



## Ballistic Resistance – Test Report

<b>Client:</b>	<b>FG Glass Industries Pvt Ltd</b> Attention: Mr. Suresh Aiyer 1204, Tower A Naman Midtown Elphistone Road, Lower Parel Mumbai 400013 India
<b>Report date:</b>	<b>11 June 2019</b>
<b>Job number:</b>	000009281A
<b>Test procedure and supporting documentation:</b>	Per Customer Instructions ANSI/UL-752, Level 3 (Modified)
<b>Sample receipt, identification information, and disposition:</b>	The sample(s) were received on <b>10 June 2019</b> . Sample item identification and description details are provided on the attached data record(s). The test sample(s) were inspected prior to testing and no anomalies were discovered. Sample(s) will be returned or discarded per customer instructions. H.P. White will only hold sample(s) as required by specific test protocols.
<b>Test date(s) and location:</b>	Testing commenced on <b>11 June 2019</b> , at the H.P. White Laboratory, Inc. facilities located at 3114 Scarboro Road, Street, Maryland. Testing concluded on <b>11 June 2019</b> .
<b>Report prepared by:</b>	Ashley Gowland, Customer Operations Coordinator
<b>Report reviewed by:</b>	Chris D'Amario, Engineer
<b>Revision number and date:</b>	NA
<b>Supplement to report:</b>	NA
<b>Test data transmittal method and storage location:</b>	This test report and test data were transmitted via email in a manner compliant with ISO 17025 requirements. Permanent electronic and hardcopy files are maintained in accordance with HPWLI data storage policy on data storage systems, filed by job number.
<b>Disclaimer:</b>	Testing was performed on sample(s) provided by the client. H.P. White Laboratory, Inc. holds no responsibility for sample selection methods. This report is based on data obtained from testing only the sample(s) submitted, and should NOT be interpreted as an endorsement by H.P. White Laboratory, Inc. of the continuing quality or performance of any other items of the same, or similar, design. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This testing was performed by H.P. White Laboratory, Inc. to client specification, and the test results are the property of the client, who holds all rights of reproduction or publication of this report and related test data.
<b>Destination control statement:</b>	This document may contain items controlled by the U.S. government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.

## Test Procedures

**Ballistic Testing:** All testing was conducted on an indoor range at ambient conditions, in accordance with your instructions and the modified provisions of ANSI/UL-752, Level 3. Testing was conducted using caliber .44 Magnum, LWC, 240 grain ammunition. The test sample(s) were positioned 15.0 feet from the muzzle of the barrel to produce zero (0°) degree obliquity impacts. Photoelectric infrared screens were located at 5.0 feet and 10.0 feet which, in conjunction with electronic chronographs, were used to compute bullet velocities at 7.5 feet forward of the muzzle. Penetrations were determined by visual examination of the 1/8-inch-thick corrugated cardboard witness plate, placed 18.0 inches behind and parallel to the test sample(s). Table I provides a summary of information on the attached data record(s).

**Table I: Ballistic Resistance, Summary of Results**

Sample No.	Thickness (in) (a)	Weight (lbs.)	Conditioning	Caliber	Obliquity (degrees°)	Shots (b)	Velocity (fps) Max/Min	Penetrations
FGBR19-001	1.042	11.0	AMBIENT	.44 MAGNUM	0	3	1470/1453	0
FGBR19-002	1.046	11.0	AMBIENT	.44 MAGNUM	0	3	1497/1462	0
FGBR19-003	1.046	11.0	AMBIENT	.44 MAGNUM	0	3	1474/1421	0
FGBR19-004	1.044	11.0	AMBIENT	.44 MAGNUM	0	3	1466/1447	0
FGBR19-005	1.056	11.2	AMBIENT	.44 MAGNUM	0	3	1478/1432	0

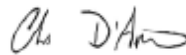
(a) Average of four (4) thickness measurements  
(b) See individual data record(s) for specific footnotes/remarks

Report prepared by:



Ashley Gowland  
Customer Operations Coordinator

Report reviewed by:



Chris D'Amario  
Engineer



### TEST PANEL

Manufacturer : FG Glass Industries Pvt. Ltd.

