



LBA

LBA INTERNATIONAL LIMITED

BALLISTIC HELMETS



HIGH TECH ARMOUR

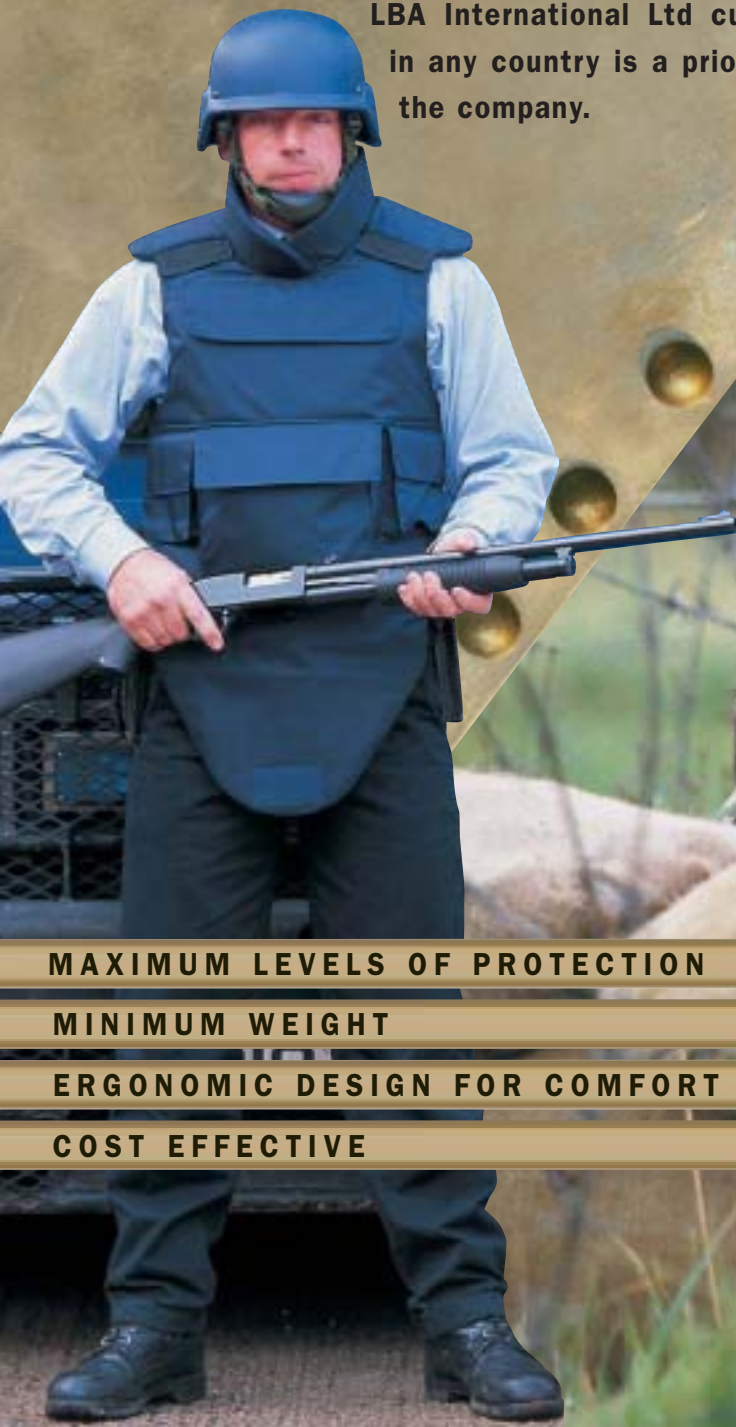
LBA International Ltd design and manufacture a comprehensive range of high technology, specialist armour products. The company is recognised as a world leader in the ballistic engineering.

Aftersales support and comprehensive training are provided by LBA staff who are internationally recognised as leaders in the armour industry.

Forensic Laboratories Ltd, a division of LBA International Ltd, are acknowledged for their excellence in ballistic test evaluations to international standards.

