Architectural Testing

PERFORMANCE TEST REPORT

Rendered to:

CRIMSAFE NORTH AMERICA, LLC

PRODUCTS: Fixed Screen, Safe-S-Cape Egress and Hinged Security Screen Door

Report No: 90809.02-106-31
Report Date: 06/05/09
Expiration Date: 06/03/13

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Architectural Testing

PERFORMANCE TEST REPORT

Rendered to:

CRIMSAFE NORTH AMERICA, LLC
3020 Reynolds Road, Units 1-3
Lakeland, Florida 33803

Report No:	90809.02-106-31
Test Dates:	04/15/09
Through:	06/03/09
Report Date:	06/05/09
Expiration Date:	06/03/13

Products: Fixed Screen, Safe-S-Cape Egress and Hinged Security Screen Door

Project Summary: Architectural Testing, Inc. was contracted by Crimsafe North America, LLC to perform testing in order to evaluate the compliance of three metal protection screen assemblies with ANSI/SMA 6001-2002. Testing included an Impact Resistance Test, a Sag Test, a Forced Entry Test and Thickness measurements. The test specimens were supplied by Crimsafe North America, LLC and were visually inspected before testing. The protection screens tested met the performance requirements of ANSI/SMA 6001-2002 as follows:

Product	Class
Fixed Screen	Medium
Safe-S-Cape Egress	Heavy
Hinged Security Screen Door	Heavy

Test Method Description: The tensile strength of the screen material was tested in accordance with ASTM E 8. The test specimens were machined and sized as sheet type. The specimens were tested using a SATEC Unidrive, Model MII 50 UD Universal Testing Machine (ICN Y002011) with a cross-head speed of 0.2" per minute. For the remainder of the testing program, screen assemblies were mounted to a rigid test frame.

For the impact tests, an 11" diameter impact ball meeting the description in the test method and weighing 33 pounds was attached to a pendulum system and positioned to impact on the exterior side of the screen at its weakest location (mid-height and midspan of the unrestrained mesh area). The pendulum was pulled back to a vertical height of 1.5 feet above its resting position in order to produce a 50 foot-pound impact force at the bottom of the pendulum arc, and 3 feet above its resting position in order to produce a 100 foot-pound impact force. The ball was then released and the specimens were inspected for damage after impact.

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Test Method Description: (Continued)

For the sag test, the screens were opened 90º and a load was applied vertically downward at a distance of 2 feet 6 inches from the hinge axis for a continuous period of five minutes. At the conclusion of this period, the load was removed and the permanent set recorded.

For the forced entry resistance test, the screens were prepared with loading mounts at quarter-point positions of the stile opposite of the hinge side of the screen panel. A load was then applied in the plane of the screens in a direction away from the screen frame tending to create a gap between the frame and the panel on the lock side. A second load was then applied to the same attachment point as the first load, only in a direction away from the plane of the screens tending to open it. These loads were held for ten seconds and released. This load sequence was repeated with the in-plane load reversed (tending to jam the panel into the frame).

Test Results: The results are reported in the following tables.

Screening Material

Test No.	Tensile Strength (lb/in.)
1	1,058
2	921
3	1,135
4	931
5	896
6	1,019
Average	**993**
Allowable	>800

Fixed Screen
Class Level - Medium

	Impact Test	Thickness
Test Value	50 ft·lb	0.066"
Result	**<3"**	
Allowable	≤3"	

Test Results: (Continued)

Safe-S-Cape Egress
Class Level - Heavy

	Impact Test	Sag Test	Forced Entry Test	Thickness
Test Value	100 ft·lb	90 lb	50 and 150 lb side loads 300 lb open load	0.066"
Result	**< 3"**	**0.000"**	**Pass**	
Allowable	≤ 3"	≤0.062"	Pass	

Hinged Security Screen Door
Class Level - Heavy

	Impact Test	Sag Test	Forced Entry Test	Thickness
Test Value	100 ft·lb	90 lb	50 and 150 lb side loads 300 lb open load	0.066"
Result	**< 3"**	**0.000"**	**Pass**	
Allowable	≤ 3"	≤0.062"	Pass	

Observations: Drawings for the three screen products can be found in Appendix A. The measurement system employed for the impact tests consisted of an impressionable surface mounted 3 inches behind the screen. After impact, this surface was inspected for markings to detect deflections of 3 inches or more. No tearing of the screen material was observed at the indicated impact levels, nor was there evidence of deflection of the screen beyond three inches.

A dial indicator was used to measure permanent set for the sag test (See Photograph No. 3 in Appendix B).

