

Element U.S. Space & Defense Test Report for Ballistic Resistance Testing

Project No.: PH00013965 Tested: 31 December 2024 P.O. No.: Signed Quote OH23335

Prepared For

Ace Link Industrial Inc. | 3 Chrysler Street | Irvine, CA 96218
Attention: Justin Mills

Prepared By

Element U.S. Space & Defense | 4603B Compass Point Road | Belcamp, MD 21017 | (410) 297-8154 |
www.elementdefense.com



Kathleen Zurner
Technical Writer



Matt Rixham
Project Manager

Further dissemination only as directed by Ace Link Industrial Inc., March 2025.

This report and the information contained herein represent the results of testing articles/products identified and selected by the client. The tests were performed to specifications and/or procedures approved by the client. Element U.S. Space & Defense makes no representations expressed or implied that such testing fully demonstrates efficiency, performance, reliability, or any other characteristic of the articles being tested, or similar products. This report should not be relied upon as an endorsement or certification by Element U.S. Space & Defense of the equipment tested, nor does it represent any statement whatsoever as to its merchantability or fitness of the test article or similar products for a particular purpose. This document shall not be reproduced except in full without written approval from Element U.S. Space & Defense.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et q.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

This information may be subject to the Export Administration Regulations (EAR) pursuant to 15 C.F.R. Parts 730-774. Transfer of this data by any means to a non-U.S. Person, whether in the United States or abroad without the proper U.S. government authorization is strictly prohibited. Violations of the EAR may be subject to both criminal and administrative penalties under the Export Control Reform Act of 2018 (50 U.S.C. §§ 4801-4852).

Element U.S. Space & Defense is an independent testing facility and has no affiliation with Ace Link Industrial Inc.

Revision History

Rev.	Description	Issue Date
0	Initial Release	March 2025

BALLISTIC RESISTANCE TEST

Element U.S. Space & Defense

4603B Compass Point Road
Belcamp, MD 21017

Client: Ace Link Industrial Inc.

Project No.: PH00013965-1

Test Date: 12/31/2024

Page 1 of 1

Test Panel Description: Soft armor sample.

Manufacturer: Ace Link Industrial Inc.

Sample No.: Panel A-1 Front

Size: C5
Avg. Thickness: N/A
Thicknesses: N/A

Weight: 4.000 lbs
Plies/Laminates: N/A

Date Received: 12/19/2024
Received Via: UPS Ground
Returned Via: UPS Ground

Setup

Shot Spacing: NIJ-STD-0101.07
Level HG2
Witness Panel: Clay
Backing Material: 5.5-in clay/plywood
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,
9.666, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 0.000

Range No.: Range 3
Temp: 65 °F
BP: 30 inHg
RH: 43 %
Barrel/Gun: WC020651
Gunner: Timothy Mackie
Recorder: Keivin Guzman

Ammunition

Projectile	Lot No.	Manufacturer	Powder
(1) .44 Mag, 240-grain SJHP	J28W	Speer	Accurate No. 5

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 10:40 AM; Block No. WC074180; Temp: 95.3 °F; Drop Depths: 20.8 mm, 17.1 mm, 20.7 mm, 18.7 mm, 19.6 mm

(1) NIJ-STD-0101.07 Level HG2 (Modified)

(2) Customer Request

Shot No.	Ammo	Powder/ Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	14.3	240	3507	1426	3033	1429	1427	None	32.1	0	(a)
2	1	14.3	240	3504	1427	3033	1429	1428	None	31.1	0	
3	1	14.3	240	3517	1422	3041	1425	1423	None	30.7	0	
4	1	14.3	240	3524	1419	3050	1421	1420	None	25.1	45	
5	1	14.3	240	3441	1453	2977	1455	1454	None	28.5	30	
6	1	14.3	240	3517	1422	3041	1425	1423	None	13.4	45	
7	1	14.3	240	3475	1439	3006	1441	1440	None	17.3	0	

Remarks:

Required Velocity: 1400 - 1460 ft/s.

Projectile Yaw Check: 0° Yaw on All Impacts.

Footnotes:

(a) Neckline Shot

ATTACHMENT A CALIBRATION DATA

WC060267	101	YIS/Cowden Group, I	Chrono USB	Chronograph 1	Range 3	6/5/2024	6/5/2025
WC067005	106	YIS/Cowden Group, I	Chrono USB	Chronograph 2	Range 3	6/5/2024	6/5/2025
WC079246	A21106926	RCBS	1500	Powder Scale	Range 3	11/12/2024	11/12/2025
WC060370	26059102	Sartorius	Combics	Floor scale	Range 3	1/17/2025	1/17/2026
WC064334	906	Starrett	530-100	100 ft Tape Measure	Range 3	5/23/2024	5/23/2025
WC074990	WC074990	Dewalt	DWHT36107	25 ft Tape Measure	Range 3	10/12/2023	10/12/2025
EL00004012	EL00004012	Craftsman	CMHT37525	25 ft Tape Measure	Range 3	9/11/2023	9/11/2025
WC067391	192291544	Control Company	4040	Temp and Humidity	Range 3	8/20/2024	8/20/2025
EL00004196	230371969	Control Company	4378	Thermometer	Range 3	10/7/2024	10/7/2026
WC060650	570001	SPI	91-316-0	Angle Block	Range 3	11/13/2023	11/13/2025
EL00004122	23/240027	Starrett	3753A-6/150	DG Tool	Range 3	5/23/2024	5/23/2025
WC079400	18/110094	Starrett	3753A-6/150	BFD Bridge	Range 3	9/12/2024	9/12/2025

