



Product Information: PHYSICAL PROPERTIES COMPARISON

6/01

| 1/4" Thick Materials | °F Normal Service | °F Extreme Service | °F Thermal Shock Resistance | °F Max. Thermal Gradient | In/In/°F Coefficient of Thermal Expansion | PSI Design Tensile |
|--|-------------------|--------------------|-----------------------------|--------------------------|---|--------------------|
| VYCOR® Code 7913 96% Silica | 1652 (900°C) | 2192 (1200°C) | — | 396 (202°C) | 4.2×10^{-7} | 750 |
| Pyroceram® III/Robax™ Glass-Ceramic | 1292 (700°C) | 1472 (800°C) | 1292 (700°C) | 1292 (700°C) | 1.5×10^{-7} | 1500-2000 |
| Tempered PYREX®/Borofloat™ Borosilicate Code 7740 | 500 (260°C) | 554 (290°C) | 532 (278°C) | 194 (90°C) | 18.1×10^{-7} | 2000 |
| PYREX®/Borofloat™ Borosilicate Code 7740 | 446 (230°C) | 914 (490°C) | 266 (130°C) | 97 (36°C) | 18.1×10^{-7} | 1000 |
| Soda-Lime Tempered | 428 (230°C) | 482 (250°C) | 244 (118°C) | 58 (14°C) | 52×10^{-7} | 2000 |
| Soda-Lime | 230 (110°C) | 860 (460°C) | 122 (50°C) | 29 (-2°C) | 52×10^{-7} | 1000 |

Normal Service:

No breakage from excessive thermal shock is assumed.

Extreme Limits:

The glass will be very vulnerable to thermal shock. Recommendations in this range are based on mechanical stability considerations only. Tests should be made before adopting final designs. these data approximate only. Intermittent only - short periods of time.

Thermal Shock:

Based on plunging sample into cold water after oven heating. Resistance of 97° means no breakage if heated to 147°F and plunged into water at 50°F. *Tempered samples have over twice the resistance of annealed glass.*

Temperature Gradient:

The temperature differential between two surfaces of a tube or constrained plate that will cause a tensile stress of 1000 psi on the cooler surface.

Coefficient of thermal Expansion:

The relative increase in size of a material when heated.

Tensile Strength:

The resistance of a material to breakage under the stress of pulling or stretching.

Design Tensile Strength:

The anticipated tensile load that a material can withstand over an indefinite period of time.

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