

## H.P. WHITE LABORATORY, INC.

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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-38

Sample No. : 06  
 Weight : 2.15 lbs.  
 Hardness : NA  
 Plies/Laminates : 38

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

### SET-UP

Shot Spacing : PER NIJ-STD-0101.06 LEVEL IIIA  
 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  
 RP : 29.74 in. Hg  
 RH : 76%  
 Barrel No./Gun : .44MAG/R-9  
 Gunner : C. SUTTON  
 Recorder : L. CHES

### AMMUNITION

(1) : .44 MAG JHP, 240 gr. Lot No. : SPEER C19P  
 (2) : Lot No. :  
 (3) : Lot No. :  
 (4) : Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

- (1) : PER NIJ-STD-0101.06 LEVEL IIIA (ABBREVIATED)
- (2) : PRE-TEST CLAY DROPS: 21mm, 19mm, 19mm, 20mm, 19mm
- (3) : PRE-TEST CLAY TEMP: 100.9F

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	3509	1425	3509	1425	1425	None	DEF. 36mm
2	1	3504	1427	3504	1427	1427	None	DEF. 37mm
3	1	3530	1416	3528	1417	1417	None	DEF. 36mm
4	1	3519	1421	3530	1416	1419	None	(a)
5	1	3521	1420	3520	1420	1420	None	(b)
6	1	3504	1427	3503	1427	1427	None	

#### REMARKS :

MAKE-UP: LAYERS 1-38, 100% UHMW POLYETHYLENE.

#### FOOTNOTES :

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