For the forced entry test, a 1/4-inch diameter rod was used as a feeler gage to verify that no separation between the operable frame and subframe was greater than 1/4-inch. All locking devices remained engaged and operable, and the operating frame remained secure.

Data sheets, representative samples of test specimens, a copy of this test report will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period such materials shall be discarded without notice and the service life of this report by Architectural Testing will expire. Results obtained are tested values and were secured using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

Digitally Signed by: Rodney E. Holland

Rodney E. Holland - Technician II
Components / Materials Testing

Digitally Signed by: Gary Hartman

Gary Hartman, P.E. - Director
Components / Materials Testing

REH:reh/nlb

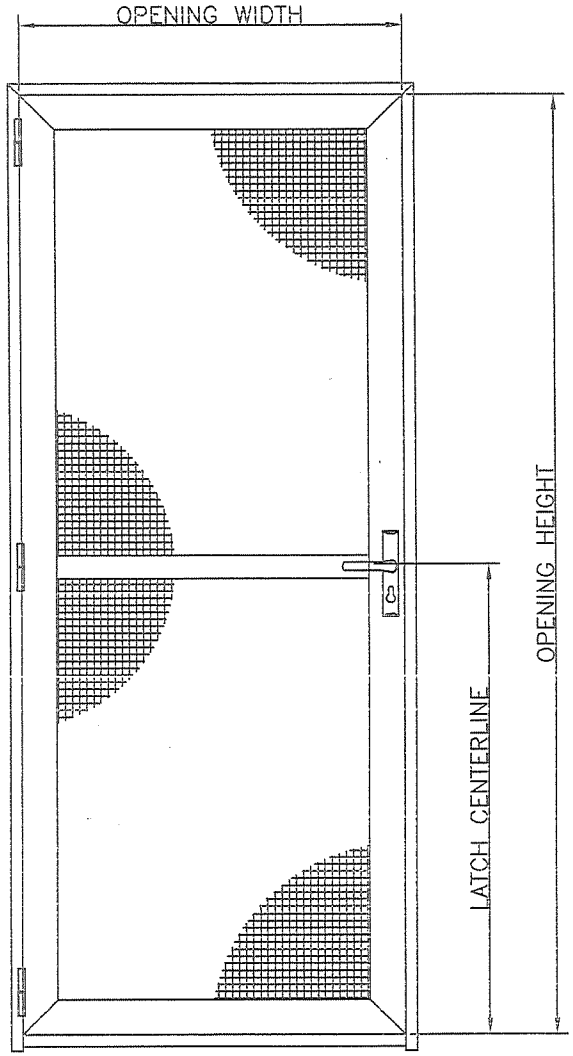
Attachments (pages) This report is complete only when all attachments listed are included.
Appendix A - Drawings (5)
Appendix B - Photographs (3)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	06/05/09	N/A	Original report issue.

APPENDIX A

Drawings



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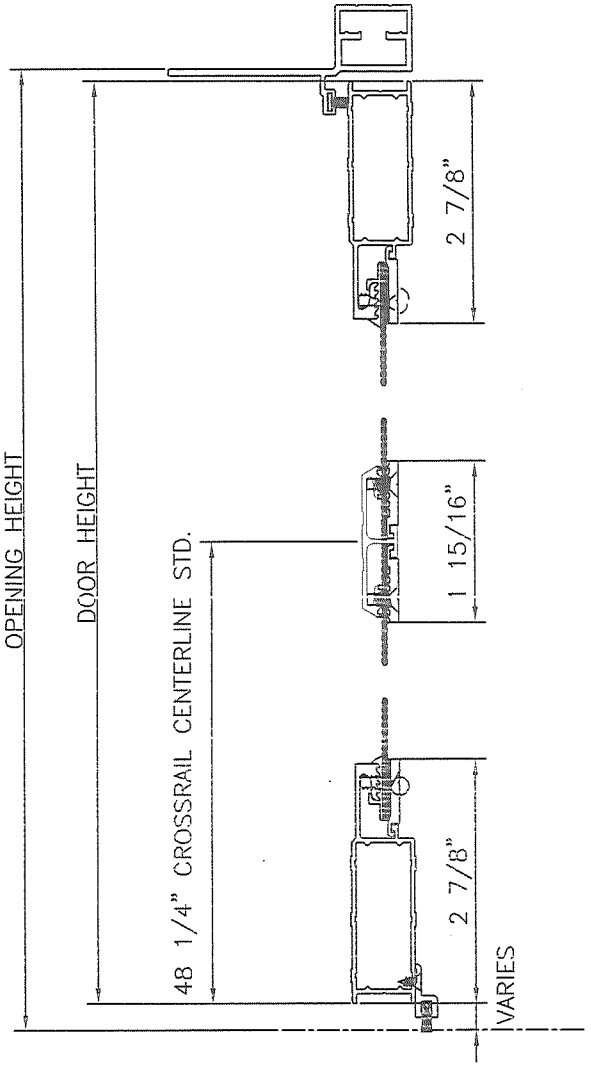