LBA products are sold direct or through a network of experienced international agents to military, police and security forces. Immediate response to the needs of

LBA International Ltd customers in any country is a priority of the company.



MAXIMUM LEVELS OF PROTECTION

MINIMUM WEIGHT

ERGONOMIC DESIGN FOR COMFORT

COST EFFECTIVE

PROTECTION FROM LBA

CONTENTS

Design, Manufacture and Quality	2-3
Latest Developments	4
PAS-TAC Helmet	5
PASGT Helmet	6
Paratroop Helmet	7
Combat Helmet	8
Defender Helmet	9
Mine Clearance Helmet	10
Faceshields	11
Helmet Accessories	12
Ballistic Performance	13



The LBA range of protective helmets is comprehensive, in current production and issued to military, law enforcement and mine/bomb personnel internationally.

The protective helmet range is fully supported by an extensive range of protective armours for every personal defence application.



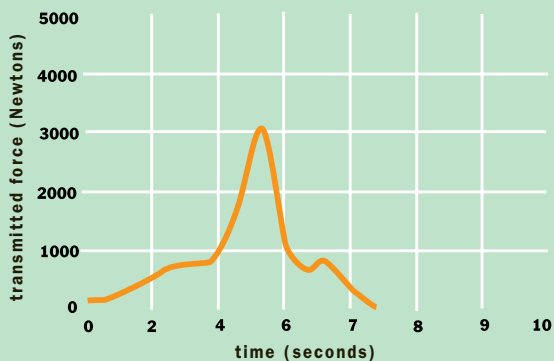
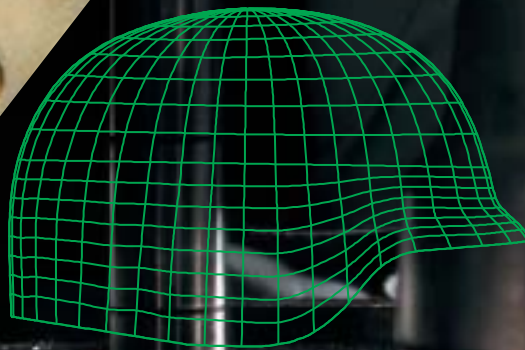
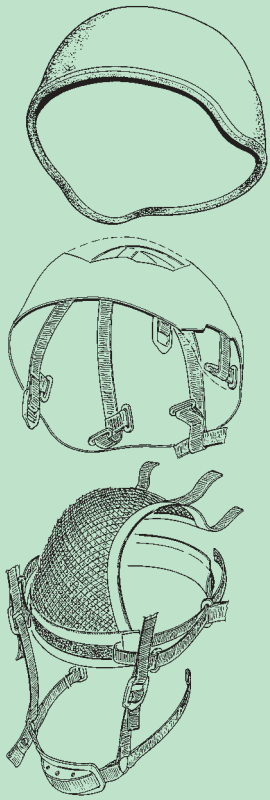
DESIGN, MANUFACTURE & QUALITY

LBA RESEARCH & DEVELOPMENT

LBA International Ltd is dedicated to the evaluation of new high performance materials and their application to ballistic science. LBA International's research and development into the evaluation and design of advanced ballistic materials has resulted in increased levels of protection, reduced weight and manufacturing costs.

In the past three decades the industry has been motivated by LBA's designs and their engineering staff. LBA technology has been copied worldwide, not always successfully by other manufacturers.

ISO 9001
STANDARD



SHOCK ABSORPTION EN 397

LBA helmets are designed to protect the wearer against injuries during operational tours of duty. The built-in energy absorption system in all LBA helmets exceeds EN 397 standards which stipulate that a transmitted force no greater than 5000 N is sustained when the helmet is struck by a 5kg hemispherical weight dropped from 1 metre.

Additional protection by optional internal liners can be supplied. These liners increase the standard from EN 397 to EN 966 for parachute and tank crew operations.

