

Use of Internal Grills

Internal grills in an insulating glass unit are known by many names: grills, muntin bars, simulated divided lites, shadow bars, contour bars, and grills between glass (GBG). When internal grills are used in an insulating glass unit there is a potential these dividers will contact the airspace glass surfaces (surface #2 or and #3) of the unit. This can occur under a number of conditions:

- When the unit is exposed to atmospheric pressure above that at which it was constructed including: cold temperature conditions and high barometric pressure conditions
- Installation at an altitude below its fabrication altitude
- High and buffeting winds
- Use of tempered glass with some level of bow
- Fabrication at or near the IG thickness lower limit

When the grills contact the airspace glass surfaces, there is the potential for having condensation on the room side (#4 glass surface) immediately behind the grill. This is because the insulating glass unit will lose insulating value where the grill contacts the glass surfaces, causing the indoor glass surface to be colder.

In addition, in units with large glass utilizing long spans of the internal grills, there is a chance for brief glass to internal grill contact. Swinging or sliding patio doors that are rapidly swung open or shut could result in the grill contacting the glass resulting in a brief rattling noise. This brief rattling noise is not a product defect and does not warrant replacement of the glass.

Insulating glass units using internal grills may or may not have the same rated U-Factor. The National Fenestration Rating Council's *Procedure for Determining Fenestration Product U-Factors (NFRC 100:2010)* states:

“Products with glazing dividers between layers of an insulating glass (IG) unit shall be permitted to be assumed to have the same U-factor as identical products without such dividers providing the following:
a. For dividers, there is at least 3.00mm (0.118in) air/gas space between the divider and both glass surfaces.”

Determining what grills are available to consumers and if the 3mm gap requirement will be met are decisions made by the window manufacture.

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