

User Manual Stab-proof vest Thor

1. Introduction

1.1 Purpose of this Manual

This user manual is intended to support the safe, appropriate, and regulation-compliant use of your Armadillo Tex stab-resistant vest. It provides all necessary information regarding use, care, and maintenance—especially in the context of CE certification in accordance with the Personal Protective Equipment Regulation (EU) 2016/425, based on a Certification by Regulation referencing NIJ standards.

1.2 General Information on PPE Category

The Stab-proof vest Thor is classified as Personal Protective Equipment (PPE) Category III under Regulation (EU) 2016/425 and tested according EN ISO 13688:2013 and EN ISO 13688:2013/A1:2021. It offers protection against stabs and cuts caused by blades for compliance with point 3.3 of regulation EU 2016/425. This category includes PPE designed to protect the wearer against hazards that may cause serious injury or death.

As Category III PPE, this vest is subject to strict requirements concerning:

- Design, construction, and manufacturing
- Testing by notified bodies
- Documentation and CE marking
- Ongoing production control and monitoring

The purpose of this vest is to provide protection against stab injuries caused by sharp or pointed objects. It is a passive protective device that significantly enhances wearer safety but cannot guarantee complete protection in all situations.

This manual provides essential guidance on correct use, care, storage, and disposal of the vest and constitutes an integral part of its CE conformity.

1.3 Manufacturer Information

Manufacturer: Armadillo Tex GmbH

Manufacturing location: Made in Germany (Remscheid)

Address: Hackenberg 87, 42897 Remscheid

Production site address: Leverkusener Straße 65, 42897 Remscheid

Phone: +49 2191 7890579

Email: info@armadillo-tex.com

1.4 Product Line & Article Numbers

Product line: Stab-proof vest Thor professional

Size	Color	Weight [kg]	Protection area [m ²]	Article number
S/M	black	2,1	0,25	4260650451348
L/XL	black	2,4	0,32	4260650451355
XXL/3XL	black	2,9	0,39	4260650451362
4XL/5XL	black	3,4	0,44	4260650451379

Stab-proof vest Thor				
	S/M	L/XL	XXL/3XL	4XL/5XL
Chest of user [cm]	72 - 106	82 - 116	92 – 126	107 – 141
Height of user [cm]	155 - 185	165 - 195	170 – 200	175 - 205

2. Product Description

2.1 Type of Vest

The vest described in this manual is the Stab-proof vest Thor from the Armadillo Tex product line. It is designed to be worn as a tactical vest and provides effective protection against stab injuries as well as limited protection against blunt force trauma. This vest is intended for professional users in security services, correctional institutions, or law enforcement.

2.2 Materials and Protection Areas

The stab-proof vest is constructed from a multi-layer composite of carbon, aramid, and glass fibers, arranged in a bionically inspired scale-like structure. This design offers high flexibility while maintaining consistent protective performance. The carrier fabric consists of a durable, multifunctional fabric.

The protective inserts are removable, and the cover is washable. The protection area covers both the front and back of the upper torso and can optionally be extended with separate side protection modules.

- Available sizes: S/M, L/XL, XXL/3XL, 4XL/5XL
- Available colors: Black
- Protection area (front + back, depending on size): approx. 0.25–0.44 m²

The fabric of the carrier is made of PET. The Elastic cummerbund with Velcro closure is made of PET and spandex. The Velcro is made of PET and PA. The shoulder straps are made of PA.

2.3 Protective Function and Levels

The vest has been tested and certified according to VPAM KDIW 2004, Level K1, and provides protection against attacks with sharp or pointed objects (e.g. knives), as well as limited resistance against blunt force impact.

CE certification is granted based on a Certification by Regulation in accordance with the PPE Regulation (EU) 2016/425, with reference to a NIJ-oriented test procedure.

The vest falls under PPE Category III.

2.4 Protection Coverage / Anatomy

The vest provides coverage of the torso, including the chest, abdomen, flanks, and back. The ergonomic design ensures a tight and stable fit, minimizing movement during physical activity. Thanks to its modular structure, additional protective components (e.g. side modules) can be added as needed.

3. Intended Use

3.1 Suitable Applications

The Stab-proof vest Thor is designed for use by professional personnel in fields such as personal protection, private security, correctional services, and similar operational environments. It is intended to protect the upper torso from injuries caused by sharp or pointed objects, particularly knives and comparable weapons.

