ARMOR TESTING BOOKLET

HG2 & IIIA+ Soft Armor
IV ICW Rifle Plates

SAFE LIFE DEFENSE

OBL
OREGON BALLISTIC LABORATORIES

NIJ Certification is a voluntary testing process for Body Armor offered by the National Institute of Justice. All of our soft armor panels are on the NIJ Compliant Product List, which means they have been tested for consistency in performance for a 5 year lifespan. After 5 years, the NIJ recommends you replace your soft armor, due to their testing criteria.

OREGON BALLISTIC LABORATORIES

These testing results are provided by an independent NIJ approved lab, Oregon Ballistics Laboratory. Our Body Armor is tested regularly and the results in this booklet have been randomly selected and reproduced here for your review.

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HG2 Soft Armor Ballistic Resistance Testing Summary:

The samples were tested in accordance with NIJ-STD-0101.06 HG2 (abbreviated) (modified) in an indoor range with the muzzle of the test barrel mounted 15 feet away from the target and positioned to produce 0-degree obliquity impacts. Four infrared light screens, in conjunction with time-based frequency counters, were positioned such that bullet velocity was measured 8.25 feet from the target. Penetrations were determined by examination of a 5.5-inch clay block mounted behind the test sample. Results for all testing performed for this purpose are summarized in the following table.

Result From .357 SIG 125gr. FMJ

Test Sample			Ballistic Threat				Results			
OBL NO.:	S/N.:	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD		Pass/Fail
					Min.	Max.		Min.	Max.	
18640	N/A	2.77	.357 SIG 125gr. FMJ	6	1478	1498	0	24.73	30.62	PASS

Testing Data From .357 SIG 125gr. FMJ

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 µs (10^{-6})	TIME 2 µs (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	125.5	6.8	3365	3362	1486	1487	1487	P	0°	24.73	
2	125.4	6.8	3377	3364	1481	1486	1484	P	0°	24.81	
3	124.3	6.8	3341	3338	1497	1498	1498	P	0°	30.62	
4	124.1	6.7	3359	3364	1489	1486	1488	P	30°		
5	124.6	6.7	3386	3382	1477	1478	1478	P	45°		
6	124.8	6.7	3380	3380	1479	1479	1479	P	0°		

REMARKS:
P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:
Test sample satisfied the ballistic requirements given.

FOOTNOTES:
Sample was not subjected to Armor Submersion per section 7.8.2

HG2

Result From .44 MAG 240gr. SJHP

Test Sample			Ballistic Threat				Results			
OBL NO.:	S/N.:	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD		Pass/Fail
					Min.	Max.		Min.	Max.	
18641	N/A	3.90	.44 MAG 240gr. SJHP	6	1432	1449	0	33.14	42.42	PASS

Testing Data from .44 MAG 240gr. SJHP

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 µs (10^{-6})	TIME 2 µs (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	239.7	11.6	3474	3470	1439	1441	1440	P	0°	35.64	
2	240.1	11.6	3472	3468	1440	1442	1441	P	0°	42.42	
3	239.7	11.6	3493	3490	1431	1433	1432	P	0°	33.14	
4	239.3	11.6	3489	3486	1433	1434	1434	P	30°		
5	239.6	11.6	3484	3481	1435	1436	1436	P	45°		
6	239.5	11.6	3453	3450	1448	1449	1449	P	0°		

REMARKS:
P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:
Test sample satisfied the ballistic requirements given.

FOOTNOTES:
Sample was not subjected to Armor Submersion per section 7.8.2

Level IIIA+ Soft Armor Ballistic Resistance Testing Summary:

The samples were tested in accordance with NIJ-STD-0101.06 Level IIIA (abbreviated) (modified) in an indoor range with the muzzle of the test barrel mounted 15 feet away from the target and positioned to produce 0-degree obliquity impacts. Four infrared light screens, in conjunction with time-based frequency counters, were positioned such that bullet velocity was measured 8.25 feet from the target. Penetrations were determined by examination of a 5.5-inch clay block mounted behind the test sample. Results for all testing performed for this purpose are summarized in the following table.

Result From 9mm 50gr. Liberty Civil Defense

Test Sample			Ballistic Threat				Results			
OBL NO.:	Model	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD		Pass/Fail
					Min.	Max.		Min.	Max.	
18119	PLUS	1.87	9mm 50gr. Liberty Civil Defense	6	2037	2067	0	17.38	18.78	PASS

Testing Data From 9mm 50gr. Liberty Civil Defense

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 µs (10^{-6})	TIME 2 µs (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	50.0		2421	2420	2065	2066	2066	P	0°	17.68	
2	50.0		2455	2454	2037	2037	2037	P	0°	18.78	
3	50.0		2420	2419	2066	2067	2067	P	0°	17.38	
4	50.0		2438	2438	2051	2051	2051	P	30°		
5	50.0		2438	2437	2051	2052	2052	P	45°		
6	50.0		2442	2442	2048	2048	2048	P	0°		

REMARKS:
P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:
Test sample satisfied the ballistic requirements given.

