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28 March 2012
(HPWLI 12101-01)

Troy Acoustic Corporation
2480 Sidney Lanier Drive
Brunswick, GA 21525

Attention: Louis Salseda

In accordance with your instructions, H.P. White Laboratory, Inc. conducted ballistic resistance testing of four (4) proprietary armor samples received 22 March 2012 via Old Dominion.

Testing was conducted in accordance with the general and modified provisions of NIJ-STD-0108.01, BALLISTIC RESISTANT PROTECTIVE MATERIALS, dated September 1985, using caliber 7.62x63mm, 166 grain, AP, M2, 7.62x51mm, 149 grain, M80 Ball, 5.56x45mm, 85 grain, M855, and .50, 708 grain, M2 Ball ammunition. The test samples were rigidly mounted on an indoor range 50.0 feet from the muzzle of a test barrel to produce zero (0) degree obliquity impacts. Photoelectric infrared screens were positioned at 6.5 and 9.5 feet which, in conjunction with dual elapsed time counters (chronographs), were used to compute projectile velocities 8.0 feet forward of the muzzle. Penetrations were determined by visual examination of a 0.020 inch thickness alloy 2024-T3 aluminum witness panel positioned 6.0 inches behind, and parallel to, the test samples. Table I presents a summary of the attached data records.

TABLE I. SUMMARY OF RESULTS

Test Sample				Ballistic Threat				Results
Number	Weight (lbs.)	Size (in.)	Obliquity (degrees)	Caliber	Shots	Velocity (fps)		Penetrations
						Maximum	Minimum	
HPW-1	99.1	12x12x24	0	.30 AP M2	1	2854		0
HPW-2	98.9	12x12x24	0	7.62mm, M80	5	2766	2756	0
HPW-3	98.5	12x12x24	0	5.56mm, M855	5	3009	2976	0
HPW-4	98.0	12x12x24	0	.50 M2 Ball	4	2880	2820	0

This conclusion is based on data obtained from having tested only the samples 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.

The test samples will be discarded. Should you have any questions regarding this matter, or if we may be of any further service, please do not hesitate to contact us.

Respectfully,

H.P. White Laboratory, Inc.

Tim Gorsche

TG/tc
Enclosures



TEST PANEL

Manufacturer : TROY ACOUSTICS
Size : 12 x 12 x 24 in.
Thicknesses : NA
Avg. Thick. : NA
Description : PROPRIETARY

Sample No. : HPW-1
Weight : 99.1 lbs.
Hardness : NA
Plies/Laminates : NA

Date Rec'd. : 3/22/12
Via : OLD DOMINION
Returned : N/A

SET-UP

Shot Spacing : 1 SHOT 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. : 6
Temp. : 68 F
BP : 29.68 in. Hg
RH : 33%
Barrel No./Gun : R6 .30-06
Gunner : T.CONTRERAS
Recorder : WOLFE

AMMUNITION

(1) : CAL. .30 AP, M2, 166 gr.
(2) :
(3) :
(4) :

Lot No. : UNKNOWN
Lot No. :
Lot No. :
Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01 (LEVEL IV)
(2) : REQUIRED VELOCITY: 2800-2900 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	1051	2854	1051	2854	2854	None	

REMARKS :	FOOTNOTES :



TEST PANEL

Manufacturer : TROY ACOUSTICS
Size : 12 x 12 x 24 in.
Thicknesses : NA
Avg. Thick. : NA
Description : PROPRIETARY

Sample No. : HPW-2
Weight : 98.9 lbs.
Hardness : NA
Plies/Lamination : NA

Date Rec'd. : 3/22/12
Via : OLD DOMINION
Returned : N/A

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. : 6
Temp. : 68 F
BP : 29.68 in. Hg
RH : 33%
Barrel No./Gun : R6 .308
Gunner : T.CONTRERAS
Recorder : WOLFE

AMMUNITION

(1) : 7.62mm Ball, M80, 149 gr.
(2) :
(3) :
(4) :

Lot No. : UNKNOWN
Lot No. :
Lot No. :
Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01 (LEVEL III)
(2) : REQUIRED VELOCITY: 2700-2800 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	1085	2765	1087	2760	2762	None	
2	1	1089	2755	1080	2778	2766	None	
3	1	1088	2757	1088	2757	2757	None	
4	1	1085	2765	1084	2768	2766	None	
5	1	1089	2755	1088	2757	2756	None	

REMARKS :	FOOTNOTES :



TEST PANEL

Manufacturer : TROY ACOUSTICS
Size : 12 x 12 x 24 in.
Thicknesses : NA
Avg. Thick. : NA
Description : PROPRIETARY

Sample No. : HPW-3
Weight : 98.5 lbs.
Hardness : NA
Plies/Lamination : NA

Date Rec'd. : 3/22/12
Via : OLD DOMINION
Returned : N/A

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. : 6
Temp. : 68 F
BP : 29.68 in. Hg
RH : 33%
Barrel No./Gun : R6 .223
Gunner : T.CONTRERAS
Recorder : WOLFE

AMMUNITION

(1) : 5.56mm M855, , 85 gr.
(2) :
(3) :
(4) :

Lot No. : UNKNOWN
Lot No. :
Lot No. :
Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01 (MODIFIED)
(2) : REQUIRED VELOCITY: 2950-3000 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	1001	2997	1001	2997	2997	None	
2	1	1009	2973	1007	2979	2976	None	
3	1	998	3006	996	3012	3009	None	
4	1	999	3003	997	3009	3006	None	
5	1	1000	3000	998	3006	3003	None	

REMARKS :	FOOTNOTES :



TEST PANEL

Manufacturer : TROY ACOUSTICS
Size : 12 x 12 x 24 in.
Thicknesses : NA
Avg. Thick. : NA
Description : PROPRIETARY

Sample No. : HPW-4
Weight : 98.0 lbs.
Hardness : NA
Plies/Lamination : NA

Date Rec'd. : 3/22/12
Via : OLD DOMINION
Returned : N/A

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. : 6
Temp. : 71 F
BP : 30.03 in. Hg
RH : 24%
Barrel No./Gun : R6 .50 CAL
Gunner : T.CONTRERAS
Recorder : WOLFE

AMMUNITION

(1) : CAL. .50 , M2 BALL, 708 gr. Lot No. : UNKNOWN
(2) : Lot No. :
(3) : Lot No. :
(4) : Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

- (1) : NIJ-STD-0108.01 (MODIFIED)
- (2) : REQUIRED VELOCITY: 2800-2900 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	1047	2865	1049	2860	2863	None	(a)
2	1	1054	2846	1054	2846	2846	None	
3	1	1063	2822	1065	2817	2820	None	
4	1	1041	2882	1042	2879	2880	None	

REMARKS :	FOOTNOTES : (a) TEST TERMINATED DUE TO DESTRUCTION OF SAMPLE.
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