

Saint-Etienne, on 26th of April 2010



CHAMBRE DE COMMERCE & D'INDUSTRIE de
ST-ETIENNE - MONTBRISON
BANC NATIONAL D'EPREUVE

CERTIFICATE OF COMPLIANCE

Reference: TEST REPORT n° 60/10/BNE on 26th
of April 2010

Laboratory: BANC NATIONAL D'EPREUVE DES ARMES ET
MUNITIONS DE SAINT-ETIENNE

Applicant: LUMIGLASS INDUSTRIES LLC
Al Quoz Industrial Area 4
PO. Box 113744
Dubai- UNITED ARAB EMIRATES

Tests date: 12th of April 2010

Reference samples: LU 010515

Ammunitions: 7.62 x 39 API BZ

RESULTS:

The samples supplied by LUMIGLASS INDUSTRIES LLC, submitted to test,
according to NATO AEP 55 vol.1 comply with the requirements of STANAG
4569 level II "X-PARTIAL".

The Director
P. RENAUDOT

5, Rue de Méons - Z.I. Molina Nord - 42004 ST-ETIENNE
☎ : 04-77-25-12-06 📠 : 04-77-37-70-46



Wiltshire Ballistic Services Ltd

The Ranges, Station Road, Devizes,
Wiltshire SN10 1BZ, England.

Tel: +44 (0)1380 721644 Fax: +44(0)1380 721421
<http://www.wiltshireballistics.co.uk>



Certificate No. PB 48474

Wiltshire RFD 228

Lumiglass Industries LLC
P.O.Box 113744
Dubai
United Arab Emirates.

Attn: Mr. John Farnham
Ref. LPO-LUM/0056/2006

19th September 2006

BALLISTIC TEST CERTIFICATE

This test was carried out to evaluate the ballistic resistance of the glass samples supplied. The product classified as BR6 NS.

Report/trial No	2771
Test date	11 th September 2006
Report prepared by	C B Warwick
Manufacturer of sample	Lumiglass Industries LLC.
Sample designation	Lumiglass
Sample size	500 x 500mm multilayer panels.

The Test

Calibre of test rounds	7.62NATO
Bullet make	Dynamit Nobel
Bullet weight & type	9.5g. Ball
Standard worked to	BS EN1063
Test gun	UB 1
Barrel	840
Muzzle to target distance	10m
Configuration of test range	7m, 8m and 10m
Bullet/projectile strike pattern	120mm triangle
Range temperature	17.5 C
Range humidity	86%

39.5

OK



Wiltshire Ballistic Services Ltd

The Ranges, Station Road, Devizes,
Wiltshire SN10 1BZ, England.

Tel: +44 (0)1380 721644 Fax: +44(0)1380 721421
<http://www.wiltshireballistics.co.uk>



Wiltshire RFD 228

Lumiglass Industries LLC
P.O.Box 113744
Dubai
United Arab Emirates.

Attn: Mr. John Farnham
Ref. LPO-LUM/0056/2006

19th September 2006

BALLISTIC TEST CERTIFICATE

This test was carried out to evaluate the ballistic resistance of the glass samples supplied. The product successfully defeated the threat but remained unclassified as the projectile nature is not included in the EN 1063 standard.

Report/trial No	2771d
Test date	11 th September 2006
Report prepared by	C B Warwick
Manufacturer of sample	Lumiglass Industries LLC.
Sample designation	Lumiglass
Sample size	500 x 500mm multilayer panels.

The Test

Calibre of test rounds	7.62x39mm
Bullet make	Czech Military
Bullet weight & type	PS Ball
Standard worked to	BS EN1523
Test gun	UB 1
Barrel	2064
Muzzle to target distance	10m
Configuration of test range	7m, 8m and 10m
Bullet/projectile strike pattern	120mm triangle
Range temperature	17.5 C
Range humidity	86%

H.P. WHITE LABORATORY, INC.

3114 Scarboro Road
Street, Maryland 21154-1822
Telephone: 4101 838-8550
Facsimile: 4101 838-2802
email: info@hpwhite.com
www.hpwhite.com



14 May 2008
(HPWLI 10889-01A)

Lami Glass Industries, LLC
Al Quoz Industrial Area, No. 4,
24 Rashid St.
Dubai U/AE

Attention: Mr. Abu Taha

Gentlemen:

In accordance with your letter, dated 28 April 2008, H.P. Laboratory, Inc. conducted ballistic resistance testing of one transparent armor sample received 7 May 2008 via Federal Express.

Testing was conducted in accordance with the provisions of NIJ-STD-0108.01, BALLISTIC RESISTANCE PROTECTIVE MATERIALS, dated September 1985, Level III, using caliber 7.62mm, M80, Ball ammunition. The test sample was rigidly mounted on an indoor range 50.0 feet from the muzzle of a test barrel to produce zero degree obliquity impacts. Photoelectric laminae screens were positioned at 6.5 and 9.5 feet which, in conjunction with elapsed time counters (chronographs), were used to determine projectile velocities 8.0 feet from the muzzle. Penetrations were determined by visual examination of a 0.020 inch thick sheet of 2024T3 aluminum positioned 6.0 inches behind, and parallel to, the test sample. Table I presents a summary of the attached data record.