Order Information		Sample Information			
Customer Name	Ace Link	ETL Sample ID	ETL-TSI-ACL-25-282-0102	Size (in)	N/A
Customer ID	ACL	Sample Type	Soft Armor	Shape/Curvature	FLAT
Quote #	VERBAL	Model Number	A15-3A	Feature Details	N/A
Customer PO #	VERBAL	Description	A15-3A V50	Weight (lbs)	2.782
Test Order #	ETL-TO-ACL-25-282	Lot Number	N/A	Thickness (in)	0.442
Test Plan #	ETL-TP-ACL-25-282-0102	Serial Number	N/A	Construction	N/A

Ballistic Evaluation								Test Parameters			
Range Configuration								Test Type	Reference Spec.	No. Shots	Shot Pattern
Temperature	Relative Humidity	Barrel End to Target	Target to Velocity	Target to Witness	Vel Set 1 Dist	Vel Set 1 Dist	Range #	Ballistic Limit - V50	Customer	12	ETL STANDARD
(°F)	(%)	(ft)	(ft)	(in)	(ft)	(ft)		Threat	Velocity (ft/s)	Velocity Tolerance (ft/s)	
70.5	42.5	15	8.21	6	5.33	4.33	1	17gr FSP	1969	±500	
Equipment/Ammunition Details								Backing		Witness Panel	
Receiver	Barrel	Threat	Propellant	Propellant Lot	Casing			Air		Cardboard, 0.125" Thk	
HSP #1187	ETL-BA-22-016	17gr FSP	Accurate #2	50711242026	308 Winchester						

Clay Validation								
	Drop 1 (mm)	Drop 2 (mm)	Drop 3 (mm)	Drop 4 (mm)	Drop 5 (mm)	Avg. (mm)	Temp. (°F)	Box # Drop Time
Pre-Test:								
Post-Test:								

Ballistic Evaluation Data												
Shot #	Proj. Wt (gr)	Pwdr Wt (gr)	Time 1 (µs)	Time 2 (µs)	V1 (ft/s)	V2 (ft/s)	Vavg (ft/s)	Obliq. (°)	Result	BFD (mm)	Shot Location	Notes
1	17.0	7.5	2778	2251	1918.65	1923.59	1921.12	0	PP	N/A	TL	
2	17.0	7.8	2569	2080	2074.74	2081.73	2078.24	0	CP	N/A	ML	
3	17.0	7.5	2813	2290	1894.77	1890.83	1892.80	0	PP	N/A	ML	
4	17.0	7.8	2745	2222	1941.71	1948.69	1945.20	0	PP	N/A	BL	
5	17.0	8.0	2555	2067	2086.11	2094.82	2090.47	0	PP	N/A	TR	
6	17.0	8.2	2511	2031	2122.66	2131.95	2127.31	0	CP	N/A	MR	
7	17.0	8.0	2633	2130	2024.31	2032.86	2028.59	0	PP	N/A	MR	
8	17.0	8.2	2548	2066	2091.84	2095.84	2093.84	0	PP	N/A	BR	
9	17.0	8.4	2485	2015	2144.87	2148.88	2146.88	0	CP	N/A	TC	
10	17.0	8.2	2566	2079	2077.16	2082.73	2079.95	0	PP	N/A	C	
11	17.0	8.4	2474	2003	2154.41	2161.76	2158.09	0	PP	N/A	BC	
12	17.0	8.6	2445	1980	2179.96	2186.87	2183.42	0	CP	N/A	BC	

Test Remarks					Acronyms		
V50 (REGRESSION): 2120.9 ft/s V05 (REGRESSION): 2011.7 ft/s V50 (MIL-STD-662F, 4X4): 2119.77 ft/s					Evaluation	Shot Locations	Units
					SIP - Stop in Plate	T - Top	F - Farenheit
					SIV - Stop in Vest	B - Bottom	% - Percent
					PP - Partial Penetration	M - Middle	inHg - Inches of Mercury
					CP - Complete Penetration	C - Center	in - Inches
					EV - Excessive Velocity	L - Left	ft - Feet
					IV - Insufficient Velocity	R - Right	mm - Millimeter
					UH - Unfair Hit	CR - Crown	° - Degrees
					STEI - Shot-to-Edge Distance Incorrect	VP - Viewport	µs - Microseconds
					STSI - Shot-to-Shot Distance Incorrect		ft/s - Feet per Second
					ICW - In Conjunction With		

Test Report History				
Report Revision	Operator 1	Operator 2	Approver	Notes
A	MDenhart	ILyon	AGibson	Initial Release

The data and information contained within this report is the sole property of Ace Link and may only be distributed as directed and approved by them directly.

END OF REPORT