

Appearance

Glass-ceramic sealing glass is white colored in powder form.

Chemical Composition (by weight)

Strontium oxide (SrO)	31.09 - 37.99 %
Silica (SiO ₂)	30.52 - 37.30 %
Zinc oxide (ZnO)	24.43 - 29.85 %
Alumina (Al ₂ O ₃)	2.08 - 3.16 %
Boron oxide (B ₂ O ₃)	0.79 - 2.79 %

Physical Properties

Specific Gravity	3.5 (g/cm ³)
Glass Transition Temperature	670 ± 10 °C
Crystallization Temperature	880 ± 10 °C
Softening Temperature (T _d)	697 ± 10 °C
Coefficient of Thermal Expansion (annealed glass)	7.9 x 10 ⁻⁶ /°C (50 - 500 °C)
Coefficient of Thermal Expansion (crystallized)	8.0 x 10 ⁻⁶ /°C (200 - 900 °C)
Interfacial Bond Strength (Shear)	15.4 MPa
Interfacial Bond Strength (Tensile)	10.7 MPa
Dielectric Constant (1kHz, RT) (annealed glass)	9.28
Loss Tangent (1kHz, RT) (annealed glass)	0.0156

Recommended Firing Conditions

Ramp to 800 °C and hold for 2 hours, then ramp to 900 °C and hold for 2 hours.
Heating/cooling rate: 3 to 10 °C/min

Applications

Operational Temperature: up to 1200 °C

The typical application of GL1702 sealing glass is to seal ceramics at high temperatures. Common applications of sealing glass include: solid oxide fuel cells (SOFCs), solar cells, sodium ion batteries, high-temperature sensors, and other sealing, bonding, or coating applications.