Size : 12 x 12 in.

Thicknesses : 1.041, 1.043, 1.046, 1.038 in.

Avg. Thick : 1.042 in.

Description : TRANSPARENT ARMOR,BR GLASS

Sample No. : FGBR19-001

Weight : 11.0 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 6/10/19

Via :

Returned :

### SET-UP

Shot Spacing : 3 ON A 4" TRIANGLE

Witness Panel : 1/8" CORRUGATED CARDBOARD

Obliquity : 0 deg.

Backing Material : NA

Conditioning : Ambient (+72 F)

Primary Vel. Screens : 5.0 ft., 10.0 ft.

Primary Vel. Location : 7.5 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 15.0 ft.

Target to Wit. : 18.0 in.

Range No. : 3

Temp. : 70 F

BP : 30.01 in. Hg

RH : 55%

Barrel No./Gun : R3/.44 MAGNUM

Gunner : LINKOUS

Recorder : BONSALL

### AMMUNITION

(1) : .44 MAGNUM,LWC, 240 gr.

(2) :

(3) :

(4) :

Lot No. : HPW-0046

Lot No. :

Lot No. :

Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

(1) : Bullet Resistant Equipment, ANSI/UL 752-2005 (Modified)

(2) : Non-Metallic, Protection Level 3 (.44 Magnum, 1350-1485 fps.)

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	3407	1468	3398	1471	1470	None	
2	1	3446	1451	3438	1454	1453	None	
3	1	3431	1457	3423	1461	1459	None	

### REMARKS :

### FOOTNOTES :



### TEST PANEL

Manufacturer : FG Glass Industries Pvt. Ltd.

Size : 12 x 12 in.

Thicknesses : 1.048, 1.044, 1.047, 1.046 in.

Avg. Thick : 1.046 in.

Description : TRANSPARENT ARMOR,BR GLASS

Sample No. : FGBR19-002

Weight : 11.0 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 6/10/19

Via :

Returned :

### SET-UP

Shot Spacing : 3 ON A 4" TRIANGLE

Witness Panel : 1/8" CORRUGATED CARDBOARD

Obliquity : 0 deg.

Backing Material : NA

Conditioning : Ambient (+72 F)

Primary Vel. Screens : 5.0 ft., 10.0 ft.

Primary Vel. Location : 7.5 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 15.0 ft.

Target to Wit. : 18.0 in.

Range No. : 3

Temp. : 70 F

BP : 30.01 in. Hg

RH : 55%

Barrel No./Gun : R3/.44 MAGNUM

Gunner : LINKOUS

Recorder : BONSALL

### AMMUNITION

(1) : .44 MAGNUM,LWC, 240 gr.

(2) :

(3) :

(4) :

Lot No. : HPW-0046

Lot No. :

Lot No. :

Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

(1) : Bullet Resistant Equipment, ANSI/UL 752-2005 (Modified)

(2) : Non-Metallic, Protection Level 3 (.44 Magnum, 1350-1485 fps.)

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	3425	1460	3416	1464	1462	None	
2	1	3412	1465	3404	1469	1467	None	
3	1	3343	1496	3336	1499	1497	None	

### REMARKS :

### FOOTNOTES :

**TEST PANEL**

Manufacturer : FG Glass Industries Pvt. Ltd.

Size : 12 x 12 in.

Thicknesses : 1.045, 1.046, 1.045, 1.046 in.

Avg. Thick : 1.046 in.

Description : TRANSPARENT ARMOR,BR GLASS

Sample No. : FGBR19-003

Weight : 11.0 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 6/10/19

Via :

Returned :

**SET-UP**

Shot Spacing : 3 ON A 4" TRIANGLE

Witness Panel : 1/8" CORRUGATED CARDBOARD

Obliquity : 0 deg.

Backing Material : NA

Conditioning : Ambient (+72 F)

Primary Vel. Screens : 5.0 ft., 10.0 ft.

Primary Vel. Location : 7.5 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 15.0 ft.

Target to Wit. : 18.0 in.

