



NATIONAL CERTIFIED TESTING LABORATORIES

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NCTL Report No: 210-3580-1

DC Not. No: 09001

Date: 02/26/09

NCTL Certification No: 06-0119.04

Test Dates: 01/20/09

Test Requested By: Ingersoll-Rand/Steelcraft
9017 Blue Ash Road
Cincinnati, OH 45242

Tests Conducted: Dade County Building Code Compliance Office Protocol TAS 201-94, Impact Test Procedures. Dade County Building Code Compliance Office, TAS 202-94, "Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components using Uniform Static Air Pressure." Dade County Building Code Compliance Office TAS 203-94, "Criteria for Testing Products Subjected To Cyclic Pressure Loading."

Design Pressures:

Specimen #1	TAS 202 (Structural Only)	+ 150.0 psf Positive	-150.0 psf Negative
Specimen #1	TAS 201. TAS 203	+ 150.0 psf Positive	-150.0 psf Negative
Specimen #2	TAS 201. TAS 203	+ 150.0 psf Positive	-150.0 psf Negative
Specimen #3	TAS 201. TAS 203	+ 150.0 psf Positive	-150.0 psf Negative

(1) DESCRIPTION OF UNIT:

Model Designation:

All Specimens: H-Series Flush Double Steel Doors with Von-Duprin (WS9927) Exit Device.

Overall Size:

All Specimens 100.0" x 98.0" overall.

Configuration:

All Specimens XX

(2) MATERIAL CHARACTERISTICS:

Frame Material: Cold Rolled 16ga Steel

Frame Construction: Cold rolled 16ga steel measuring 2" wide face x 5.75" deep x 4.875" throat opening. Miter corner tab and slot construction. Extruded aluminum threshold with bumper gasket series 950 by NGP measuring 5.75" wide x 0.5" high coped to fit into the main frame and secured with eight (8) #10 x 1.75" wood screws located 4" from each end 11" on center thereafter.

Slab Construction: All Specimens The door slab measured 47.75" wide x 95.5" high x 1.75" thick 16ga cold rolled steel skins. The slab was honeycomb reinforced. Phenolic resin impregnated kraft paper (1.2" cell full honeycomb core) was laminated to both inside faces. The vertical edges were beveled with a continuous mechanical seam and a continuous bead of structural epoxy applied to the interlocking seam connection. The top and bottom rails contained 16ga inverted steel channels measuring 0.688" x 1.660" x 47.66" that were spot welded to the face sheets, nominally 2" from each end and 6" on center.

Weatherseals:

<u>QTY</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
One (1) Strip	PS-074 Self-Adhesive Weatherstrip	Frame Head
One (1) Strip	PS-074 Self-Adhesive Weatherstrip	Each Frame Jamb
One (1) Strip	Bulb Vinyl Gasket	Length of Threshold
One (1) Piece	Two (2) Fin Fas-seal Door Sweep	Slab Bottoms

Hardware:

<u>QTY</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
Eight (8)	Ives 5BB1/3CB1 Butt Hinges 4.5" x 4.5" x 0.134" thick, secured with four (4) 0.210" diameter x 0.525" self threading Phillips head counter-sunk screws to the frame and four (4) in the slab.	Four (4) in each Frame Jamb measuring 9.5", 35.04", 60.33" and 85.62" from the Rabbet in the Head to the Center of the Hinge
Eight (8)	Wire Hinge Spacer's	One (1) behind each Hinge on the Door Slab
One (1)	Von-Duprin WS9927 (F) Exit Device Touch Bar height from finished floor 39.687"	One (1) on each Door Slab
One (1)	Series 950 Threshold by NGP	Frame Sill

Reinforcement:

<u>QTY</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>
One (1)	Vertical Lock Rail Reinforcement Channels measuring 3.5" wide x 93.5" long x 0.099" thick.	Each Door Slab Lock Stiles
Eight (8)	Hinge Reinforcements measuring 1.28" wide x 9.19" long x 0.171" thick	Frame Hinge Stile
Eight (8)	Hinge Reinforcements measuring 1.23" wide x 9.19" long x 0.171" thick	Door Slab Hinge Stile
One (1)	Hinge Stile Reinforcement measuring 4" wide x 10" long x 0.067" thick	Each Door Slab Hinge Stile

Sealant: Latex caulking as needed to seal unit into wood test buck.


3/25/09

Installation:

All Specimens: The specimens were installed into the wooden test buck with Sixteen (16) 0.375" x 5" long lag bolts. Six (6) in the head located at 8", 23" and 38" from each end to the centerline. Five (5) in each jamb located at 8", from each end 26.5" on center thereafter measuring from sill to head.

