



American Test Lab of South Florida

6801 NW 17 Ave. Ft. Lauderdale Fl. 33309

Office 954.972.6208 Fax 954.972.6285

Web www.atlsf.com E-Mail atlsf@bellsouth.net

Page 1 of 6
Date: 05/13/05

ATL Report # 0316.01-05

ATL Certification # 04-0914.01

Test Dates: 3/17, 4/25, 4/27, 4/28/05

Model Designation:

Model # P55 PVC Top End Retention Large Roll-up Shutter,
as per Roll-A-Way drawing # S-0105-EG, page 1 of 1, dated 01/28/05.

Test Requested By - Roll-A-Way, 10601 Oak Street N.E., St. Petersburg, FL 33716.
Phone: (727) 576-1143 Fax: (727) 563-9701

Tests Conducted: ASTM E 330, ASTM E 1886-97, ASTM E 1996-02.

Design Pressures - +/- 40 psf

(1) DESCRIPTION OF UNIT:

Overall Size: 149.500" wide x 82" high

Specimen: At the right jamb an extruded aluminum "U" track (1.026" x 2.500") (6063 T6 extruded aluminum alloy) and at the left jamb an extruded aluminum "U" track (1.026" x 3.000") (6063 T6 extruded aluminum alloy) with a horizontal masonry opening of 143-1/2" wide x 82" high. Each track was attached to grouted concrete blocks with (10) 1/4" x 1-3/4" hex washer head Elco Tapcons, located (1) at 3" from bottom, then (7) at 8" oc., (2) at 4-7/8" oc. At the head a 149-1/2" x 10" x 0.036" wall thickness aluminum roll forming shutter box cover, consisting of a top exterior female hood, a bottom exterior male hood and a cast aluminum cover plate at each end. Each cast cover plate was attached to grouted concrete blocks with (2) 1/4" x 1-3/4" hex washer head Elco Tapcons at each end. Each cast cover plate was attached to the top hood with (3) # 42 aluminum pop rivets and to the bottom hood with (3) # 8 x 5/8" ss truss square drive socket head sms. At the bottom of the shutter cover box an extruded aluminum hollow section (1-1/2" x 3-1/2" x 0.100" typical wall thickness), attached to the bottom lip of the cast cover plate with (2) 1/4-20 x 1" bolts, using a 1/4-20 nut. An extruded aluminum angle (1.000" x 1.500" x 0.062" typical wall thickness) was attached to each end of the hollow section. The 1" x 1-1/2" angle was attached to the cover box with (1) # 8 x 1/2" truss socket square drive head sms, located in the 1" leg. An extruded aluminum angle (0.750" x 0.687" x 0.062" typical wall thickness) was attached to the hollow section with (8) # 8 x 1/2" truss socket square drive head sms, located (1) at 3" from end, then (7) at 20-1/2" oc. The angle was also fastened to shutter box cover with (8) pop rivets, located (1) at 3" from end, then (7) at 20-1/2" oc.

W. J. J. 5/17/05

5-18-05
FLORIDA
PROFESSIONAL ENGINEER

Panel Construction:

Single span roll-up shutter with (34) P55 PVC slats (2.539" x 0.551" x 0.039" typical wall thickness x 145-1/4" in length), with (1) top extruded aluminum Rebar (6063 T6 aluminum alloy), each. A # 12 x 2-1/2" ss sms with an oversize # 14 head at each slat end.

(1) Extruded aluminum hollow section (2.539" x 0.500" x 0.039" typical wall thickness x 145" in length) slat at the bottom. On all specimens a horizontal span of 144" between the extruded aluminum tracks

Weather-stripping:

Brush Type: (2) rows on each end "U" vertical track, total 288".

Bulb Rubber: (1) row on bottom aluminum slat, total 145".

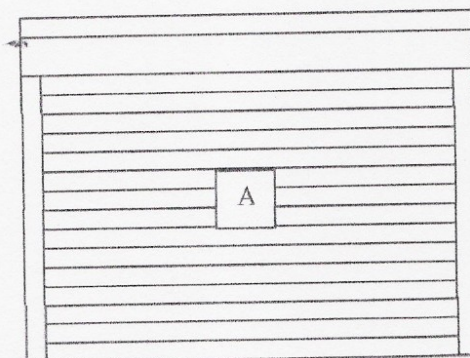
Additional Description:

Specimen A1 was tested per Static Air requirements of ASTM E 330.

