

General Service Bulletin (GSB):	Laminated/Tempered/Heated Glass Warrantable / Non-Warrantable Conditions
GSB Overview:	Use this GSB to help determine (Warrantable / Non-Warrantable) glass defects vs. damage
NOTE: This information is not intended to replace or supersede any warranty, parts and service policy, Work Shop Manual (WSM) procedures or technical training or wiring diagram information.	

### **Cleaning Glass**

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- All glass should be cleaned prior to evaluation including tree sap, chemicals, wax or bugs. Use steel wool on the surface no greater than 0000 grade, in a circular motion then rinse/wipe with water or a non-abrasive glass cleaner. Do not use razor blades or other sharp objects to clean glass, as this may scratch and damage the glass and will remove window grid line material from a heated glass panel.

### **Laminated Glass**

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- *Pen Test:* Slowly run the tip of a ballpoint pen along the length of the crack. If impact damage is present, the tip will catch into the depression caused by the impact (page 3).
- *Flashlight Test:* Aim a flashlight at a 45° angle along the crack. This will help to highlight the crack making it more visible to inspect for radiating cracks from impact damage.
- Stress cracks are cracks in fixed glass that originate beneath a molding or from an edge, with no evidence of impact on the glass or to the surrounding moldings or body panels.

### **Tempered Glass**

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- Tempering is a special heat treatment developed to create a compressive stress on the surface of the glass. Tempered glass will crack into fragments if the outer surface has been impacted or deeply scratched. It may be possible to determine the origin by following the fracture pattern.
- Broken glass pieces may be forced outward from cabin pressure within the vehicle. This can occur from shutting a door if the glass was previously compromised (scratch/chip).
- If broken glass is the direct result of a defective component with warranty coverage it would be related damage, not defective glass.
- Quench Marks are small cloudy spots which appear in tempered glass from the heat treatment process. These spots will be most noticeable on curved windows due to light reflection angle. These quench marks seen in specific conditions are increased with polarized lenses should be considered a glass characteristic (page 5).

### **Warranty Policy and Coverage**

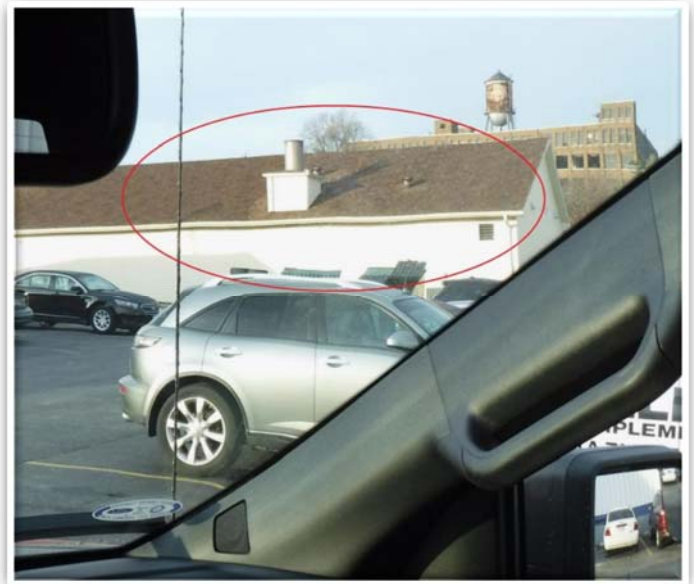
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- Please refer to the Warranty & Policy Manual for complete information on glass coverage, warrantable / non-warrantable conditions.

# Laminated/Tempered/Heated Glass General Service Bulletin



Distortion in the primary viewing area  
Warrantable



Distortion viewed at angles across the window or near the bottom/side of the glass  
Not warrantable

## Laminated/Tempered/Heated Glass General Service Bulletin



Cracks from the edge of a laminate glass, which passes the Pen Test.  
\*Refer to the Warranty & Policy Manual for coverage\*

Warrantable



Cracking radiating from a central impact point.  
Tempered glass pieces may be forced outward due to cabin pressure

