

USE OF BUMPERS ON EXPOSED INTERNAL GRILLES

Cardinal IG Company has done extensive testing on the use of soft urethane plastic bumpers with a PSA adhesive inside IG units. These bumpers are used on internal grilles to maintain separation between the bars and glass. They were initially intended for use on simulated divided lite (SDL) grilles covered on the outside of the glass with an additional wood or metal grid. This external grid limited the exposure of the bumpers to sunlight.

With the advent and popularity of exposed internal grilles there have been desires by many window and door manufacturers to use these grilles in situations where they will be visible and exposed to direct sunlight. The main purpose for the bumpers was to help reduce the potential for grilles to contact the glass. When grilles contact glass surfaces they can create a rattling noise and the bumpers help reduce this noise but is not a guarantee that the grilles will not squeak or rattle. The use or nonuse of bumpers does not have an effect on the IG unit warranty since this phenomenon is not covered under standard warranty circumstances.

Cardinal IG Company's testing has shown there is a potential for discoloration with the bumpers currently available on the market. For this reason Cardinal cannot offer a warranty for discoloration on these products. Cardinal's current position is to use, when requested, white bumpers on all white grilles, colored bumpers when available and clear bumpers on grilles of all other colors. Testing has shown white and colored bumpers have significantly less potential for color change when compared to clear bumpers.

Testing was conducted in both QUV and Xenon Arc accelerated weathering devices. This testing has shown a potential for discoloration prior to the 20-year seal failure warranty of a current IG unit. LoE²® glass should reduce the potential for color change though the use of these coatings will not eliminate the entire potential. The picture below compares the potential color change of a clear bumper compared to a white bumper after QUV exposure.

These tests have not yet been directly correlated to outdoor exposure. Despite this, the testing does indicate the potential for change. This testing does not indicate that in every situation the bumpers will change color, but again does indicate the potential. Factors found to affect this discoloration are temperature, intensity of UV (sunlight), use of low-E glass and argon filling. In actual exposure this means that location and design of the home and window will play a major factor in the rate of color change. Naturally, bumpers used next to the indoor glass lite in the airspace will not see the same temperature and UV light exposure as those directly exposed to the outdoors. Because of this, bumpers as viewed from the inside of the home will have significantly less opportunity for color change compared to ones that are directly exposed to the environment.

Cardinal IG Company intends to continue in the search for bumpers that will provide the best performance for both noise reduction and resistance to color change.

The information in this Technical Service Bulletin is subject to the disclaimers and other limitations appearing in the DISCLAIMER that accompanies this Bulletin and at www.cardinalcorp.com.

©Copyright 2008 Cardinal IG Company

Comparison of Bumpers Exposure in QUV (Clear/Clear Air-Filled Units)

