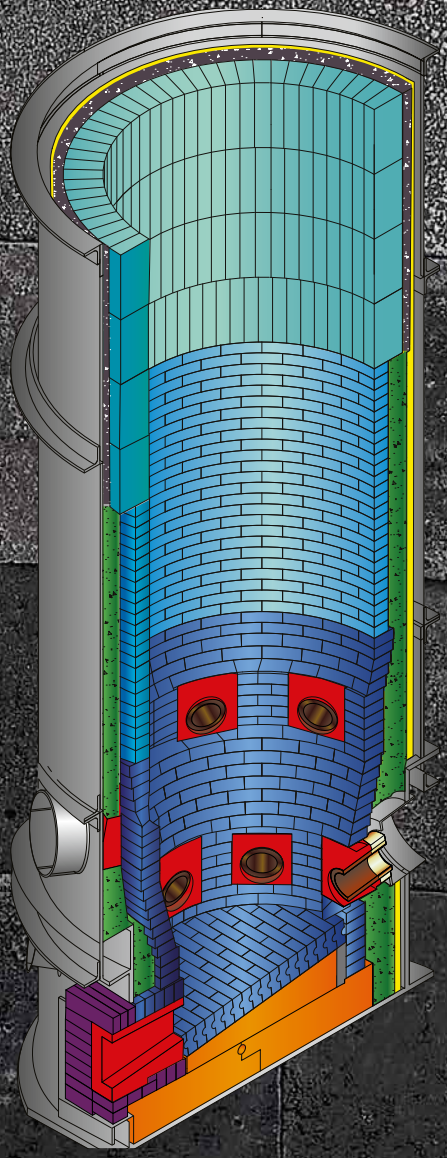
SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES

REFRACTORIES

FOR COPPER SHAFT FURNACES



SAINT-GOBAIN

SHAFT PERFORMANCE LIFE IMPROVEMENT

Saint-Gobain Performance Ceramics & 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® LK1175 and VK1209

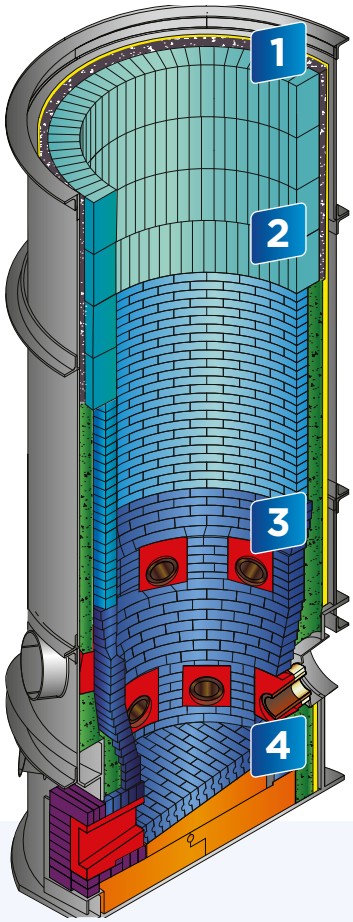
Is a dry vibratable refractory designed specifically to function as safe back-up lining for CN795 refractories in copper shaft furnance linings and launder systems. Its excellent performance is due to resistance to molten copper penetration.

Twinfrax®

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

NEW INNOVATIVE DESIGN

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



1 IMPACT ZONE
- Large SiC arch blocks
- Improved thermal efficiency
- Fewer horizontal joints to reduce erosion

2 SAFETY LINING
- Typically reduces drying time by 5 days. Improve safety due resistance to molten copper. Reusable for many hot face relines
- Allows 6“ SiC lining system
- Thicker hot face brick lining
- Resistant to molten copper
- Improved safety

3 BURNER BLOCK TWINFRAX®
- Dual refractory system
- High oxidation oxy-nitride SiC mix combined with semi insulating mix composition

4 MELTING AREA
- Faster repair
- Better wear resistance improves refractory life. Allows production of cleaner copper
- Tongue and groove hearth bricks

