

Ceramic Materials

Material types		ZrO ₂	Al ₂ O ₃
Theoretical density	[g / cm ³]	6.08	3.98
Hardness	[HV]	~ 1200	~ 2000
Bending strength (4-point)	[N / mm ²]	800 - 1000	350 - 450
Elasticity module	[10 ³ N / mm ²]	approx. 200	approx. 350
Weibull module (m)		10	8 - 12
K _{1C} -value (critical voltage intensity factor)	[10 ³ N / mm ² m ^{1/2}]	8.2	3.5
Porosity	[%]	< 0.5	< 2
Maximum usage temperature	[°C]	up to 1000 (dependent on humidity)	1400
Expansion coefficient	[10 ⁻⁶ / K]	approx. 10	approx. 5 - 7
Specific heat (20°C)	[J / kgK]	550	900
Thermal conductivity (100°C)	[W / mK]	approx. 1.5	approx. 25
Specific resistance (20°C)	[Ohm cm]	10 ¹⁰	10 ¹⁵
Colour		white	white
Special features		very rigid, highly wear-resistant	high temperature applications

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