

EVALUATION REPORT

Title: Evaluation of Commercial Hardware

Report #: IR2009-002

Manufacturer: Ingersoll-Rand Company
Security Technologies
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I. Introduction/ Scope

Based on wind load and impact/cyclic testing for commercial hardware, the following report will review the wind load & impact requirements for additional Falcon lock types.

All hardware testing from NCTL was conducted per TAS 201-94 (Impact Test Procedures), TAS 202-94 (Uniform Static Air Pressure) and TAS 203-94 (Criteria for Testing Products Subject to Cyclic Wind Pressure Loading).

II. Reference Documents

The following documents were referenced in the evaluation review:

1. NCTL 210-3580-2, H-16-4 Series Flush Double Steel Door with Falcon 25R Rim Exit Device, +70/-55 PSF, Dated 2/26/2009
2. Dade County NOA 07-0829.03, Double Flush Outswing Steel Door, March 25, 2009
3. Dade County NOA 07-0829.04, Single Flush Outswing Steel Door, August 21, 2008
4. IR Dwg IRF-D07, Flush Outswing Double Doors, Dated 5/27/07, 10 Sheets
5. IR Dwg IRF-S07, Flush Outswing Single Door, Dated 6/2/08, 11 Sheets
6. IR Dwg 3580-2, Falcon 25-R Series Rim Exit Device, Dated 5/26/2009, 4 Sheets.

III. Product Evaluation

The following tables summarize the hardware configurations that have been evaluated against the hardware that has been tested and those with Dade County Approvals.

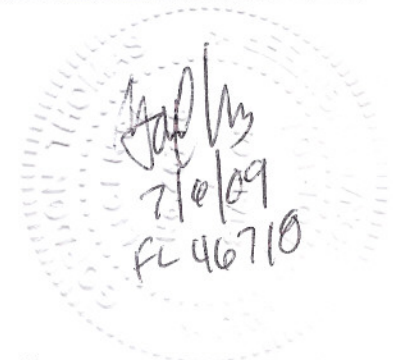
Item	IR Brand	Hardware Family	Design Pressure	Impact	Approval	Engineering Dwg	Notes
1	Falcon 25-R	Rim Exit	+70/ -55 psf	Yes	NCTL 210-3580-2	3580-2	
2	Falcon 25-V	Surface Vertical Rod	+/- 70 psf	Yes	Evaluation	3580-2	1
3	Falcon 25-C	Concealed Vertical Rod	+/- 70 psf	Yes	Evaluation	3580-2	2
4	Falcon 25-M	Mortise	+/- 70 psf	Yes	Evaluation	3580-2	3
5	Monarch 18-V	Surface Vertical Rod	+/- 70 psf	Yes	NOA 07-0829.03	IRF-D07	
6	Monarch 18-C	Concealed Vertical Rod	+/- 70 psf	Yes	NOA 07-0829.03	IRF-D07	
7	Monarch 18-M	Mortise	+/- 70 psf	Yes	NOA 07-0829.04	IRF-S07	4

Note 1 – Includes same top & bottom latches as Monarch 18-V

Note 2 – Includes same top & bottom latches as Monarch 18-C

Note 3 – Includes same mortise lock as Monarch 18-M.

Note 4 – NOA approval for single door only.



VI. Limitations of Use

The drawings referenced above provide the primary details for the limitations of use.

The door hardware details are contained in IR drawings listed above. This includes trim options, door sizes and mullion types.

I have concluded that the configurations shown above comply with the structural requirements for the wind load and large missile impact requirements of the 2007 Florida Building Code.

Maximum Door Width	4'-0"
Maximum Door Height	8'-0"
Maximum Wind load	+/- 70 psf
Hardware Details	Reference drawings listed above.
Rated for TAS 201 impact rating	

Certification of Independence of Evaluation Entity

I hereby certify that (1) I have no financial interest in Ingersoll Rand Security Technologies; (2) I am an independent licensed Professional Engineer in the State of Florida and; (3) I comply with the criteria of independence as stated in 9B-72.110 (3), F.A.C. and 9B-72.110(4), F.A.C.