FAILURE STRENGTHS OF UVEKOL ACRYLIC RESIN LAMINATED GLASS LITES

by

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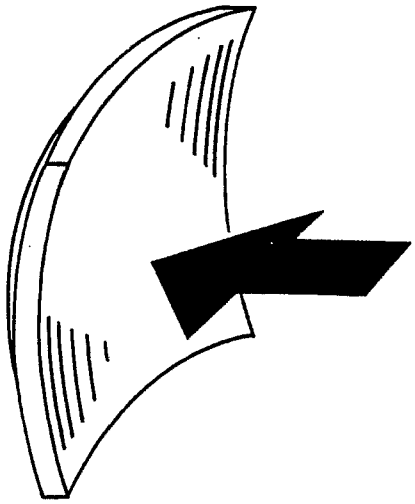

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[Excerpts]

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[Copies of the entire report are available upon request from UCB Chemicals, Uvecryl Coatings, by calling 1-888-269-3901.]

SPECIMEN STRENGTH MEASUREMENTS FOR SERIES 1: 66 X 66 X 1/4 IN.

SPECIMEN NUMBER	TOTAL THICKNESS (in.)	UVEKOL THICKNESS (in.)	FAILURE PRESSURE (psi)	FAILURE PRESSURE (psf)	CENTER DEFLECTION AT FAILURE (in.)
1	0.262	0.038	1.19	171	1.14
2	0.263	0.037	0.876	126	1.27
3	0.262	0.035	1.12	161	1.44
4	0.259	0.045	0.790	114	1.21
5	0.259	0.034	0.479	69	0.922
6	0.259	0.034	1.02	147	1.39
7	0.259	0.044	1.14	164	1.43
8	0.258	0.043	1.17	168	1.47
9	0.256	0.040	1.29	186	1.56
10	0.259	0.043	0.851	123	1.25
11	0.260	0.034	1.22	176	---*
12	0.260	0.038	1.20	173	1.46
13	0.257	0.041	1.36	196	1.60
14	0.257	0.041	1.16	167	1.44
15	0.257	0.038	0.953	137	1.30
16	0.256	0.035	1.09	157	1.41
17	0.250	0.028	0.969	140	1.37
18	0.259	0.043	1.16	167	1.46
19	0.258	0.037	0.688	99	1.13
20	0.256	0.034	0.799	115	1.21
21	0.257	0.037	0.902	130	1.25
22	0.257	0.035	0.747	108	1.19

* This quantity was not measured.

Mean Total Thickness: 0.258 in.
Inferred Interlayer thickness: 0.038 in.

Mean failure pressure: 1.01 psi (145 psf)
Standard Deviation: 0.222 psi (32 psf)
Coefficient of Variation: 0.220

Mean Center Deflection: 1.33 in.
Standard Deviation: 0.163 in.
Coefficient of Variation: 0.123

SPECIMEN STRENGTH MEASUREMENTS FOR SERIES 2: 38 X 76 X 1/4 in.

SPECIMEN NUMBER	TOTAL THICKNESS (in.)	UVEKOL THICKNESS (in.)	FAILURE PRESSURE (psi)	FAILURE PRESSURE (psf)	CENTER DEFLECTION AT FAILURE (in.)
1	0.246	0.037	1.06	153	1.02
2	0.246	0.037	1.12	161	1.06
3	0.246	0.032	1.05	151	1.01
4	0.247	0.035	1.22	176	1.12
5	0.254	0.031	1.46	210	1.20
6	0.258	0.039	1.40	202	1.16
7	0.256	0.038	1.19	171	1.06
8	0.254	0.030	1.13	163	1.02
9	0.260	0.036	0.816	118	0.828
10	0.254	0.035	1.18	170	1.01
11	0.254	0.032	0.995	143	0.899
12	0.256	0.033	1.54	222	1.14
13	0.253	0.033	0.628	90	0.687
14	0.255	0.037	1.50	216	1.19
15	0.246	0.037	1.23	177	1.06
16	0.247	0.036	1.20	173	1.06
17	0.256	0.030	1.30	187	1.23
18	0.256	0.033	1.28	184	1.23
19	0.257	0.035	0.906	130	0.993
20	0.254	0.035	1.46	210	1.33
21	0.256	0.038	0.790	114	0.977
22	0.258	0.040	1.02	147	1.03

Mean Total Thickness: 0.253 in.
Inferred Interlayer thickness: 0.035 in.

Mean failure pressure: 1.16 psi (167 psf)
Standard Deviation: 0.241 psi (35 psf)
Coefficient of Variation: 0.208

Mean Center Deflection: 1.06 in.
Standard Deviation: 0.142 in.
Coefficient of Variation: 0.134

CONCLUSIONS

The primary objective of this research was to evaluate the failure strengths of two samples of LG units laminated with Uvekol acrylic resin interlayer relative to those of comparably sized monolithic glass lites and LG units reported by other researchers. Observations from the results of the tests conducted in this research producted the conclusions listed below:

(1) The LG units tested at room temperature in this research have mean strengths which are significantly greater than the mean strengths of monolithic glass lites having the same rectangular dimensions and the same nominal thicknesses which were tested under identical loading conditions.

(2) The LG units tested at room temperature in this research have mean strengths which are significantly greater than the mean strengths of LG units having the same nominal dimensions which were tested under identical loading conditions.

(3) The thickness of the acrylic resin interlayer was noticeably greater than the nominal 0.030 in. thickness.

[Excerpt from "Failure Strengths of Uvekol Acrylic Resin Laminated Glass Lites" by H. Scott Norville and Paul M. Bove, April 1993. Copies of the entire report are available upon request from UCB Chemicals, Uvecryl Coatings, by calling 1-888-269-3901.]