereas small bottles cool down in about forty- five minutes. If the glass cools too quickly, stress fractures occur and the bottles explode.

The bottles were checked by a packer at the 'cold end' before being boxed. Bottles were always checked and sorted manually at the Edenbridge factory. At the time, computer inspection was found to be less efficient and this was the main reason why the Edenbridge plant remained operative for so long. Minute cracks, stones or 'birdies' in the glass could be identified under the bright lights. Stones were clumps of glass which had not melted and homogenised or pieces of furnace walls which had fallen into the glass under the intense heat. Birdies (a colloquial term) were strings of glass inside the surfaces of a bottle with a larger blob of glass in the middle. They were so called because looked exactly like a bird on a branch under the intense light. Trained inspectors measured the weight, shape and dimensions of the bottles. The dimensions of screw heads were measured by go and no-go gauges to make sure they were moulded correctly. Faulty bottles were crushed on site and then fed back in to the furnace as cullet.

The bottle moulds were cleaned, polished and re-used repeatedly. If a bottle was on the machinery for seven days, then the moulds would be replaced by fresh moulds two or three times before being scrapped and recycled by another company.

Glass production at Lewis and Towers was a continuous process. A furnace man and an assistant were on call 24 hours a day, including Christmas Day and New Year's Day to keep the trickle of molten glass flowing to the gob. If the furnace was replaced, it took a week to melt the solid glass and start it working again.



Arthur Brooks tending to the furnace at the Edenbridge plant, c1980. The required temperature for soda lime glass is 1000°C.



The parison machine at Lewis and Towers, Edenbridge, c1980. The mould is comprised of two halves.



Tony Stempson beside the annealing lehr at Lewis and Towers in Edenbridge, c1980. Light box on the left illuminated imperfections in the glass.