

BREAK and ENTRY PERFORMANCE TEST REPORT

Report No.: C7770.03-201-44

Rendered to:

3M COMPANY
St. Paul, Minnesota

PRODUCT TYPE: Safety and Security Window Film
SERIES/MODEL: 3M – 6 mil Microlayered Safety and Security Window Film

Test Dates: 04/26/13
Report Date: 07/17/13

1.0 Report Issued To: 3M Company
Renewable Energy Division
St. Paul, Minnesota 55114

2.0 Test Laboratory: Architectural Testing, Inc.
849 Western Avenue North
St. Paul, Minnesota 55114
651-636-3835

3.0 Project Summary:

3.1 Product Type: Safety and Security Window Film

3.2 Series/Model: 3M – 6 mil Microlayered Safety and Security Window Film

3.3 Scope: Testing involved methodical attacks by an adult male to an entry door system including sidelites. Objective of the testing was to simulate an attack by an intruder with a firearm as the primary device to gain access through a door entryway. Testing was performed per the direction of 3M personnel.

3.4 Test Dates: 04/26/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until April 26, 2017.

3.6 Test Location: Architectural Testing, Inc. test facility in St. Paul, Minnesota.

3.7 Test Sample Source: The test specimens were provided by the client.

3.8 List of Official Observers:

<u>Name</u>	<u>Company</u>
Paul Neumann	3M Company
Billy Pettit	3M Company
Karl A. Lips-Eakins	Architectural Testing, Inc.
Eric J. Schoenthaler	Architectural Testing, Inc.

4.0 Test Specimen Description:

4.1 Test Specimen Description: The glazing that was tested was installed within a storefront entry system including two sidelites. The mockup consisted of a fully glazed outswing aluminum entry door with deadbolt and two fully glazed sidelites. The door size was 36" x 84" and the sidelites were 18" x 84". The glass remains consistent with 1/4" tempered glass with applied film as noted in the testing section.

5.0 Test #1: Handgun attack, no security film

5.1 Product Type: None

5.2 Series/Model: None

5.3 Film Attachment: No film was utilized

5.4 Area of Attack: Sidelite

5.5 Conditioning Temperature: 21°C (70°F)

5.6 Result: A total of 3 seconds elapsed before the attacker was able to gain access through door entryway system.

<u>Method of Attack</u>	<u>Number of Impacts/Shots</u>	<u>Time Elapsed (Seconds)</u>	<u>Note</u>
Gunshots	1	0:00:03	1

Note 1: The handgun utilized was a Glock Model 23 in .40 S&W. The ammunition utilized was full metal jacketed.

6.0 Test #2: Handgun attack, 3M 6-mil microlayered film

6.1 Product Type: Safety and Security Window Film

6.2 Series/Model: 3M – 6 mil Microlayered Safety and Security Window Film

6.3 Film Attachment: 3M Impact Protection Profile flexible-mechanical attachment

6.4 Area of Attack: Sidelite

6.5 Conditioning Temperature: 21°C (70°F)

6.6 Result: A total of 58 seconds elapsed before the attacker was able to gain access through door entryway system.

<u>Method of Attack</u>	<u>Number of Impacts/Shots</u>	<u>Time Elapsed (Seconds)</u>	<u>Note</u>
Gunshots	4	0:00:05	1, 2
Kicking	9	0:00:13	
Upper Body Attack	1	0:00:07	3
Kicking	4	0:00:04	
Upper Body Attack	1	0:00:02	3
Kicking	2	0:00:04	
Upper Body Attack	8	0:00:04	3
Kicking	8	0:00:19	
<u>Totals from above:</u>			
Gunshots	4	0:00:05	1
Upper Body Attacks	11	0:00:13	3
Kicking	23	0:00:40	
Total:	38	0:00:58	

Note 1: The handgun utilized was a Glock Model 23 in .40 S&W. The ammunition utilized was full metal jacket.

Note 2: Attempted attack with upper body after first shot.

Note 3: Upper body attack defined as a discrete attempt to push, pull, punch, rip or tear the glazing with hands, fists, or elbow.

