

Glass railings and exposed edges

Saflex® DG41 PVB provides new possibilities.



Architectural glass railings can dramatically enhance a building's facade, and for occupants, the unobstructed views are priceless. Exposed edges have long been a challenge for manufacturers and installers, but advancements in interlayer products have resolved many of these issues. Saflex DG41 polyvinyl butyral (PVB) interlayers are ideal for laminated glass railings, especially those in hot, humid climates. Laminated glass comprising these interlayers can withstand high humidity and temperature deviations between hot and cold climates without compromising the integrity of the laminate edge when properly laminated.

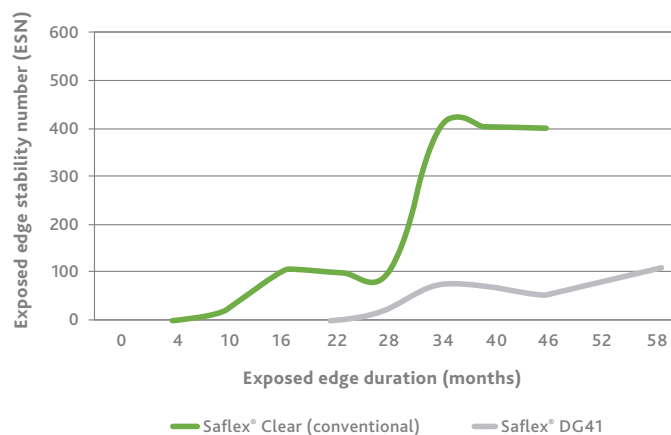
Exposed edges get the heat in Miami

Edge stability is a performance property that indicates Saflex interlayer's resistance to delamination when exposed edges are subjected to a hot and humid environment. For outdoor edge stability testing, Eastman selected a commercially operated site near one of the most tropical cities in the United States—Miami. Edge stability, as defined here, is a long-term event in which the samples are exposed to the natural outside environment. The edges are unprotected and, consequently, wet in the early morning (with dew) and during episodes of fog or rain.

The edge stability number (ESN) is a weighted sum of "percent defect lengths" where the weight increases as the square of the depth (expressed in sixteenths of an inch). The maximum ESN number is 2,500, with the minimum number being zero; the smaller the number, the better the edge stability in this environment. Any product exhibiting an ESN of less than 500 is considered exceptional.

Figure 1 shows the difference between the conventional Saflex PVB interlayer and a Saflex DG41 PVB interlayer both exposed at the aforementioned site for the corresponding duration. Understanding that an ESN of 500 is considered exceptional, Saflex DG41 performance at 58 months is outstanding. Saflex PVB interlayer formulation exposure was completed at 46 months; however, Saflex DG41 was exposed for a longer duration.

Figure 1. Edge stability numbers for Saflex® Clear and Saflex® DG41



Salt fog testing for edge blush and delamination

Saflex DG41 PVB interlayer performed well in salt fog testing, which was conducted according to the ASTM B117-11 standard. Specimens were placed in a hot (35°C) environment and uniformly exposed to salt fog (created from a 5% saline solution). When compared against a Saflex Clear interlayer, Saflex DG41 showed marked improvement in performance in edge blush and was less susceptible to edge delamination.

Saflex® Structural product offering

Product nomenclature	Thickness	Std. widths	Std. lengths	Transparency
Saflex® DG	0.76 mm (0.030 in.)	45–322 cm	250 m	Clear

Sealant compatibility

Sealants can sometimes cause contact problems because of their various chemical compositions. Using GANA (Glass Association of North America) methodology, Eastman tested five different samples for 3,500 hours with cyclical UV light, heat, and condensation exposure. On average, Saflex DG41 PVB interlayer outperformed a standard interlayer on percentage of edge affected, average total depth, and maximum depth affected.

Post-breakage behavior

Laminated glass can provide protection following a rare breakage situation. The glass adheres to the interlayer, reducing the likelihood of shards of glass falling on pedestrians at the street level.

Adding color

Saflex DG41 PVB interlayer is compatible with Eastman's unlimited color possibilities via the Vanceva® Colors and Earth Tones collections. For distinctive color, subtle neutrals and whites, gradients, and patterns, Vanceva interlayer system offers unparalleled design options, giving architects the ability to make their projects unique.

Saflex DG41—unlimited design options

Saflex DG41 is the ideal interlayer solution for creating glass railings, balustrades, canopies, or other projects where exposed edges are involved. Extensive testing in both natural and lab conditions have shown that when properly laminated and installed, glass with Saflex and Vanceva formulations can provide acceptable long-term performance when edges of the laminate are exposed to normal weathering.

Additional benefits of Saflex laminated glass



Safety protection



Burglary protection



Storm protection



UV protection



Noise reduction

Architects and designers trust Saflex®.

Around the world, architects and designers trust Saflex when performance and safety are their most critical concerns. The reason for their confidence is simple. No matter what the specifications or performance targets, Saflex interlayer technology delivers advanced glazing performance for demanding applications.



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