The vest is intended for overtly wear over the clothing. The outer fabric is optimized for heavy external wear.

3.2 Protection Against Edged and Pointed Weapons

The vest provides effective protection against stab injuries caused by handheld weapons such as:

- Knives with smooth or serrated blades
- Screwdrivers or similarly pointed tools
- Improvised stabbing weapons (“spike threats”) – with limitations depending on attack type

The protective performance is certified according to Level K1 of VPAM KDIW 2004, with proven resistance to energy levels up to 25 joules, as defined in the testing standard.

Furthermore it is certified according to NIJ Standard-0115.00 with 15 joules (entire protection surface).

3.3 Exclusion of Ballistic Protection

This vest **does not provide ballistic protection**. It is **not suitable for use against firearms** (e.g. bullets, projectiles, or shotgun pellets).

3.4 Combination with Additional PPE

The stab-proof vest can be combined with other types of personal protective equipment, such as:

- High-visibility vests or service uniforms
- Body protection gear (e.g. gloves, arm guards)
- Communication equipment (e.g. radios – usable with integrated cable routing)

It must always be ensured that external equipment does not interfere with the vest’s fit or protective performance.

4. Warnings and Safety Instructions

4.1 General Safety Instructions

Read this manual in full before using the stab-proof vest for the first time.

Wear the vest only when fully assembled and with all protective inserts correctly positioned.

Use the vest only in undamaged condition. Regularly inspect it for tears, cuts, holes, or material deformation.

If visible damage is present or the vest has been subjected to an attack, its protective function can no longer be guaranteed. Affected components must be replaced.

4.2 Notes on Protective Performance

The vest provides protection against stabbing injuries according to Level K1 (VPAM KDIW 2004) as well as according to NIJ Standard-0115.00 with 15 joules (entire protection surface) and 24 joules (core protection area).

It does not protect against firearms (bullets or projectiles).

Protection against blunt force trauma (e.g. punches, kicks, impacts) is not certified.

The protective function may be impaired by:

- Improper storage or cleaning
- Mechanical damage
- Unauthorized modifications or alterations to the vest

4.3 Wearing Instructions

The vest must fit closely to the body without shifting or causing pressure points.

Side closures must be properly fastened and adjusted as necessary.

Do not carry sharp objects (e.g. tools) between your body and the protective inserts – risk of injury!

4.4 Environmental Conditions

Extreme temperatures (e.g. above 60 °C) or prolonged exposure to direct sunlight may damage the protective material.

The vest is not flame-resistant – avoid contact with open flames or sparks.

Contact with chemicals, solvents, or oils can impair functionality.

4.5 Operational Warnings

After an attack or stress beyond standard test levels, the vest must be removed from service and inspected.

Perform a visual and functional inspection before each shift or deployment.

This product is intended for individual use only – the protective performance depends on proper personal fit.

5. Technical Data

5.1 Model Designation

Product name: Armadillo Tex – Stab-proof vest Thor

Model type: Tactical vest (over the clothing)

Category: Personal Protective Equipment (PPE), Category III

Application: Passive torso protection against stabbing threats

5.2 Protection Level

Testing standards: VPAM KDIW 2004 / NIJ Standard 0115.00

Protection level: Level K1 (25 J) by VPAM, 15 J by NIJ (entire surface)

Certification: Certification by Regulation in accordance with PPE Regulation (EU) 2016/425

Test energy: 25 / 15 joules (as per VPAM and NIJ testing protocols)

Certified by:

- VPAM: Beschussamt Mellrichstadt
- NIJ: AITEX

5.3 Material Composition

Protective inserts: Multilayer composite of carbon, aramid, and glass fibers

Outer cover: 100% polyester

Inner lining: Breathable and skin-friendly

5.4 Sizes and Dimensions

Available sizes: S/M, L/XL, XXL/3XL, 4XL/5XL

Available colors: Black

Protection area (front + back, depending on size): approx. 0.25–0.44 m²

5.5 Weight

- S/M: 2,1
- L/XL: 2,4
- XXL/3XL: 2,9
- 4XL/5XL: 3,4

6. Wearing and adjustment

6.1 Preparation before wearing

Check the vest for visible damage, deformation, or wear before each use.

Ensure that all protective inserts are fully and correctly positioned.

Make sure the correct size is selected – the vest should fit close to the body without being restrictive.

