Railing System Load/Deflection Testing

Test Type:	Horizontal Load to 200 lbs per IBC 2006 section 1607.7.1.1	Submitted By:	KET	Date	04/09/10
Test Focus (Part #s):	Sentry 1/2" laminated glass				
Railing Type:	Single pane of laminated glass				
Railing Specifications:	42" x 48" pane of glass, 5' GR2450H, PG2450, Load placed at 46" height				
Test Method:	400 lbf load per ASTM standards				

Test Specifications per ASTM E985:		**Results:**				
Safety Factor of 2.0	**System Calculations:**	**Load (lbf)**	**Displacement (in.)**			**Test**
			Midrail	**N/A**	**N/A**	**AVG**
Pre Load	**200 (lbf)**	Preload	1.87			1.8700
Released Test Load	**100 (lbf)**	RTL	0	0	0	0.0000
		200	0.896			0.8960
Ultimate Test Load	**400 (lbf)**	300	1.908			1.9080
		350	2.433			2.4330
Deflection Specifications Per ASTM E985		ULT	2.988			2.9880
Max Deflection	**(h/12) = 3.5 in**	RD	0.166			0.1660
Residual Deflection (At RTL)	**20% of MD = .5 in**					

NOTES:

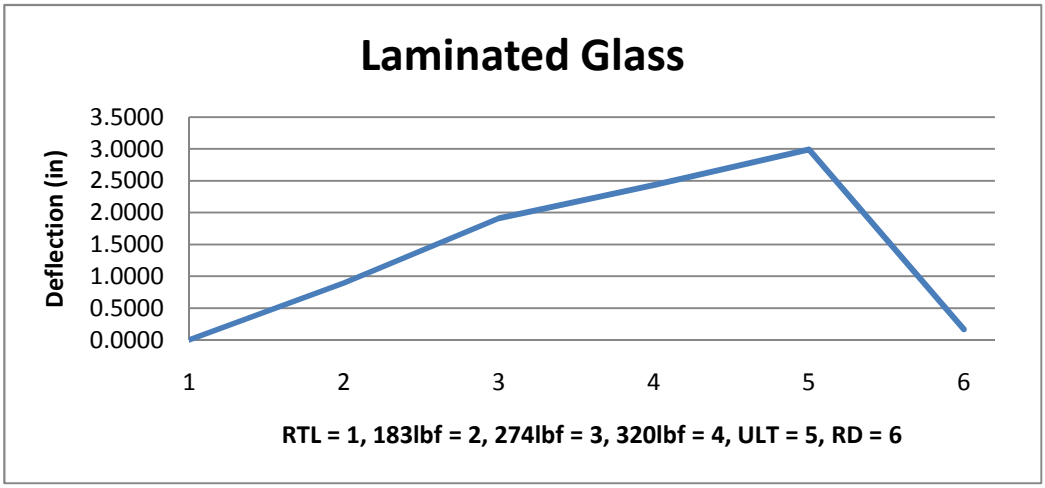
Midrail at 0 lbf = 1.988 in

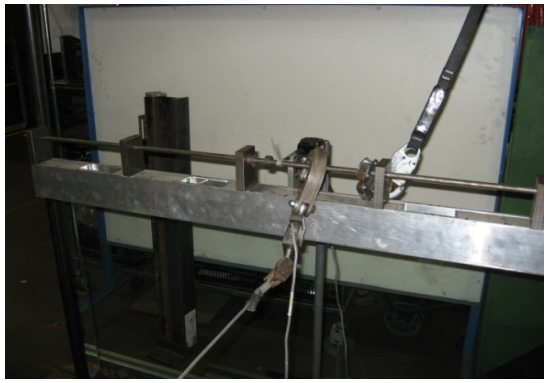
Loads were adjusted to be equivalent to a 42" load test, ex. 200lbf*42"/46"=183lbf = new preload

Potentiometer cannot be zeroed, so calculations are done manually

CONCLUSIONS:

Horizontal test of 1/2" laminated glass passed ASTM Standards





Initial Setup

Preload of 183 lbf
(Actual Deflection of 1.87 in)
(Equivalent to 200 lbf)

Release Test Load of 92 lbf
(Equivalent to 100 lbf)

Ultimate Test Load of 365 lbf
(Actual Deflection of 2.988 in)
(Equivalent to 400 lbf)

Deflection at ULT

Residual Deflection at 92 lbf
(Actual Deflection of .166 in)
(Equivalent to 100 lbf)