

# COPPER

PERFORMANCE  
CERAMICS and  
REFRACTORIES



# PERFORMANCE REFRACTORIES

SHAFT PERFORMANCE LIFE IMPROVEMENT



## ENHANCED PERFORMANCE

Saint-Gobain Performance Ceramics and Refractories has introduced a **THIRD GENERATION** of silicon carbide refractories to effectively protect your copper shaft furnace.

From our laboratories, passionate research teams have developed a better performing material with far greater service life. Outstanding improvements are now available to be applied in your furnace with customized shapes according to your requirements. Our engineers dedicate their design expertise to deliver top quality solutions that enhance your furnace performance, minimizing the need of intervention and extending the lifetime service.

Saint-Gobain delivers a completely custom engineered solution for copper furnace applications. Our refractory design concepts, combined with special cements, minimize slag and refractory inclusions, yielding a cleaner metal.

Moreover, the gain in energy efficiency will cut your production expenses, improving your environmental impact.

## OUR MATERIALS

**Cryston®-Cu Max (CN-795)** is a patented oxy-nitride bonded silicon carbide refractory developed with a self protecting bond system which gives an exceptional resistance to oxidation and chemical attack.

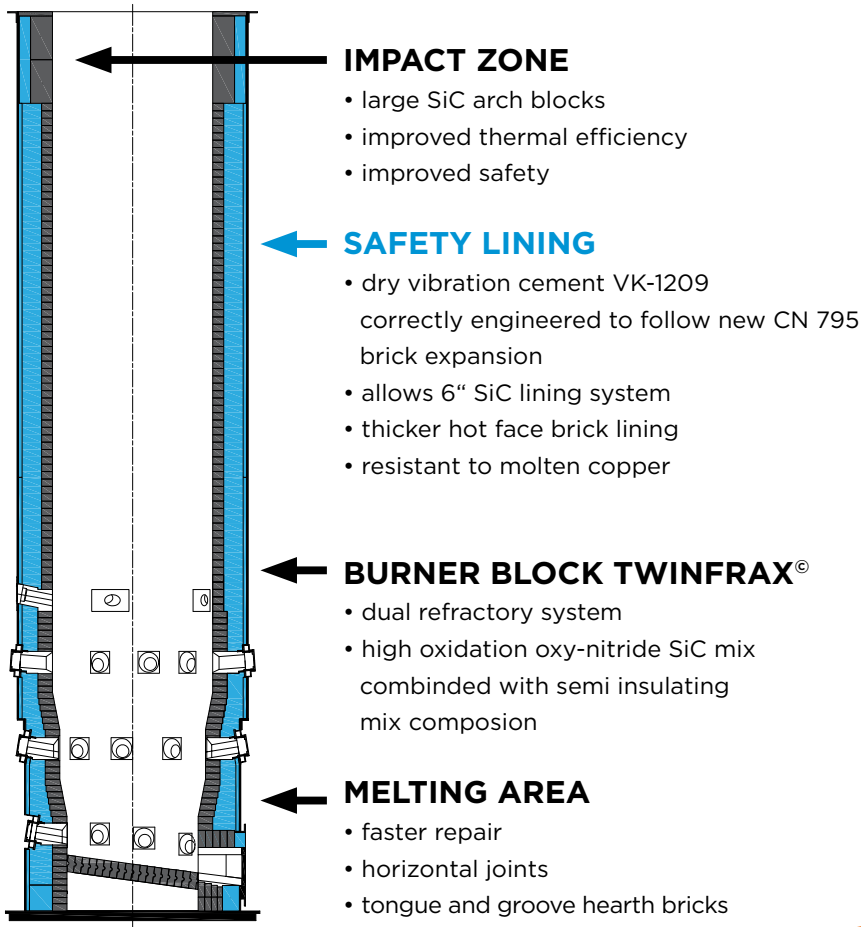
**Norton® VK-1209** is an dry vibratable refractory designed specifically to function as safe back-up lining for CN795 refractories in copper shaft furnace linings and launder systems. Its excellent performance is due to resistance to molten copper penetration.

**Twinfrax®** is a patent dual refractory system for burner blocks and tubes. It features two layers, a high oxidation resistance oxy-nitride SiC mix combined with semi-insulating mix composition. Both materials have same expansion coefficient to avoid thermal shock separation.



