



SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES

REFRACTORIES

FOR ALUMINUM PROCESSING



SCAN ME

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SAINT-GOBAIN



1 in 4 products
did not exist 5 years ago



170.000+
employees



2022 sales of
€ 51.2 billion



represented in
76
countries



-27%
carbon emissions
reduction (vs. 2017 on scope 1+2)



8
main R&D centres

OUR MISSION

Saint-Gobain designs, manufactures and distributes materials and solutions which are key ingredients in the well-being of each of us and the future of all.

OUR PURPOSE

MAKING THE WORLD A BETTER HOME.



WE ARE COMMITTED TO BEING CARBON FREE BY 2050.

SAINT-GOBAIN

PERFORMANCE CERAMICS & REFRACTORIES

OUR MISSION

To design, develop and **supply solutions** and **services** for **extreme operating industrial conditions**. Our engineered **ceramics** and **refractory** products are manufactured to the **highest industrial standards** and deliver **enhanced performance** while **minimizing environmental impact**.

PIONEERING CERAMIC SOLUTIONS FOR EXTREME INDUSTRIAL APPLICATIONS AND A GREENER WORLD.



EFFICIENT RESULTS

MAXIMIZE EQUIPMENT INVESTMENT AND SERVICE LIFE WITH NON-FERROUS REFRACTORY DESIGNS FROM SAINT-GOBAIN

Saint-Gobain non-ferrous metallurgy solutions deliver unparalleled corrosion, oxidation and chemical resistance to improve service life and performance under the harshest operating conditions.

Primary and secondary non-ferrous metallurgy processes require engineered refractory solutions to deliver the cleanest metal while achieving an extended and consistent service life. With years of experience, as well as a strong dedication to R&D to innovate new materials, Saint-Gobain will deliver completely customized solutions for any challenge.

BENEFITS



Energy efficiency



Longer service lifetime



Minimized shutdown

OUR MATERIALS

FOR PRIMARY & SECONDARY APPLICATIONS

Reduce oxide impurities and corrosion while achieving maximum furnace longevity with high-quality oxy-nitride and nitride bonded SiC from Saint-Gobain. Nitride bonded SiC refractories, Advancal® and Refrax® ARC, have become the reference material for the sidewall lining of modern aluminum reduction cells.

Our Advancal® aluminium reduction cell material offers extended service life through improved oxidation and corrosion resistance. All our products and solutions can be manufactured with the material that meets your need to the best.

Product name	Components
Refrax® ARC	Silicon nitride bonded silicon carbide
Advancal®	High oxidation resistant silicon nitride bonded silicon carbide
Cast Refrax®	Silicon nitride bonded silicon carbide with complex shape capability
Carbofrax® 8S	High thermal conductivity silicon carbide mortar
Jargal® M	Fusion cast alumina for high purity metal
Cryston® Max	Ultra high oxidation silicon oxynitride silicon carbide



For more information

FEATURES & BENEFITS



Larger bath volume



Increased power



Lower thermal conductivity



Lower electrical conductivity



Superior oxidation resistance



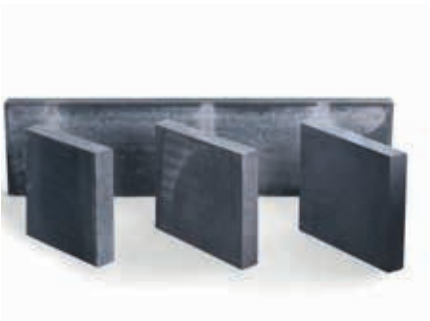
Excellent erosion & corrosion resistance



SIC CASTABLES

Carbofrax® • Annaplast®

Our castable protect the top of the sidewall block against oxidation and premature failure.



SIDEWALL BLOCKS

Advancal® • Refrax®

The industry standard for over fifty years, our sidewall blocks deliver long lasting, reliable performance in reduction cells across the globe. Thinner sidewalls with Advancal® aluminium reduction cells maximize heat flow characteristics through the wall to improve reduction cell performance.



SIC MORTARS

Carbofrax® • Annaplast®

Carbofrax® 8S and Annaplast® APL 76 are formulated for our very well-known SiC mortars CBX 8S & APL 76 for cementing SiC sidewall blocks.

LAUNDER SYSTEM

Refrax®

Laundry systems for aluminium transfer and casting. Saint-Gobain also provides pouring spouts and baffle plates.



DEGASSING ROTARS

Refrax®

Refrax® rotors provide sustainable, chemical resistance for degassing unit components. High toughness and chemical inertness of our materials enhance your performance.



IMMERSION HEATER TUBES

Cryston® Max

High density oxy-nitride silicon carbide tubes and flame diffusers offer superior cost-benefit. Cryston® Max materials offer the optimal thermal conductivity and chemical resistance to keep metal molten in aluminum degassing and holding units.



THERMOCOUPLE TUBES

Refrax®

Refrax® properties of excellent thermal shock, high thermal conductivity, chemical inertness and hot strength make it the ideal choice of material.



