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3 March 2014
(HPWLI 000002360A)

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

Attention: Jim Beck

In accordance with your instructions and Purchase Order AZ1464JB, H.P. White Laboratory, Inc. conducted Ballistic Resistance Testing of five (5) steel armor samples received 28 February 2014 via United Parcel Service.

Testing was conducted in accordance with the provisions of NIJ-STD-0108.01, BALLISTIC RESISTANT PROTECTIVE MATERIALS, dated September 1985, Level III, using caliber 7.62x51mm, 149 grain, M80, Ball ammunition. The test samples were rigidly mounted on an indoor range 50.0 feet from the muzzle of a test barrel to produce zero (0) degree obliquity impacts. Photoelectric infrared screens were positioned at 6.5 and 9.5 feet which, in conjunction with dual elapsed time counters (chronographs), were used to compute projectile velocities 8.0 feet forward of the muzzle. Penetrations were determined by visual examination of a 0.020 inch thick aluminum alloy 2024T3 witness panel positioned 6.0 inches behind, and parallel to, the test samples. Table I presents a summary of the enclosed data records.

TABLE I. SUMMARY OF RESULTS

Test Sample			Ballistic Threat					Results
Heat Number	Thickness (a)	Weight (lbs.)	Caliber	Obliquity (degrees)	Shots	Velocity (fps) Max	Min	Penetrations
N00881	0.260	10.53	7.62, M80	0	5	2770	2735	0
N00885	0.263	10.60	7.62, M80	0	5	2762	2737	0
N00889	0.264	10.80	7.62, M80	0	5	2775	2755	0
N00890	0.261	10.55	7.62, M80	0	5	2752	2729	0
N01120	0.260	10.51	7.62, M80	0	5	2784	2749	0

(a) Based on an average of four corner thicknesses.

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 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.

Sincerely,

H.P. White Laboratory, Inc.

Kevin Black

KB/sz
Enclosures

H.P. White Laboratory, Inc.

BALLISTIC RESISTANCE TEST

Client : 451:KLOECKNER METALS

Job No. : 000002360 Test Date : 3/3/14

TEST PANEL

Manufacturer : KLOECKNER
Size : 12 X 12 in.
Thicknesses : 0.260, 0.260, 0.260, 0.258 in.
Avg. Thick. : 0.260 in.
Description : 0.260" AR500 ARMOR PLATE
HEAT# N01120

Sample No. : N01120
Weight : 10.51 lbs.
Hardness : NA
Plies/Laminates :

Date Rec'd. : 2/28/14
Via : UPS
Returned : N/A

SET-UP

Shot Spacing : 4 ON 8" SQUARE - 1 IN CENTER
Witness Panel : 0.020", 2024-T3 ALUMINUM
Obliquity : 0 deg.
Backing Material : NA
Conditioning : Ambient (+72 F)

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 Wit. : 6.0 in.

Range No. : 3
Temp. : 61 F
BP : 30.17 in. Hg
RH : 32%
Barrel No./Gun : R3/.308
Gunner : CHES
Recorder : BONSALL

AMMUNITION

(1) : 7.62mm Ball, M80, 149 gr. Lot No. : UNKNOWN
(2) : Lot No. :
(3) : Lot No. :
(4) : Lot No. :

APPLICABLE STANDARDS OR PROCEDURES

(1) : NIJ-STD-0108.01
(2) : LEVEL III
(3) : REQUIRED VELOCITY: 2700-2800 FPS.

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	1091	2750	1092	2747	2749	None	
2	1	1086	2762	1088	2757	2760	None	
3	1	1091	2750	1092	2747	2749	None	
4	1	1076	2788	1079	2780	2784	None	
5	1	1087	2760	1088	2757	2759	None	

REMARKS :

FOOTNOTES :

Filename : 000002360 (N01120) 451 KLOECKNER METALS.Pen