DuPont™ SentryGlas®

EDGE STABILITY RESULTS—12-YEAR TEST

DuPont Glass Laminating Solutions

DuPont™ SentryGlas® **Structural Interlayer Product Information**

At the BellSouth building in Fort Lauderdale, silicone-sealed, butt-joined safety glass made with SentryGlas® helped architects deliver panoramic corner office views, while meeting tough wind and storm protection codes. Extensive outdoor testing and real life experience show that laminates made with SentryGlas® resist damage from long-term sealant contact.

Proven Edge Stability Opens New Design Possibilities

From tropical heat and storm zones to northern climate extremes, DuPont™ SentryGlas® interlayers enable designers to create stronger, larger expanses of safety glazing including open-edged, structural, and butt-glazed installations.

Frigid winters, shadeless summer heat and occasional Mississippi River floodwaters were among the design challenges for a bandshell built on an island in St. Paul, Minnesota. Open-edged and butt-sealed glazing panels made with SentryGlas® remain free of visual defects after years of exposure. The extra strength of the interlayer helped create a uniquely shaped overhead structure.

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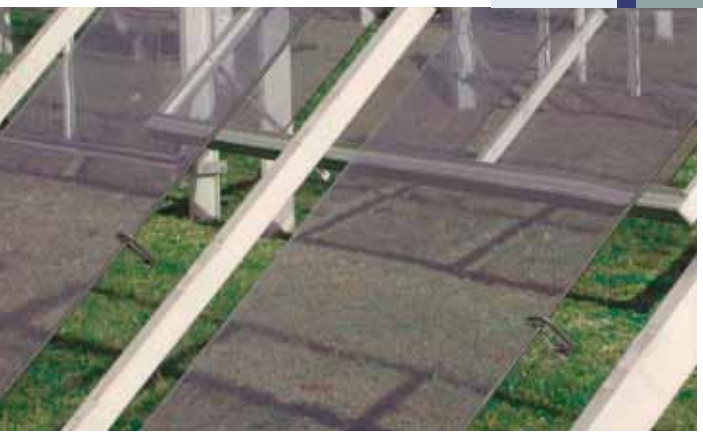


Laminated glass test lites made with DuPont™ SentryGlas® structural interlayers were placed on exposure in Florida on 18 September 1997 and have been inspected annually for weathering effects.

Zero Defects for SentryGlas® after 149-month Florida Weathering

After 149 months of exposure, SentryGlas® laminate was assigned an Edge Stability Number (see Table 1). This weighted system assigns higher importance to progressively deeper defects. A laminate with no defects would have an ESN of 0, while the maximum would be 2,500 (equivalent to continuous defects measuring >¼ in. [6.4 mm] around the entire perimeter).

The Edge Stability Number (ESN) calculation is as follows:

- ESN = 1•(PCT1) + 4•(PCT2) + 9•(PCT3) + 16•(PCT4) + 25•(PCT5)

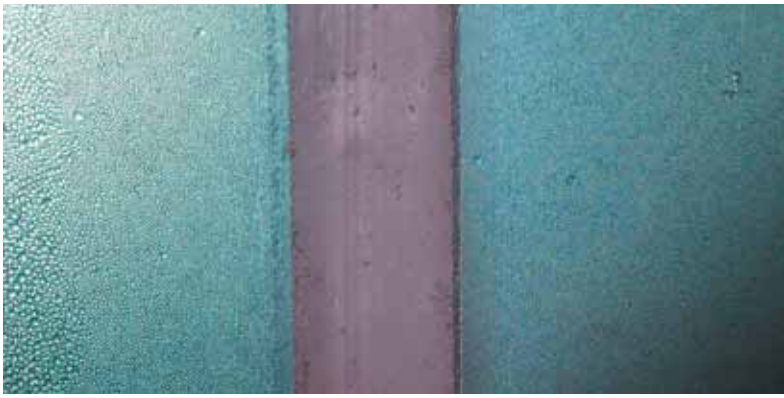
Where
PCT1 = % defect length with depth <1/16 in. (<1.6 mm)
PCT2 = % defect length with depth 1/16 in. – <1/8 in. (1.6 – <3.2 mm)
PCT3 = % defect length with depth 1/8 in. – <3/16 in. (3.2 – <4.7 mm)
PCT4 = % defect length with depth 3/16 in. – <1/4 in. (4.7 – <6.4 mm)
PCT5 = % defect length with depth >1/4 in. (>6.4 mm)

SentryGlas® ionoplast interlayers enable innovative frameless facade and canopy design, with novel glass structural support at the TKTS booth in New York City's Times Square.

Open-edged rooftop glass railings made with DuPont™ SentryGlas® help protect people and the view at the Marina Bay Sands SkyPark in Singapore..

Photographs of observed SentryGlas® edge conditions are presented below:

Edges of laminated glass test samples after weather exposure show no visible moisture intrusion or delamination effects in open-edge applications. Open-edge laminates made with SentryGlas® may develop some edge-whitening due to oxidation. This does not affect laminate performance or transparency.



Edges of laminated glass after weather exposure show no visible moisture intrusion or delamination effects in silicone butt-joined installations.

Zero Defects for Open Edges and Silicone Contact

ESN data in Table 1 includes samples with open-edge exposure, as well as samples butt-joined using silicone. ESN numbers recorded are zero (0) for samples laminated using SentryGlas®.

Table 1: SentryGlas® Edge Stability Number (ESN) Test Data after 12-Year Exposure

Sample ID	Laminate Perimeter (mm)	Defect Length (mm)					
		<1.6	1.6–3.1	3.2–4.6	4.7–6.3	>6.4	ESN
824-63-1	3912	0	0	0	0	0	0
824-64-2	3912	0	0	0	0	0	0
824-48-3	3912	0	0	0	0	0	0
824-46-4	3912	0	0	0	0	0	0
824-47-5	3912	0	0	0	0	0	0
824-44-6	3912	0	0	0	0	0	0
824-34-7	3912	0	0	0	0	0	0
824-27-8	3912	0	0	0	0	0	0
824-16-9	3912	0	0	0	0	0	0
824-71-10	3912	0	0	0	0	0	0
824-56-11	3912	0	0	0	0	0	0
824-75-12	3912	0	0	0	0	0	0
824-74-13	3912	0	0	0	0	0	0

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Architectural Safety Glass Interlayer

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