

ENGINEER

Specialist journal for Ireland

Winter 04 - 05

Elite Thermal Systems

Elite Thermal Systems Ltd of Leicestershire is used to developing thermal process systems for difficult and unusual applications. One such application

was for a leading international photographic manufacturer, who required a special 450°C oven for the production of barium bromide. The challenge for Elite was to produce a system capable of withstanding the corrosive properties of the product and by-products of the process while maintaining safe working conditions for personnel. An oven, designed with innovative features to provide a solution to the problem, is now installed and processing up to 30kg of barium bromide per day. The highly corrosive properties of the product and evolved vapours demanded special design



characteristics and the use of a work chamber manufactured from a special corrosion and heat-resisting material.

In other news, Elite Thermal Systems has won the contract to develop a furnace for the clarification of gemstones. Of chamber design, incorporating a vertical elevator, and operating at 1800°C, the furnace

(right), destined for the Far East, will produce gemstones that are significantly clearer, thereby increasing their purity and value. A requirement of the design is close temperature control, with an inert internal atmosphere. The gemstones will be

elevated into the furnace where they will be held at a constant temperature in a non-oxidising atmosphere for a long cycle time. Elite produce a range of standard ovens and furnaces up to 2000°C which are suitable for many applications. Where specific thermal process characteristics are required, Elite will design a custom solution to meet the needs of the system.



Meanwhile, A 1200°C, three zone horizontal tube furnace (above right) from Elite Thermal Systems is providing big benefits at the Corus Technology Center - Swinden Laboratory, where it is being used to simulate manufacturing conditions on newly



developed grades of steel wire. Previously this research was carried out in two tube furnaces, but a lack of temperature uniformity over

the heated length meant that the results obtained could become unreliable. The new Elite 50mm bore three-zone tube furnace has a maximum temperature of 1200°C and total heated zone length of 610mm. Each zone is independently controlled by its own thermocouple and PID controller, which makes the system control very stable and precise. "The Elite team were very professional and had a practical appreciation of our requirements," said Peter Brownlow, Corus Senior Research Assistant.

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