HEARTH BRICKS

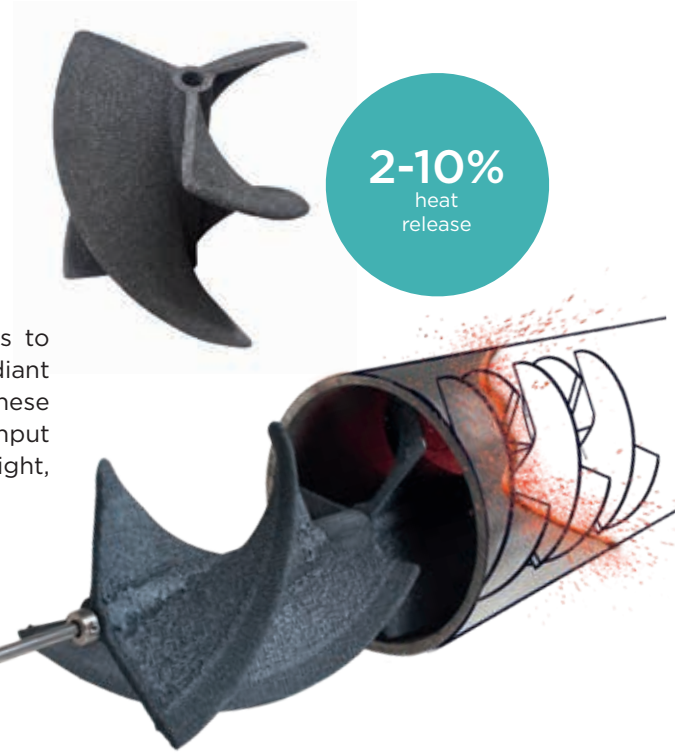
Cryston® Max

Cryston® Max hearth bricks provide excellent resistance to mechanical shock in loading areas of the furnace. Extend the time between furnace re-lines with our proven material.



SPYROCOR® RADIANT TUBE INSERTS

These inserts can be easily retrofitted into existing radiant tubes to improve efficiency and bolster the amount of heat that the radiant tube is re-radiating into the furnace chamber. By implementing these inserts, users can experience energy savings of up to 15% or throughput improvements of up to 5%. Available for simple installation in straight, U-type, W-type, and tri-type radiant tubes. Also applicable in P-type and double-P-type radiant tubes.






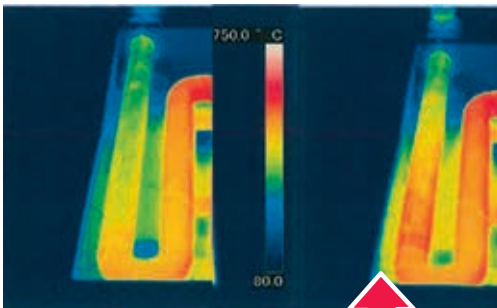
2-10%
heat
release

FEATURES

- Patented twist fin design
- Absorbs heat energy
- Re-radiates heat back into the furnace
- 2 - 6 % throughput improvements

BENEFITS

-  Reduction of exhaust temperature
-  Improved energy efficiency
-  Reduction of polluting emissions



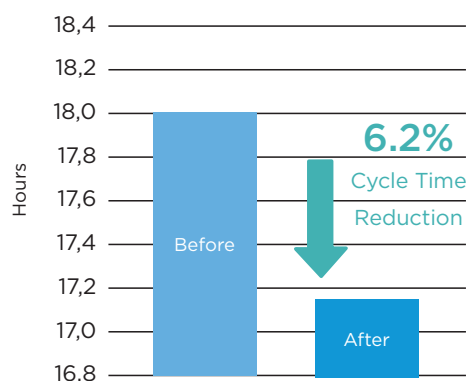
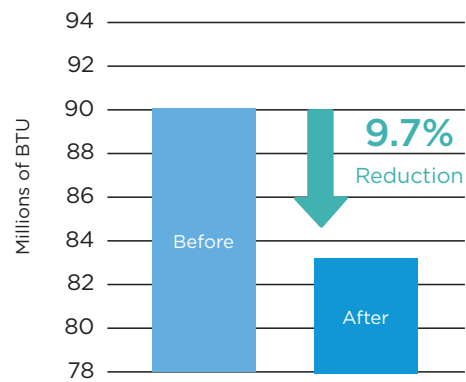
More heat into the furnace allows operators to reach YOUR desired temperature faster and boost throughput.

CASE STUDY

Aluminum slab reheating furnace with W-type Radiant Tube & 567,000BTU/Hr burner

Energy saving: 9.7%
Additional capacity: +28 cycles / year
ROI*: 4 months

Natural gas consumed per furnace cycle



*Energy savings represents an average at gas cost of \$4.00/MMBZU.

MAKING THE WORLD A BETTER HOME

OUR COMMITMENT

Being carbon free by 2050

SUSTAINABILITY AT THE HEART OF OUR BUSINESS STRATEGY

Sustainability is a key tenet of modern environmental, social, and corporate governance (ESG).

OUR AMBITION

To provide solutions to our customers that contribute to de-carbonization and reduce environmental footprint.

At Saint-Gobain Performance Ceramics and Refractories, our business model directly contributes to critical ESG outcomes with a dual approach to sustainable development goals: **Minimizing our environmental footprint while maximizing our virtuous impact across the entire value chain.**

OUR 2030 OBJECTIVES

WATER

- - **50%** Industrial water withdrawal
- **0** water discharge in area with extremely high water risk



CO₂ EMISSIONS

- - **33%** reduction in scope 1 and scope 2 emissions
- - **16%** reduction in scope 3 emissions



CIRCULAR ECONOMY

- - **80%** non valorized production residue
- + **30%** avoidance of virgin raw material
- **100%** recyclable packaging with 30% recycled or bio-sourced content



PRODUCT STEWARDSHIP

- **100%** Life Cycle Analysis for all of Group product ranges



OUR GLOBAL PRESENCE



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