NOT TO SCALE

* ALL DIMENSIONS ARE IN INCHES

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Crimsafe North America
Phone:+1 863 510 0188
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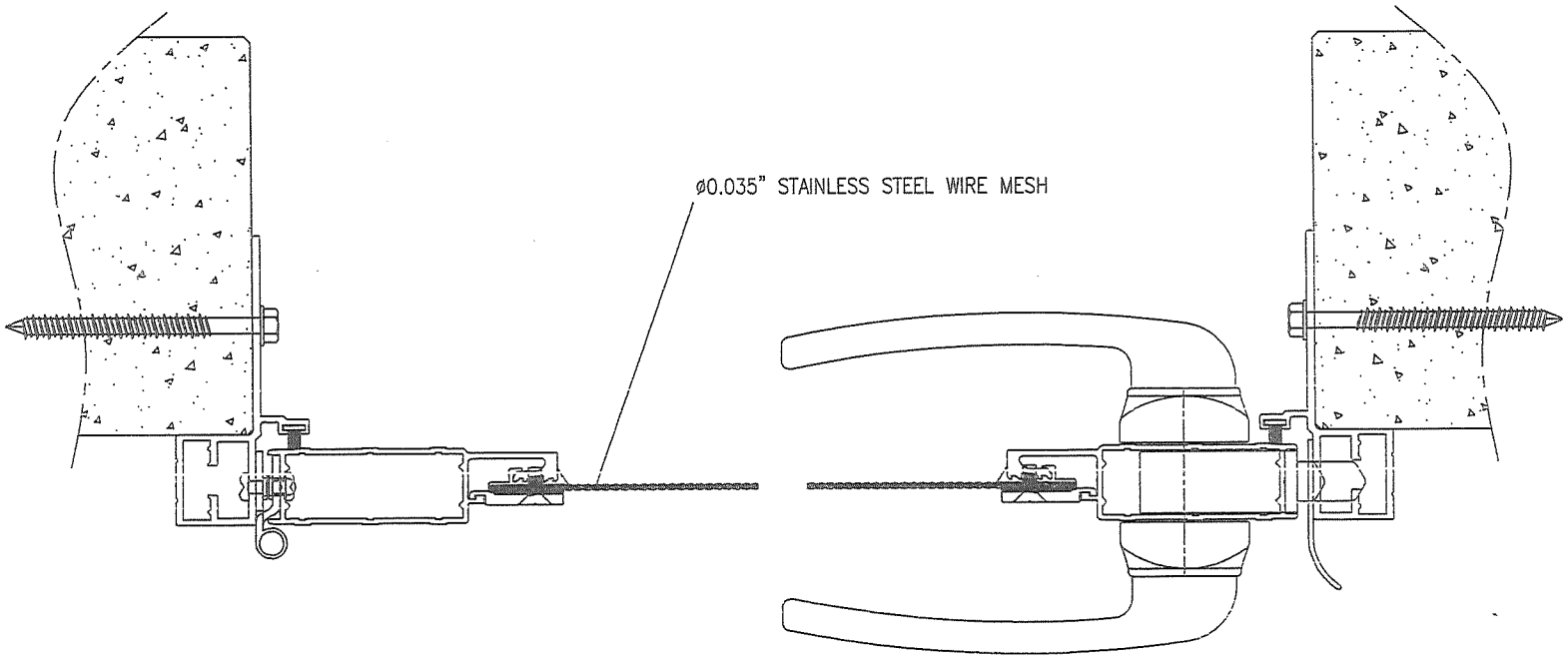
Product:
HINGED SECURITY SCREEN DOOR

Rev.	Rev. Description

DRAWN BY: CC.	11 Mar 09
CHECKED BY: RR.	11 Mar 09
APPROVED BY: Peter Bouma	11 Mar 09
SCALE: N.T.S	
INTERNAL DWG CODE: A2020-0003	