Range No. : 3

Temp. : 70 F

BP : 30.01 in. Hg

RH : 55%

Barrel No./Gun : R3/.44 MAGNUM

Gunner : LINKOUS

Recorder : BONSALL

**AMMUNITION**

(1) : .44 MAGNUM,LWC, 240 gr.

(2) :

(3) :

(4) :

Lot No. : HPW-0046

Lot No. :

Lot No. :

Lot No. :

**APPLICABLE STANDARDS OR PROCEDURES**

(1) : Bullet Resistant Equipment, ANSI/UL 752-2005 (Modified)

(2) : Non-Metallic, Protection Level 3 (.44 Magnum, 1350-1485 fps.)

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	3427	1459	3418	1463	1461	None	
2	1	3397	1472	3389	1475	1474	None	
3	1	3522	1420	3513	1423	1421	None	

**REMARKS :****FOOTNOTES :**



### TEST PANEL

Manufacturer : FG Glass Industries Pvt. Ltd.

Size : 12 x 12 in.

Thicknesses : 1.037, 1.047, 1.046, 1.046 in.

Avg. Thick : 1.044 in.

Description : TRANSPARENT ARMOR,BR GLASS

Sample No. : FGBR19-004

Weight : 11.0 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 6/10/19

Via :

Returned :

### SET-UP

Shot Spacing : 3 ON A 4" TRIANGLE

Witness Panel : 1/8" CORRUGATED CARDBOARD

Obliquity : 0 deg.

Backing Material : NA

Conditioning : Ambient (+72 F)

Primary Vel. Screens : 5.0 ft., 10.0 ft.

Primary Vel. Location : 7.5 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 15.0 ft.

Target to Wit. : 18.0 in.

Range No. : 3

Temp. : 70 F

BP : 30.01 in. Hg

RH : 55%

Barrel No./Gun : R3/.44 MAGNUM

Gunner : LINKOUS

Recorder : BONSALL

### AMMUNITION

(1) : .44 MAGNUM,LWC, 240 gr.

(2) :

(3) :

(4) :

Lot No. : HPW-0046

Lot No. :

Lot No. :

Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

(1) : Bullet Resistant Equipment, ANSI/UL 752-2005 (Modified)

(2) : Non-Metallic, Protection Level 3 (.44 Magnum, 1350-1485 fps.)

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	3415	1464	3407	1468	1466	None	
2	1	3454	1448	3447	1451	1449	None	
3	1	3460	1445	3452	1448	1447	None	

### REMARKS :

### FOOTNOTES :



### TEST PANEL

Manufacturer : FG Glass Industries Pvt. Ltd.

Size : 12 x 12 in.

Thicknesses : 1.053, 1.059, 1.059, 1.055 in.

Avg. Thick : 1.056 in.

Description : TRANSPARENT ARMOR,BR GLASS

Sample No. : FGBR19-005

Weight : 11.2 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 6/10/19

Via :

Returned :

### SET-UP

Shot Spacing : 3 ON A 4" TRIANGLE

Witness Panel : 1/8" CORRUGATED CARDBOARD

Obliquity : 0 deg.

Backing Material : NA

Conditioning : Ambient (+72 F)

Primary Vel. Screens : 5.0 ft., 10.0 ft.

Primary Vel. Location : 7.5 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 15.0 ft.

Target to Wit. : 18.0 in.

Range No. : 3

Temp. : 70 F

BP : 30.01 in. Hg

RH : 55%

Barrel No./Gun : R3/.44 MAGNUM

Gunner : LINKOUS

Recorder : BONSALL

### AMMUNITION

(1) : .44 MAGNUM,LWC, 240 gr.

(2) :

(3) :

(4) :

Lot No. : HPW-0046

Lot No. :

Lot No. :

Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

(1) : Bullet Resistant Equipment, ANSI/UL 752-2005 (Modified)

(2) : Non-Metallic, Protection Level 3 (.44 Magnum, 1350-1485 fps.)

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	3496	1430	3487	1434	1432	None	
2	1	3420	1462	3412	1465	1464	None	
3	1	3386	1477	3378	1480	1478	None	

### REMARKS :

### FOOTNOTES :