Ceramicx offers hot stuff for thermoformers

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Ballydehob, Ireland-based Ceramicx, a supplier of heaters for thermoforming, is preparing for its fourth K exhibition in 2013.

Owner Frank Wilson is in bullish mood and tells PRW: "The best thermoformers in the world are now questioning and re-evaluating their heating technology and its influence on production efficiency. Carrying on while putting up with 'legacy' heating problems is neither sensible nor profitable. A review of heating inevitably means taking a fresh look at infrared (IR) heat technology. This is good news for Ceramicx and good for the thermoforming industry."

Ceramicx exports its infrared heating systems to thermoformers and blow moulders in over 60 countries worldwide. The company has posted an annual average of 20% sales growth in the past three years. Its exhibiting presence at both the NPE 2012 show and Chinaplas 2012 enabled further outreach to the thermoforming sector.

'GREENER' THERMOFORMING

Wilson says: "We realised that, for the first time, US manufacturing industry is being incentivised to 'go green'. For many thermoformers, adopting IR heating with sophisticated control is a way of making operating parameters more accurate and saving cost. After NPE we shipped several significant orders to US thermoformers making goods for the fast-cycling food service sector.

The company sees the quality of its thermoforming platen build as a key contributor to its success. In thermoforming production a number of infrared ceramic heaters are generally mounted on reflectors which are then arrayed upon a platen - or two - which is installed in the production line.

Ceramicx believes that all thermoforming control systems should provide early-warning diagnostic features, for instance the capability to alarm the operator in the event of a single heater loss, a shorted wire or a blown fuse.

The company's in-house quality assurance work centres on developing systems with close wattage tolerances for the ceramic and quartz electrical elements. There is a semi-automatic validation system with closed-loop process control to guarantee product quality. Performance characteristics are assigned and recorded for each part as it is produced.

'LEGACY' HEATING PROBLEMS

Wilson has found that most plastics thermoformers have experienced heating problems at some points in the lifetimes of their machines. He notes: "Over the past ten years thermoformers worldwide have seen broadly the same problems. 'Legacy' heating problems may include burnouts and other electrical faults. There may be production quality issues with older-style, non-directional heating. Tubular, magnesium-filled, 'black rod' and other non-infrared heat sources can all contribute to imprecision in thermoforming, to energy waste and to high electricity costs.

"In a completely enclosed oven, these types of heating may become uncontrollable. Operators are continually forced to ramp up the power in an effort to maintain an even temperature."

THE INFRARED SOLUTION

"Until we see a wholesale adoption of IR heating," says Wilson, "our core message to thermoformers will remain the same. Replacing an entire thermoforming machine is too big a step for many, but an IR upgrade can improve the performance of an expensive fixed capital asset and typically pays for itself within months."

Effective plastics thermoforming means that all energy inputs have to be properly measured and then precisely applied to the process.

Ceramicx claims that a simple infrared upgrade to a conventional heating system can increase profits for thermoformers by at least one third, with many subsidiary benefits.

The company summarises the benefits to thermo-formers of an IR heating upgrade to heating as follows:

* Major reduction in wear and tear on capital equipment;

* Straightforward (like-for-like) replacement of tubular heaters;

* Enhanced performance not depending on changes to control or instrumentation;

* Poorly performing infrared to be replaced with superior platens;

* Savings through precise direction of heat flow;

* Better resultant product quality;

* Shorter set-up time and tool change times;

* Production of more complex parts possible through better control;

* Cooling requirements reduced;

* Precise matching of heating control to the characteristics of the polymers being processed;

* Better environment for operators.

Wilson concludes: "Every thermoforming system is unique in some ways in terms of products, materials and speed of cycling. Ceramicx believes that the vast majority of systems will be migrated to IR heating in the coming years."