

NATIONAL TECHNICAL SYSTEMS

V50 BALLISTIC LIMIT TEST

Date Received: 15/10/2020
Via: DHL
Returned Via: DHL

Record No.: SBO20010-14
Test Date: 22/10/2020
Customer: Sioen Ballistics

Test Conditions

Range Temp.: 21.7 °C
Range Humidity: 43 %

Sample Tested

Manufacturer: Sioen Ballistics
Model No.: #2032
Size: 35cm x 40cm
Style / Type: Soft Armour Shootpack
Sample No.: 1
Weight (kg): 0.710

Threat

Projectile: Fragment Simulating Projectile
Type: Type 1 (30 +/- 2 HRC / Non-Tumbled)
Weight: 1.1 g (17 gr.)
Powder: Bullseye
Barrel (cm): 60.96
Obliquity: 0°
Yaw: ≤ 5°

Test Standard

STANAG AEP-2920 Edition 3,
NATO STANDARD AEP-2920
Edition A, Version 1
22 June 2015

Range 4

Muzzle to Screen 1: 1.33 m
Screen 1 - 4: 1.52 m
Screen 2 - 3: 1.24 m
Screen 4 - Target: 2.06 m
Midpoint to Target: 2.83 m

Witness

Witness: 2024-T3 Aluminum
Target to Witness: 0.15 cm

Target: Soft Armor (IAW Section 3.3.3)
Class: G5 (IAW Annex C.)
Conditioning: Dry (Ambient)

Shot No.	Powder Charge (gr.)	CHRONOGRAPHS 1 - 4		CHRONOGRAPHS 2 - 3		AVERAGE VELOCITY m/s	LOSS VELOCITY m/s	STRIKING VELOCITY m/s	TEST RESULTS		
		TIME	VELOCITY	TIME	VELOCITY				Shot Location	Shot Included	Complete Partial
		sx-5	m/s	sx-5	m/s						
1	3.2	277.8	548.6	226.5	549.7	549.1	25.5	523.6	1	N	P
2	3.4	265.3	574.4	216.0	576.4	575.4	26.9	548.5	2	Y	P
3	3.7	253.0	602.4	206.1	604.1	603.2	28.4	574.8	3	Y	P
4	4.0	245.3	621.3	199.8	623.1	622.2	29.3	592.9	4	N	C
5	3.8	248.6	613.0	202.6	614.5	613.8	28.9	584.9	5	Y	C
6	3.6	252.2	604.3	205.3	606.4	605.3	28.5	576.9	6	Y	C
7	3.4	266.1	572.7	216.7	574.5	573.6	26.8	546.8	7	Y	C
8	3.2	276.0	552.2	224.7	554.1	553.1	25.8	527.4	8	N	P
9	3.3	263.6	578.1	214.6	580.1	579.1	27.1	552.0	9	Y	P

This test was performed in accordance with the specification requirements and the results properly reflect the ballistic performance of the listed sample.

TEST REMARKS / NOTES:

- *Sample tested as received, in cover only, no outer carrier provided
- *Sample secured using clamping system for soft armour component IAW Annex D., Figure D.1 (air/hydraulic frame and clamp fixture).

Projectile Used (IAW Annex C to AEP-2920, Table C.2 & Figure C.2.1):

.22 Caliber, 1.1g +/- 0.03g (17 gr.) Chisel Nose Fragment Simulating Projectile (FSP)
as described in MIL-DTL-46593 launched without a sabot (30 +/- 2 HRC / Non-Tumbled)

Customer Requested Starting Velocity: **530.0** m/s

*Customer Estimated V50 Velocity: **500.0** m/s

V50 Calculation (IAW Section 5.4.1):

- V50 based on (3) partial and (3) complete penetrations with a range of results ≤ 40 m/s

Shot Pattern / Shot Spacing (IAW Section 5.8.1 and Annex G., Figure G.1):

- Shot-to-component edge ≥ 25mm
- Shot-to-component corner ≥ 50mm
- Shot-to-frame edge ≥ 25mm
- Shot-to-shot ≥ 65mm (or 10x caliber)

Zerger / Montgomery