Specimens B, C, D were tested per the Impact and Cycle requirements of ASTM E 1886-97 and ASTM E 1996-02, missile D (# 2 Southern Yellow Pine 2x4, 9 lbs), Wind Zone 3.

STATIC AIR PRESSURE TESTS

Static Tests were conducted in accordance ASTM E 330



W. B. Smith
5-19-05

Design Loads **+ 40.0 psf, - 40.0 psf. Specimen A1**

(HH)

<u>Positive loads</u>	<u>time</u> (sec.)	<u>psf</u>	<u>max. def.</u> at "A"	<u>perm set</u> at "A"
1/2 Test	30	30.0	4-13/16"	9/16"
Design	30	40.0	4-13/16"	5/8"
Test	30	60.0	6-1/2"	2-1/16"
<u>Negative loads</u>	<u>time</u> (sec.)	<u>psf</u>	<u>max. def.</u> at "A"	<u>perm set</u> at "A"
1/2 Test	30	30.0	2-13/16"	1/2"
Design	30	40.0	3-1/4"	1"
Test	30	60.0	4"	1-5/8"

H. Smith
5-19-05

Note: Specimen A failed before reaching positive design load. Open cell concrete blocks at right jamb cracked. Concrete blocks were replaced with grouted concrete blocks. Specimen A was then retested for Static Air Pressure tests as specimen A1 successfully.

IMPACT TEST - LARGE MISSILE

Impact tests were conducted in accordance with ASTM E 1886-97 and ASTM E 1996-02, missile D, Wind Zone 3.

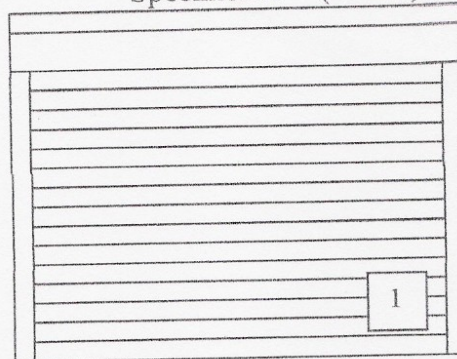
Impact Locations:

Coordinates are as follows:

"X" horizontal edge distance from nearest closest supporting edge.

"Y" vertical edge distance from nearest closest supporting edge.

Specimen B (WRM)



SPEED FT/SEC

1). 50.2

Max. defl Perm set

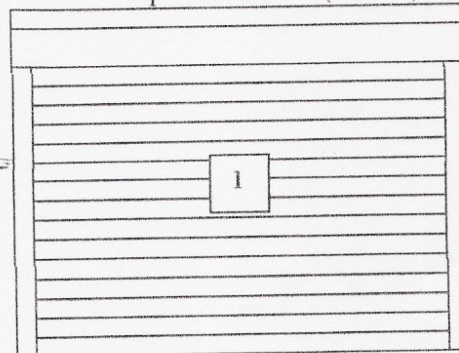
2-7/8" 1-1/2"

Impact Locations

X1 = 6-1/4" Y1 = 6-3/4"

Temperature: 69.5 degrees F

Specimen C (WRM)



SPEED FT/SEC

1). 50.1

Max. defl Perm set

5-3/16" 1-1/2"

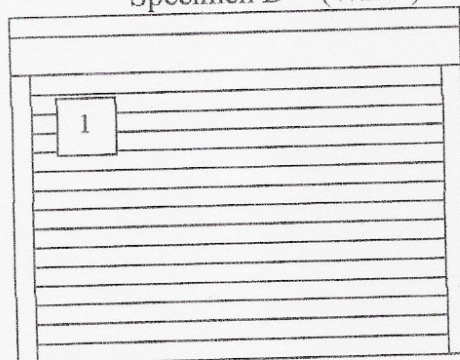
Impact Locations

X1 = 36" Y1 = 70-1/2"

Temperature: 77.5 degrees F

WRM
5/17/05

Specimen D (WRM)



SPEED FT/SEC

1). 50.0

Max. defl	Perm set
3"	3/4"

Impact Locations

X1 = 6" Y1 = 7-1/2"

Temperature: 79 degrees F

Specimen "B"

Type and weight of missile: # 2 Southern Yellow Pine 2x4, length approx. 86-13/16" & 9.0 LB 4.8 oz (15 min prior to testing).