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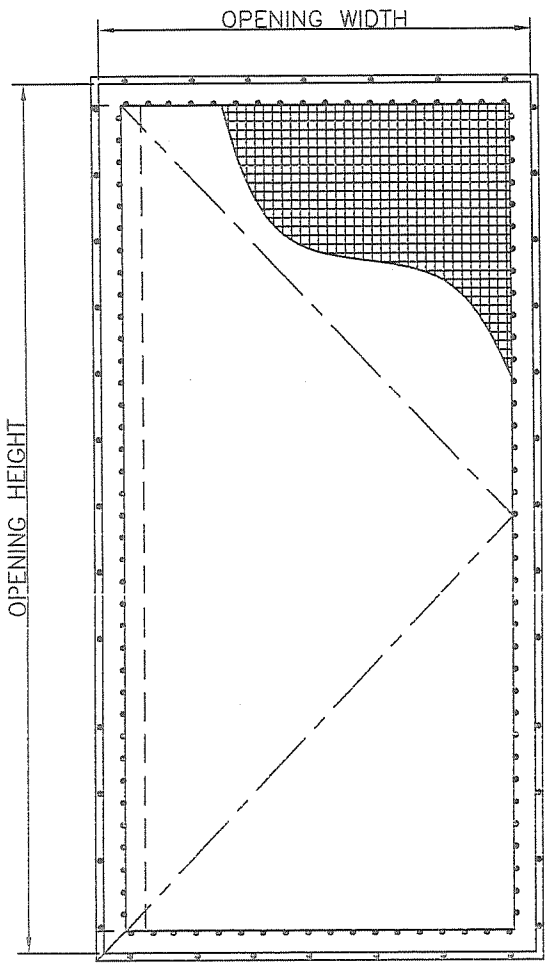
Sheet 2 of 2	



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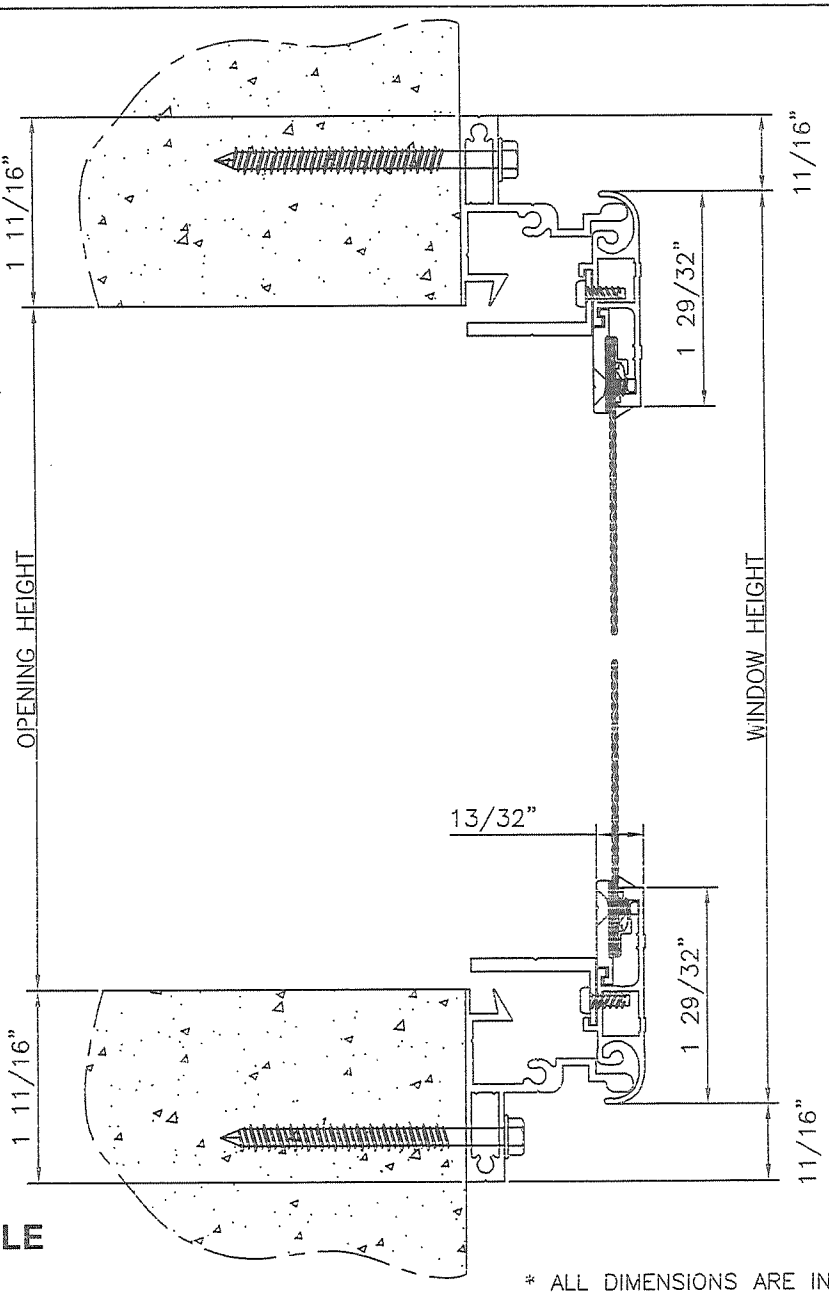

