



# ***LBA INTERNATIONAL LTD***

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## Technical Specification

LBA P01-4A Ceramic Plates

## Introduction

While soft armour based on aramid fibre is capable of defeating threats from fragments and certain soft core ammunition, it is necessary, on weight and cost considerations, to up-armour the soft armour with a ceramic plate, to defeat high velocity or steel-core ammunition.

## Material

The ceramic casting is moulded from alumina oxide ( $\text{Al}_2\text{O}_3$ ). This has the twin advantages of good performance and a relatively low cost.

The strike face loads on armour of this type are essentially compressive and hence the high hardness and rigidity of ceramic are very important. Rear loadings are however tensile and are absorbed by high tensile strength advanced composite backing. LBA use aramid fabric for this purpose which has an excellent strength to weight ratio.

To provide a tidy assembly, black ballistic nylon is bonded to the rear surface and a wrap of nylon affixed over the front and sides. This also helps reduce spall effects.

## Design

The LBA Ceramic plates are designed to provide maximum protection at the lowest possible weight. It also has the unique multi curve shape to optimise fit and comfort.

## Ballistic Performance

LBA ceramic plates will provide level III and IV of protection according to NIJ 0101.04.

The plates are designed to stop either of the following in conjunction with NIJ IIIA soft armour.

Ammunition	Weight (grains)	Velocity (m/s)	Energy (Joules)	No of strikes at 0°
7.62 x 63 M2 AP	168	868	4106	1
7.62 x 51 (308) M80 Ball	150	853	3535	6
7.62 x 51 (308) DAG-AP	146	835	3290	3
5.45mm MS Core	54	930	1510	6
5.56mm M193	55	1000	1780	6
5.56mm SS109	62	1000	2005	6
7.62 x 39 MS Core	123	740	2180	6

## **Dimensions**

Plate size 250mm x 300mm, Area 0.075m<sup>2</sup>

## **Warranty**

The hard armour packs are warranted to be free from defects in the materials and workmanship for a period of 10 years from the date of manufacture, as shown on the label.

This warranty is terminated if the product has been abused.

LBA reserves the right to recall and inspect any equipment subject to a warranty claim prior to settlement.

## **Quality**

LBA's quality system has been approved to ISO 9001.

The company is proud of the quality of workmanship and quality of its products. We welcome customer inspection.