Not warrantable



# Laminated/Tempered/Heated Glass General Service Bulletin



Delaminating from the glass edge  
Warrantable



Scratches  
Not warrantable



Chips  
Not warrantable

## Laminated/Tempered/Heated Glass General Service Bulletin



Bubbling from trapped air in laminate layers  
Warrantable

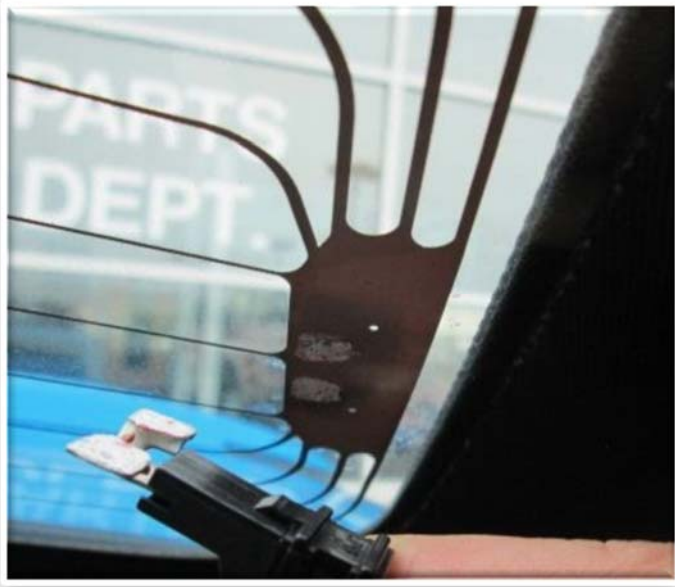


Bubbles in aftermarket window film with  
air gaps near printing/grid lines  
Not warrantable

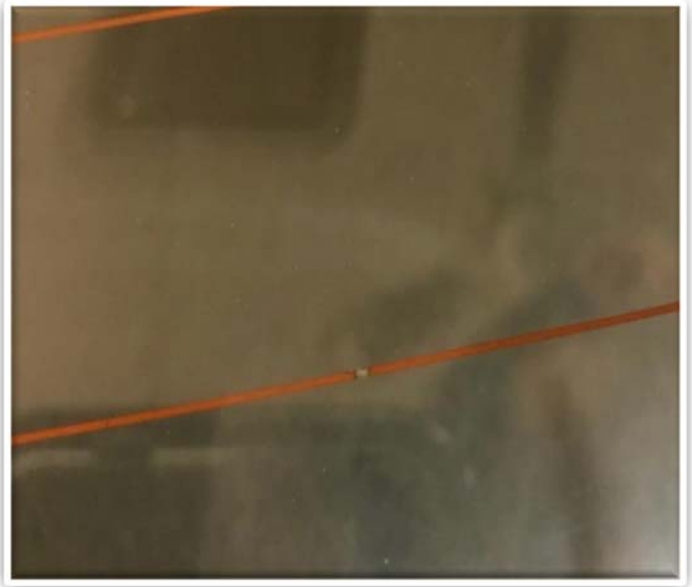


Tempered glass quench marks prominent  
at some angles or with polarized lenses  
Not warrantable

## Laminated/Tempered/Heated Glass General Service Bulletin



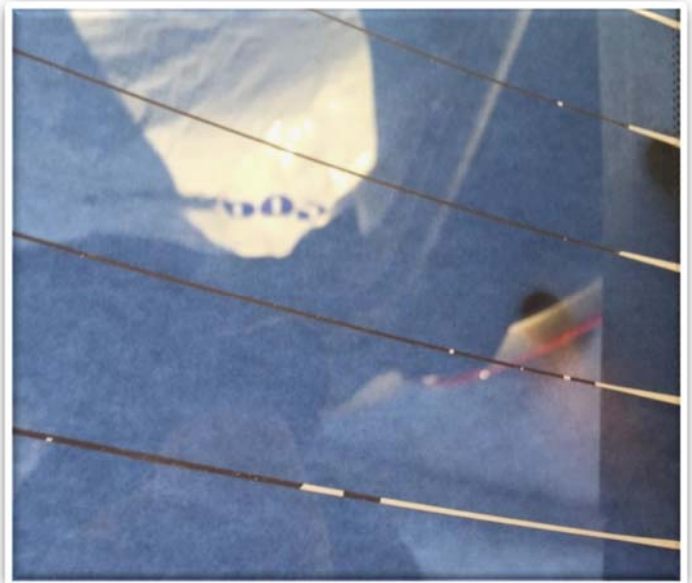
Cold solder joint. Terminal detached with solder on both connections. \*Repairable\*  
Warrantable



Broken grid line.  
\*Repairable\* up to 5mm in length  
Warrantable



Terminal detached with removed conductor and solder  
Not warrantable



Removed grid lines from multiple locations, often concentrated.  
NOTE: antenna grid lines will not defrost  
Not warrantable