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METALCASTER OF THE YEAR

**HARMONY  
CASTINGS**

**INSIDE: CALDE GUARD,  
STATE-OF-THE-ART  
REFRACTORY SOLUTION**



State-of-the-Art Refractory Solution

The three biggest foundries in Sweden—Volvo, Skania, and SKF—have implemented a new, three-part refractory solution for coreless induction furnaces. Now available in North America, the new CALDE GUARD solution from AFS Corporate Member HWI, a member of Calderys, comprises (1) a boron-free silica-based lining that is paired with (2) a precast top ring as well as (3) specialized installation, service, and aftercare. The result, says Gert Karlsson, foundry technical director, is 25% longer lining life than all other refractory concepts.

“A typical measurement for the life of a refractory product is how many cycles you can melt with the furnace,” Karlsson said. “I would say 350 heats would be considered high performance, and less than 200 might be a mediocre performance. With CALDE GUARD, most foundries see an improvement in that 300–350 range.”

“All our feedback is consistent: Customers say they save important money because of the longer 25% lifespan and less maintenance—they see significantly more production hours in a year,” he added.

CALDE GUARD is compatible with all OEM induction furnaces on the market. Unlike many quartz-based silica refractories, Calderys sources quartzite-based silica from Sweden, which enables better density and performance, according to Karlsson.

While the boron-free silica dry-vibe lining is an alternative to boron offering a beneficial biological impact, the precast ring is included for the upper section of coreless induction furnaces to reduce mechanical wear.

Calderys manufactures the precast top ring in-house at its own foundry service center. The company says having full control of this process guarantees they can consistently deliver superior equipment for every installation.

Full Package

“We provide customers with the full package for this concept: customization, installation, and training,” said



CALDE GUARD is compatible with all OEM induction furnaces, according to Calderys.



Pictured: The precast top ring is installed. Follow the QR code to watch a short CALDE GUARD video.

Håkan Andersson, Calderys foundry refractory sales director for EMEA. “We don’t leave the customer with it until we’ve run through a few installs with them, ensuring they have the proper knowledge of the product so that they can make use of its full potential.

“CALDE GUARD was born from an environmental concern and has ultimately developed into a full-scale solution to give an improved furnace lifespan across the board,” Andersson

continued. “Calderys is unique in being able to offer this full proof of concept, covering the materials, their installation and their maintenance.”

The system is currently being promoted in the U.S. market, despite price sensitivity, as it offers significant cost savings through reduced maintenance and increased production hours.

The CALDE GUARD system is compatible with various induction furnace manufacturers and is gaining traction in Europe and other regions.

Details Matter

Silica products tend to be soft and susceptible to mechanical damage in unheated areas at the top of the furnace, and boron-free silica is even softer, according to Karlsson. Hence the need for precise attention to the precast top ring of CALDE GUARD.

“When refractory materials aren’t fully sintered, they will be mechanically weak. This is a result of neither the melt level nor the induction coil not reaching the top of the furnace,” he added.

“Hence, foundry operators sometimes use a standard castable for lining the top of the furnace. Furnaces are charged from the top—so a strong top ring is needed for material strength to withstand abrasive and mechanical force.”

However, standard castables are subject to dry-out time. This halts production and delays equipment availability for customers. Using a precast top ring eliminates the extra dry-out requirement, allowing customers to return to production more quickly.

“The precast top ring is already dried out—it’s ready to go, shortening the installation time,” Karlsson continued. “A crucial advantage for the customer is that Calderys does all this in-house before handing anything over to the customer. That means the casting and lining are done in the same controlled environments every time so we can always ensure a perfect result.”

Andersson added, “A stronger lining means more heats per lining, so less frequent re-lining and overall, less downtime throughout the installation process. As there are no extra sintering agents required for the product to be ready to use, this increases equipment availability.”

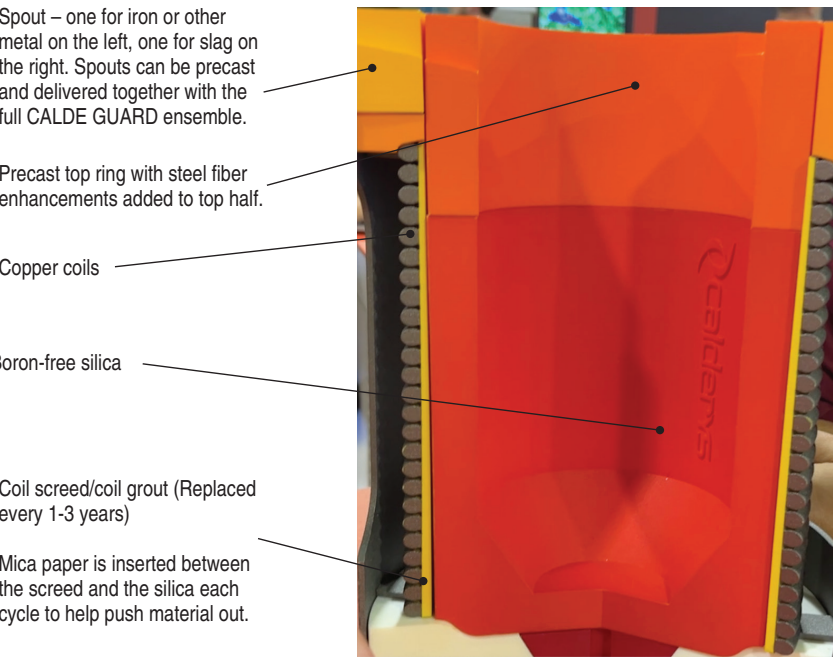
In addition to the time saved by improving installation efficiency, Calderys says foundry customers can expect to perform relines less frequently—which means reduced costs, lower energy usage, and ultimately improved sustainability performance.

**CALDE GUARD at a Glance**  
• Enhances refractory performance and productivity.



Gert Karlsson, Calderys, and Griffin Patterson, HWI, at CastExpo.

As Seen at CastExpo: Model of the CALDE GUARD Solution for an Induction Furnace



- It’s a full turnkey concept combining SVENSKA MIX QBF, precast top ring including spouts, and specialized installation methods.
- SVENSKA MIX QBF is a boron-free silica dry-vibe with good resistance to expansion cracks.
- It is environmentally friendly and suitable for foundries aiming to reduce their environmental footprint.

- The top ring is pre-cast and pre-sintered for enhanced mechanical strength.
- It does not require on-site extra sintering abeyon what is typical with the silica lining.
- CALDE GUARD is available in the U.S. through HWI, a member of Calderys headquarters in Pennsylvania. MC





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