

How an ENERTEK ISO crucible lowered radiant heat and limited temperature loss in lift-coil induction



SUSTAINABILITY

THE CHALLENGE

Current crucibles radiate and lose a lot of heat during transfer to mold. This radiant heat causes HSE concerns and the temperature loss leads to the need for higher melt temperatures to ensure quality castings.

FOUNDRY:

Foundry Institute of RWTH Aachen University is a prominent research and teaching institute in Aachen, Germany.



PARAMETERS

Alloy: Aluminium

Furnace type: 1000 Hz, 100 kW
Induction Furnace

Application type: Heat Iron to 1500 °C
Hold for 15 minutes
Remove from furnace
Measure Temperature
after 5 minutes

FOSECO PRODUCTS

ENERTEK ISO crucible
Type A50 (DIAMANT Universal
+ 6 mm Thermacoating)



OUR SOLUTION

The new ENERTEK ISO crucible is used to retain the heat of the melt. This retention of heat is due to a smaller heat loss through the crucible that also lowers the amount of radiant heat felt by operators.

THE OUTCOME

The ENERTEK ISO crucible improved heat retention inside the crucible. This lowered the temperature loss over five minutes by approximately 50 %. This reduction in heat loss was also noted by the furnace operators as a much better working environment.

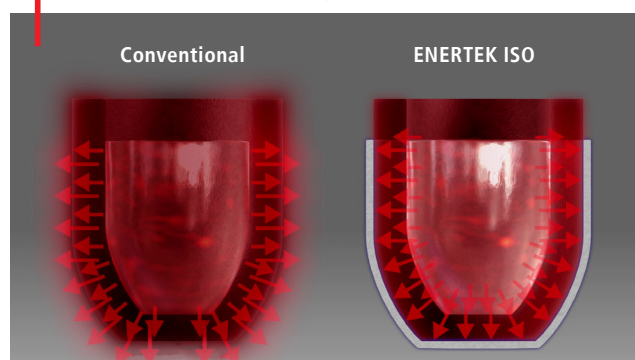
KEY BENEFITS

- Temperature loss reduced by ~ 50 %
- Lower radiated heat flux
- Improved HSE factors

Competitor isopressed crucible (left) and ENERTEK ISO crucible (right) with 1500 °C melt



Reduced temperature loss due to thermacoating



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