SEQUENCE OF TESTS PERFORMED:

Test Sequence: TAS 202

1. 1/2 Test Pressure Positive
2. 1/2 Test Pressure Negative
3. Design Pressure Positive
4. Design Pressure Negative
5. Full Test Pressure Positive
6. Full Test Pressure Negative
7. Forced Entry Resistance

STATIC AIR PRESSURE TESTS

Static Tests were conducted in accordance with TAS 202-94

Specimen # 1 Structural Only

<u>Design Load</u>	<u>+ 150.0 psf, - 150.0 psf</u>		<u>Measured</u>	<u>Measured</u>
<u>Positive Loads</u>	<u>Time (Sec.)</u>	<u>psf Load</u>	<u>Def.</u>	<u>Perm. Set</u>
1/2 Test	30	75.00		
Design	30	150.00		
Test Load	30	225.00	Loc#1 0.849"	0.051"
<u>Negative Loads</u>	<u>Time (Sec.)</u>	<u>psf Load</u>	<u>Def.</u>	<u>Perm. Set</u>
1/2 Test	30	75.00		
Design	30	150.00		
Test Load	30	225.00	Loc#1 0.600"	0.038"

Loc#1 Maximum Allowable Perm. Set (0.04% of 95.625" span) = 0.382"

Loc#1 Mid-span of Door Panel.

FORCED ENTRY RESISTANCE TEST

Forced Entry Resistance- Florida Building Code
Section 1707.4.2

Meets as Stated

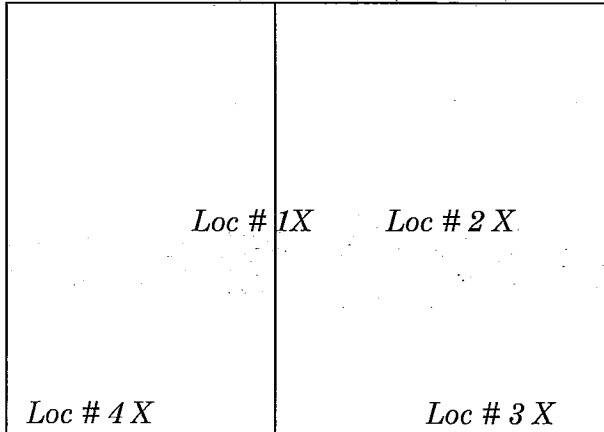
The specimen tested meets the criteria of Chapter 36 of the South Florida Building Code for Forced Entry Resistance.

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3/25/09

LARGE MISSILE IMPACT TEST

Impact Tests were conducted in accordance with TAS 201-94

Type and weight of missile: Speed 50 ft/sec
 # 2 Southern Yellow Pine 2 x 4
 Length approx. 8'-1/2" & 9 lb.



All Specimens: Loc#1 Mid-span 6" above Hardware
 Loc#2 Mid-span of Panel
 Loc#3 Bottom Right corner of Panel
 Loc#4 Bottom mid-span of Panel

Description of specimen after Impact test: None of the impacts penetrated the specimen and all latching mechanisms remained engaged.

CYCLE TEST

Cycle tests were conducted in accordance with TAS 203-94

All Specimens

Design Load psf + 150.0 psf - 150.0 psf

<u>Range of test</u>	<u>Actual load psf</u>	<u># of cycles</u>	<u>cycles/min</u>
<u>Positive loads</u>			
+ .0 - .5	00 - 75.0	600	40
+ .0 - .6	00 - 90.0	70	40
+ .0 - 1.3	00 - 195.0	1	

<u>Range of test</u>	<u>Actual load psf</u>	<u># of cycles</u>	<u>cycles/min</u>
<u>Negative loads</u>			
- .0 - .5	00 - 75.0	600	40
- .0 - .6	00 - 90.0	70	40
- .0 - 1.3	00 - 195.0	1	

671 cycles completed

Description of specimen after cycle test: Specimen showed no resultant failure or duress after cycle test. No failure of fasteners or separation from the frame.

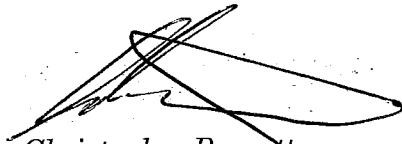
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 3/25/09

Disclaimer: This test report was prepared by National Certified Testing Laboratory (NCTL), 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. NCTL 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.

Observers: Mr. Miguel Nieves (NCTL)
Mr. Mark Bennett (NCTL)
Mr. Ricky Moffett (NCTL)
Mr. Yuriy Farber (Ingersoll-Rand)
Mr. Karen Bishop (Ingersoll-Rand)
Mr. Gerry Ferrara (P.E.)

