

H.P. WHITE LABORATORY, INC.

3114 Scarboro Road
Street, Maryland 21154-1822
Telephone: (410) 838-6550
Facsimile: (410) 838-2802
Email: info@hpwhite.com
www.hpwhite.com



8 April 2013
(HPWLI 000000608)

Shenzhen Guodun Armor Technology Co., Ltd.
6/F, 3rd B/D, 46 Huaning Rd.
Dalang, Longhua
Shenzhen 518109
G.D. China

Attention: Mr. Alejandro Shaw

In accordance with your instructions, H.P. White Laboratory, Inc. conducted Ballistic Limit, Protection (V50BL[P]) testing of one rigid woven aramid fiber in matrix helmet received 1 April 2013 via DHL.

Testing was conducted in accordance with the provisions of MIL-STD-662F, using unsaboted caliber .22, 17 grain, fragment simulator projectiles conforming to the provisions of MIL-DTL-46593B. The test sample was mounted on an indoor range 15.0 feet from the muzzle of a test barrel to produce zero degree obliquity impacts. Velocity screens were positioned at 5.0 and 10.0 feet which, in conjunction with elapsed time counters (chronographs), were used to compute projectile velocities 7.5 feet from the muzzle. Standard drag data were used to calculate striking velocities. Penetrations were determined by visual examination of a 0.020 inch thick aluminum alloy 2024T3 witness panel positioned 2.0 inches behind, and parallel to, the test sample. Table I is a summary of the attached data record.

TABLE I. SUMMARY OF RESULTS

Test Sample			Ballistic Threat		Ballistic Limit (fps)		
Number	Weight (lb)	Thickness (in)	Caliber	Shots Total/V50	V50 BL (P)	High Partial	Low Complete
G01303260003	2.89	0.309	.22 FSP	10/6	2206	2217	2147

This report is based on the data obtained from having tested only the sample 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 sample is being returned DHL. Should you have any questions regarding this matter, or if we may be of any further service, please do not hesitate to contact us.

Very truly yours,

H.P. White Laboratory, Inc.

Lester W. Roane

LWR/tc
Enclosure



H.P. White Laboratory, Inc.

Client : 1737:Shenzhen Guodun Armor Technology Co., Ltd

PROTECTION BALLISTIC LIMIT TEST, V50 BL(P)

Job No. : 00000608

Test Date : 4/8/13

TEST PANEL

Manufacturer : Shenzhen Guodun Armor Technology Co., Ltd Sample No. : G01303260003
 Size : M in. Heat No. : NA
 Thicknesses : 0.304, 0.311, 0.318, 0.302 in. Weight : 2.89 lbs.
 Avg. Thick. : 0.309 in. Hardness : NA
 Required BL(P) : NA Plies/Laminates : NA
 Description : RIGID WOVEN ARAMID FIBER IN MATRIX
 (HELMET)

Date Rec'd. : 04/1/13
 Via : DHL
 Returned : DHL

SET-UP

Shot Spacing : PER MIL-STD-662F
 Witness Panel : 0.020", 2024-T3 ALUMINUM
 Obliquity : 0 deg.
 Backing Material : NA
 Conditioning : AMBIENT

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. : 2.0 in.

Range No. : 5
 Temp : 69 F
 BP : 30.03 in. Hg
 RH : 38%
 Barrel No./Gun : 17 GUN-1
 Gunner : ALLINGHAM
 Recorder : GORRERA

AMMUNITION

Projectile : .22 Fragment Simulator, 17 gr.
 Powder : RED POWER CHARGE

Lot No. : 17HPW-019

APPLICABLE STANDARDS OR PROCEDURES

- (1) : MIL-STD-662F
- (2) :
- (3) :

Shot No.	Powder/Seating	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Vel. Loss (ft/s)	V-Strike (ft/s)	Result	Include in V50	Footnotes
1	11	2262	2210	2262	2210	2210	102	2109	P		(a)
2	10	2150	2326	2154	2321	2323	107	2217	P	Y	(a)
3	9	2190	2283	2190	2283	2283	105	2178	P		(b)
4	8	2118	2361	2123	2355	2358	108	2250	C	Y	(b)
5	9	2222	2250	2222	2250	2250	104	2147	C	Y	(c)
6	10	2240	2232	2249	2223	2228	102	2125	P		(c)
7	9	2213	2259	2217	2255	2257	104	2154	P		(d)
8	8	2168	2306	2168	2306	2306	106	2200	P	Y	(d)
9	7	2159	2316	2163	2312	2314	106	2207	P	Y	(e)
10	6	2154	2321	2159	2316	2319	107	2212	C	Y	(e)

REMARKS :

Velocity loss computed using standard formulas.

FOOTNOTES :

- (a) SHOT IMPACTED ON CROWN OF HELMET.
- (b) SHOT IMPACTED ON FRONT OF HELMET.
- (c) SHOT IMPACTED ON LEFT SIDE OF HELMET.
- (d) SHOT IMPACTED ON BACK OF HELMET.
- (e) SHOT IMPACTED ON RIGHT SIDE OF HELMET.

V50 SUMMARY :

No. Points : 3 & 3
 V50 : 2206
 High Partial : 2217
 Low Complete : 2147
 Range of Results : 103
 Range of Mixed : 70