6.2 Putting the vest on

Open both side Velcro fasteners completely.

Pull the vest over your head so that the protective inserts lie centrally on the front and back of the torso.

Adjust the shoulder straps using the Velcro to achieve a proper fit. The lower edge of the front panel should sit at or just below navel level.

Close the left and right side flaps in sequence and pull them tight until the vest fits snugly but comfortably. Ensure the vest is centered and symmetrical on the body.

Check the fit:

- The vest must not shift when you move.
- The shoulder area must not restrict freedom of movement.
- When taking the vest off and putting it back on, it is sufficient to release only one of the side Velcro fasteners. This allows for comfortable donning and doffing while maintaining the correct fit.

6.3 Wearing Duration

The vest can be worn for extended periods. However, pay attention to:

- adequate ventilation in hot conditions
- regular breaks if pressure points develop

For prolonged use, wearing a functional undershirt is recommended to improve comfort.

6.4 Fit Considerations

The vest only provides optimal protection when it fits correctly. If in doubt, choose the smaller size to avoid a loose fit.

Side protection modules should fit tightly and be correctly secured to prevent gaps in coverage.

6.5 Combination with Clothing

The vest is designed to be worn over standard outer garments (shirt, T-shirt, pullover).

7. Use in Operation

7.1 Wearing Style and Discretion

The Stab-proof vest Thor is optimized for open wear over the clothing. It is cut close to the body and has minimal bulk.

7.2 Freedom of Movement

The modular scale structure of the protective inserts allows for high mobility, even during activities involving frequent bending, twisting, or quick changes of direction. The vest dynamically adapts to body postures without slipping or causing pressure.

7.3 Behavior During an Attack

In case of an attack with a knife or sharp object:

- Move out of the danger zone as quickly as possible without relying solely on the vest for protection.
- The vest significantly reduces the risk of injury but does not replace the need for defensive behavior.
- Avoid multiple impacts on the same spot, as the protective material can be locally compromised.

7.4 After an Incident

If the vest has been actively struck or heavily stressed during use, it must immediately undergo a visual and tactile inspection.

Visible damage, tears, or deformation of the protective inserts result in the loss of protective function.

In case of doubt, the vest should be removed from service and submitted to the manufacturer or dealer for assessment.

A vest that has been hit must not be used again, even if it appears intact externally.

7.5 Spare Clothing and Hygiene

For longer deployments or frequent use, carrying a second, clean textile cover is recommended.

The outer cover can be washed separately – changing it improves comfort and hygiene.

Wearing an undershirt made of functional material enhances moisture transport and prevents chafing.

7.6 Combination with Equipment

The vest can be worn under normal service clothing, e.g., under a shirt, sweater, or jacket. Radios and small equipment items can be worn outside the vest, provided they do not restrict mobility.

When additional side protection is used, proper positioning and fixation must be ensured to maintain continuous protection.

8. Care, Cleaning, and Maintenance

8.1 General Information

The vest consists of two main components:

- the textile cover (outer material with integrated pockets for protective inserts)
- the removable protective inserts

Careful maintenance is required for long service life and reliable protective function.

8.2 Cleaning the Textile Cover

Before washing: Remove all protective elements from the cover. Close all hook-and-loop fasteners flush to avoid damage to the cover by the hooks.

Washing instructions:

- Hand wash or gentle cycle at a maximum of 30 °C (86 °F)
- Do not spin, tumble dry, or iron
- Do not use bleach or chemical cleaning agents

Drying:

- Air dry only
- Do not place in direct sunlight or on radiators

8.3 Cleaning the Protective Inserts

Protective elements should be gently hand-washed or brushed off. Alternatively, they can be wiped with a damp cloth.

Do not use cleaning agents, alcohol, or solvents.

Allow wet inserts to air dry.

8.4 Disinfection

The outer side of the textile cover can be gently treated with a mild surface disinfectant. Protective inserts must not be disinfected or sprayed—chemicals may damage their structure.

8.5 Storage

Store the vest dry, clean, and lying flat.

Do not place heavy objects on the vest to avoid deformation.

Protect from UV light, high humidity, and heat.

Do not store in cars or near heaters.

8.6 Maintenance and Inspection

Perform visual inspections at regular intervals:

- Condition and fit of hook-and-loop fasteners
- Condition of the textile cover (seams, fabric)
- Condition of the plastic fasteners
- Integrity of the protective plates

Protective elements showing cracks, breaks, or visible damage must not be used further.

