



## US research facility benefits from 40tpd furnace

In a move that many describe as “bold”, Emhart Glass has invested €18 million in a research centre in Windsor, Connecticut in the USA. The centre, which will be used to develop and bring to market enhanced methods for improving the glass forming process, is equipped with a complete production line for the manufacture of glass bottles. Leanne Dennehy spoke to Steven J Pinkerton, Vice President of research and development at Emhart Glass and Lorenzo Barquin, Director of Operations at the Emhart Glass Research Centre in Windsor.

One of the major driving forces behind the creation of Emhart Glass' research centre was the ability to be able to test under industrial conditions its research into glass strengthening. Some years ago the supplier of machinery to the glass industry undertook a major programme to increase the strength of glass containers in order to make them more competitive with PET, aluminium cartons and other flexible packaging. After years of successful research and development, the next phase was to test production capability in an industrial environment. The investment for a research facility was approved on October 23<sup>rd</sup> 2006 and in October 2007 - almost exactly one year later - the research centre manufactured its first glass container.



Lorenzo Barquin, Director of Operations (left) and Steven J Pinkerton, Vice President of research and development (right) at Emhart Glass.

### Radical methodologies

“Emhart Glass has developed successfully without a glass research plant for many years,” says Steven J Pinkerton, Vice President of research and development. “However, to test the developments we have made in glass strengthening requires a complete line. Production is so tight today that it is difficult and time consuming to

schedule tests at a customer's plant when they are trying to make, pack and sell ware. At Emhart Glass we believe that a new surge is needed in the glass industry to develop radical methodologies to produce glass containers, automate the process and improve yield. This is why we have

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invested in a research facility of our own. It represents our drive to make glass the preferred packaging material to the alternatives."

The production line in the research centre includes a 40 tonnes/day, oxy-fuel fired furnace (designed by Sorg with refractories from RHI and PDR). It includes the capability for two forehearths, although only one – a joint Emhart/Sorg 240 type forehearth - is currently in operation. The feeder and shear are Emhart Glass equipment based on its 555 feeder. "As a research centre we have already developed this particular part of the process and the feeder has been transformed," says Lorenzo Barquin, Director of Operations at the facility. Emhart Glass' NIS machine is also in operation (with four of the ten sections currently being used).

The cross conveyor and stacker were supplied by Sheppee International, while the lehr is 2m wide and 23m long – a gas fired lehr from EW Bowman. The cold end conveyor is from German supplier DMA and inspection is managed by Emhart Glass' Inex Veritas family of inspection machines.

"The basic premise of this investment is research and development," says Mr Barquin. "We have no intention of packing or selling ware. If we do pack, it is for testing and sampling purposes only."

### Return on investment

The investment for the 27,500ft<sup>2</sup> glass plant together with 18,000ft<sup>2</sup> of office space was €18 million. "Our cost per container is considerably higher than a normal glass manufacturers' cost as we are a small volume producer," says Mr Pinkerton. "However, we feel that the recovery of our ongoing investment is well worthwhile because of the new products we will be able to release, the speed at which we will be able to release them and the impact they will have."

The plant is currently making flint glass and recycling 100% of the glass containers it produces, while the primary area of research is glass strengthening. Emhart Glass has had success with such research under

controlled conditions and is now investigating its research under the normal process variations that any glass container manufacturer encounters, including furnace variations, glass property changes and cooling wind fluctuations. It is also investigating variations in the forming process, such as loading, cooling and automation.

While the facility was built primarily for research, it will also be used to train customers and Emhart Glass personnel.

### Back to the future

While such a research centre is a bold move, it is not the first time that Emhart Glass has built such a facility. During 1929 – 1964 it operated a research centre in Hartford, Connecticut with three furnaces and a total capacity of 40 tonnes/day melting capacity. "When this plant was built in the 1920s it was to develop the solutions necessary to make modern day production," says Mr Pinkerton. By 1964 the industry had made strong

gains and it was felt that equipment and processes could be developed and improved by sharing a furnace with a customer. "This is no longer practical for the technologies we intend to develop so our own production line was a vital investment," says Mr Pinkerton.

Some of the smaller projects Emhart Glass has been working on will be rolled out later this year, while the larger ones will reach fruition from 2009 onwards. "We are unsure how the facility will develop," says Mr Pinkerton. "It is possible it will grow depending on how new developments progress – it was certainly built with expansion possibilities. However, the key idea is that this facility is here for the long haul. It is a substantial investment for the benefit of the whole glass industry and one which will produce new technologies and processes necessary to move the glass industry forward." ■

\* Emhart Glass, USA.

Website: [www.emhartglass.com](http://www.emhartglass.com)



The glass plant covers 27,500ft<sup>2</sup>, while office space adds another 18,000ft<sup>2</sup>. ▶