



PROTECTING FRONTLINE STAFF WITH FORTIS ARMOUR

The threat of attack and physical violence to frontline staff such as, military personnel, customs and immigration officers, police and law enforcement officers, surveillance and intelligence officers, and close protection officers has never been greater.

The Fortis Armoured Vest reduces the risk of personal injury through its high level of protection, lightweight and easy to wear design. The range consists of both overt and covert protection, available in standard chest sizes.

The unique properties of the Fortis Armoured Vest provide resistance to ballistic, bomb-blast fragments, glass fragments, knife and needle attack; all in a single vest.

- Bullet-, bomb-blast fragments, glass fragments, knife- and spike-resistant in one single fabric.
- Lightest-weight all-in-one-soft armour in the world.
- Area of full protection extends over whole armour, edge to edge.
- Keeps its full armour properties when wet.
- Can be upgraded to protect from rifle and high power rifle threats.
- Protection against multiple/automatic fire from sub-machine guns.
- With the inclusion of the necessary plates, the armour can be qualified to NIJ level IV.

The Material

The material is an advanced composite of ultra-high-tensile fibres and thermoplastic resin that has outstanding toughness and durability. The method of manufacture of the composite is heat-compaction. The resulting composite is covered by a worldwide patent.

The composite is a thin flexible sheet material of impregnated textile, supplied as a raw material to manufacturers of body armour. The material is cut into pattern shapes and assembled in pluralities of layers in an outer cover with adjustable shoulder and waist fastenings and worn as a body armour 'vest'.

UK Armour Vest Standards

The two standards referred to are Stab Resistance for Body Armour and Ballistic Resistance for Body Armour.

Stab Resistance Body Armour Standard

There are three levels of protection:

- KR1 - the lowest protection level and is tested at a performance level of 24 joules of energy.
- KR2 - a medium protection level, tested at a performance level of 33 joules of energy.
- KR3 - a high protection level, tested at a performance level of 43 joules of energy.

Protection Level	Energy Level E1 (Joules)	Maximum Penetration at E1 (mm)	Energy Level E2 (Joules)	Maximum Penetration at E2 (mm)
KR1	24	7	36	20
KR2	33	7	50	20
KR3	43	7	65	20



Ballistic Body Armour Standard

The levels of protection cover the following threat groupings:

HG1A – Low Handgun

Protection against standard ammunition fired from short-barrelled handguns.

HG2 - High Handgun/ Carbine

Protection against standard ammunition fired from long barrelled handguns, 9mm carbines and sub machine guns.

RF1 – Rifle

Protection against soft-core ammunition fired from rifles.

SG1 – Shotgun

Protection against BB and No.6 shot fired from full-length shotguns at close range.

Threat Class	Calibre	Ammunition	Bullet Wt	Min. Range (m)	Velocity (M/s)
HG1A, Low Handgun	9mm cal	9mm FMJ Dynamit Nobel DM11A1A1B2	8.0gm 124 grain	5	360+/-10
	.357 Magnum	Norma Soft point flat nose 19107	10.2g 158 grain	5	385+/-10
The Fortis Body Armour – Standard Protection – is certified to this level.					
HG2, High Handgun, Carbine	9mm cal	9mm FMJ Dynamit Nobel DM11A1A1B2	8.0gm 124 grain	5	425+/-10
	.357 Magnum	Norma Soft point flat nose 19107	10.2g 158 grain	5	450+/-10
The Fortis Body Armour – Higher Protection – is certified to this level.					
SG1 Shotgun	12 gauge	Winchester 1oz rifle lead slug 12RS15/12RSE	28.4gm 437 grain	10	435+/-10
The Fortis Body Armour – Higher Protection – when used in conjunction with the Fortis SGP/1 plate, meets this standard.					
RF1 Rifle	7.62 cal	Nato ball L2A2	9.3gm 144 grain	10	830+/-10
The Fortis Body Armour – Higher Protection – when used in conjunction with the applicable plate, meets this standard.					

Trauma Measurement

Blunt trauma can cause severe injury. Armour which minimises blunt trauma is highly desirable.

The standards 'HG1-HG2-RF1-SG1' have a requirement of a maximum indentation depth of 25mm in the UK and 44mm in the USA.

The wearing of body armour does not guarantee protection from all types of threats that may be encountered. It is the responsibility of the purchaser to ensure that the product specified is satisfactory for the intended purpose. Kempton's expertise is at your service, with specific threat testing and proven solutions.

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