Specimens "C", "D"

Type and weight of missile: # 2 Southern Yellow Pine 2x4, length approx. 86-3/4" & 9.58 LB (15 min prior to testing).

Description of specimens after impact test:

B. Impact was made in the lower right corner of the shutter. The impact did not penetrate the specimen.

Results: Passed

C. Impact was made in the center of the shutter. The impact did not penetrate the specimen.

Results: Passed

D. Impact was made in the upper left corner of the shutter. The impact did not penetrate the specimen.

Results: Passed

CYCLE TEST (WRM)

Cycle tests were conducted in accordance with ASTM E 1886-97 and ASTM E 1996-02,

Design Loads + 40.0 psf, - 40.0 psf

Specimens B, C, D

<u>Range of test</u>	<u>actual load psf</u>		<u># of cycles</u>	<u>cycles/min</u>			<u>max. defl</u>		
				B	C	D	B	C	D
Positive loads									
+ .2 - .5	8	20	3500	22	30	26	4.569"	3.045"	5.083"
+ .0 - .6	0	24	300	30	30	21	4.961"	3.582"	5.480"
+ .5 - .8	20	32	600	32	30	21	5.687"	4.089"	6.298"
+ .3 - 1.0	12	40	100	25	9	33	6.320"	4.857"	6.295"
Perm Set							5.292"	2.325"	2.875"
Negative Loads									
- .3 - 1.0	12	40	50	25	13	25	4.943"	8.124"	6.189"
- .5 - .8	20	32	1050	28	33	34	4.760"	8.163"	6.084"
- .0 - .6	0	24	50	25	17	17	4.296"	7.430"	5.642"
- .2 - .5	8	20	3350	27	29	29	4.245"	7.052"	5.440"
Perm Set							3.479"	6.443"	0.261"

9000 cycles completed

Description of specimens after cycle test:

B, C, D. Specimens showed no resultant failure or duress after cycle test. No failure of fasteners.

WRM
5/17/05

2 mill polyethylene film was used on the cycle tests and it is the opinion of the undersigned that they had no influence on the results of these tests.

Observers - 3/17, 4/25, 4/27, 4/28/05

William R. Mehner - PE 4/25, 4/27, 4/28/05

Henry Hattem - PE 3/17/05

Keith Harker, Julio Valle- ATLSF

Jose L. Mir, Assistant Director
American Test Lab of South Florida

All Tests Certified and Witnessed by:

William R. Mehner
6801 N. W. 17 Avenue
Fort Lauderdale, FL 33309
State of Florida:
Registered Engineer P.E. # 7496

Henry Hattem
6801 N. W. 17 Avenue
Fort Lauderdale, FL 33309
State of Florida:
Registered Engineer P.E. # 0014373