BSI TESTED

**TOTAL
IN-HOUSE
MANUFACTURE**

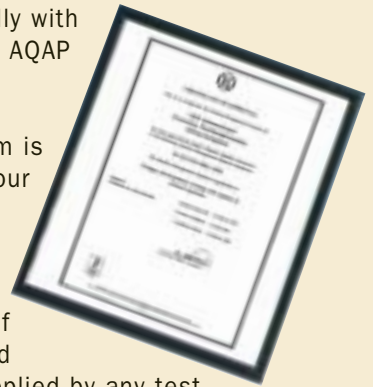
DESIGN FACILITIES AND PRODUCTION

LBA products are designed and manufactured to the highest standards of quality demanded by International Defence and Law Enforcement Agencies. The company's reputation is maintained by all LBA staff, their dedication and commitment guarantees the production of outstanding protective products. The selection by continuous evaluation of the highest quality performance materials, creative design work, optimum quality control standards and advanced manufacturing process, result in products which offer superior ballistic protective qualities. LBA products weigh less, are better designed and are more cost effective and comfortable to wear for long periods in comparison with other similar products.

QUALITY

LBA International Ltd complies fully with BS EN ISO 9002 (compatible with AQAP 120) at all levels of armour production. This comprehensive documented quality control system is applied to every area of LBA armour production, design, manufacture, ballistic testing and final inspection.

Independent ballistic evaluation of any LBA product to any recognised international standard can be supplied by any test laboratory nominated by the end user.

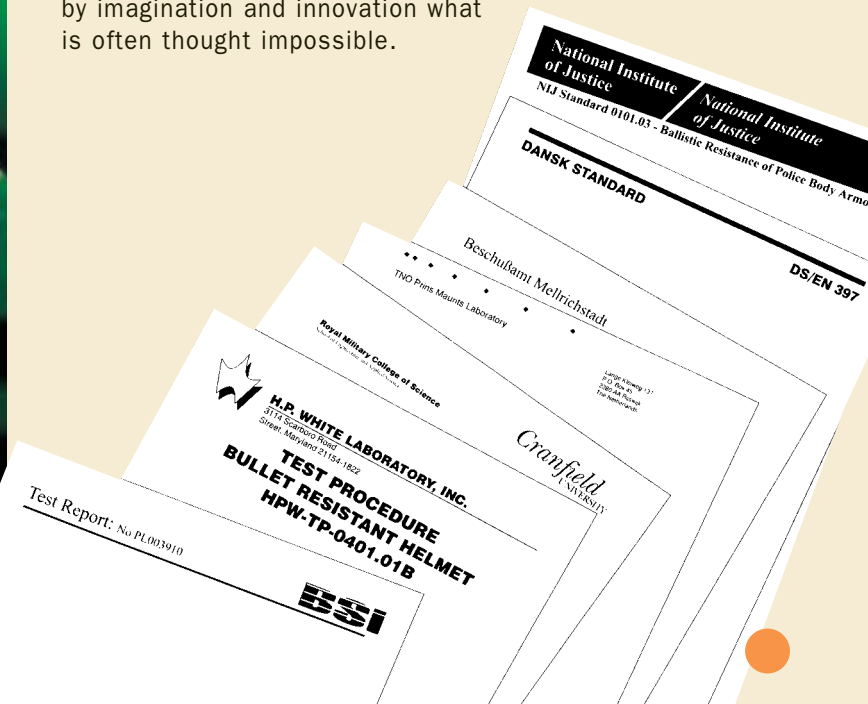


ARMOUR

An all-purpose bulletproof product does not exist. The ability of any armour to resist penetration by specific projectiles depends on many factors: projectile velocity, shape (separation), in time (burst fire), angle of attack and impact spacing, the armour condition, construction, UV and humidity protection. If all these factors are considered carefully, the buyer benefits from obtaining the selection of the most effective armour for his or her operational needs.

Our dedication enables us to achieve by imagination and innovation what is often thought impossible.

**IN-HOUSE
DESIGN
FACILITIES**



LATEST DEVELOPMENTS

LBA TETRAMID® F6T HELMET

LBA Tetramid® armour systems, the latest generation

LBA Tetramid® armour technology, which is unique to the company, can be specified in the following standard LBA helmet designs: PASGT, Combat and PAS-TAC.

