



## Glass cracking

### Causes

Window Glass can crack when a mechanical force is applied to it. Cracking can also occur by a thermal force which is caused by a large difference in temperature between one part of the window and another.

Mechanical forces may be wind, flexing of the window frame due to house settling or excessive construction/hammering close to the window. Glass by its nature is not a homogenous product as such. It is not stable under stress from temperature changes.

Thermal stress created by a temperature difference between the center of the glass and the edge. Normally, a temperature difference of 30 C is needed to cause cracking. Many environmental factors can cause such a temperature variation, for example: a cold night followed by a bright sunny morning will heat up the center of the glass very quickly;

shadows on the glass created by roof overhangs, landscaping or other buildings; internally applied film or coating on the window; reflective or light colored venetian blinds closed during the hottest point of the day.

The above types of cracks are extremely hard to predict and the cause is practically impossible to determine. As such, the glass industry and therefore the window industry do not provide a warranty to cover this type of window cracking.

### Indoor Shading

Venetian blinds, draperies or other shading fixtures must be hung to provide space on the sides and bottom, or top and bottom to allow air movement by natural convection. Failure to do so will result in excessive thermal stress, which can cause cracking, which is not covered under warranty.

The following are recommended to avoid this situation:

- a minimum of 40mm (1 1/2") clearance should be left on the top and bottom of the shading fixture, or on the sides and bottom.
- a minimum 50 mm (2") clearance should be left between the glass surface and the shading fixture; any heating or air conditioning outlets should be located on the room side of the shading fixture; vertical blinds are preferred over drapes or horizontal blinds; open weave draperies are preferred over tightly knit material.

To offset the lack of adequate ventilation, tempered glass may be needed. Application of a solar control film on the glass inside the home will cause thermal stress, which is not covered under warranty.