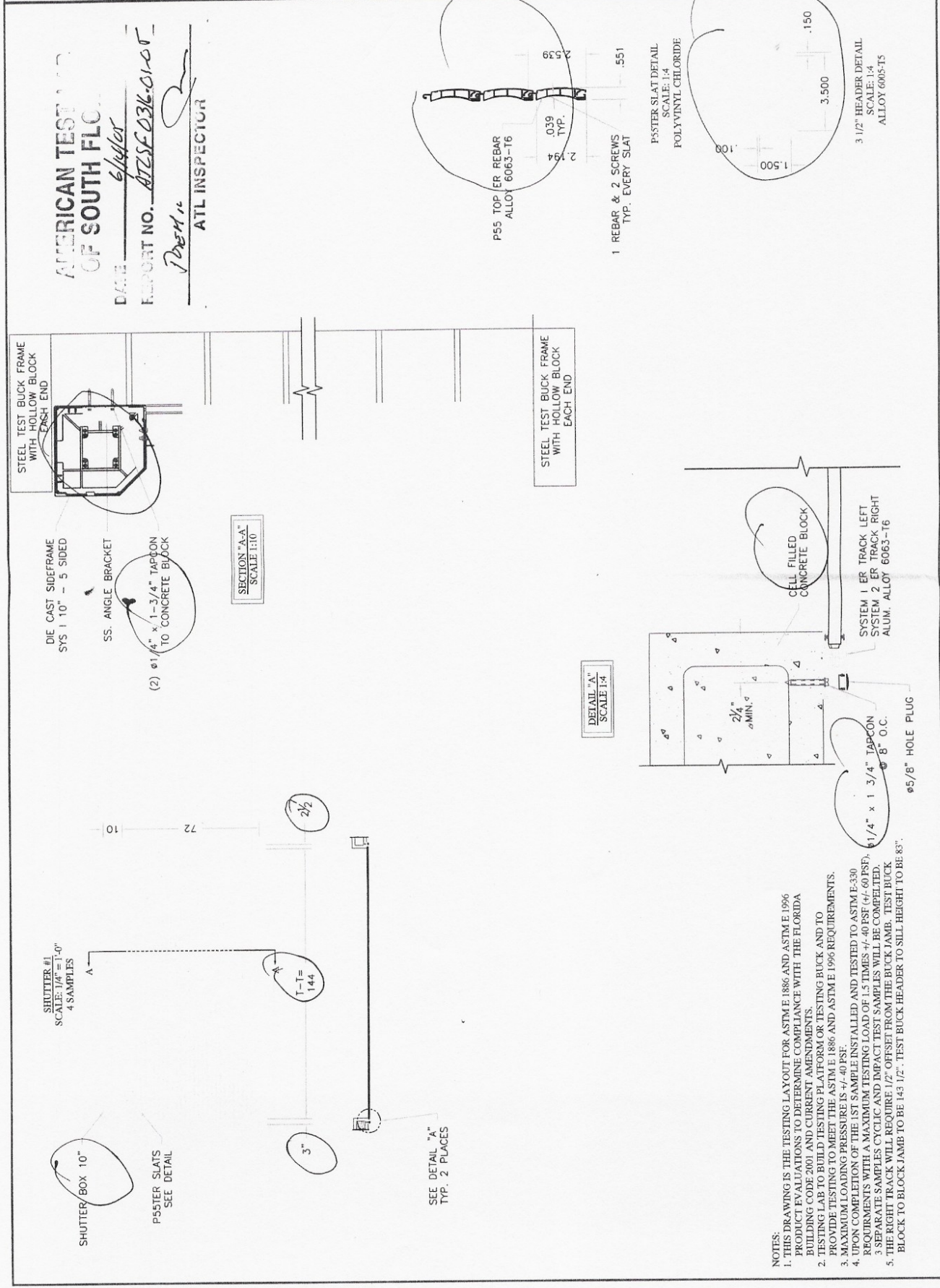
Engineer Seal & Signature

5/17/05

5-19-05

Disclaimer: This test report was prepared by American Test Lab of South Florida (ATLSF), for the exclusive use of the above named client, it does not constitute certification of this product. The results are for that particular specimen tested and does not imply the quality of similar or identical products manufactured or installed from specifications identical to the tested product. ATLSF is a testing lab and assumes that all information provided by the client is accurate and does not guarantee or warranty any product tested or installed.

SCALE: AS NOTED SHEET 1 OF 1 B S-0105-EG DRAWING NO.		TITLE: P55 TOP END RETENTION LARGE SHUTTER ASTM 1886/1996 & E-330 TESTING	
DATE: 01-28-09 DRAWN: DLP	DATE: _____ CHECKED: _____	DATE: _____ MEASURED: _____	DATE: _____ APPROVED: _____
REV. DESCRIPTION		THIRD ANGLE PROJECTION	



- NOTES:
- THIS DRAWING IS THE TESTING LAYOUT FOR ASTM E 1886 AND ASTM E 1996. PRODUCT EVALUATIONS TO DETERMINE COMPLIANCE WITH THE FLORIDA BUILDING CODE 2001 AND CURRENT AMENDMENTS.
 - TESTING LAB TO BUILD TESTING PLATFORM OR TESTING BUCK AND TO PROVIDE TESTING TO MEET THE ASTM E 1886 AND ASTM E 1996 REQUIREMENTS.
 - MAXIMUM LOADING PRESSURE IS +/- 40 PSF.
 - UPON COMPLETION OF THE 1ST SAMPLE INSTALLED AND TESTED TO ASTM E-330 REQUIREMENTS WITH A MAXIMUM TESTING LOAD OF 1.5 TIMES +/- 40 PSF (+/- 60 PSF), 3 SEPARATE SAMPLES CYCLIC AND IMPACT TEST SAMPLES WILL BE COMPLETED.
 - THE RIGHT TRACK WILL REQUIRE 1/2" OFFSET FROM THE BUCK JAMB. TEST BUCK BLOCK TO BLOCK JAMB TO BE 143 1/2". TEST BUCK HEADER TO SILL HEIGHT TO BE 83".