# NEW INNOVATIVE REFRACTORY DESIGN

OUR CRYSTON®, NORTON® AND TWINFRAX® FOR COPPER SHAFT FURNACES



## IMPROVEMENTS

- oxidation resistance
- resistance to copper oxide
- stability of the properties
- mechanical strength
- abrasion resistance

## ADVANTAGES

- safety lining is molten copper resistant
- easier and faster installation and repair
- longer lining life from 2.5 to 4 times
- increased thermal efficiency
- lower refractory cost per ton of copper

# CONTACTS

## Worldwide Presence

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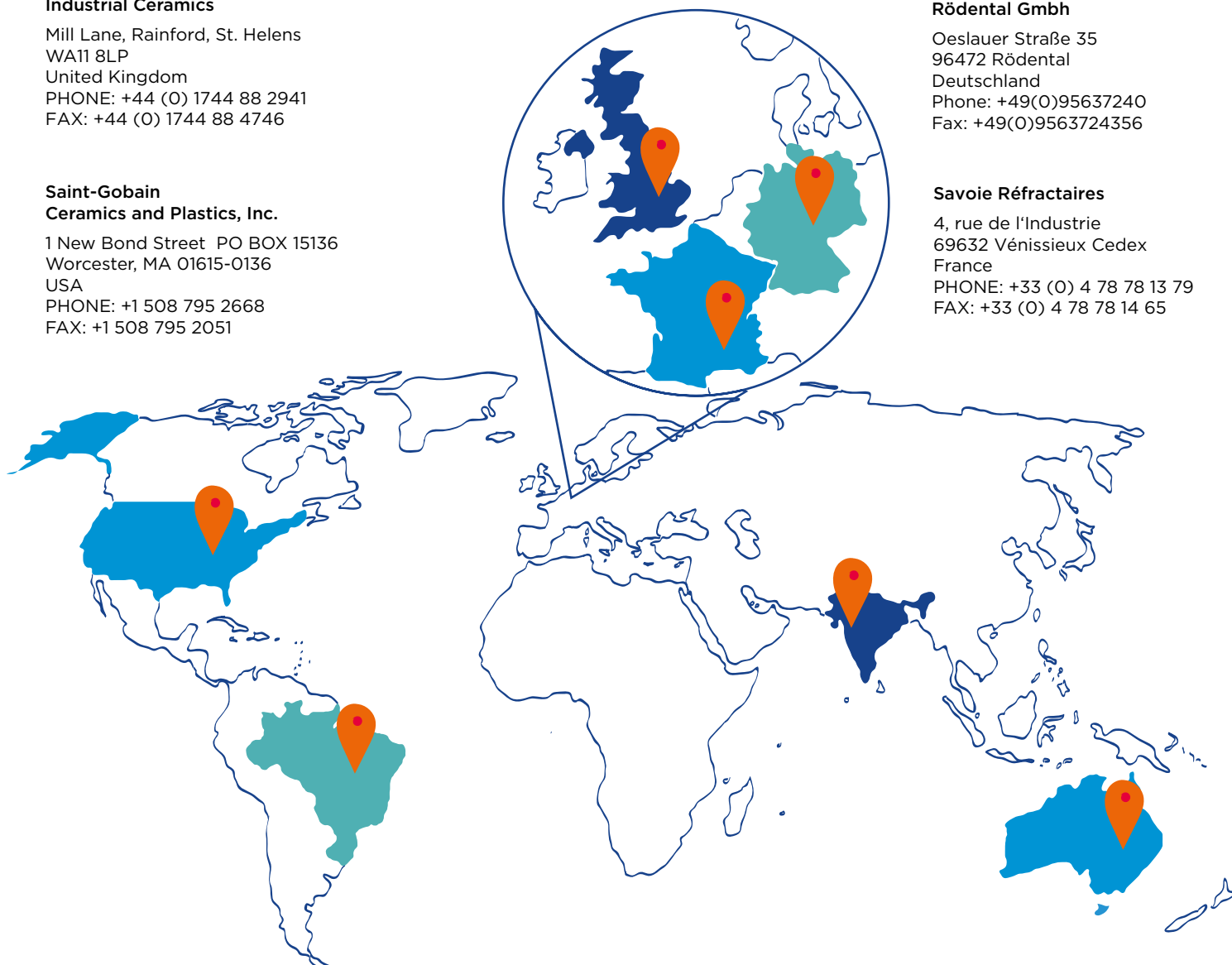
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