

3M SOURCING OPERATIONS PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM F1233 (PHYSICAL ATTACK) TESTING ON SECURITY GLAZING MATERIALS

REPORT NUMBER

R6733.01-119-12 R0

TEST DATE

07/29/24

ISSUE DATE

09/10/24

RECORD RETENTION END DATE

07/29/28

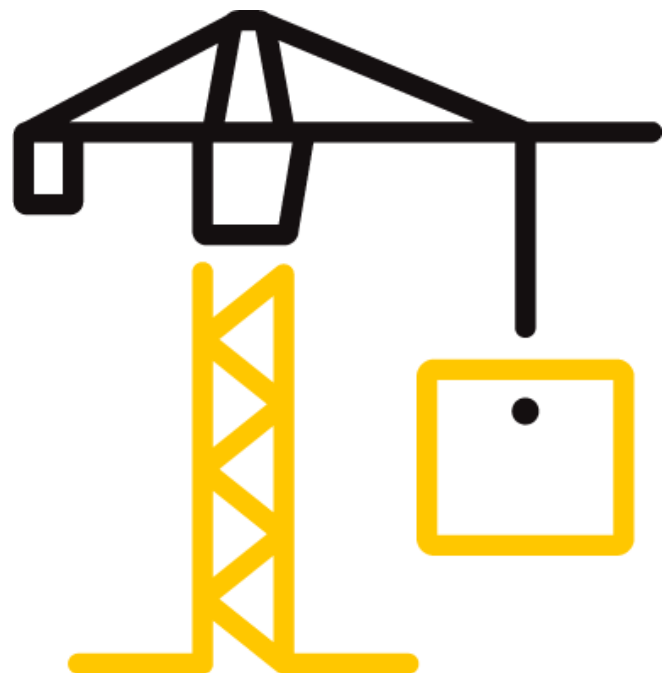
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TEST REPORT FOR 3M SOURCING OPERATIONS

Report No.: R6733.01-119-12 R0

Date: 09/10/24

REPORT ISSUED TO

3M SOURCING OPERATIONS

3M Center

216-2N-07

Maplewood, MN 55144

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by 3M Sourcing Operations to perform forced entry-physical attack resistance testing in accordance with ASTM F1233 on tempered and annealed glazing with *Scotchshield Security Window Film S2400*. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

For INTERTEK B&C:

COMPLETED BY:	Eric J. Beaudoin	REVIEWED BY:	V. Thomas Mickley, Jr., P.E.
TITLE:	Team Lead - Ballistics	TITLE:	Senior Staff Engineer
SIGNATURE:		SIGNATURE:	
DATE:	09/10/24	DATE:	09/10/24

EJB:vtm/aas

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SUMMARY OF TEST RESULTS

Product Type: Security Glazing Materials

Series/Model Number: *Scotchshield Security Window Film S2400*

GLAZING	SPECIMEN NO.	TEST RESULTS	FORCED ENTRY-PHYSICAL ATTACK CLASS ACHIEVED ¹
1/4 in Annealed	1	Class 0.0 (Contraband) Class 1.1 (Body)	Class 0.0 (Contraband) Class 1.1 (Body)
	2	Class 0.0 (Contraband) Class 1.1 (Body)	
1/4 in Tempered	1	Class 0.0 (Contraband) Class 1.1 (Body)	Class 0.0 (Contraband) Class 1.0 (Body)
	2	Class 0.0 (Contraband) Class 1.0 (Body)	

¹ Forced Entry-Physical Class Achieved based off the worst-case result from the two-specimen set.

SECTION 3

TEST METHOD

Each test specimen was evaluated for Forced Entry-Physical Attack only in accordance with the following:

ASTM F1233-21, *Standard Test Method for Security Glazing Materials and Systems*

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test samples were provided by the client. Representative samples of the test specimens will be retained by Intertek B&C for a minimum of four years from the test completion date.

Installation: Samples were installed into a test frame fabricated in accordance with Section 8.2 of ASTM F1233.

SECTION 5

EQUIPMENT

Equipment used during testing was in accordance with Sections 8.3 - 8.6 of ASTM F1233.

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LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Eric J. Beaudoin	Intertek B&C
Jeffrey C. Jones	Intertek B&C
Scott T. Gladfelter	Intertek B&C

SECTION 7

TEST PROCEDURES

Forced Entry Resistance Test

The sample was rigidly mounted for physical attack resistance testing. The resources (tools) for forced entry testing were provided to test personnel, in addition to an 1/8 in diameter rod (representing contraband) and an 8 in x 8 in x 5 in solid uncompressible rectangular object (representing body passage). A tripod-mounted video camera was used to record the entire forced entry test sequence. Blunt impact, sharp impact, and thermal stress tools were utilized to attack the specimen. The surface temperature of the test specimen was recorded following each attack sequence. Concentrated assault team members are listed in the following table.

