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February 3, 2006
[HPWLI 9998-02A]
[Duplicate Original]



Optima Ballistic Glass Corporation
Zona Procesadora de Exportacion Albrook
Call Marginal Este, Ave. Curundu, Local G
Panama
Republica de Panama

Attention: Juan Jose Estrada

Dear Juan Jose Estrada:

You recently requested ballistic resistance testing of one transparent armor sample received on January 25, 2006 via FedEx.

All testing was conducted on an indoor range at ambient conditions and in accordance with provisions of NIJ-STD-0108.01, **BALLISTIC RESISTANT PROTECTIVE MATERIALS**, dated September 1985. Testing was conducted at a Level III threat using caliber 7.62x51mm, 149 grain, M80 Ball ammunition. The test sample was rigidly mounted 50.0 feet from the muzzle of a test barrel to produce zero degree obliquity impacts. Redundant pairs of lumiline screens were located at 6.5 feet and 9.5 feet. Together with electronic chronographs, they provided bullet velocities at 8 feet. Penetrations were determined by visual examination of a 0.020 inch thick witness panel of alloy 2024T3 aluminum positioned 6 inches behind, and parallel to, the rear of the test sample. Table I provides a summary of information on the attached Data Record.

TABLE I - SUMMARY OF RESULTS
[NIJ Level III - Optima Glazing]

Test Sample			Ballistic Threat				Results [Penetrations]
Number	Thickness [in.] [a]	Weight [lbs.]	Caliber	Shots [b]	Velocity		
					Minimum	Maximum	
LEVEL III	1.629	42.06	7.62mm	5	2725	2760	0

[a] - Average of four corner thicknesses
[b] - At the corners and in the center of an 8-inch square

Based on the data presented, the test sample submitted for testing **SATISFIED** the ballistic resistance requirements of NIJ-STD-0108.01, Level III. This conclusion is based solely on data obtained from the sample provided, and should not be interpreted as an endorsement by H.P. white Laboratory, Inc.

Thank you for the opportunity to conduct these tests. The sample was discarded after testing as you requested. If you should have any questions, please feel free to contact us.

Very truly yours,

H.P. WHITE LABORATORY, INC.

Lester W. Roane

LWR/mw
[Enclosure]



H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : OPTIMA BALLISTIC GLASS

Job No. : 9998-02

Test Date : 02/02/06

TEST PANEL

Manufacturer : OPTIMA BALLISTIC GLASS

Size : 18 x 18 in.

Thicknesses : 1.612, 1.636, 1.641, 1.626 in.

Avg. Thick. : 1.629 in.

Description : LAMINATED TRANSPARENCY

Sample No. : LEVEL III

Weight : 42.06 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 1/25/06

Via : Federal Express

Returned : NA

SET-UP

Shot Spacing : 4 ON 8" SQUARE - 1 IN CENTER

Witness Panel : 0.020", 2024-T3 ALUMINUM

Obliquity : 0 deg.

Backing Material : NA

Conditioning : AMBIENT

Primary Vel. Screens : 6.5 ft., 9.5 ft.

Primary Vel. Location : 8.0 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 50.0 ft.

Target to Wit. : 6.0 in.

Range No. : 5

Temp. : 66.3 F

BP : 29.68 in. Hg

RH : 31%

Barrel No./Gun : TEST BARREL

Gunner : HEIL

Recorder : HEIL

AMMUNITION

(1) : 7.62mm Ball, M80, 149 gr.

(2) :

(3) :

(4) :

Lot No. : WRA 22978

Lot No. :

Lot No. :

Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01

(2) : THREAT LEVEL : III

(3) : REQUIRED VELOCITY : 2700-2800 fps.

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	1087	2760	1115	2691	2725	None	
2	1	1082	2773	1107	2710	2741	None	
3	1	1078	2783	1103	2720	2751	None	
4	1	1075	2791	1100	2727	2759	None	
5	1	1074	2793	1100	2727	2760	None	

REMARKS :

FOOTNOTES :