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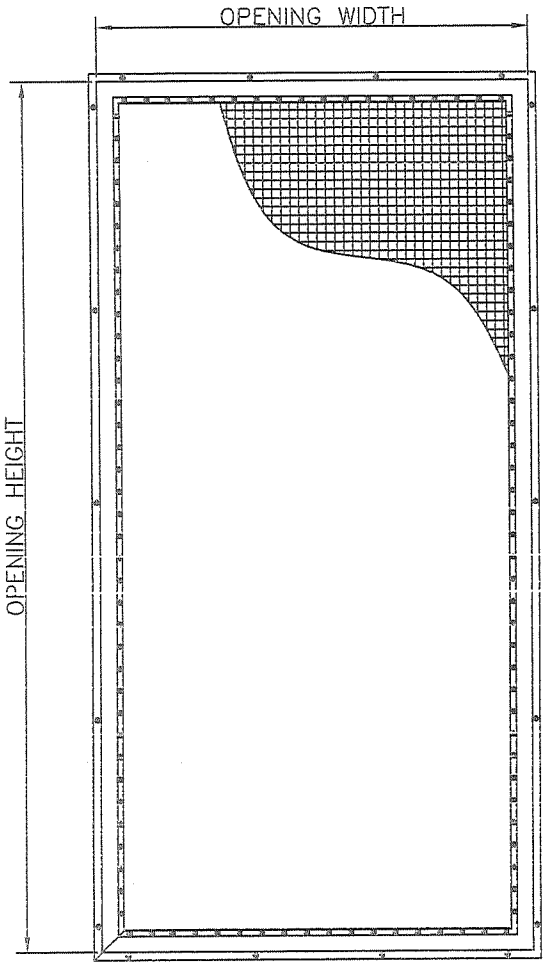
Product:
SAFE -S - CAPE SECURITY SCREEN WINDOW

Rev.	Rev. Description

DRAWN BY: CC.	17 Mar 09
CHECKED BY: RR.	17 Mar 09
APPROVED BY: Peter Bouma	17 Mar 09
SCALE: N.T.S	
INTERNAL DWG CODE: A2020-0004	