TABLE I. SUMMARY OF RESULTS

Number	Test Sample		Caliber	Ballistic Threat			Results Penetrations
	Weight (lb)	Thickness (in) (a)		Shots	Velocity (fps) Maximum Minimum		
HPW-1	40.06	1.613	7.62, M80	5	2770	2733	0

(a) Average of four corner thicknesses.

Based on the data presented in Table I, the test sample submitted for testing SATISFIED the ballistic resistance requirements of NIJ-STD-0108.01, Level III. This conclusion is based on 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.

In accordance with your instructions, the test sample is being returned via Federal Express. 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.
Craig B. Dunn

CBD/vc
Enclosure



H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : LUMIGLASS

Job No. : 10889-01

Test Date : 5/14/08

TEST PANEL

Manufacturer : LUMIGLASS
Size : 18 X 18 in.
Thicknesses : 1.613, 1.612, 1.614, 1.612 in.
Avg. Thick. : 1.613 in.
Description : LAMINATED TRANSPARENCY

Sample No. : JPPW-1
Weight : 40.06 lbs.
Hardness : NA
Plex/Laminates : NA

Date Rec'd : 05/07/08
Via : Federal Express
Returned : Federal Express

SET-UP

Shot Spacing : PER CUSTOMER REQUEST
Witness Panel : 0.020", 2024-T3 ALUMINUM
Obliquity : 0 deg.
Backing Material : NA
Conditioning : AMBIENT

Primary Vel. Screen : 6.5 ft., 0.5 ft.
Primary Vel. Location : 8.0 ft. From Muzzle
Residual Vel. Screen : NA
Residual Vel. Location : NA
Range to Target : 50.0 ft.
Target to Vel. : 6.0 in.

Range No. : 3
Temp. : 80 F
BP : 30.06 in. Hg
RH : 56%
Barrel No./Gun : TEST BARREL
Gunner : WOOTENBONSALL
Recorder : BLACK

AMMUNITION

(1) : 7.62mm Ball, M80, 140 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) :
(3) :

Shot No.	Amm.	Time 1 (msec)	Velocity 1 (ft/s)	Time 2 (msec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	1092	2747	1094	2742	2745	None	
2	1	1088	2757	1090	2752	2755	None	
3	1	1097	2735	1098	2732	2733	None	
4	1	1087	2780	1089	2755	2757	None	
5	1	1082	2773	1084	2768	2770	None	

REMARKS :

FOOTNOTES :

H.P. WHITE LABORATORY, INC.

3114 Scarboro Road
Street, Maryland 21154-1822
Telephone: (410) 838-8550
Facsimile: (410) 838-2802
email: info@hpwhite.com
www.hpwhite.com



7 April 2009
(HPWLI 10889-03A)

Lumi Glass Industries, LLC
Al Quoz Industrial Area, No. 4,
24 Rashid St.
Dubai UAE

Attention: Mr. Abu Taha

Gentlemen:

In accordance with your instructions, H.P. Laboratory, Inc. conducted ballistic resistance testing of one transparent armor sample received 24 February 2009 via Federal Express.

Testing was conducted in accordance with the provisions of NIJ-STD-0108.01, BALLISTIC RESISTANCE PROTECTIVE MATERIALS, dated September 1985, Level IV, using caliber .30-06 Springfield, 166 grain, AP, M2 ammunition. The test sample was rigidly mounted on an indoor range 50.0 feet from the muzzle of a test barrel to produce zero degree obliquity impacts. Photoelectric lumiline screens were positioned at 6.5 and 9.5 feet which, in conjunction with elapsed time counters (chronographs), were used to determine projectile velocities 8.0 feet from the muzzle. Penetrations were determined by visual examination of a 0.020 inch thick sheet of 2024T3 aluminum positioned 6.0 inches behind, and parallel to, the test sample. Table I presents a summary of the attached data record.

TABLE I. SUMMARY OF RESULTS

Test Sample			Ballistic Threat			Results
Number	Weight (lb)	Thickness (in) (a)	Caliber	Shots	Velocity (fps) Maximum Minimum	Penetrations
HPW-3	24.20	2.160	.30 AP, M2	1	2861	0

(a) Average of four corner thicknesses.

Based on the data presented in Table I, the test sample submitted for testing SATISFIED the ballistic resistance requirements of NIJ-STD-0108.01, Level IV. This conclusion is based on 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.

In accordance with your instructions, the test sample is being returned via Federal Express. 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.

Craig B. Dunn

CBD/te
Enclosure



H.P. White Laboratory, Inc.
BALLISTIC RESISTANCE TEST

Client : LUMIGLASS

Job No. : 10889-03

Test Date : 3/27/09

TEST PANEL

Manufacturer : LUMIGLASS
 Size : 12 X 12 in.
 Thicknesses : 2.156, 2.168, 2.154, 2.161 in.
 Avg. Thick : 2.160 in.
 Description : 2.15" LAMINATED TRANSPARENCY

Sample No. : HPW-3
 Weight : 24.20 lbs.
 Hardness : NA
 Pile/Laminates : NA

Date Rec'd : 02-24-09
 Via : Federal Express
 Returned : Federal Express

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 Wt. : 6.0 in.

Range No. : 3
 Temp. : 60 F
 BP : 30.06 in. Hg
 RH : 56%
 Barrel No./Gun : TEST BARREL
 Gunner : CONTRERAS J.
 Recorder : BONSALL

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	1050	2857	1047	2865	2861	None	

REMARKS :

FOOTNOTES :