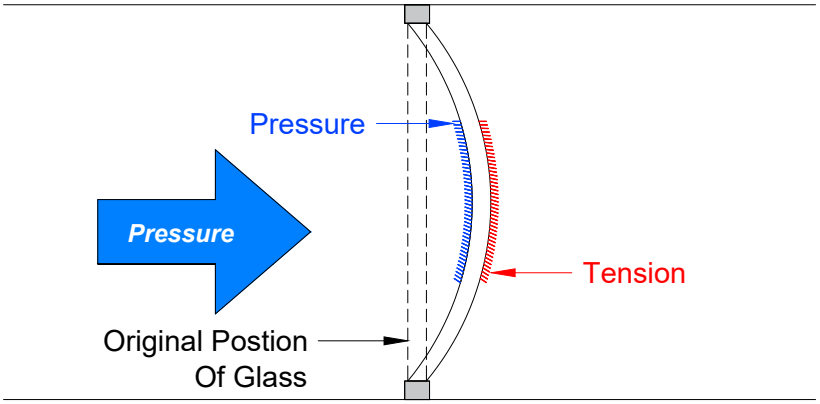
WIND LOADS & DEFLECTIONS

Calculating glass & overall maximum opening height

DEFLECTION

The amount of movement of glass under uniform wind pressure (wind load).



When wind loads are applied to glass it causes both compression and tensile stresses as illustrated in the diagram above.

The face of the glass that has the load imposed on it is subject to compressive stresses for which the glass has a high resistance. The opposite face has the tensile stresses applied to it for which glass has a lower resistance.

10mm & 12mm toughened glass deflects to the same extent, but toughened glass can withstand more deflection before breaking.

DETERMINING THE WIND LOAD

The actual design wind load pressure for each individual application can be determined by specific engineering design using NZS 4203 or AS/NZS 1170. Most regulatory authorities offer information relevant to the job specific site – on larger projects the project engineer will provide this information. Loads will vary due to ground terrain, building height and glazing location, with much higher loads on the corners of buildings and edges of roofs.

ULTIMATE WIND PRESSURE (UWP)

WIND ZONE	WIND ZONE SYMBOL	BASIC WIND SPEED M/S	ULTIMATE WIND PRESSURE PA
Low	L	32	650
Medium	M	37	850
High	H	44	1200
Very High	VH	50	1550
Extra High	EH	55	-