

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.

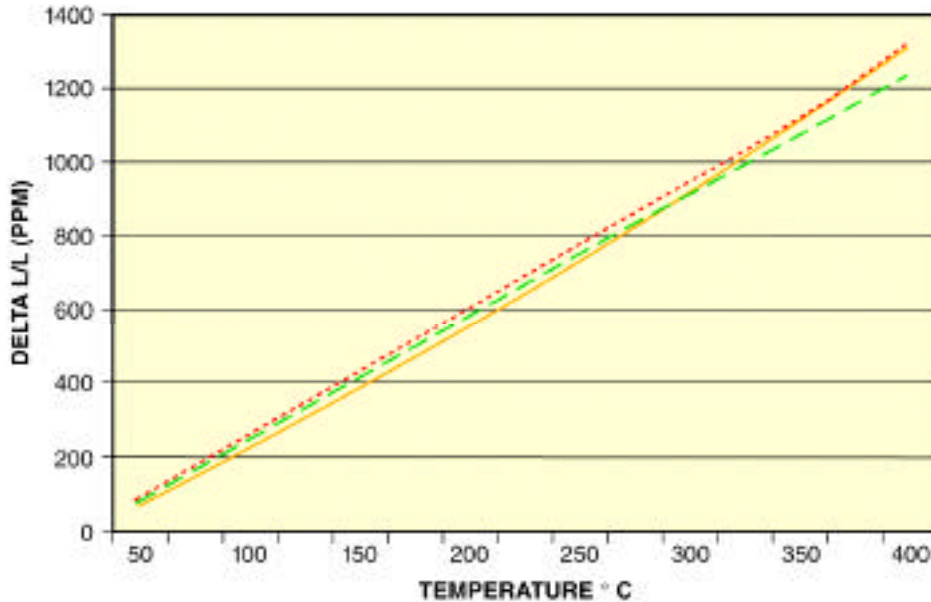
The substrates are produced using the *industry standard* Pyrex® (Corning code 7740) and other silicon thermal expansion matching glasses, such as Corning code 7070; coupled with innovative manufacturing techniques, world class measurement, and global sales and technical support.

### Materials: Pyrex® 7740 Borosilicate Glass 7070 Lithia Potash Borosilicate

Glass Properties:		7740	7070
<b>Mechanical</b>	Density (g•cm <sup>-3</sup> )	2.23	2.13
	Young Modulus (G Pa)	62.75	51.00
	Poisson Ratio	0.20	0.22
	CTE, 0-300°C (x10 <sup>-6</sup> •°C <sup>-1</sup> )	3.25	3.20
<b>Viscosity</b>	Working Point (°C) 10 <sup>4</sup> Poise	1252	1068
	Softening Point (°C) 10 <sup>7.6</sup> Poise	821	n/a
	Annealing Point (°C) 10 <sup>13</sup> Poise	560	496
	Strain Point (°C) 10 <sup>14</sup> Poise	510	456
<b>Electrical</b>	Log volume resistivity ( 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**

### Specialty Lighting & Materials

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