

# Glass Breakages Explained

## Nickle Sulphide Inclusion:

Nickel sulphide inclusion is a tiny impurity inside glass that can cause the glass to shatter suddenly, sometimes years after it's been installed.

During glass manufacturing, microscopic particles of nickel sulphide (NiS) can accidentally get trapped in the molten glass. As the glass cools, these particles slowly change their crystal structure and expand over time. That internal expansion creates stress in the glass, and eventually the glass can break without any external impact.

This issue is most associated with toughened (tempered) glass, because the internal stresses from tempering make the glass more vulnerable to this delayed failure.

## Extreme Changes in Temperature:

Direct exposure to sunlight can cause the temperature of the glass to rise, leading to thermal stress cracks.

Rapid temperature changes are the primary cause of thermal stress cracks in windows. If the temperature outside is significantly different from the temperature inside, the glass may not be able to adjust to the changes, leading to cracks or spontaneous blow up of toughened glass.

## Low Quality Glass:

Lower quality glass is more prone to thermal stress cracks than high quality glass. Sun exposure.

## Poor Product Installation:

Ensure glass edge have an arris or polished edge to prevent stress occurring. Ensure that your windows are properly installed and have enough room to expand and contract. Window film. Applying window film can help regulate the temperature of your windows and prevent thermal stress cracks.

## Window Films:

Applying window film can help keep a room cooler, however if the glass edge hasn't been properly prepared with either an arris or a polish, after time the film can hold a temperature difference causing stress on the glass surface leading to cracking.

## Ventilation:

Proper ventilation can help regulate the temperature inside your home and reduce the temperature difference between the inside and outside of your windows, also a common cause for glass fogging can be due to poor ventilation within the room or a defective seal on a double-glazed unit.

