

DuPont™ SentryGlas®

EDGE STABILITY RESULTS—SEVEN 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.

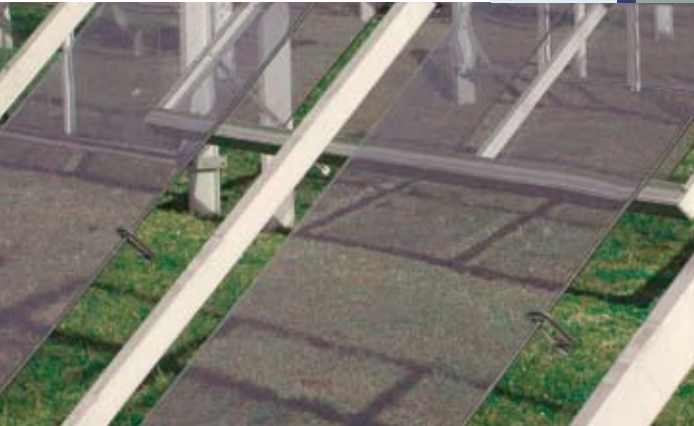
Proven Edge Stability Opens New Design Possibilities

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.



SentryGlas®



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 84-month Florida Weathering

After 84-month 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 $>1/4$ in. [6.4 mm] around the entire perimeter).

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

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

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)

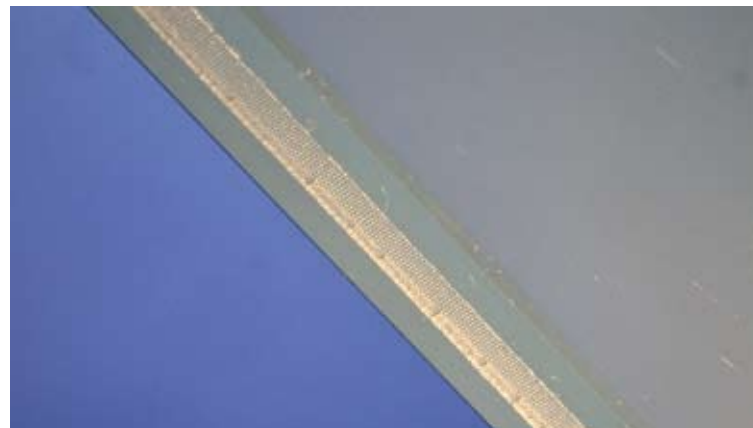
PCT3 = % defect length with depth $1/8$ in. – $<3/16$ in. (3.2 – <4.7 mm)

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® structural interlayers enable innovative designs and support systems.

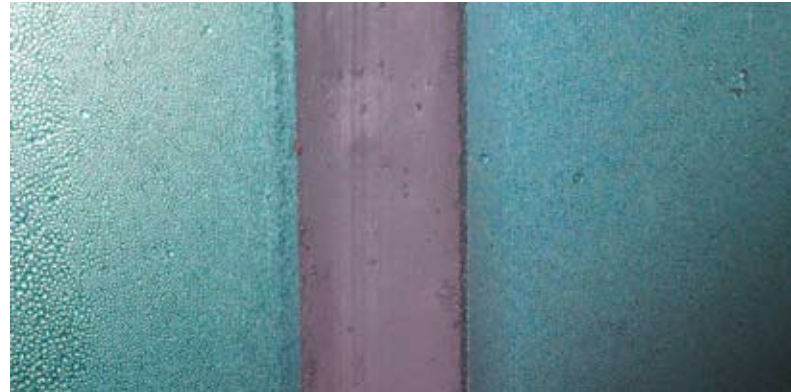


After years of open-edge weather exposure, the interlayer of SentryGlas® still has its fresh from the manufacturer edge detail.

Photographs of observed SentryGlas® edge conditions are presented below:



Edges of laminated glass test samples after weather exposure show no measurable moisture intrusion or delamination effects in open-edge application.



Edges of laminated glass after weather exposure show no measurable 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 Seven Year Exposure

Sample ID	Laminate Perimeter (mm)	Defect Length (mm)					ESN
		<1.6	1.6-3.1	3.2-4.6	4.7-6.3	>6.4	
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



DuPont™ SentryGlas®
Architectural Safety Glass Interlayer

Worldwide DuPont Sales and Support

DuPont Glass Laminating Solutions supplies and supports customers from research, manufacturing and sales locations worldwide.

Americas

DuPont Company
BMP 26-2363
4417 Lancaster Pike
Wilmington, DE 19805 U.S.A.
Telephone +1 302 774 1161
Toll-free (USA) 800 438 7225
Fax +1 302 892 7390

DuPont do Brasil, S.A.

Alameda Itapecuru, 506
06454-080 Barueri, SP Brasil
Telephone +55 11 4166 8542
Fax +55 11 4166 8720

Asia Pacific

DuPont China Holding Co., Ltd.
Shanghai Branch
399 Keyuan Road, Bldg. 11
Zhangjiang Hi-Tech Park
Pudong New District, Shanghai
P.R. China (Postcode: 201203)
Telephone +86 21 3862 2888
Fax +86 21 3862 2889

Europe / Middle East / Africa

DuPont de Nemours Int'l. S.A.
2, Chemin du Pavillon Box 50
CH-1218 Le Grand Saconnex
Geneva, Switzerland
Telephone +41 22 717 51 11
Fax +41 22 717 55 00

sentryglas.com email: glass@dupont.com

The technical data contained herein are guides to the use of DuPont materials. The advice contained herein is based upon tests and information believed to be reliable, but users should not rely upon it absolutely for specific applications because performance properties will vary with processing conditions. It is given and accepted at user's risk and confirmation of its validity and suitability in particular cases should be obtained independently. The DuPont Company makes no guarantees of results and assumes no obligations or liability in connection with its advice. This publication is not to be taken as a license to operate under, or recommendation to infringe, any patents.

CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see DuPont Medical Caution Statement, H-50102.

Copyright © 2008 DuPont. The DuPont Oval Logo, DuPont™, The miracles of science™ and SentryGlas® are trademarks or registered trademarks of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

K-02066-1 (09/08) Printed in the U.S.A.



The miracles of science™