



Alumina ceramic tubes with metallized end faces

Metallized Alumina Ceramic Components

Product ID / SKU: FWM/MET-ALU-001

Material: Metallized Ceramic Family

Product type: Metallized Ceramics Component

Metallized alumina bodies with controlled joining or electrical interface areas for ceramic-to-metal assemblies.

Alumina Typical Material Properties

Property	95% Al ₂ O ₃	99% Al ₂ O ₃	99.5% Al ₂ O ₃	99.8% Al ₂ O ₃	Condition / basis
Density (g/cm ³)	3.65	3.85	3.90	3.92	-
Fracture toughness (MPa·m ^{1/2})	3-4	3-4	4	4	-
Young's modulus (GPa)	320	340	370	390	-
Flexural strength (MPa)	300	330	375	390	25°C
Compressive strength (MPa)	2200	2350	2450	2500	25°C
Thermal conductivity (W/(m·K))	18-22	27	29	32	25°C
Linear thermal expansion coefficient (10 ⁻⁶ /K)	8	8	8	8	25-1000°C
Dielectric strength (kV/mm)	16	20	22	22	-
Volume resistivity (Ω·cm)	10 ¹⁴	10 ¹⁴	10 ¹⁴	10 ¹⁴	25°C
Relative permittivity	9	9.7	9.7	9.8	1MHz, 25°C
Dielectric loss	0.0004	0.0002	0.0002	0.0001	1MHz, 25°C
Vickers hardness (HV)	>1300	1700	1750	1800	-
Material thermal-shock temperature difference, ΔT (°C)	220	180-200	180-200	180-200	-

Property	95% Al ₂ O ₃	99% Al ₂ O ₃	99.5% Al ₂ O ₃	99.8% Al ₂ O ₃	Condition / basis
Typical maximum material temperature (°C)	1500	1650	1700	1700	-

Product Geometry & Configuration

Product parameter	Configuration	Basis
Material system	Metallized Ceramic Family	Material family; grade selected for the application
Component forms	Metallized rings and washers; Metallized tubes and bodies; Patterned plates and custom components	Drawing-defined configurations
Geometry and dimensions	Custom sizes available	Part drawing and mating interfaces
Functional surfaces	Contact, locating, joining or insulating surfaces as applicable	Surface finish and acceptance criteria on the drawing