FOOTNOTES:

IIIA+

Result From .357 SIG FMJ

Test Sample			Ballistic Threat				Results			
OBL NO.:	Model	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD		Pass/Fail
					Min.	Max.		Min.	Max.	
18120	PLUS	1.85	.357 SIG FMJ	6	1397	1423	0	20.68	21.05	PASS

Testing Data From .357 SIG FMJ

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 µs (10^{-6})	TIME 2 µs (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	125.8	6.2	3576	3572	1398	1400	1399	P	0°	20.83	
2	125.9	6.2	3542	3549	1412	1409	1411	P	0°	20.68	
3	124.7	6.2	3548	3544	1409	1411	1410	P	0°	21.05	
4	125.1	6.2	3521	3506	1420	1426	1423	P	30°		
5	124.9	6.2	3550	3550	1408	1408	1408	P	45°		
6	124.5	6.2	3577	3585	1398	1395	1397	P	0°		

REMARKS:
P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:
Test sample satisfied the ballistic requirements given.

FOOTNOTES:

Result From .44 Mag SJHP

Test Sample			Ballistic Threat				Results			
OBL NO.:	Model	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD		Pass/Fail
					Min.	Max.		Min.	Max.	
18122	PLUS	1.86	.44 Mag SJHP	6	1344	1355	0	30.30	33.54	PASS

Testing Data From .44 Mag SJHP

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 µs (10^{-6})	TIME 2 µs (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	240.1	10.4	3697	3694	1352	1354	1353	P	0°	30.58	
2	239.7	10.4	3708	3705	1348	1350	1349	P	0°	30.30	
3	240.3	10.4	3699	3695	1352	1353	1353	P	0°	33.54	
4	240.1	10.4	3711	3708	1347	1348	1348	P	30°		
5	240.1	10.4	3722	3719	1343	1344	1344	P	45°		
6	240.0	10.4	3694	3691	1354	1355	1355	P	0°		

REMARKS:
P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:
Test sample satisfied the ballistic requirements given.

FOOTNOTES:

IIIA+

Level IIIA+ Stab Resistance Testing Summary:

The sample was tested in accordance with NIJ-0115.00 in an indoor lab. Two laser break screens, in conjunction with one time-based frequency counter, were used to measure impact velocity and calculate strike energy. Penetrations were determined by examination of NIJ foam and polyart paper.

Testing Data

IMPACT NO.	THREAT	TIP SHARPNESS (HRC)	LEVEL	ENERGY LEVEL	DROP MASS (kg.)	ANGLE OF INCIDENCE (DEGREES)	DROP HEIGHT (M)	TIME ms (10-3)	IMPACT VELOCITY (M/S)	STRIKE ENERGY (J)	DEPTH OF PENETRATION (MM)	NOTES
1	Spike	-64	1	E1	1.910	0°	1.304	7.983	5.09	24.75	-	
2	Spike	-64	1	E2	1.910	0°	2.034	6.605	6.15	36.15	-	
3	Spike	-64	1	E1	1.910	45°	1.294	7.804	5.21	25.90	-	

REMARKS:
Spike weight= 1.910kg
Blade weight= 1.920kg

TEST RESULTS:
Test sample satisfied the requirements given.

RIFLE PLATE

Level IV ICW Rifle Plate Ballistic Resistance Testing Summary:

The sample was tested in accordance with NIJ-STD-0101.06 Level IV ICW (abbreviated) (modified) in an indoor range with the muzzle of the test barrel mounted 50 feet away from the target and positioned to produce 0-degree obliquity impacts. Four infrared light screens, in conjunction with time-based frequency counters, were positioned such that bullet velocity was measured 8.25 feet from the target. Penetrations were determined by examination of a 5.5-inch clay block mounted behind the test sample. Results for all testing performed for this purpose are summarized in the following table.

Result From .30 cal M2AP

Test Sample			Ballistic Threat				Results			
OBL NO.:	S/N.:	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD (mm)		Pass/Fail
					Min.	Max.		Min.	Max.	
19612	N/A	9.82	.30 cal M2AP	6	2859	2895	0	27.63	31.95	PASS

Testing Data From .30 cal M2AP

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 µs (10^{-6})	TIME 2 µs (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	161.1	44.5	1736	1732	2880	2887	2884	P	0°	31.95	Plate Complete / System Partial
2	161.5	44.5	1740	1737	2874	2879	2877	P	0°	27.63	Plate Complete / System Partial
3	162.2	44.5	1750	1748	2857	2860	2859	P	0°		Plate Partial / System Partial
4	162.0	44.6	1730	1725	2890	2899	2895	P	0°		Plate Partial / System Partial
5	161.4	44.6	1731	1727	2889	2895	2892	P	0°		Plate Partial / System Partial
6	161.6	44.6	1746	1742	2864	2870	2867	P	0°		Plate Partial / System Partial

REMARKS:
P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:
Test sample satisfied the ballistic requirements given.

FOOTNOTES:
Sample was not subjected to Armor Drop Test per section 6.2.3.4
Sample was not subjected to Armor Submersion per section 7.8.2

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