Forced Entry Resistance Test Personnel

NAME	AGE (yrs)	WEIGHT (lbs)
Eric J. Beaudoin	51	202
Jeffery Jones	22	180

SECTION 8

TEST SPECIMEN DESCRIPTION

PRODUCT TYPE	Security Glazing Material
SERIES/MODEL NUMBER	3M Scotchshield Security Window Film S2400
OVERALL SIZE	29-3/4 in wide by 29-3/4 in high
FIXED DAY LITE OPENING	27-7/8 in wide by 27-7/8 in high
MEASURED THICKNESS	0.250 in
FRAME CONSTRUCTION	No window framing materials were tested
GLAZING TYPE	- Annealed (Test Series No. 1) - Tempered (Test Series No. 2)

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TEST RESULTS

Test Date: 07/29/24

Ambient Temperature: 80-88°F

Relative Humidity: 40-60%

Forced Entry Resistance Test Results

Series No. 1

3M Scotchshield Security Window Film S2400 on 1/4 in Annealed Glass

Specimen No. 1

SEQUENCE	CLASS ACHIEVED	DESCRIPTION OF ATTACK	TEMP. (°F)	ACTUAL TIME (min:sec)	NOTE
1	1.0	Ball Peen Hammer	77	00:14	Note #1
2	1.1	Ball Peen Hammer	79	00:17	--
3	1.2	1-1/2" Pipe/Sledge	78	01:41	Note #2

Note #1: After 2 hits, the 1/8 in diameter rod (representing contraband) was able to pass freely through the specimen.

Note #2: After 22 impacts the 8 in x 8 in x 5 in solid uncompressible rectangular object (representing body passage) was able to pass freely through the specimen. No further testing was performed. Final opening size 9-1/2 in x 4-1/2 in.

Specimen No. 2

SEQUENCE	CLASS ACHIEVED	DESCRIPTION OF ATTACK	TEMP. (°F)	ACTUAL TIME (min:sec)	NOTE
1	1.0	Ball Peen Hammer	77	00:19	Note #1
2	1.1	Ball Peen Hammer	78	00:14	--
3	1.2	1-1/2" Pipe/Sledge	77	01:04	Note #2

Note #1: After 2 hits, the 1/8 in diameter rod (representing contraband) was able to pass freely through the specimen.

Note #2: After 10 impacts the 8 in x 8 in x 5 in solid uncompressible rectangular object (representing body passage) was able to pass freely through the specimen. No further testing was performed. Final opening size 4-3/4 in x 10-3/4 in.

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Series No. 2

3M Scotchshield Security Window Film S2400 on 1/4 in Tempered Glass

Specimen No. 1

SEQUENCE	CLASS ACHIEVED	DESCRIPTION OF ATTACK	TEMP. (°F)	ACTUAL TIME (min:sec)	NOTE
1	1.0	Ball Peen Hammer	79	00:26	Note #1
2	1.1	Ball Peen Hammer	80	00:30	--
3	1.2	1-1/2" Pipe/Sledge	77	00:42	Note #2

Note #1: After 3 hits, the 1/8 in diameter rod (representing contraband) was able to pass freely through the specimen.

Note #2: After 9 impacts the 8 in x 8 in x 5 in solid uncompressible rectangular object (representing body passage) was able to pass freely through the specimen. No further testing was performed. Final opening size 11-1/4 in x 6-1/4 in.

Specimen No. 2

SEQUENCE	CLASS ACHIEVED	DESCRIPTION OF ATTACK	TEMP. (°F)	ACTUAL TIME (min:sec)	NOTE
1	1.0	Ball Peen Hammer	78	00:19	Note #1
2	1.1	Ball Peen Hammer	78	00:46	Note #2

Note #1: After 2 hits, the 1/8 in diameter rod (representing contraband) was able to pass freely through the specimen.

Note #2: After 10 hits the 8 in x 8 in x 5 in solid uncompressible rectangular object (representing body passage) was able to pass freely through the specimen. No further testing was performed. Final opening size 13 in x 4 in.

SECTION 10

CONCLUSION

Test Series No. 1 achieved a Forced Entry-Physical Attack Class of 0.0 (Contraband) and 1.1 (Body).

Test Series No. 2 achieved a Forced Entry-Physical Attack Class of 0.0 (Contraband) and 1.0 (Body).

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PHOTOGRAPHS



Photo No. 1

Test Series No. 1/Specimen No. 1 (Pre-Test)



Photo No. 2

Test Series No. 1/Specimen No. 1 (Class 1.0 - Contraband)

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Photo No. 3

Test Series No. 1/Specimen No. 1 (Class 1.2 - Body)



Photo No. 4

Test Series No. 1/Specimen No. 2 (Pre-Test)

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Photo No. 5

Test Series No. 1/Specimen No. 2 (Class 1.0 - Contraband)



Photo No. 6

Test Series No. 1/Specimen No. 2 (Class 1.2 - Body)

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Photo No. 7

Test Series No. 2/Specimen No. 1 (Pre-Test)



Photo No. 8

Test Series No. 2/Specimen No. 1 (Class 1.0 - Contraband)

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Photo No. 9

Test Series No. 2/Specimen No. 1 (Class 1.2 - Body)



Photo No. 10

Test Series No. 2/Specimen No. 2 (Pre-Test)

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Photo No. 11

Test Series No. 2/Specimen No. 2 (Class 1.0 - Contraband)



Photo No. 12

Test Series No. 2/Specimen No. 2 (Class 1.1 - Body)



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130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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REVISION LOG

REVISION #	DATE	PAGES	REVISION
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