

# BALLISTIC RESISTANCE TEST

## Chesapeake Testing

121 Bata Boulevard, Suite F  
Belcamp, MD 21017

Client: Kyocera Industrial Ceramics Corp.  
Job No.: CD01-2009-R02BRT-12970  
Test Date: 4/1/2009

**Test Panel** Description: Liba Panel plus 7.3 mm HH steel

Manufacturer: Kyocera Industrial Ceramics Corp. Sample No.: CDS-5 (20 mm)

Size: See remarks	Heat No.: NA	Date Received: 4/1/2009
Thickness: See remarks	Weight: See remarks	Via: Hand Carried
Avg. Thick: NA	Hardness: NA	Returned: Hand Carried
	Plies/Laminates: NA	

## Setup

Shot Spacing: Per Customer Request	Primary Vel. Screens: 15 ft, 35 ft	Range No.: Range 2
Witness Panel: 0.02 in 2024-T3 Al	Primary Vel. Location: 25 ft	Temp: 72 °F
Obliquity: 0°	Range to Target: 45 ft	BP: 30.09 inHg
Backing Material: NA	Target to Witness: 6 in	RH: 36%
Condition: Ambient		Barrel/Gun: Test Barrels
		Gunner: Nate Lucky
		Recorder: Carty Ingram

## Ammunition

Projectile	Lot No.	Powder
(1) : 20-mm, 830-grain FSP	Lot No. : PTI 062208	H4831
(2) : 14.5-mm, 975-grain B-32	Lot No. : New Lenox ARL-02-C-0127	H4831

## Applicable Standards or Procedures

(1) Per customer request

Shot No.	Ammo	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Striking Vel. (ft/s)	Penetration	Footnotes
1	1	5472	3655	5475	3653	3654	3548	None	
2	1	5490	3643	5494	3640	3642	3537	None	(a)
3	1	5495	3640	5497	3638	3639	3534	None	(a)
4	1	5431	3683	5434	3681	3682	3576	None	(b)
5	1	5477	3652	5481	3649	3650	3544	None	(c)
6	1	5479	3650	5483	3648	3649	3543	None	(c)
7	1	5827	3432	5831	3430	3431	3331	None	(d)
8	2	6643	3011	6644	3010	3010	3002	None	
9	2	6628	3018	6631	3016	3017	3009	None	
10	2	6740	2967	6742	2966	2967	2959	None	

### Remarks:

Requested Velocity: 3500 ft/s  
 Liba- Thickness: 1.010 in., 1.008 in., 1.017 in., 1.008 in.;  
 Weight: 54.86 lbs Size: 23.50 in x 23.50 in  
 7.3 mm HH: 0.290 in., 0.288 in., 0.287 in., 0.286 in.;  
 Weight: 31.15 lbs Size: 19.50 in x 19.50 in  
 Test for BAE Systems

### Footnotes:

(a) Impacted 5 inches from previous impact  
 (b) Impacted between shot 1 and shot 2 (3 inch separation between shots)  
 (c) Impacted between shot 2 and shot 3 (3 inch separation between shots)  
 (d) Impacted between shot 4 and shot 6 (1.5 inch separation between shots)

### Warning

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