

Corning supplies a variety of polished and machined glass wafers for use in the fast-growing MST/MEMS (Micro Systems Technology/Micro-Electrical-Mechanical Systems) technologies.

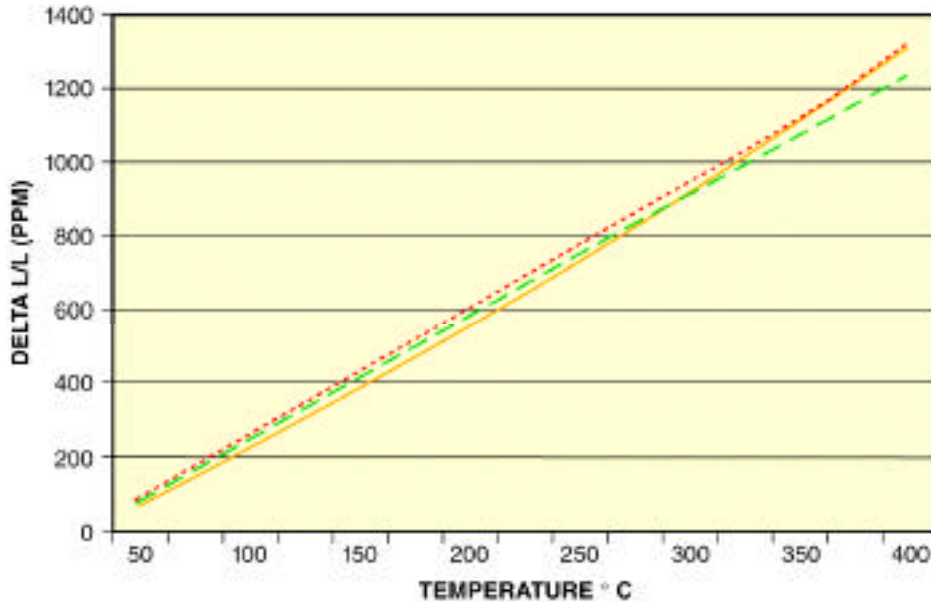
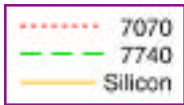
The substrates are produced using the *industry standard* Pyrex® (Corning code 7740) and other silicon thermal expansion matching glasses, such as Corning code 7070; coupled with innovative manufacturing techniques, world class measurement, and global sales and technical support.

Materials: Pyrex® 7740 Borosilicate Glass 7070 Lithia Potash Borosilicate

Glass Properties:		7740	7070
Mechanical	Density (g•cm ⁻³)	2.23	2.13
	Young Modulus (G Pa)	62.75	51.00
	Poisson Ratio	0.20	0.22
	CTE, 0-300°C (x10 ⁻⁶ •°C ⁻¹)	3.25	3.20
Viscosity	Working Point (°C) 10 ⁴ Poise	1252	1068
	Softening Point (°C) 10 ^{7.6} Poise	821	n/a
	Annealing Point (°C) 10 ¹³ Poise	560	496
	Strain Point (°C) 10 ¹⁴ Poise	510	456
Electrical	Log volume resistivity (Ω•cm): 250°C, 350°C	6.1, 4.6	11.2, 9.1
	Dielectric Constant, 20°C, 1MHz	4.6	4.1
	Loss Tangent, 20°C, 1 MHz (%)	0.5	0.06

Thermal Expansion

Corning 7070
Corning 7740 &
<110> Silicon
Cooling Curve



Standard Diameters:

SEMI standard wafer diameters:

- 75.0mm +/- 0.5mm
- 100.0mm +/- 0.5mm
- 125.0mm +/- 0.5mm
- 150.0mm +/- 0.5mm

Other shapes and sizes (for example, rectangles) will be quoted upon request
Drilled or machined wafers are also available upon request

Standard Thickness:

- 1.0mm +/- 0.025mm
- 0.5mm +/- 0.025mm

Orientation Flats:

SEMI standard flats will be quoted upon request

Edge Beveling:

Standard for 1.0 and 0.5mm thick wafers

Warp:

Less than 20 microns

Total Thickness Variation (TTV):

Less than 20 microns

Surface Finish:

Both sides polished to Ra < 15Å typical
Inspected under intensive light (approximately 1500 lux) for scratches and cracks;
top and bottom surfaces - no faults found

Inclusions:

No inclusions greater than 0.3mm diameter allowed
No open inclusions or bubbles

Edge Chips:

No chips greater than 1.0mm diameter

Packaging:

“Coin Stack” canister, foam packed at each end
Wafers interleaved with lint free spacers
25 wafers per canister

Wafer cassettes or carriers are available at additional cost

Hole Drilling Guidelines: (Typical)

Feature location	+/- 0.05mm
Minimum hole diameter	0.25mm
Hole diameter tolerance	+/- 0.05mm
Matrix hole pitch, minimum	1.5 x hole diameter

CORNING

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