Tetramid® composite armours were introduced by LBA International Ltd in 2002 after extensive development and trials. Tetramid® composite armour helmets are the most advanced lightweight helmets currently available. They are in current production.

The new LBA PASGT F6T helmet, when directly compared to the F6 standard PASGT medium size design, provides NIJ Level 111A ballistic protection with a 30% weight reduction of 285 grams (10oz). From the comparison chart below, the exceptional weight savings become apparent.



The LBA F6T helmet range also features a unique 'bolt-free' harness support system. This feature will be applied to all 2002 LBA helmets thereby increasing their ballistic integrity.

Designed and manufactured to the highest international quality control and construction standards, the LBA Tetramid® helmet systems are tough, maintenance free and provide the maximum ballistic protection for the lowest weight.

COMPLETE HELMET RANGE - STATISTICAL DATA

Sizes (cm)	Head sizes (cm)		F1/F2 (grams)		F3/F4 (grams)		F5/F6 (grams)		
	M	L	M	L	M	L	M	L	
LBA Tetramid Helmet Range								F6T	
Combat	54-59	57-63	-	-	-	-	1010	1085	
PAS-TAC	54-59	57-63	-	-	-	-	1010	1085	
PASGT	54-59	57-63	-	-	-	-	1065	1165	
Mine	54-59	57-63	-	-	-	-	1010	1085	
Standard Helmet Range									
Combat	54-59	57-63	900	1000	1100	1200	1250	1350	
PAS-TAC	54-59	57-63	-	-	1100	1200	1250	1350	
PASGT	54-59	57-63	-	-	1150	1250	1350	1450	
Paratroop (Combat)	52-56	56-59	1000	1100	1200	1300	1350	1450	
Paratroop (PAS-TAC)	52-56	56-59	-	-	1200	1300	1350	1450	
Defender	54-60	57-64	-	-	-	-	1400	1500	
Mine	54-59	57-63	-	-	1100	1200	1250	1350	

NOTE: All weights are for guidance only

Tetramid® is the registered name of LBA International Ltd

LBA PAS-TAC HELMET

The LBA PAS-TAC Helmet is a unique low profile, lightweight and improved PASGT helmet developed by LBA to meet the demands of Special Forces units.

The LBA PAS-TAC Helmet is a compact, high performance product. Manufactured from the latest Tetramid® armour systems, plus the new LBA bolt-free harness fixing system, the LBA PAS-TAC helmet is perfectly balanced and provides greater wearer comfort over long periods.

The 7% saving in weight without any loss of ballistic performance, plus compatibility with all existing PASGT equipment, has made the LBA PAS-TAC the preferred choice of Special Force units internationally.



LBA PASGT HELMET

The LBA PASGT (Personal Armour System Ground Troops) Helmet is a much improved design development of the standard US PASGT.

The LBA PASGT helmet has been constructed using the latest LBA Tetramid® advanced armour system. The new LBA PASGT provides the same area of cover as the US version. The ballistic performance of the F6 unit is impressive, perfectly balanced with a fully adjustable harness mounted on the new LBA bolt-free suspension system. Maintenance free and comfortable, the robust construction exceeds standard EN 397.

The LBA unit is compatible with all existing PASGT systems.



LBA PARATROOP HELMET

LBA Special Forces Paratroop Helmet has a built-in high impact liner that protects against shock in excess of EN 966.

The LBA Paratroop Helmet is available in Combat or PAS-TAC style. It is designed to meet the exacting demands of airborne forces. The shock protection exceeds the EN 966 standard.

The design of the shell is identical to that of the Combat and PAS-TAC Helmet. The liner and harness systems have been strengthened to withstand the rigours of airborne troop operations.



Combat Helmet

The unit is equipped with the new LBA bolt-free three-point harness system which provides a comfortable and fully adjustable crown, headband and chinstrap fix while retaining the optimum space between the actual shell and the head without any loss of ballistic performance.

