

# SAINT-GOBAIN CERAMIC MATERIALS PRODUCT OVERVIEW

Saint-Gobain Ceramic Materials - Wear Resistant Technologies (WRT) is an unmatched strength of many Saint-Gobain divisions working together with an unparalleled depth and scope of ceramic materials, application experience, engineering capabilities, and global presence. Our unique product portfolio provides cost effective solutions for solving wear and corrosion problems that are encountered in heavy industry during routine plant operation on a daily basis. Extending the life of your material handling equipment and keeping your systems at maximum operational levels is our goal. With Saint-Gobain's vast history and extensive experience we have solved literally every type of wear application, so you can be assured that we have tackled one similar to yours and have a solution to your unique wear problems.



## DURAFRAX®

Our Durafrax® 2000 is a 90% fine-grain, high grade alumina made from exceptionally pure, uniformly controlled aluminum oxide. We have engineered it to be one of the best wear materials available for fine particle abrasion and offers excellent mechanical properties, superior wear resistance, and good corrosion performance. Durafrax® 2000 90% alumina is available in a variety of standard shapes & sizes or custom pre-engineered systems are available that can be installed economically in the shop or in the field. Our engineers are industry leaders in a application techniques, and they will work with you to determine the appropriate attachment method for your operating environment.



## CORGUARD®

Corguard® (ZAC) is a combination of alumina, zirconia, and silica that has been electrically melted and fused, just like steel. But, the similarity to steel ends there, because Corguard® outlasts steel and other traditional wear materials many times over. Our fusion-casting process creates an interlocking crystalline structure that is resistant to heavy impact, sliding abrasive wear, and thermal shock. The dense, impervious structure and chemical composition of Corguard® give it outstanding resistance to corrosion by acids, solvents, slags, and many molten salts.



## CRYSTON®

Cryston® CN178 is Saint-Gobain's unique high performance nitride-bonded silicon carbide ceramic with exceptional resistance to abrasion, erosion, high temperature, and harsh chemical environments. Cryston® CN178 is an effective solution to severe environments where conventional refractories wear out or corrode at unacceptable rates. Its durability far exceeds that of other ceramics, manganese steel, high chrome, rubber, or plastics. Cryston® can be cast or pressed, which provides a wide degree of design latitude. Large and complex shapes are entirely practical, and in every case, you can depend on dimensional tolerances well within design specifications.



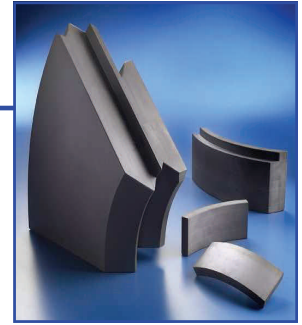
## NORFRAX®

Norfrax® RB is Saint Gobain's high performance, fine grain reaction-bonded silicon infiltrated silicon carbide (SiSiC) material. This premium silicon carbide material is engineered to resist oxidation and thermal shock while providing excellent structural support and wear resistance. Norfrax® RB provides a viable solution to many of heavy industries' most difficult wear, corrosion, and oxidation applications compared to traditional silicon carbides and other ceramic materials, which provide inferior wear protection. Norfrax® RB is formed through a proprietary casting method and firing of the green body at a very high temperature in a protective atmosphere. Large and complex shapes are entirely practical, and in every case, you can depend on dimensional tolerances well within design specifications.



## HEXOLOY®

Hexoloy® is a fully dense alpha silicon carbide and is a superior alternative to metals, tungsten carbides, silicon carbides and other oxide ceramics. A combination of extreme hardness, fine grain, and unsurpassed strength make it one of the most specified materials for the most demanding applications affording the user, more uptime, reliability and efficiency of equipment. No other company in the world has more expertise with silicon carbide than Saint-Gobain Ceramic Materials. We make more of this remarkable material for high performance components than anyone else.



## WEARPAK®

Wearpak® Saint-Gobain's unique portfolio of adhesive formulations with years of experience behind research and development. Whether you are an experienced installer or engineer looking to surpass specification requirements, we have the correct Wearpak product for you. Formulations include adhesives, silicones, mortars and wearing compounds.



## OTHER STRENGTHS

### We Sell Solutions

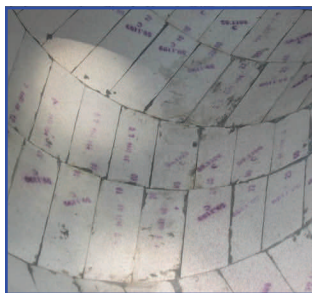
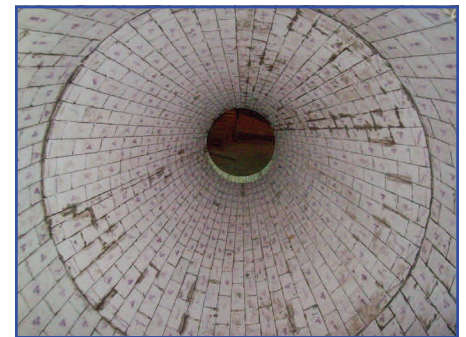
Analyzing a wear problem is a complex process. Our design engineers understand wear problems and specify solutions to suit your operational environment. Material properties, engineering tolerances, attachment methods, and material cost are all considered in a Saint-Gobain wear solution.

### MARKETS

- Asphalt
- Abrasive Material Handling
- Cement
- Chemical Processing
- Coal-Fired Power Generation
- Grain Handling
- Iron/Steel Manufacturing
- Mineral Processing
- Powder/Bulk Solids Conveying
- Pulp & Paper Manufacturing
- Pulverizing & Grinding

### APPLICATIONS

- Chutes/Hoppers
- Classifier
- Cyclone Separators
- Elbows
- Fan Housing & Blades
- Lined Piping
- Nozzles
- Ball Mill Linings
- Wear Panels



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