

4.7.11 Stress Distribution Correlation

The stress distribution across the window surfaces shall be obtained during vehicle testing and correlated to an analytical model with the same load cases applied.

4.7.12 Spring Stiffness

a. Spring stiffness (load versus deflection) shall be determined for all springs and seals and combinations included in the window design.

b. The measured stiffness for the springs and seals shall be used for all analyses and models of the window assembly.

4.7.13 Stress Analysis Requirements and Reports

The stress analysis of the glass or ceramic structural component shall be in accordance with the current best practices for structural design, analysis, and reporting standards and methodologies.

4.7.14 Analysis Methods for Tempered Glass

a. The methodology for flaw growth analysis in tempered glass shall be the same as for annealed glass (section 4.7.2 of this Standard) for any tensile stress on the surface of the pane when loaded, such as during proof testing.

If the total stress at the initial design flaw depth is compressive after combining the temper stresses and the proof tensile stresses, then a flaw growth analysis is not required.

b. Where tempered glass is used in the window design, the pre-compression of each surface of each windowpane shall be measured and recorded.

4.7.15 Temper Layer Preservation

The sum of the measured temper surface stress and two times the applied limit surface tensile stress shall be equal to or less than zero (compressive).

4.8 Safety and Structural Integrity Assurance Requirements

4.8.1 Redundancy

4.8.1.1 Pressure Redundancy

a. All vehicle/element windows that are or can be a part of the crew-inhabiting pressure shell shall have redundant pressure panes.