SHOCK ABSORPTION

The LBA Paratroop Helmet can withstand a maximum residual acceleration of 250G when impacted in a moving head mode with head energy (excluding helmet weight) of 75 joules into a variety of anvil shapes. The shell plus the liner exceeds EN 966 standard.



**PAS-TAC
Helmet**

LBA COMBAT HELMET

The LBA Combat Helmet style is on general issue world-wide. Compact, lightweight and comfortable with a high level of protection.



The LBA Combat Helmet has a high level of ballistic protection combined plus excellent balance and weight distribution. Manufactured from the latest LBA Tetramid® armour systems plus the new LBA bolt-free harness fixing, the LBA Combat Helmet is comfortable to wear for long periods, fully adjustable, easily maintained and hard wearing. It is supplied to order in several sizes and ballistic protection levels.

The LBA Combat Helmet is standard issue to military, police and tactical teams internationally. It is a general purpose unit that can be adapted to many roles and is fully compatible with all other equipment.

LBA DEFENDER HELMET

The LBA Defender Helmet is fully compatible with a variety of ear defender systems.

The LBA Defender Helmet provides the highest levels of ballistic protection, impact resistance and trauma reduction. The LBA Defender is fully compatible with circum-aural ear defenders such as the Peltor HG61 F and the Davies CT 100. It is the ideal choice for tactical operations personnel who require high levels of ballistic and communication/hearing protection.

Originally developed for the Swedish Armed Forces (Helmet 90), LBA has further improved the design and the ballistic performance. The new lightweight LBA Defender helmets are manufactured from the latest LBA Tetramid® armour systems and are equipped with the new LBA bolt-free harness support system for improved balance and increased comfort factor.



LBA MINE CLEARANCE HELMET

The LBA Mine Clearance Helmet is designed for international humanitarian and IED operations. It is fully compatible with a comprehensive range of IED equipment.

The LBA Mine Clearance Helmet has been designed to be worn for long periods in adverse conditions by land mine clearing operatives. The LBA Mine Clearance helmet is manufactured from the latest LBA Tetramid® armour system, and is equipped with the new LBA bolt-free fully adjustable harness. Alternative visor variants can be supplied to order.



The ballistic properties of the Mine Clearance Helmet are identical to other helmets in the LBA range. The harness system and the centre of balance of the unit, in conjunction with the additional visor weights, have been calculated to provide the maximum comfort during extended use.



LBA FACESHIELDS

- Tetranike Visorband
- Riot Faceshield
- Fragmentation Faceshield
- Advanced Fragmentation Faceshield
- Ballistic Faceshield

LBA offers the following visors/faceshields, all of which feature full wrap-around protection and clear undistorted optics. They are quick to fit, simple to use and conform to NIJ 0104.02

LBA has developed a comprehensive range of distortion free visors which can be fitted to all LBA helmets. The LBA Tetranike® Visorband is used independently.



LBA TETRANIKE VISORBAND

LBA Tetranike Visorband has become the standard issue for de-mining operators in the major mine clearance areas around the world. The Visorband is designed exclusively for mine clearance use. It consists of full face clear polycarbonate 5mm thick extended by 13cm at the top, connected to the head band which is fully adjustable for both girth and depth. The visor is hinged and can be lifted and closed at will. The headbands are supplied separate from the visors, for easy self-assembly, to reduce bulk of shipping.



RIOT FACESHIELD

The LBA Riot Faceshield is designed to protect the wearer from low velocity impacts, such as hand-thrown projectiles or flying debris. A flexible wiper is fitted as standard to prevent liquid and chemicals from running down on to the wearer's face.



FRAGMENTATION FACESHIELD

The LBA Fragmentation Faceshield is a general purpose faceshield providing facial protection against fragments and other flying debris. A clear air passage at the top and bottom prevents misting up of the visor. Also available in extended length for demining.

ADVANCED FRAGMENTATION FACESHIELD



The Advanced Fragmentation Faceshield offers the same characteristics as the standard Fragmentation Faceshield, but with much higher fragmentation resistance. This faceshield is ideal for mine clearance work.



