



**Technical Bulletin
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Glass Breakage:
Determination of Cause by Break Origin Analysis

There are typically four causes of glass breakage: high stress thermal breakage, low stress thermal breakage, pure bending failures (excessive wind or impact load) and internal flaws. The cause of any glass breakage can be precisely determined if the break origin of the glass can be preserved until it can be studied by a qualified glass technician. Without an inspection of the break origin, no one can positively identify the cause of glass breakage. **Please keep in mind that glass is not warranted against breakage from any cause.**

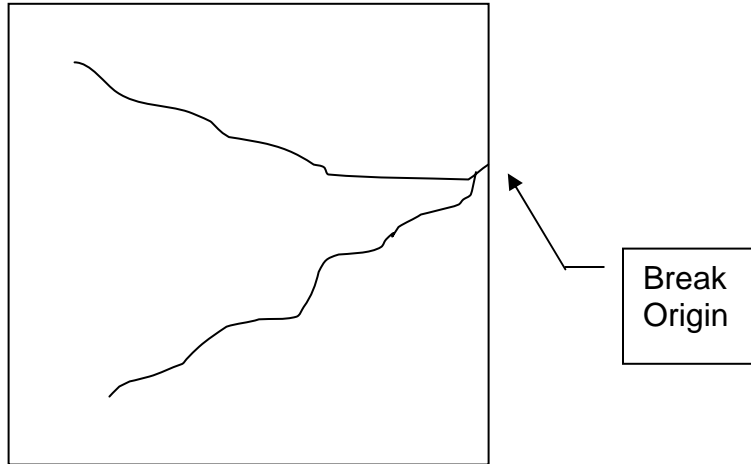
In the case of annealed or heat strengthened glass, the broken glass will usually remain in the opening after breakage. In this event, the runs in the glass should be taped with clear packaging tape or some similar type of tape. It is important to save the location of the runs at the edge of the glass, since this is where the break usually originates.

In the case of fully tempered glass, saving the break origin is more difficult, but not impossible. The broken lite of glass must be located before it vacates the opening. Some point on the glass will display the characteristic "spider web" appearance (see drawing) which will identify the break origin. The center of the "spider web" may occur at an edge or in the central area of the glass. This location must be held together with clear packaging tape, or some similar type of tape. An area about 6" - 8" in diameter should be saved. The taping must be done carefully to avoid losing the break origin altogether. Have an assistant hold his hand against the side of the glass opposite the side you are working on. This will help to prevent the glass from falling out. Work slowly and carefully.

The break origin can be sent to Vitro America, "Attention: Technical Services". Vitro America will then have the breakage analyzed and a formal letter with the results will be sent to the interested party or parties. Or, you can send the break origin directly to the glass laboratory of your choice.



Break Origin in Heat Strengthened Or Annealed Glass



Break Origin in Tempered Glass

