

SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES

# REFRACTORIES

FOR COPPER SHAFT FURNACES





## 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® VK-1209

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\*

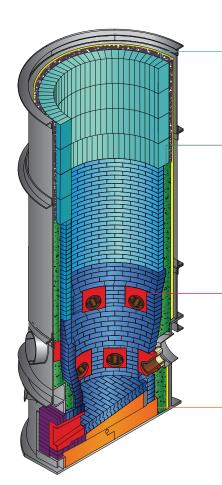
is a patent dual refractory system for burner blocks and tubes. It features two layers, a high oxidation resistant oxy-nitride SiC mix combined with semi-insulating mix composition. Both materials have the same expansion coefficient to avoid thermal shock separation.





## NEW INNOVATIVE DESIGN

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



#### **IMPACT ZONE**

- large SiC arch blocks
- improved thermal efficiency
- improved safety

#### SAFETY LINING

- dry vibration cement VK-1209 correctly engineered to follow new CN 795 brick expansion
- allows 6" SiC lining system
- thicker hot face brick lining
- resistant to molten copper

#### BURNER BLOCK TWINFRAX®

- dual refractory system
- high oxidation oxy-nitride SiC mix combined with semi insulating mix composition

#### **MELTING AREA**

- faster repair
- horizontal joints
- tongue and groove hearth bricks







### **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



## **CONTACT US**

USA

Niagara Falls

+1 716 278 6233

Worcester

+1 508 795 5264

MIDDLE EAST & AFRICA

Dubai (UAE)

+971 4 8011800

**EUROPE** 

Castellón (Spain)

+34 9647 303 90

Corsico (Mi), (Italy)

+39 0244 851

Prague (Czech Republic)

+42 0725 174 478

Rainford (United Kindom)

+44 1744 882 941

Rödental (Germany)

+49 9563 724 201

INDIA

Bangalore

+ 91 2676 612 085

Halol

+ 91 2676 612 085

PACIFIC

Melbourne (Australia)

+61 394 745 940

JAPAN

Nagoya

+81 5619 708 08

CHINA

Dengfeng

+86 21 6489 999 3

Shanghai

+86 1811 633 835 7

ASIA

Seoul (Korea)

+82 2370 693 34



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

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in www.linkedin.com/company/saint-gobain-performance-ceramics-refractories

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