BALLISTIC FACESHIELD

The laminated Ballistic Faceshield offers maximum protection from fragments and a variety of ballistic threats. The Ballistic Faceshield is ideally suited for SWAT and tactical teams.

Visor	Minimum Fragmentation Velocity V ₅₀ * m/sec (ft/sec)	Bullet Resistance	Weight (Grains)	Maximum Bullet Velocity m/sec (ft/sec)	Energy (Joules)
Riot	NONE	NONE			
Fragmentation	240 (800)	NONE			
Advanced Fragmentation	500 (1640)	NONE			
Ballistic	600 (2000)	9mm DM11A1B2	123	410 (1345)	670
		9mm FMJ Rem†	124	410 (1345)	675
Advanced Ballistic	650 (2130)	9mm DM11A1B2	123	426	882
		9mm FMJ Rem†	123	426	
		.357 GECO AP	158	415	

*Tested using a standard 17 grain fragment, in accordance with STANAG 2920

†9mm FMJ Rem (Remington) also includes the following lead core rounds: 9mm RG 2Z, 9mm FN, 9mm WW, 9mm KF 2Z, 9mm FNM, 9mm SBS, 9mm POF, 9mm MKE, 9mm IMI, 9mm Hornady, 9mm AMA, 9mm SXT Black Talon and 9mm Fed Hydra-Shok

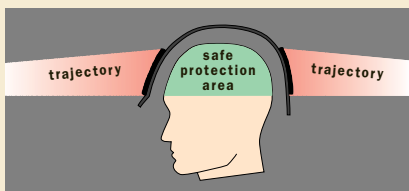
HELMET ACCESSORIES



ADD-ON RIFLE PROTECTION

LBA has developed a unique system that can be fitted in seconds to any existing style of helmet. The system is designed to stop several types of high velocity rounds in the crucial front and rear areas of a helmet, namely AK47 (7.62 x 39mm) @ 720m/sec.

The system incorporates two high protection plates which have been specifically designed to match the contours of the helmet. These plates are quick and simple to fit and replace.



Add-On Rifle Protection	Calibre	Ammunition	Weight (Grains)	Maximum Bullet Velocity m/sec (ft/sec)	Energy (Joules)
ARP1 (Single strike only)	5.45 x 39mm	Mild Steel Core	54	930 (3050)	1510
	5.56 x 45mm	M193	55	1000 (3280)	1780
	5.56 x 45mm	SS109	62	1000 (3280)	2010
	7.62 X 25mm	Tokarev Steel Core	85	450 (1475)	560
	7.62 x 39mm	Mild Steel Core	123	720 (2360)	2060
	7.62 X 51mm	NATO Ball	144	*720 (2360)	

*Velocity at range of 100m

HARNESSES



Standard



Optional

The style of harness used is often a compromise between comfort and functionality. However, LBA can reduce this compromise by offering a range of components specially designed to be functional and comfortable.

	Standard	Optional
Chin strap colour	Black	Olive
Crown assembly	Cross-tapes	Net mesh
Chin piece	Plastic chin cup	Cotton or leather chin strap

Other special harnesses are available to order

Additional items also available are:

- A range of different chin strap/cup configurations
- A load release buckle

CAMOUFLAGE COVERS



A full range of camouflage covers is available for LBA's helmets. Standard patterns include Woodland, Desert, Arctic & UN Blue in a wide variety of different prints.

CARRYING BAGS



A useful addition to protect the helmet and visors from damage.

FACESHIELD COVERS

To protect visors from scratches and damage during use and also to suppress reflections off the visor at night when in the upright position. The visor cover is available made from nylon, elasticated at the edges for rapid attachment.



COMMUNICATIONS & EAR DEFENDERS

It is becoming increasingly important and often vital to establish a communication link within a helmet. All LBA helmets can be fitted with communications.



Even with our most compact helmet (the Combat), Peltor Soundtrap circum-aural ear defenders can be comfortably worn. Alternatively hearing protection is provided with foam earplugs and communications with a miniature ear mounted headset. Further details available on request.



