

# MATERIAL PROPERTIES

## NORFRAX<sup>®</sup> RB

Norfrax<sup>®</sup> RB is Saint Gobains' high performance, fine grain reaction-bonded silicon infiltrated silicon carbide (RBSiC) material. This premium silicon carbide material is engineered to resist oxidation and thermal shock while providing excellent structural support and wear resistance. Norfrax<sup>®</sup> 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<sup>®</sup> 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.

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

Property		SI Units	English Units
<b>Chemical Analysis (RBSiC)</b>			
Silicon Carbide		87%	87%
Silicon		12%	12%
Oxides		1%	1%
Bulk Density		3.05 g/cm <sup>3</sup>	190 lbs./ft. <sup>3</sup>
Young's Modulus (MoE)	20 °C	375 GPa	53 × 10 <sup>6</sup> psi
Vickers Hardness	20 °C	22 GPa	3.19 × 10 <sup>6</sup> psi
Modulus of Rupture	RT	179 MPa	26 × 10 <sup>3</sup> psi
	1250 °C	214 MPa	31 × 10 <sup>3</sup> psi
Thermal Conductivity,	200 °C	125.0 W/m·K	866 (BTU·in)/(hr·ft <sup>2</sup> ·°F)
	300 °C	99.1 W/m·K	687 (BTU·in)/(hr·ft <sup>2</sup> ·°F)
	600 °C	57.8 W/m·K	400 (BTU·in)/(hr·ft <sup>2</sup> ·°F)
	900 °C	40.0 W/m·K	277 (BTU·in)/(hr·ft <sup>2</sup> ·°F)
Thermal Expansion	1200 °C	36.4 W/m·K	252 (BTU·in)/(hr·ft <sup>2</sup> ·°F)
	30 °C—1500 °C	4.3 × 10 <sup>-6</sup> /°C	2.4 × 10 <sup>-6</sup> /°F
Maximum Use Temperature		1,350 °C	2,460 °F
Apparent Porosity		0%	0%
Specific Heat	RT	682 kJ/(kg·°C)	162 BTU/(lb·°F)

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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