

Personal Protector TECHNICAL DATA SHEET

Lightweight
detachable
vehicle
armour

Product Name

SCHERM

Product Description

The SCHERM is a lightweight, detachable soft vehicle armour fitted inside vehicle cabs. It is a highly durable and reliable bullet resistant barrier designed to provide effective personal protection to drivers and occupants of conventional vehicles against ballistic threats directed at doors, seat backs and head rests. It is constructed using advanced ballistic materials with innovative engineering techniques and incorporates design features to ensure convenience, flexibility and dependable performance.

Although primarily intended for vehicles, it is also eminently suitable for any environment demanding a light and flexible bullet, stab and frag resistant barrier. It does not splinter or fragment but rather traps bullets and other high velocity projectiles within the ballistic core. It withstands multiple shots.

The SCHERM is supplied in a variety of sizes and configurations to suit the application.

Armour Category

The SCHERM is a new product that is not covered by any existing vehicle armouring category since it is not conventional body, vehicle or structural armour. It is a form of soft armour that is designed for fitting to the interior of conventional motor vehicles to protect against firearm attack directed at vehicle occupants through doors, door posts, vehicle seat backs and head rests.

It is the subject of a Patent protection in the Republic of South Africa.

Construction

Soft and flexible ballistic core enclosed in a waterproof sheath encased in a robust stitched fabric carrier designed to withstand rough handling and prolonged exposure to the arduous environmental conditions found in vehicle cabs, particularly prolonged exposure to UV light and high temperatures.

Ballistic Rating

The Scherm is capable of stopping bullets with varying velocities and calibres, providing an effective barrier against ballistic threats within the rating. Two standard versions are supplied offering different levels of ballistic protection:

SCHERM 3000 Series

The SCHERM 3000 series of products meet the requirements of EN1522 Class FB2 and FB3

Class	Type of Weapon	Calibre	Bullet Type	Bullet Mass	Test Range	Bullet Velocity
FB2	Handgun	9 mm Luger (Parabellum)	- Full metal jacket. - Round nose. - Soft core.	8,0 ± 0,1 g	5 ± 0,5 m	400 ± 10 m/s
FB3	Handgun	357 Magnum	- Full metal jacket. - Coned bullet. - Soft core.	10,2 ± 0,1 g	5 ± 0,5 m	430 ± 10 m/s

SCHERM 4000 Series

The SCHERM 4000 series of products meet the requirements of EN1522 Class FB4

Class	Type of Weapon	Calibre	Bullet Type	Bullet Mass	Test Range	Bullet Velocity
FB4	Handgun	357 Magnum	- Full metal jacket. - Round nose. - Soft core.	10,2 ± 0,1 g	5 ± 0,5 m	430 ± 10 m/s
		44 Magnum	- Full metal jacket. - Flat nose bullet. - Soft core.	15,6 ± 0,1 g	5 ± 0,5 m	440 ± 10 m/s

NB: Since the SCHERM is not body armour it is not appropriate to use an NIJ rating.

Certification

The classification is asserted as the result of tests in a SANAS certified ballistic test laboratory conducted in accordance with the requirements of EN1522 Windows, Doors, Shutters, Blinds - Bullet Resistance - Requirements and Classification.

This is a multiple impact test in which the specimen is subjected to 3 shots fired in both calibres. To pass the test all bullets must be fully stopped.

Size of Protected Area

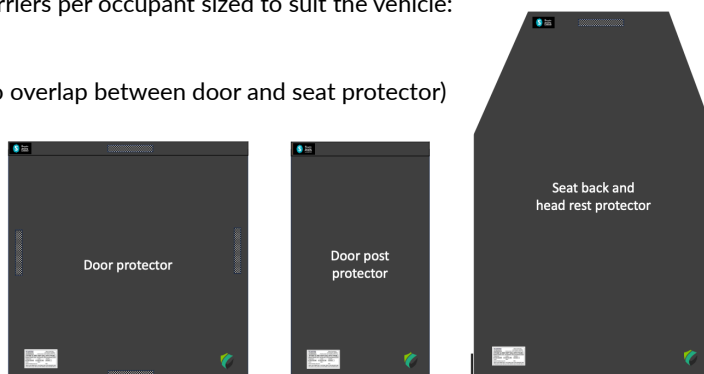
The size of the ballistic protected area varies according to the customer requirement. For common vehicle applications effective coverage is provided with two or three barriers per occupant sized to suit the vehicle:

1. Door protector
2. Vehicle seat back and head rest protector
3. Door post protector (only required if there is no overlap between door and seat protector)

SCHERM can be customised to meet specific customer requirements, including size, shape, ballistic rating and method of attachment.

This flexibility enables integration into diverse applications without compromising security, functionality or aesthetics.

The area of the ballistic core is stated on the rating label of each SCHERM protector.



Typical set of 3 vehicle protectors.

Ballistic Material

The bullet resistant ballistic core is made up of multiple layers of UHMWPE material arranged to achieve the rated protection class. Consistency and efficacy are ensured by conducting a ballistic test on a standard sample prepared from every batch of core material.

Carrier Material

Two types of carrier material are employed, being the same on the strike and protected faces:

SCHERM Series and Class	Carrier Material
SCHERM 3000 Class FB2 + FB3	Ripstop woven polyester fibre fabric
SCHERM 4000 Class FB4	Vinyl coated knitted polyester fibre

Each of these materials has been carefully selected for its durability, strength, resistance to soiling, UV and weather resistant properties and ease of maintenance. The standard colour is black.