BALLISTIC PERFORMANCE

Level	Minimum Fragmentation Velocity V ₅₀ * m/sec (ft/sec)	NIJ Level**	Bullet	Weight (Grains)	Maximum Bullet Velocity m/sec (ft/sec)	Energy (Joules)
F1	400 (1310)	Type A	9mm FMJ Rem† .38" Special + P	124	350 (1150)	490
				158	300 (1000)	460
F2	450 (1470)	Type B	9mm FMJ Rem† <i>Plus all the above bullets</i>	124	365 (1200)	530
F3	500 (1640)	Type C	9mm FMJ Rem† <i>Plus all the above bullets</i>	124	390 (1280)	610
F4	550 (1800)	IIA	9mm FMJ Rem† 9mm GECO DM11A1B2 .357 Magnum JSP Rem <i>Plus all the above bullets</i>	124	390 (1280)	610
				123	350 (1150)	490
				158	396 (1300)	800
F5	600 (2000)	II	9mm GECO DM11A1B2 .357 Magnum JSP Rem <i>Plus all the above bullets</i>	123	410 (1345)	670
				158	440 (1445)	990
F6	650 (2130)	IIIA	9mm FMJ Rem† 9mm Norma 19022 7.62mm Tokavav Lead .357 GECO MP .44 Magnum SWC-GC <i>Plus all the above bullets</i>	124	441 (1450)	780
				116	410 (1345)	630
				85	450 (1480)	555
				158	390 (1280)	775
				240	441 (1450)	1510
F6T	650 (2000)	IIIA	Performance as F6 but with a considerable weight reduction (see page 4)			

LBA ARMOUR SYSTEMS

LBA manufacture a comprehensive range of ballistic and fragmentation armours which are designed to meet all international/national ballistic standards nominated by the end user. Listed are the current ballistic performance levels that relate to LBA helmets.

LBA manufacture an extensive range of armours that can be certified in the United Kingdom, France, the USA, the Russian Federation and Germany.

*Tested using a standard 17 grain fragment, in accordance with STANAG 2920 **Tested in accordance with NIJ 0108.03

†9mm FMJ Rem (Remington) also includes the following lead core rounds: 9mm RG 2Z, 9mm FN, 9mm WW, 9mm KF 2Z, 9mm FNM, 9mm SBS, 9mm POF, 9mm MKE, 9mm IMI, 9mm Hornady, 9mm AMA, 9mm SXT Black Talon and 9mm Fed Hydra-Shok

GUARANTEE

LBA guarantees to replace any non-ballistic element of any LBA International Ltd armour product against defective workmanship providing the customer notifies the company within seven days of receipt of consignment.

LBA guarantees to replace any non-ballistic element of any LBA International Ltd armour product against defective workmanship or material failure, providing the product has been stored/used in accordance with the company's operating instructions as to the care and use of the product, and providing the company is notified of the defect within twelve months of receipt of consignment by the customer. The liability of the company limits this guarantee to replacement of the defective part or unit only. Normal wear and tear is excluded from this guarantee.

LBA guarantees the ballistic quality of all LBA soft and hard armour for a period of ten years from date of dispatch of the consignment and providing the item has been stored/used in accordance with the company's operating instructions as to the care and use of the product, and providing the company is notified of any such failure within the ten years of receipt of consignment by the customer. The ballistic integrity guarantee is limited to the ballistic performance as determined in the original purchase order and the liability of the company is limited to replacing the defective armour. The company retains the right to determine the cause and nature of the failure and to appoint, if the end user and the company cannot otherwise agree, an internationally recognised arbitrator whose findings will be accepted by both parties. Normal wear and tear is excluded from this guarantee.

The company reserves the right to improve/change/alter without notice (outside any agreed contractual commitments) any element or characteristic or design of any LBA products



LBA INTERNATIONAL LIMITED

LBA International Ltd

**2 Omega Business Centre
Caxton Close, Drayton Fields
Daventry, Northants NN11 5RT
Tel: +44 (0) 1327 311020
Fax: +44 (0) 1327 311030
Email: info@lbainternational.com
www.lbainternational.com**

