

MULTIVER
GLASS

SPONTANEOUS GLASS BREAKAGE

Version 2.0

MULTIVER Ltd
436, Berube Street, Quebec (Quebec) G1M 1C8
tel. : 1 800 463-2810 and fax : 418 687-0804



MULTIVER
Cutting edge of the glass industry



GLASS EDGE DAMAGE OR SURFACE DAMAGE

Glass edge damage or surface damage (most common) **from handling and glazing, building or framing system movement, or poor engineering** — While such damage may not be readily apparent, stress concentrations around these imperfections can occur as the glass expands and contracts in response to in-service temperature changes, wind load, building movement, and other environmental factors.

POORLY ENGINEERED GLASS FRAMING SYSTEM

Expansion and contraction of glass framing members may also lead to breakage. Such incidents occur when the gaskets, setting blocks, or edge blocks in a metal window or curtain wall frame are missing or do **not sufficiently cushion** the glass against **glass-to-metal contact** caused by **temperature- or wind-related movement**. This can cause edge and surface damage to the glass as it comes in contact with the metal frame's perimeter, **producing stresses** that eventually lead it to fail for no apparent reason.

INCLUSION INSIDE THE GLASS

There are more than 50 types of inclusion, but most of the time it is **nickel sulfide stone**. **Heat Soak test** : the goal is to initiate or accelerate the phase change of any nickel-sulfide inclusions that may be present and to cause the glass to break before it is shipped to the end customer. This test cannot, however, provide a 100 % guarantee against spontaneous breakage.

THERMAL STRESS

A **positive temperature difference** between the centre and edge of the glass lite causes the expansion of the heated glass centre, resulting in tensile stress at the edge of the glass. If the thermally induced stress exceeds the edge strength of the glass, breakage occurs.



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