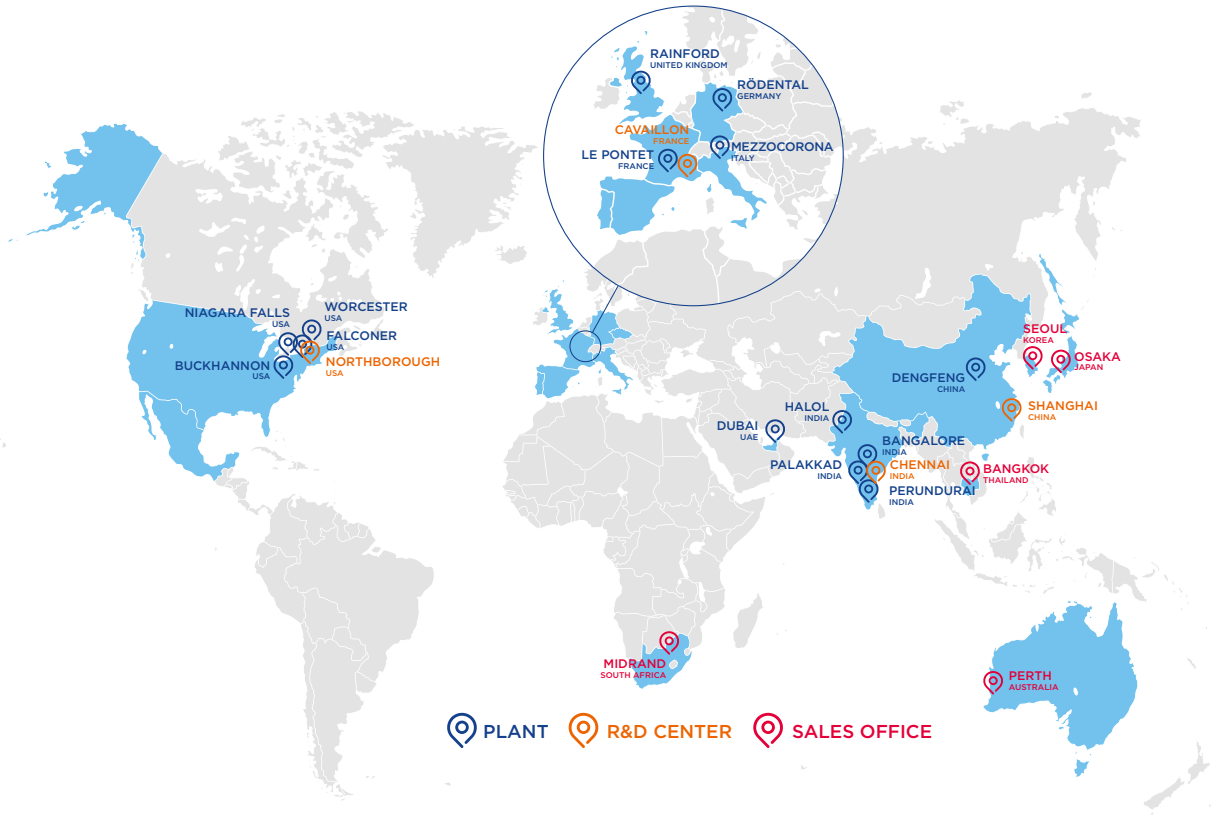
OUR CUSTOMERS ENDORSE OUR SOLUTIONS FOR CLEANER COPPER

FEATURES & BENEFITS

- Oxidation resistance
- Resistance to copper oxide
- Stability of the properties
- Mechanical strength
- Abrasion resistance
- Safety lining is molton 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

SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES

OUR GLOBAL PRESENCE



CONTACT US

USA

Niagara Falls
+1 716 278 6233
Worcester
+1 508 795 5264
Falconer
+1 716 483 7222

MIDDLE EAST & AFRICA

Dubai (UAE)
+971 4 8011800

EUROPE

Rainford (United Kindom)
+44 1744 882 941
Rödental (Germany)
+49 9563 724 201

INDIA

Bangalore
+ 91 7228 950 887
Halol
+ 91 7228 950 886

PACIFIC

Perth (Australia)
+61 394 745 940

JAPAN

Osaka
+81 6 4707 1700

CHINA

Dengfeng
+86 4008880198
Shanghai
+86 4008880198

ASIA

Seoul (Korea)
+82 2370 693 34
Bangkok (Thailand)
+66 61 415 9204

For more information:
www.ceramicsrefractories.saint-gobain.com
ceramics.refractories@saint-gobain.com

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