

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



13 August 2009
(HPWLI 11272-01A)

Hercules High Performance Materials Co., Limited
RM3305, 33/F, Jin Zhong Huan Commercial Building
Jin Tian Road, Futian
Shenzhen, G.D. 518048 China

Attention: David Lee

Gentlemen:

In accordance with your instructions, H.P. White Laboratory, Inc. conducted ballistic resistance testing of five armor samples (see enclosed data records for construction description) received 5 August 2009 via DHL.

Testing was conducted in accordance with your instructions, and the abbreviated provisions of NIJ-STD-0101.06, Level IIIA, using caliber .44 Magnum, 240 grain, JHP ammunition only. The test samples were mounted on an indoor range 17.3 feet from the muzzle of a test barrel to produce zero, thirty, and forty-five degree obliquity impacts. Velocity screens were positioned at 6.5 and 11.5 feet, which, in conjunction with elapsed time counters (chronographs), were used to compute projectile velocities 9.0 feet from the muzzle. Table I is a summary of the enclosed data records.

This report 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 are being returned via 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

A handwritten signature in black ink, appearing to read "Craig B. Dunn". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Craig B. Dunn

CBD/tc
Enclosures



H.P. White Laboratory, Inc.

Client: HERCULES HIGH PERFORMANCE MATERIALS CO, LT

BALLISTIC RESISTANCE TEST

Job No. : 11272-01

Test Date : 8/10/09

TEST PANEL

Manufacturer: HERCULES ARMOR
 Size: 15.5 x 15.5 in.
 Thicknesses: NA
 Avg. Thick.: NA
 Description: SEE REMARKS FOR MAKE-UP.
 MODEL: SAP-SB160UD-32

Sample No.: 08
 Weight: 1.85 lbs.
 Hardness: NA
 Plies/Laminates: 32

Date Rec'd.: 08/05/09
 Via: DHL
 Returned: DHL

SET-UP

Shot Spacing: PER NIJ-STD-0101.06 LEVEL II
 Witness Panel: CLAY
 Obliquity: 0, 30, & 45 deg.
 Backing Material: 5.5" CLAY/PLYWOOD
 Conditioning: SUBMERGED

Primary Vel. Screens: 6.5 ft., 11.5 ft.
 Primary Vel. Location: 9.0 ft. From Muzzle
 Residual Vel. Screens: NA
 Residual Vel. Location: NA
 Range to Target: 17.3 ft.
 Target to Wit.: 0.0 in.

Range No.: 9
 Temp.: 73 F
 BP: 29.74 in. Hg
 RH: 76%
 Barrel No./Gun: .357MAG/R-9
 Gunner: C. SUTTON
 Recorder: L. CHES

AMMUNITION

(1): .357 MAG JSP, 158 gr. Lot No.: REMINGTON 22847
 (2): Lot No.:
 (3): Lot No.:
 (4): Lot No.:

APPLICABLE STANDARDS OR PROCEDURES

- (1): PER NIJ-STD-0101.06 LEVEL II (ABBREVIATED)
- (2): PRE-TEST CLAY DROPS: 20mm, 18mm, 18mm, 19mm, 18mm
- (3): PRE-TEST CLAY TEMP: 96.9F

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	3441	1453	3431	1457	1455	None	DEF. 30mm
2	1	3544	1411	3543	1411	1411	None	DEF. 30mm
3	1	3526	1418	3526	1418	1418	None	DEF. 32mm
4	1	3457	1446	3446	1451	1449	None	(a)
5	1	3473	1440	3473	1440	1440	None	(b)
6	1	3479	1437	3479	1437	1437	None	

REMARKS:

MAKE-UP: LAYERS 1-32, 100% UHMW POLYETHYLENE.

FOOTNOTES:

- (a) SHOT IMPACTED ON A 30 DEGREE ANGLE.
- (b) SHOT IMPACTED ON A 45 DEGREE ANGLE.