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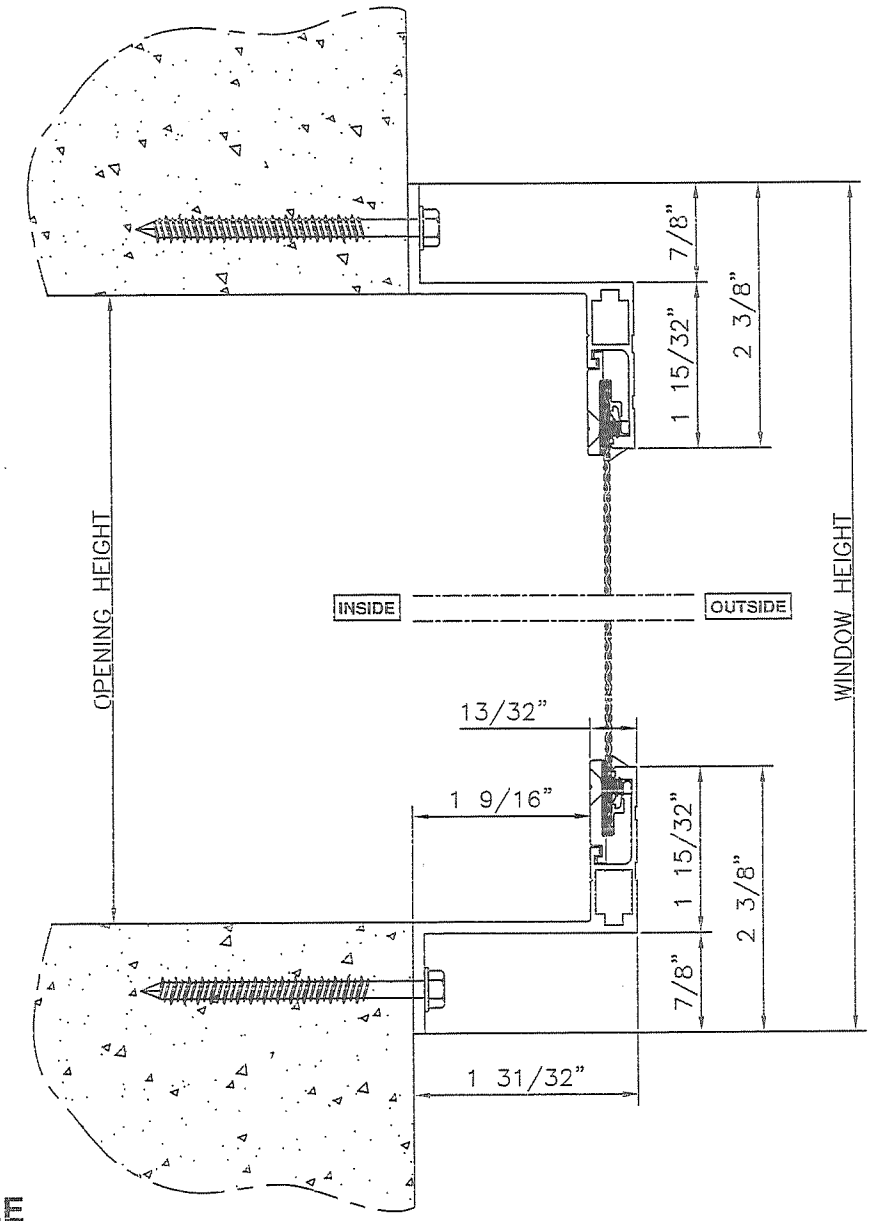

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Product:
BUILT OUT TYPE FIXED SECURITY SCREEN WINDOW

Rev.	Rev. Description