Weight

Weight varies according to size and accessories fitted, but can be estimated from the ballistic area using the weight per square meter:

SCHERM Series and Ballistic Class	Weight
SCHERM 3000 Class FB2 + FB3	5,0 kg/m ²
SCHERM 4000 Class FB4	6,1 kg/m ²

Installation/Mounting

Doors: The standard method with slide-in window clips requires no preparation. However SCHERM door protectors can also be ordered in plain form for attachment by any other convenient means. Technical guidance is available.

Seats and headrests: SCHERM head and backrest protectors are simply draped over the seat back and headrest and loosely tied at the bottom. No other form of fixing or attachment is required.

Door posts: Adhesive Velcro® is standard for attaching door posts.

Being light in weight, the SCHERM is relatively easy to support and attach.

It performs optimally when the protected face is free to move. It is intended to be suspended in air, or on or against or draped over a surface. The standard (non-intrusive) form of supply for SCHERM in vehicles is as follows:

Position	Mounting
Door protector	Slide-in clips
Door post protector	Adhesive Velcro®
Seat back and head rest protector	Draped and tied

It may also be attached with press studs, eyelets, clips, glue, double sided pressure sensitive adhesive tape, staples, clamps, etc. according to customer preference. This means it can be adapted to a wide variety of applications, whether in vehicles, buildings or elsewhere.

Other standard methods of attachment will be introduced over time.



IMPORTANT NOTE:

It is not recommended to have a solid backing on the protected side of the SCHERM as this may compromise the ballistic performance and rating. It is designed for and tested as a standalone bullet resistant barrier in free air. This means for example that if a door in a building is to be protected, the SCHERM is preferably suspended on the side of the door opposite to the strike face.

Accessories

To facilitate installation and versatility in use the SCHERM is available with a variety of standard accessories supplied according to customer specification:

- Attachment with slide-in clips or adhesive Velcro®, press studs or eyelets
- Handles in order to use the SCHERM as an emergency portable personal body shield
- Finger loop pull to aid detachment when Velcro® attachment is employed
- Pockets for holding cell phones, pens, etc.
- Elasticised cord for holding the bottom of the protector in position.

Temperature Range

The SCHERM will maintain rated performance at temperatures between -40°C and +70°C.

Identification

Each SCHERM protector is provided with a rating label which indicates the following on a durable label with indelible ink:

- Name of product and manufacturer
- Protection level
- Applicable test standard
- Application (door, door post, seat back and head rest, etc.)
- Size
- Area of ballistic core
- Date of manufacture
- Identification of strike face
- Serial No.

SCHERM		Made in South Africa
+27 065 938 0355		Patent Pending No: 2023/09544
www.scherm.co.za		PROTECTION THAT TRAVELS WITH YOU
STAND ALONE SOFT BALLISTIC PANEL		
Ballistic Protection Level: Class FB2+FB3 / FB4 as prescribed by EN1522		
Product Code:	Lot No:	Serial No.
LH Door Panel RH	LH Door Post RH	Seat Back
Vehicle:	Other:	
Ballistic Protection Area (m ²):	MFD:	
THIS IS THE STRIKE FACE / THE STRIKE FACE IS THE OPPOSITE SIDE		
This panel is only rated up to the ballistic class indicated above		

Certificate of Conformity

Certificates of conformity can be provided if so requested with order placement. A nominal fee will become applicable.

Care and Maintenance

The SCHERM needs no special care other than keeping it as clean as the interior of any vehicle and crease free. To clean wipe down with a damp cloth and mild detergent. It must be replaced or returned to SCHERM for inspection if it should become mechanically damaged or be subject to firearm attack.

The efficacy and life of the soft armour incorporated into SCHERM personal protectors is not affected by water or moisture and can be expected to provide rated protection for up to 10 years or more, subject to inspection and assessment by SCHERM after 5 years of service life.

The outer carrier fabric provides protection against sunlight and physical damage to the inner sheath which maintains the integrity of the soft ballistic armour core.

Intended Market

The SCHERM is not a substitute for a fully armoured vehicle. It is aimed at civilians who occasionally find themselves potentially exposed to firearm attack and wish to reduce risk by obtaining at least some measure of ballistic protection.

Note: SCHERM is intended to augment existing security measures and is not a substitute for proper security protocols, vigilance and personnel training.

Intellectual Property

SCHERM is a proprietary product subject to patent protection. Patent Application No.: ZAPP1430644/ZA

Any attempt to replicate or reproduce our patented product without proper authorisation is a violation of intellectual property rights and is subject to legal consequences. Scherm's commitment to providing innovative and unique solutions is protected by this patent, ensuring that our customers receive genuine, high-quality products. Counterfeit or unauthorised imitations not only compromise safety but also infringe on legal rights. We urge all users to be vigilant and support authentic SCHERM products for the highest standards of protection.

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The manufacturer reserves the right to make improvements from time to time, this specification is therefore subject to change without prior notice.

Disclaimer

While SCHERM is designed to provide ballistic protection, no product can guarantee absolute security against all threats. Users are encouraged to assess their specific security needs and consult with security professionals to determine the most effective security solutions.