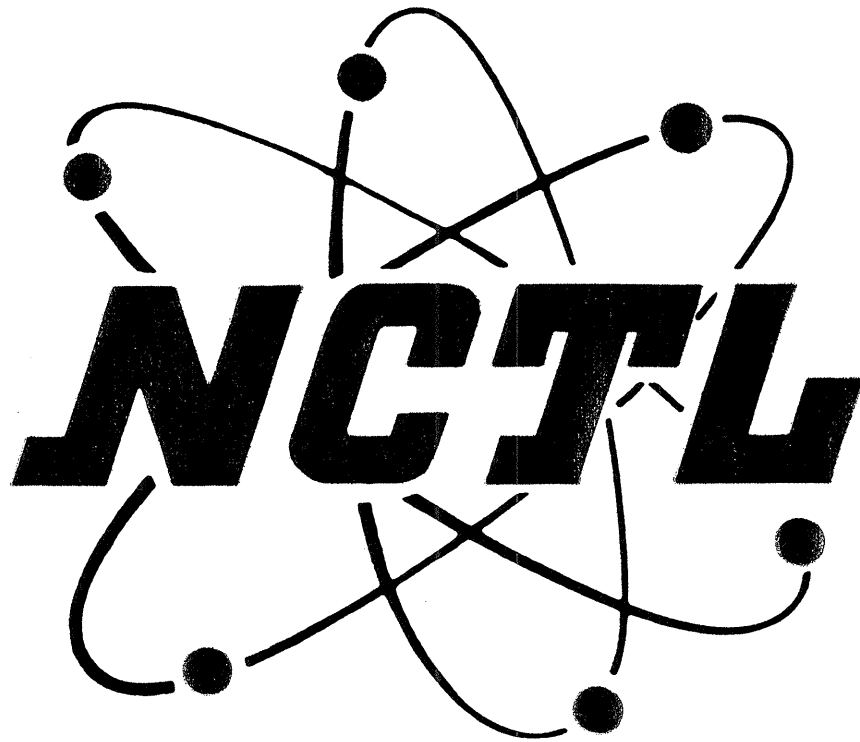


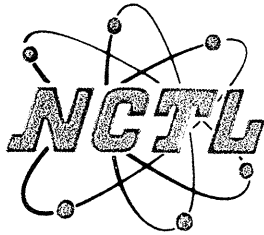
CASEMENT WINDOW



NATIONAL CERTIFIED TESTING LABORATORIES

Regency Plus, Inc.
Structural Performance Test Report
NCTL 210-2747-2
Model "Tech 2000"
Casement Window
Test Date: 11/14/01

Barry P. [Signature]
11/30/02



NATIONAL CERTIFIED TESTING LABORATORIES

1464 GEMINI BOULEVARD • ORLANDO, FLORIDA 32837
PHONE (407) 240-1356 • FAX (407) 240-8882

STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-210-2747-2

Test Date: 11/14/01

Report Date: 12/07/01

Client: Regency Plus Inc.
1024 Locust Gap Highway
Mount Carmel, Pa. 17961

Test Specimen: Regency Plus Inc. Model "Tech 2000" Casement Window (C-R45 34x 75)

Test Specification: AAMA/NWWDA 101/I.S.2-97, "Voluntary Specifications for Aluminum, Vinyl (PVC), and Wood Windows and Glass Doors."

TEST SPECIMEN DESCRIPTION

General: The test specimen description was an operating casement window measuring 34" wide by 75" high overall. The operating sash measured 32" wide by 73" high with a daylight opening of 27 1/4" wide by 68 3/8" high. The sash was hinged on the right side (inside view) and was secured to the frame with screws, at the exterior track on both the head and sill. The sash is secured to the frame with a hinged-track that employs the operator arm that allows the sash to pivot in and out. The operator arm that is secured to the frame and sash has an interior operator that is surface mounted on the sash. Mounted to the side of the sash, opposite of the hinge, is a hook-keeper. Mounted to the frame is a tie-bar with a 3-point barrel-system. When the sash is in the "closed" position, the handle is articulated downward to engage the barrel-system into the hook-keeper.

Glazing: Both sash were interior glazed using sealed insulated glass with a two (2) leaf dual durometer back-bedding, and a snap-in two (2) leaf dual durometer glazing bead. The overall insulating glass thickness was 7/8" consisting of two (2) lites of double strength-tempered glass and one space created by a "intercept" spacer system.

Weatherseals: The frame has a plastic bulb seal that is extruded in the vinyl. The bulb seal encompasses the entire perimeter of the frame and measures 3/8" wide by 1/8" high. The sash also has an extruded weather-strip that is a dual durometer and encompasses the entire sash and measures 1/2" wide by 1/16" high.

Weeps: The sash weeps at the interior track, below the glass, and in the center of the track. The weep measures 1" length by 3/16" wide. The sash is also weeped at the exterior of the sash and measures the same dimensions.

PROFESSIONALS IN THE SCIENCE OF TESTING

Raymond Park
1/30/02

Interior & Exterior Surface Finish: White vinyl (PVC)

Sealant: None Employed

Screen: An insect screen measuring 29 ½" wide by 70 ½" high was of mitered type corner construction with staked-in-place aluminum corner keys. The screen employed fiberglass mesh cloth with a solid vinyl spline and two jamb retainer springs.

