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21 February 2014
(HPWLI 000002318B)

Kloeckner Metals Corporation
2465 West Houston Ave.
Apache Junction, AZ 85220

Attention: Jim Beck

In accordance with your Purchase Order AZ1463JB, H.P. White Laboratory, Inc. conducted Ballistic Resistance Testing of four (4) steel armor samples received 20 February 2014 via United Parcel Service.

Testing was conducted in accordance with the provisions of ANSI/UL752-2005, STANDARD FOR BULLET RESISTING EQUIPMENT, Eleventh Edition, dated 9 September 2005, Level 7, Paragraphs 17.1.4 and 17.5.1, using caliber 5.56x45mm, 55 grain, M193 Ball ammunition. The test samples were mounted on an indoor range 15.0 feet from the muzzle of a test barrel to produce zero (0) degree obliquity impacts. Photoelectric infrared screens were positioned at 5.0 and 10.0 feet which, in conjunction with dual elapsed time counters (chronographs), were used to compute projectile velocities 7.5 feet from the muzzle. Penetrations were determined by visual examination of a 1/8 inch thick sheet of corrugated cardboard positioned 18.0 inches behind and parallel to the test samples. Table I provides a summary of the enclosed data records.

TABLE I.

SUMMARY OF RESULTS									
Test Sample			Ballistic Threat				Results		
Number	Weight (lb)	Thickness (in) (a)	Caliber	Shots (b)	Velocity (fps) Max. Min.		Penetrations	Spall	Muzzle Hole
N00883	15.59	0.388	5.56, M193	5	3196	3117	0	0	0
N00888	15.78	0.390	5.56, M193	5	3252	3162	0	0	0
N01113	15.33	0.380	5.56, M193	5	3233	3149	0	0	0
N01121	15.44	0.382	5.56, M193	5	3200	3147	0	0	0

(a) Average of four corner thicknesses.
(b) Four impacts on 4.5 inch square, one impact in center.

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.

The test sample 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.

Kevin Black

KB/sz
Enclosure



H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : 451:KLOECKNER METALS

Job No. : 000002318 Test Date : 2/21/14

TEST PANEL

Manufacturer : KLOECKNER
 Size : 12 X 12 in.
 Thicknesses : 0.379, 0.379, 0.380, 0.381 in.
 Avg. Thick : 0.380 in.
 Description : 3/8" AR500 PLATE
 HEAT# N01113

Sample No. : N01113
 Weight : 15.33 lbs.
 Hardness : NA
 Plies/Laminates :

Date Rec'd. : 2/20/14
 Via : UPS
 Returned : N/A

SET-UP

Shot Spacing : 4 ON 4.5" SQUARE, 1 IN CENTER
 Witness Panel : 1/8" CORRUGATED CARDBOARD
 Obliquity : 0 deg.
 Backing Material : NA
 Conditioning : Ambient (+72 F)

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. : 18.0 in.

Range No. : 3
 Temp. : 66 F
 BP : 29.89 in. Hg
 RH : 18%
 Barrel No./Gun : R3/.223
 Gunner : A. CONTRERAS
 Recorder : BONSALL

AMMUNITION

(1) : 5.56mm Ball, M193, 55 gr. Lot No. : UNKNOWN
 (2) : Lot No. :
 (3) : Lot No. :
 (4) : Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

- (1) : Bullet Resistant Equipment, ANSI/UL 752-2005
- (2) : Metallic, Protection Level 7 (5.56mm M193, 3080-3388 fps.)
- (3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Vel. Loss (ft/s)	Strike Vel. (ft/s)	Penetration	Footnotes
1	1	1557	3211	1560	3205	3208	10	3199	None	
2	1	1583	3159	1583	3159	3159	10	3149	None	
3	1	1542	3243	1542	3243	3243	10	3233	None	
4	1	1556	3213	1559	3207	3210	10	3201	None	
5	1	1574	3177	1574	3177	3177	10	3167	None	

<u>REMARKS :</u>	<u>FOOTNOTES :</u>