

JAILS CORRECTIONAL PRODUCTS A Division of FABCOR, Inc.

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Correctional Door and Frame Test

Page One

GENERAL:

On May 14, 2003, Jon Sacksteder- Professional Engineer #E41941, was at the below referenced location to witness the static, twist and impact load tests on two steel correctional doors. All tests were performed in accordance with NAAMM 863 standards.

TEST SPECIMENS:

The first door specimen used for the static and twist tests was a 36" wide x 84" long x 2" thick correctional door provided by JAILS Correctional Products- A Division of Fabcor, Inc. (JCP). The door was constructed using 12 gauge mild steel face sheets and 10 gauge perimeter channels welded 3" on center. The internal 16 gauge hat cap stiffeners were spotwelded to both face sheets at 3" on center maximum. The correctional hollow metal panel was not prepared for any hardware.

The second door specimen used for the impact test was a 36" wide x 84" long x 2" thick correctional door provided by (JCP). The door was constructed using 12 gauge mild steel face sheets and 10 gauge perimeter channels welded 3" on center. The internal 16 gauge hat cap stiffeners were spotwelded to both face sheets at 3" on center maximum. The correctional hollow metal panel was prepared for three Folger Adam 4-1/2FM-ICS hinges and one Folger Adam 10 series lock with a bolt size not exceeding 2" x 3/4" and a throw not to exceed 5/8".

STATIC TEST:

The first door specimen was placed in a tubular test stand and loaded to 14,000 lbs. at specific points noted below by means of a calibrated hydraulic jack system. Reference diagram 1 for the schematic view of the test specimen and apparatus. Deflections of the door at specific intervals as well as residual deflection were measured at the center of the door. The maximum midspan deflection was not to exceed 0.58", residual deflection was not to exceed 0.10".

Static Test (using 4" dia. hydraulic cylinder)

<u>PSI</u>	<u>Deflection in Inches</u>	<u>Lbs.</u>
0	0.0000	0
500	0.1665	6,286
750	0.2515	9,429
1000	0.3310	12,572
1114	0.3665	14,000
0	0.0740	0

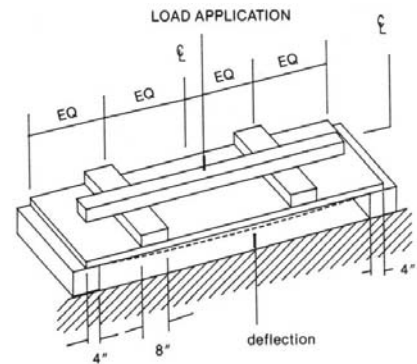
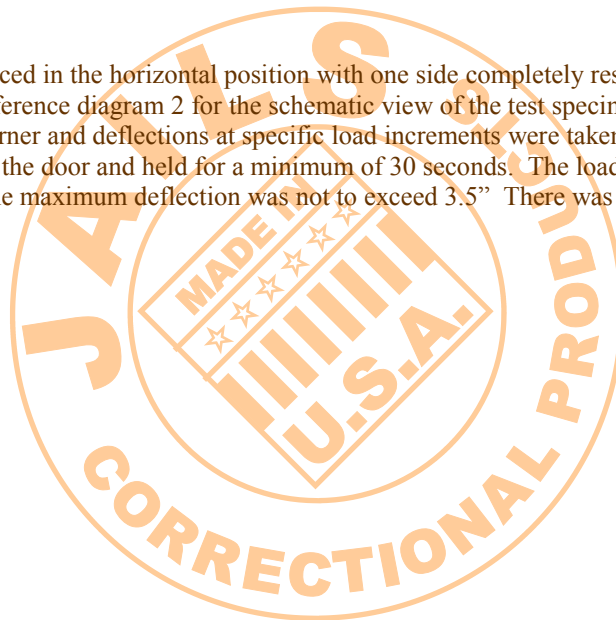


Diagram 1- Static Test

TWIST TEST:

The first door specimen was placed in the horizontal position with one side completely restrained and one corner of the opposite short side restrained. Reference diagram 2 for the schematic view of the test specimen and apparatus. The load was applied to the remaining free corner and deflections at specific load increments were taken at the same corner. A maximum load of 7545 lbs. was placed on the door and held for a minimum of 30 seconds. The load was then released and the residual deflection was recorded. The maximum deflection was not to exceed 3.5". There was no buckling or failure of welds.



Twist Test (using 4" dia. hydraulic cylinder)

<u>PSI</u>	<u>Deflection in Inches</u>	<u>Lbs.</u>
0	0.0000	0
200	0.7185	2,515
400	1.0220	5,030
600	1.6355	7,454
0	0.1705	0

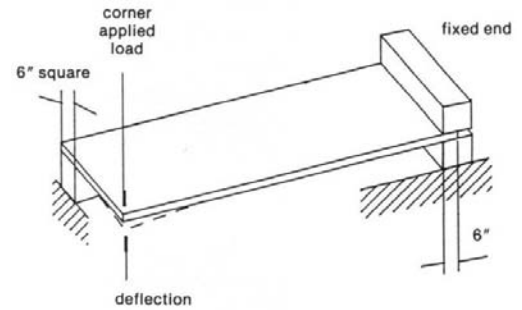


Diagram 2- Twist Test

IMPACT TEST:

The second door specimen was mounted vertically to a rigidly mounted correctional frame with the operable hardware noted above. A pendulum ram system delivered impact energy of approximately 200 foot pounds, 400 times within 6" of the lock bolt and 150 times within 6" of each of the three hinges. Reference diagrams 3 and 4 for the schematic view of the test specimen and a sketch of the loading configuration. During the impact test, the door remained undamaged, closed and locked, while 400 blows were delivered to the lock area and 150 blows to the top hinge, 150 blows to the middle hinge, and 150 blows to the bottom hinge. Upon completion of the testing, the door was capable of being unlocked and operated to provide entry

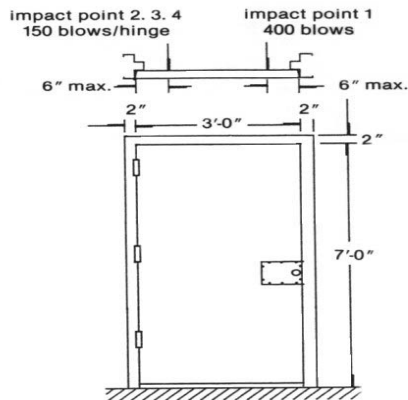


Diagram 3- Door and Frame Assembly

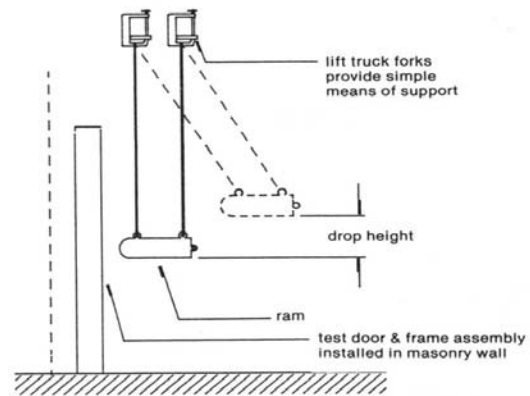


Diagram 4- Ram Pendulum System

The above tests are certified by:
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