Dade County Witness: None Present

NATIONAL CERTIFIED TESTING LABORATORIES



Christopher Bennett
Division Manager

Gerard J. Ferrara, P.E.
Florida Registration No. 11985
Certificate of Authorization No. 2529
2865 Whitehurst Road
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(386) 734-8692 - FAX



Laboratory Compliance Letter

Dade County Notification No: 09001

Laboratory Certification No: 06-0119.04

To Whom It May Concern,

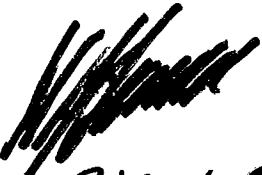
On January 20th 2009 Ingersoll-Rand Company started testing at National Certified Testing Laboratories in Orlando, FL. All tests were performed in full accordance with all Dade County requirements with no deviations.

Test Report No.
NCTL 210-3580-1

Product Series Description
H-Series Flush Double Steel Doors with
Von- Duprin (WS9927) Exit Device.

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Ingersoll Rand/Steelcraft

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Test Drawings

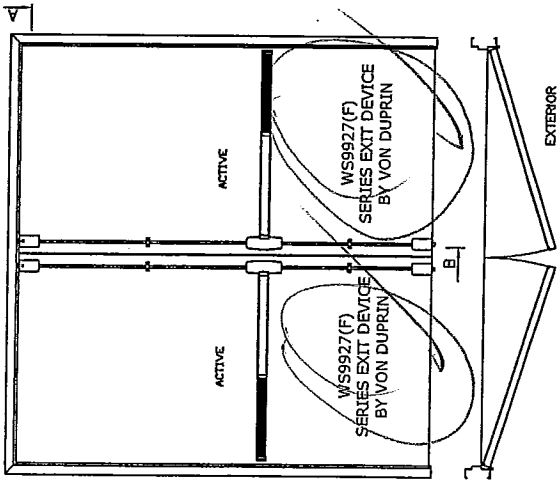
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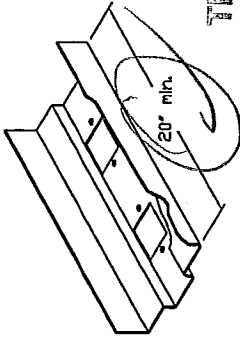
REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	NEW	01/19/09	

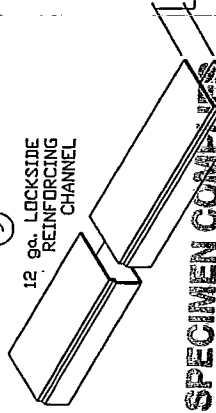
DOUBLE OUTSWING DOORS



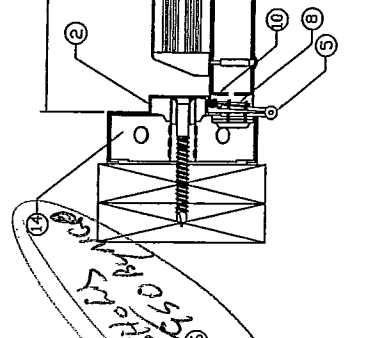
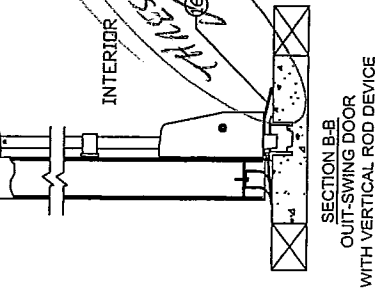
6 FRAME HEAD REINFORCEMENT SLEEVE FOR DOUBLE DOORS



9 90° LOCKSIDE REINFORCING CHANNEL



TEST SPECIMEN COMPLIES WITH THESE DETAILS. ANY DEVIATION IS NOTED. REPORT NO. NCTL - 210 - 3580-1 TEST DATE: 01/20/09



TITLE	THIRD ANGLE PROJECTION	DATE	DATE
IR	YMF	01/19/09	
IR SECURITY TECHNOLOGIES H-SERIES DOORS BY STEELCRAFT WITH VON DUPRIN WS9927(F) EXIT DEVICE TESTED TO TAS 201/202/203, EHPA, ASTM E1886/EL996, ICC 500	CHECKED		
APPROVED			
ENG. APP'VAL			
SIZE	FLAT		
SCALE	NTS		
DWG. NO.	3580-1	SHEET	2 OF 2
REV			A

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