DRAWN BY: CC.	27 Apr 09
CHECKED BY: RR.	27 Apr 09
APPROVED BY: Peter Bouma	27 Apr 09
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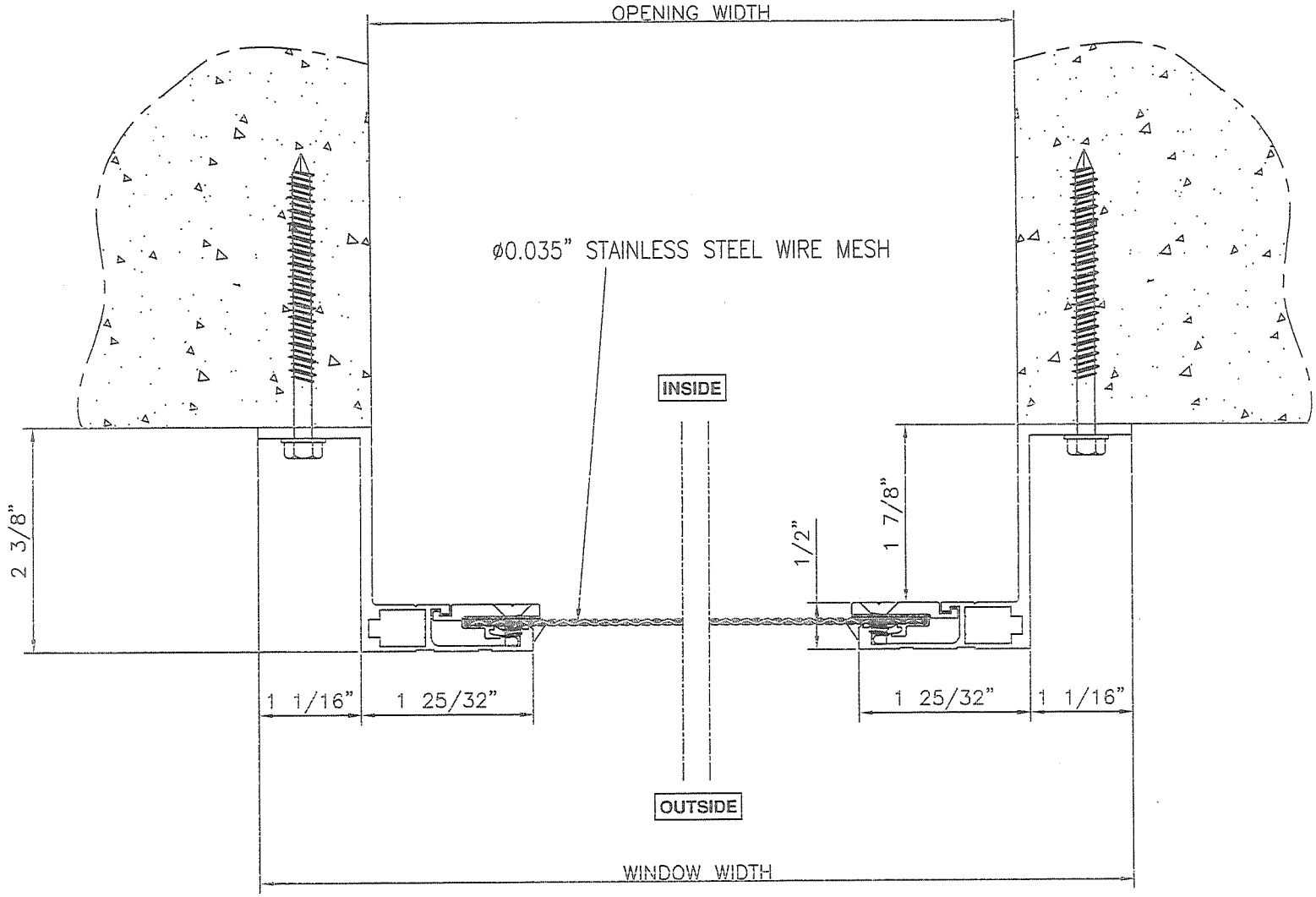
INTERNAL DWG CODE: A2020-0005	



