

# MATERIAL PROPERTIES

## CORGUARD<sup>®</sup> (ZAC)

Corguard<sup>®</sup> (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<sup>®</sup> 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<sup>®</sup> give it outstanding resistance to corrosion by acids, solvents, slags, and many molten salts.

To learn more about our high performance Corguard<sup>®</sup> family of products, please contact your Saint-Gobain representative.

Property		SI Units	English units
<b>Chemical Analysis</b>			
Alumina		50%	50%
Zirconia		34%	34%
Silica		15%	15%
Bulk Density		3.49 g/cm <sup>3</sup>	218 lbs./ft. <sup>3</sup>
Young's Modulus (MoE)	20 °C	110 GPa	34 × 10 <sup>6</sup> psi
Vickers Hardness	20 °C	19.6 GPa	2.8 × 10 <sup>6</sup> psi
Modulus of Rupture	RT	109 MPa	15.9 × 10 <sup>3</sup> psi
	1100 °C	23.3 MPa	3.38 × 10 <sup>3</sup> psi
	1200 °C	7.94 MPa	1.15 × 10 <sup>3</sup> psi
	1300 °C	5.18 MPa	752 psi
	1400 °C	2.35 MPa	341 psi
Cold Crushing Strength		563 MPa	81.6 × 10 <sup>3</sup> psi
Maximum Use Temperature		1,650 °C	3,000 °F
Apparent Porosity		1.15%	1.15%

All of the above statements, recommendations, suggestions and data concerning the subject material are based on laboratory and field results, and although we believe the same to be reliable, we expressly do not represent, warrant or guarantee the accuracy, completeness or reliability of same, of the material, or the result to be obtained from the use thereof. Nor do we warrant that any such use, either alone or in combination with other materials, shall be free of the rightful claim of any third party by way of **INFRINGEMENT** or the like, and **Saint-Gobain Ceramic Materials DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**



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