TEST RESULTS

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
2.1.2	Air Infiltration - ASTM E283 1.57 psf (25 mph)	0.1 cfm/ft ²	0.3 cfm/ft ²
2.1.3 *	Water Resistance - ASTM E547 & ASTM E331 5.0 gph/ft ² WTP= 4.50 psf	No Leakage	No Leakage
2.1.4.2 **	Uniform Load Structural - ASTM E330 45.0 psf Exterior 45.0 psf Interior	0.010" 0.015"	0.292" 0.292"
2.1.8	Forced Entry Resistance - ASTM F588 Grade 10 (See Appendix A for test results)	Meets As Stated	

OPTIONAL PERFORMANCE

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
4.3 *	Water Resistance - ASTM E547 & ASTM E331 5.0 gph/ft ² WTP= 7.5 psf	No Leakage	No Leakage
4.4.2 **	Uniform Load Structural - ASTM E330 67.5 psf Exterior 67.5 psf Interior	0.015" 0.230"	0.292" 0.292"
*	Tested with and without screen		
**	No glass breakage or permanent damage causing the unit to be inoperable		

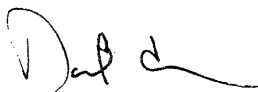
TEST COMPLETED 11/14/01

Barry Perkins
1/30/02

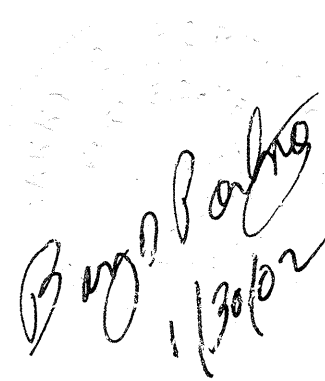
The tested specimen meets (or exceeds) the performance levels specified in Table 2.1 of AAMA/NWWDA 101/I.S.2-97 for air infiltration. The listed results were secured by using the designated test methods and indicate compliance with the performance requirements of the referenced specification paragraphs for the C-R45 (34 x 75) product designation.

Detailed drawings were available for laboratory records and comparison to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by NCTL for a period of four (4) years. The results obtained apply only to the specimen tested. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen may be drawn from this test. This report does not constitute certification of the product which may only be granted by a certification program validator.

NATIONAL CERTIFIED TESTING LABORATORIES



DANIEL D. CONYERS
Laboratory Manager



APPENDIX A
Forced Entry Resistance Test Results

Test Method: *ASTM F588-97, "Standard Test Method for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact".*

TEST RESULTS

<u>Paragraph No.</u>	<u>Loads</u>	<u>Duration</u>	<u>Measured</u>	<u>Allowed</u>
10.1-Lock Manipulation		5 Minutes	No Entry	No Entry
10.2.2.1-Test B1	L1=200 lbf	1 Minute	No Entry	No Entry
10.2.2.2-Test B2	L1=150 lbf L2= 75 lbf interior	1 Minute	No Entry	No Entry
10.2.2.3-Test B3	L1=150 lbf L2= 75 lbf exterior	1 Minute	No Entry	No Entry
10.2.2.4-Test A4 Lock Manipulation		5 Minutes	No Entry	No Entry

David P. [Signature]
1/30/02

11/27/2001 5:18		WIDTH		34			
ONE LITE CASEMENT		HEIGHT		75			
		TOTAL UI: 109					
VENDOR	ITEM #	DESCRIPTION	SYSTEM QUANTITY	SIZE	UNIT		
IMPERIAL PLASTICS	IMP-1080	GLAZING BEAD	2	29 1/4	INCH		
IMPERIAL PLASTICS	IMP-1080	GLAZING BEAD	2	70 1/4	INCH		
IMPERIAL PLASTICS	IMP-1083	FRAME	2	34 1/4	INCH		
IMPERIAL PLASTICS	IMP-1083	FRAME	2	75 3/16	INCH		
IMPERIAL PLASTICS	IMP-1084	SASH	2	32 5/16	INCH		
IMPERIAL PLASTICS	IMP-1084	SASH	2	73 5/16	INCH		
EXCEL/ASTRO	SFR-3643	SINGLE LEG SCREEN FRM	2	29 1/2	INCH		
EXCEL/ASTRO	SFR-3643	SINGLE LEG SCREEN FRM	2	70 1/2	INCH		
NEW YORK WIRE	SCREEN MESH	CHARCOAL	1	14.2695	SQ FT		
SUMMIT METAL	CORNER KEY	CK 252 x 260	4		EA		
PROTO PLASTIC	.155sss BLACK	SCREEN SPLINE	1	16 7/12	FT		
TRUTH	15-18-32-051	LEFT OPERATOR	1		EA		
TRUTH	14-05-00-004	LEFT HINGE	1		EA		
TRUTH	14-05-00-003	RIGHT HINGE	1		EA		
TRUTH	31746-92	RIGHT KEEPER	1		EA		
TRUTH	10681-92	STUD BRACKET RIGHT	1		EA		
TRUTH	40823	TIE BAR GUIDE	4		EA		
TRUTH	11921.92	TIE BAR	1		EA		
TRUTH	24-84-32-002	LOCK HANDLE RIGHT	1		EA		
TRUTH	11329-32	FOLDING HANDLE	1		EA		
TRUTH	21132	SUPPORT PLATE	2		EA		
HYGRADE		REBAR 1 X 1/2	1		FT		
GLF	GLF658SSVL	HINGE SCREW	16		EA		
GLF	GLF101SSVL	OPERATOR SCREW	4		EA		
GLF	GLF838SS	LOCK HANDLE SCREW	8		EA		
GLF	GLF81SS	TIE BAR GUIDE/KEEPER	22		EA		
ASHLAND	08702-046	SCREEN CLIP	6		EA		
GLF		SCREEN CLIP SCREWS	6		EA		
IMPERIAL	A-795	SETTING BLOCK	4		EA		
EDGESEAL	GLASS	LOWEtempclear temp	1	14 7/12	SQ FT		

ALL DIMENSIONS
 IN FEET AND INCHES
 UNLESS OTHERWISE NOTED
 11/27/01
 22172