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INTERNAL DWG CODE: A2020-0005	

APPENDIX B

Photographs

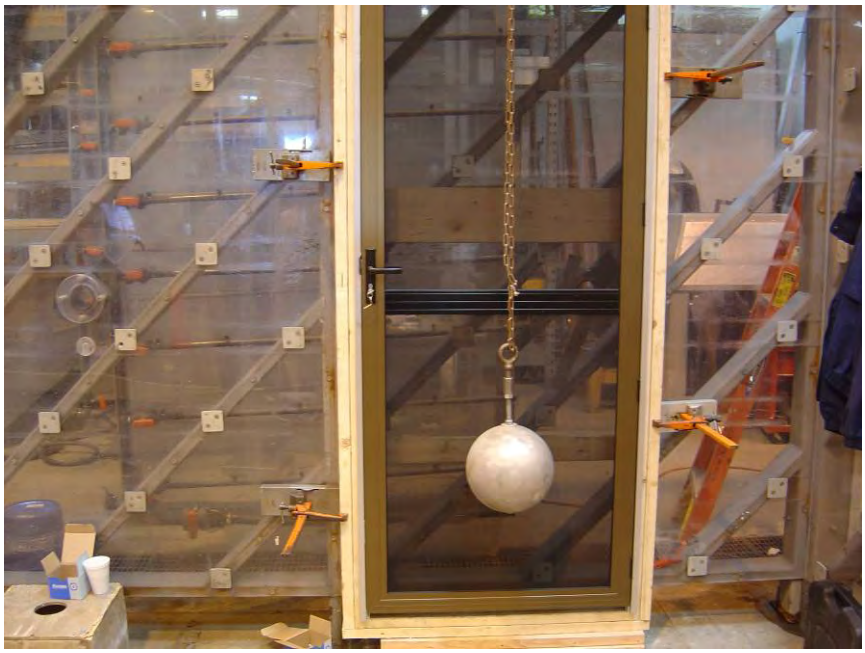

Photo No. 1
Test Setup of Impact Test

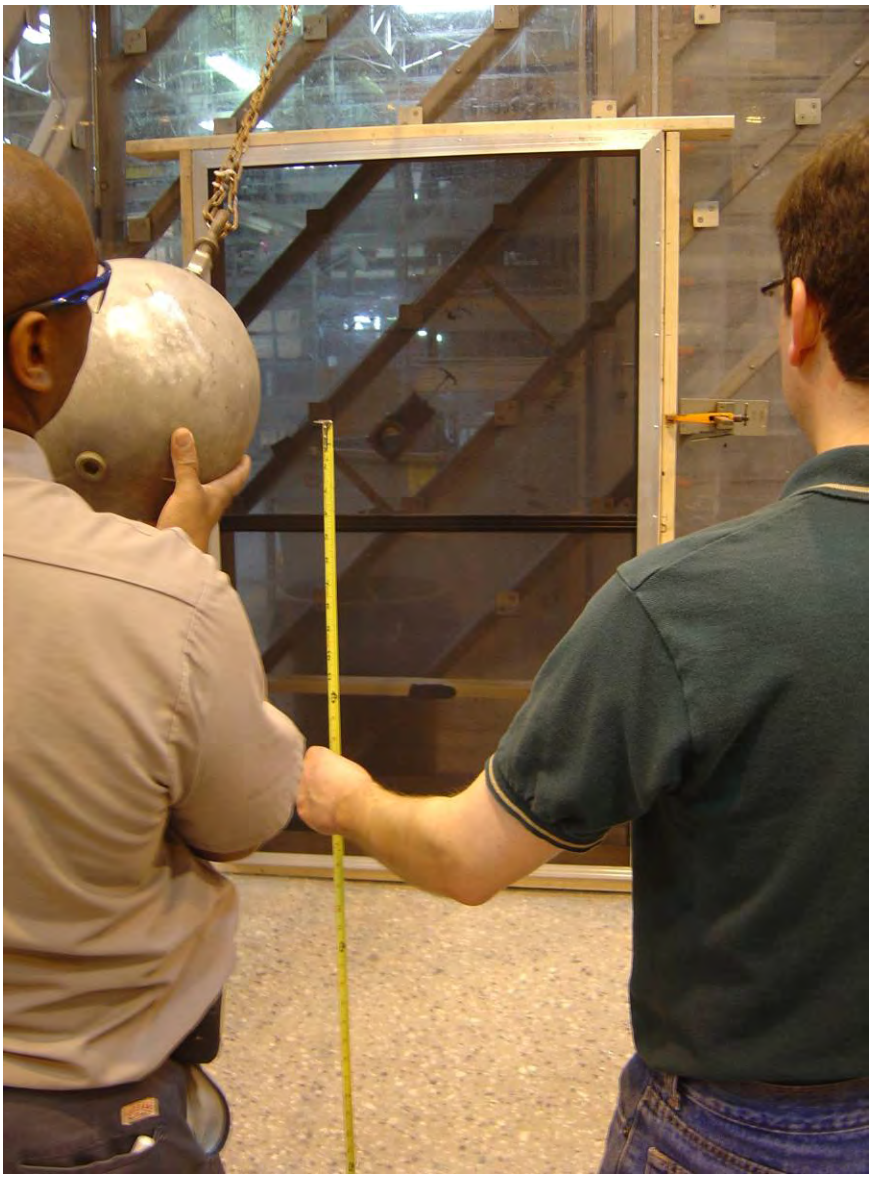

Photo No. 2
Impact Test

Photo No. 3
Test Setup of Sag Test

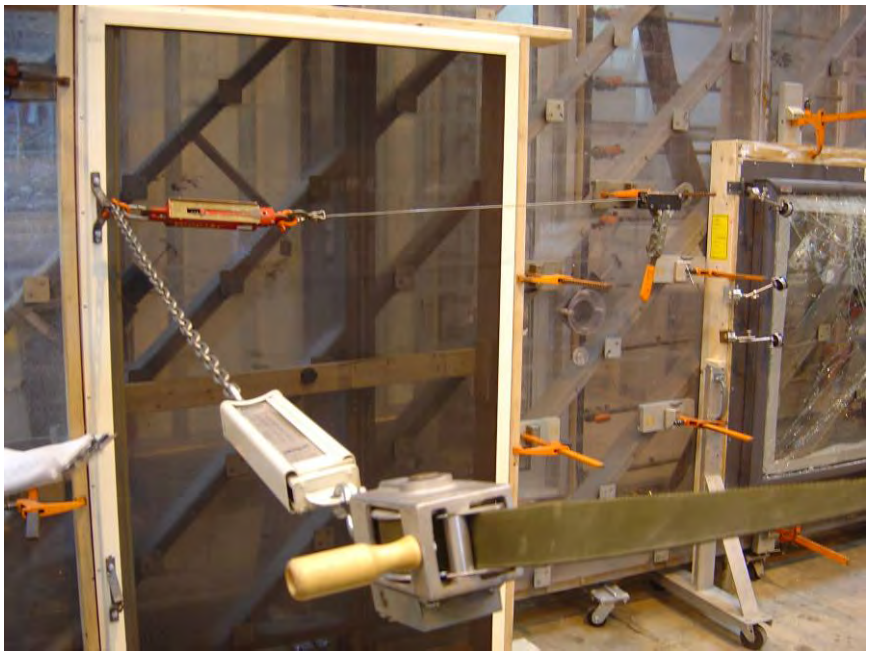

Photo No. 4
Test Setup of Forced Entry Test