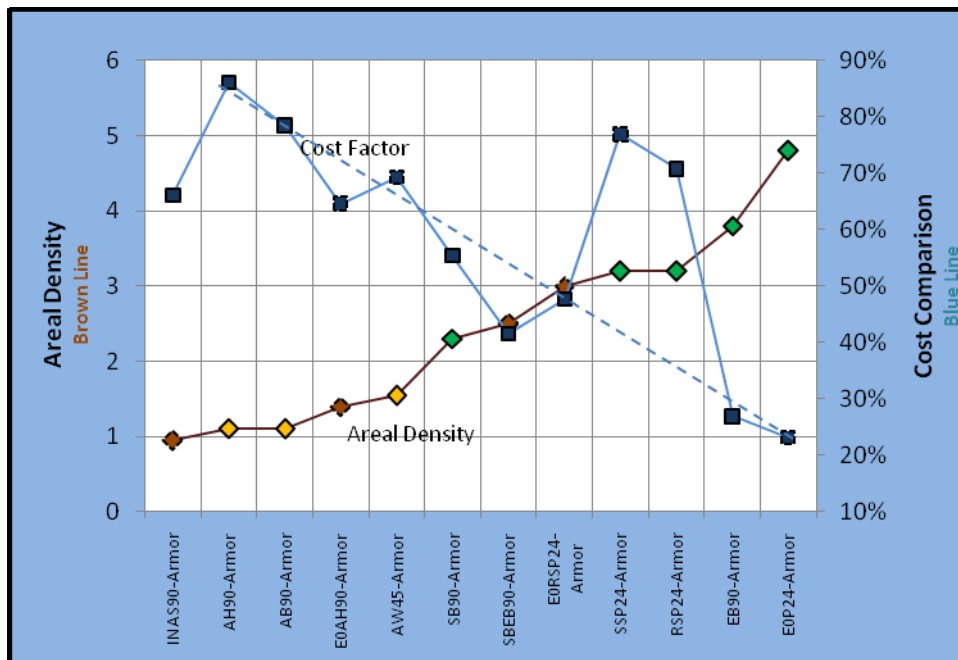


## Aramid Products Specification Sheet

LCOA’s family of Aramid products offers a variety of solutions with different performance, weight and cost characteristics along with several available surface finishes depending on use and application. These products utilize high strength Aramid fibers to absorb the energy from a ballistic threat and catch the projectile within the laminate. All of the Aramid options utilize the highest quality materials available in an effort to provide the best performance possible with weight and cost options to meet varying customer requirements. As compared with other options of fiber alternatives, the Aramid products offer the best cost/performance characteristics (see chart below).



**Aramid Solution Performance against other Materials  
and Hybrids at NIJ Level IIIA protection**

Products include 0/90 cross-ply Uni-directional thermoplastic options for higher performance as well as more cost effective woven fabric solutions in thermoplastic and phenolic thermoset resin matrices. The phenolic thermoset resin matrices offer significant fire and smoke characteristics for interior applications.

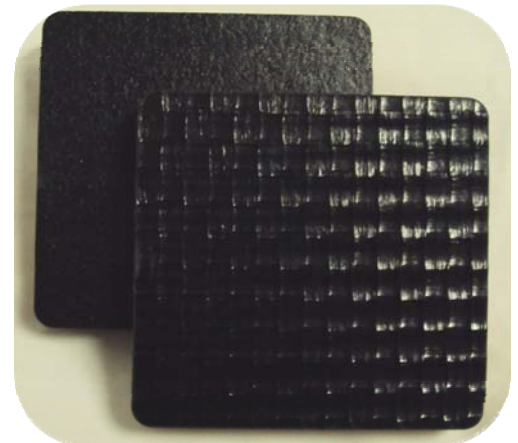
### Product Descriptions

- **AH90-Armor & AB90-Armor:** 0/90 Aramid Thermoplastic Uni-directional Aramid fibers are contained in a polyethylene or polypropylene resin matrix and combined in alternating layers to form 0/90 laminate configurations for ultimate strength and performance characteristics. The use of 0/90 fiber orientation eliminated fiber crimping common in woven fabrics and therefore increases fiber strength and ultimate performance of the laminate.

- **AW45-Armor:** Woven Aramid Thermoplastic – 3000 denier Aramid fibers in a plain weave woven fabric deliver a cost effective, high performing solution. A polyethylene resin matrix is used to bond layers of the Aramid fabric into a ballistic resistant panel capable of outperforming other resin systems offering lighter weight and lower cost.
- **AWP54-Armor:** Woven Aramid Phenolic Thermoset – 2x2 basket woven Aramid fabric is combined with a phenolic thermoset resin matrix to produce laminate compliant with MIL-DTL-62474 Class B. This mil-spec solution is fire resistant and a perfect choice for interior application where lightweight, low smoke and toxicity material is needed.
- **AWP45D-Armor:** Woven Aramid Phenolic Thermoset – 745 plain woven Aramid fabric is combined with a single sided phenolic thermoset resin matrix to produce laminate compliant with MIL-DTL-62474 Class D. This mil-spec solution is extremely efficient and cost effective from a weight/performance when compared with other thermoset solution. It is also fire resistant and a perfect choice for interior application where lightweight, low smoke and toxicity material is needed.

### Surface treatment options

- **Paperstone™:** The Paperstone™ finish can be added to any of the above solutions (patent pending) and adds a dramatic surface treatment available in a variety of colors and textures. This surface is a paper-based ‘Green’ phenolic laminate bonded to the surface of the armor to provide a decorative finish that not only disguises the applied armor, but acts a final surface application for walls or furniture. The Paperstone™e surface acts as a strike face and actually performs as an integral part of the total armor solution these products.
- **Wood veneer:** Several real wood veneers are also available as decorative surface treatments for the Aramid series of products. These veneers are special order and are applied directly to the laminate during the lamination stage to be supplied as a completed, ready to use armor system for application as a wall or furniture material.
- **Other.**



Weapon	Ammo	Velocity (ft/sec)	NIJ Level	UL 752 Level	Woven Fabric						
					0/90 Uni- Directinoal		Woven Fabric Thermoplastic		Woven Fabric Thermoset		
					Thick (in)	Weight (PSF)	Thick (in)	Weight (PSF)	Thick (in)	Weight (PSF)	
22 LR HV	40g.r Lead	1050 ± 40	I								
.38 Special RN	158gr. Lead	850 ± 50	I								
.357 Magnum Pistol	158gr. JSP	1250 ± 50	IIA								
9 mm Luger Pistol	124gr. FMJ	1090 ± 40	IIA								
9 mm Luger Pistol	124gr. FMJ	1175- 1295		1							
.357 Magnum Pistol	158gr. JSP	1395 ± 50	II	2							
9 mm Luger Pistol	124gr. FMJ	1260 ± 40	II								
9 mm Luger Pistol	124gr. FMJ	1400 ± 50	IIIA								
.44 Magnum Pistol	240gr. SWC	1400 ± 50	IIIA	3		1.1					
Rifle 7.62mm 7.62 x 51	150gr. FMJ	2800 ± 100	III	5							
Rifle .308 Win 7.62 x 51	150gr. FMJ	2800 ± 100	III	8		6.4					