7.0 Test #3: Semi-Automatic Rifle attack, 3M 6-mil microlayered film

7.1 Product Type: Safety and Security Film

7.2 Series/Model: 3M – 6 mil Microlayered Safety and Security Window Film

7.3 Film Attachment: 3M Impact Protection Profile flexible-mechanical attachment

7.4 Area of Attack: Sidelite

7.5 Conditioning Temperature: 21°C (70°F)

7.6 Result: A total of 44 seconds elapsed before the attacker was able to gain access through door entryway system.

<u>Method of Attack</u>	<u>Number of Impacts/Shots</u>	<u>Time Elapsed (Seconds)</u>	<u>Note</u>
Gunshots	4	0:00:09	1, 2
Kicking	9	0:00:11	
Upper Body Attack	4	0:00:03	3
Kicking	4	0:00:06	
Upper Body Attack	8	0:00:08	3
Kicking	1	0:00:07	
<u>Totals from above:</u>			
Gunshots	4	0:00:09	1
Upper Body Attacks	12	0:00:11	3
Kicking	14	0:00:24	
Total:	30	0:00:44	

Note 1: The rifle utilized was a Rock River Arms AR-15 in .223 caliber. The ammunition utilized was ballistic tipped.

Note 2: Attempted attack with upper body after first shot.

Note 3: Upper body attack defined as a discrete attempt to push, pull, punch, rip or tear the glazing with hands, fists, or elbow.

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period.

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For ARCHITECTURAL TESTING, Inc.

Eric J. Schoenthaler
Project Manager

Daniel A. Johnson
Director – Regional Operations

EJS/jb

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Photographs (4 pages)

Appendix A

Photographs

Photo No. 1



Test #1: Handgun attack, no security film

Photo No. 2



Test #1: Handgun attack, no security film. After 1 gun shot.

Photo No. 3



Test #1: Handgun attack, no security film. Access after 3 seconds.

Photo No. 4



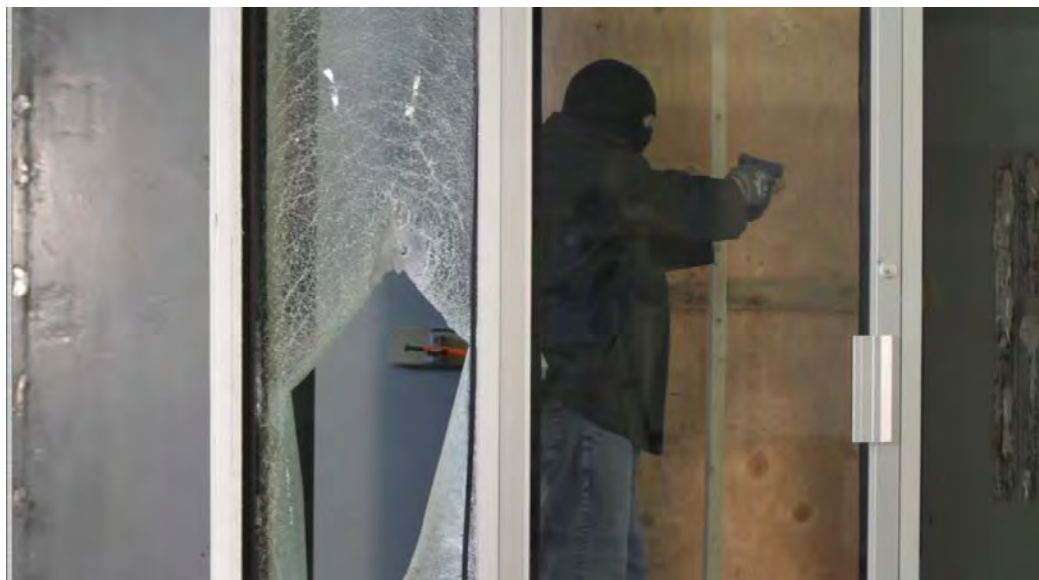
Test #2: Handgun attack, 3M 6-mil microlayered film.

Photo No. 5



Test #2: Handgun attack, 3M 6-mil microlayered film. After 4 gun shots.

Photo No. 6



Test #2: Handgun attack, 3M 6-mil microlayered film. Access after 4 gun shots, 11 upper body attacks, 23 kick attempts. Total time elapsed was 58 seconds.

Photo No. 7



Test #3: Semi-automatic rifle attack, 3M 6-mil microlayered film. After 4 gunshots.

Photo No. 8



Test #3: Semi-automatic rifle attack, 3M 6-mil microlayered film. Access after 4 gun shots, 12 upper body attacks, 14 kick attempts. Total time elapsed was 44 seconds.