



ENERTEK* ISO

Insulating duplex crucibles designed specifically for induction furnace applications

ENERTEK ISO Crucibles

In recent years, Foseco has focused significant R&D effort into the development of thermally efficient crucibles for various crucible furnace applications, resulting in the ENERTEK crucibles for electric resistance aluminium melting and holding furnaces, and more recently the ENERTEK ZnO crucibles used in zinc oxide production.

ENERTEK energy efficient crucibles provide optimized thermal conductivity and other critical properties for specific applications and deliver significant benefits to users in terms of lower energy costs and - of growing importance - a reduced carbon footprint.

ENERTEK ISO crucibles

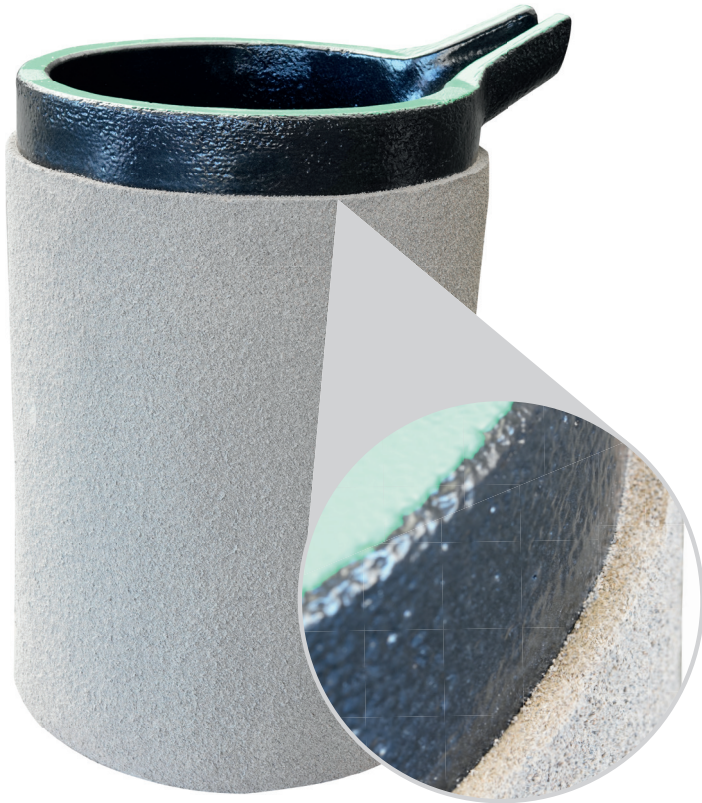
ENERTEK ISO crucibles combine optimum physical properties, strength and toughness with vastly superior insulation provided by a durable proprietary VESUVIUS refractory lining.

The resulting crucible performance and behaviour is extremely beneficial in **induction furnace operations** used for melting of precious metals and continuous casting copper applications.

ENERTEK ISO quality crucibles are available in all standard crucible designs and configurations used in such induction melting and continuous casting furnaces.

KEY BENEFITS

- + Low thermal conductivity of typically 1.4 W/m.K - 20 times lower than conventional crucibles
- + Reduced temperature loss
- + Reduced energy consumption
- + More consistent melt temperature - superior heat retention
- + Improved process consistency
- + Superior melt quality - not necessary to superheat the melt
- + Reduced thermal stresses through the crucible section - longer life in certain situations or applications.
- + Improved operational environment



Foundry experience

Temperature loss comparison with ENERTEK ISO

Experimental set-up

- + Induction melting of high temperature alloy nominal 1500 °C - then removed from the furnace.
- + Holding for 5 minutes without heating
- + Checking of metal temperature in both crucibles

Result

Significant benefit in terms of greatly reduced heat loss and melt temperature retention after 5 minutes of waiting time.

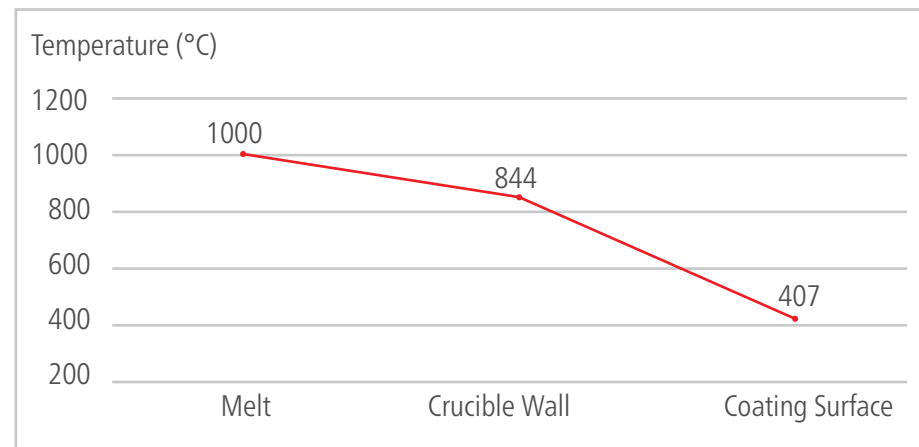
COMPARISON BETWEEN ENERTEK ISO AND STANDARD CRUCIBLE		
	ENERTEK ISO	Standard Crucible
Melt temperature (Start) (°C)	1.493	1.502
5 minutes after removal from furnace (°C)	1.398	1.308
Melt temp loss (°C/min)	95	196
Temperature loss (°C/min)	19	39



ENERTEK ISO crucible after pouring



Standard crucible (left) vs ENERTEK ISO



Temperature Profile of ENERTEK ISO Crucible

Quality control and research

Research and development

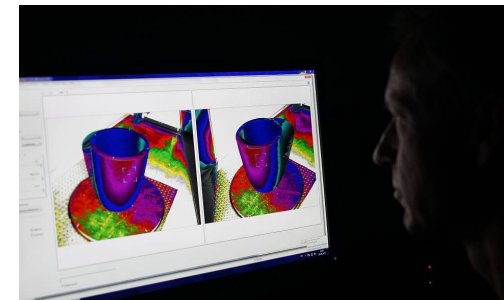
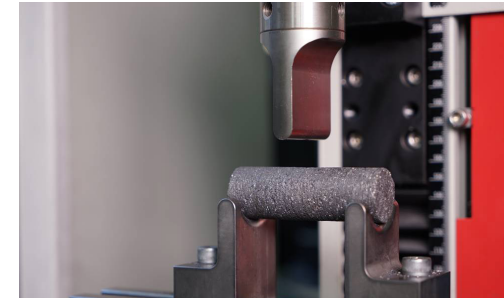
As the quality demands from end-users of castings increases, it is essential that foundry technology keeps pace. Foseco continually invest resources in the research and development of innovative solutions to the problems of today and tomorrow. Development laboratories work closely with in-house casting facilities to ensure new product developments fully meet the customer's needs.

Consistency

Controlled and automated manufacturing processes ensure that products are supplied to a highly consistent specification, minimising batch to batch product variations.

Quality assurance

Accredited quality assurance systems ensure optimal testing of finished products, and provides a framework for continual improvement and further process optimisation.



FOSECO. THINK BEYOND. SHAPE THE FUTURE.

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Foseco International Limited
Drayton Manor Business Park,
Tamworth, Staffordshire,
England B78 3TL

Phone: +44 (0)1827 262021

Fax: +44 (0)1827 283725

www.foseco.com

Please contact your local Foseco team