If in doubt, the affected component should be replaced or checked by the manufacturer.

9. Storage and Transport

9.1 General Storage Conditions

To preserve the protective effect over the long term, the vest must be stored properly:

- Store dry, clean, and lying flat
- The vest can be stored hanging or lying flat
- Avoid direct sunlight and UV exposure
- Keep humidity below 75%; do not store in damp or poorly ventilated rooms
- Do not store in vehicles, especially under high or strongly fluctuating temperatures (e.g., in summer)

9.2 Temperature Limits

Storage temperature: -20 °C to +40 °C (-4 °F to 104 °F)

Short-term exposure up to +60 °C (140 °F) is permissible but should be avoided

Heat damage is irreversible and leads to permanent impairment of the protective function

9.3 Transport of the Vest

During transport, ensure that:

- The vest is placed flat or folded with the front and back inward
- The vest is placed in a suitable container (e.g., transport bag or case)
- No heavy or sharp objects lie on the vest
- No pressure or bending occurs on the protective materials
- Temperature limits are observed during extended transport in vehicles

9.4 Long-Term Storage

If the vest will not be used for several months, it is recommended to:

- Store in the supplied bag or a breathable cover
- Perform visual inspections every 6 months
- Air out briefly before reuse

9.5 Storage of Worn or Damp Vests

Never store damp vests in airtight packaging – risk of mold!

Always allow the vest to dry completely after use before storage

Remove protective inserts if necessary and store separately (not compressed).

10. Service Life and Disposal

10.1 Service Life of the Vest

The service life of a stab-proof vest depends primarily on frequency of use, care, and storage conditions. When handled properly, the following guidelines apply:

- Protective inserts: up to 5 years
- Textile cover: approx. 12 months with frequent use, up to 5 years with occasional use

A shortened service life may occur due to:

- Heavy mechanical stress
- Improper care (e.g., washing with inserts inside, hook-and-loop fasteners not closed properly)
- High UV exposure or heat

- Chemical contamination (e.g., oils, solvents, etc.)

Note: The actual protective performance can only be guaranteed if the vest is regularly inspected and removed from service when in doubt.

10.2 End of Service Life

The vest should be replaced no later than the end of its recommended service life – even if no visible damage is present.

After significant stress or an attack, the vest must be taken out of service immediately, as microscopic damage may not be visible.

Responsibility for timely removal from service lies with the wearer or the responsible organization.

After exceeding the recommended service life or in case of visible damage, the vest must be withdrawn from use and rendered unusable by cutting or other means of destruction, in order to prevent further use.

10.3 Disposal

The protective inserts are made of fiber-reinforced composite materials and must not be disposed of with household waste.

Disposal through an authorized waste management company (hazardous or composite waste) is recommended.

The textile cover, if uncontaminated, can be disposed of via general waste or clothing donation containers.

Data protection: For vests issued by official authorities, any personal identifiers (e.g., name tags) should be removed or rendered unrecognizable prior to disposal.

10.4 Return to Manufacturer

On request, the vest can be returned to the manufacturer for proper disposal or inspection.

Please contact customer service at:

 info@armadillo-tex.com

 +49 (0) 2191 789 05 79

11. Warranty and Liability

11.1 Warranty Conditions

The Armadillo Tex Stab-proof vest Thor is manufactured in compliance with high quality standards and thoroughly inspected prior to delivery.

A 24-month warranty from the date of purchase applies to material and manufacturing defects, provided that the vest:

- has been used properly (in accordance with this manual)
- shows no mechanical or thermal damage due to improper use
- has not been altered or repaired by third parties

Excluded from the warranty are:

- Damage due to normal wear and tear (particularly to the textile cover or hook-and-loop fasteners)
- Damage caused by improper care, storage, or cleaning
- Damage from excessive mechanical or chemical exposure
- Damage resulting from actual attacks (e.g., active impact from stabbing weapons)

11.2 Disclaimer of Liability

The manufacturer assumes no liability for:

- Damage caused by improper use, tampering, or unauthorized modifications of the vest
- Injuries or property damage resulting from incorrect use, incorrect size, or misuse
- Consequential damage arising from wearing or not wearing the vest in hazardous situations

The vest is a passive protective measure and does not provide complete protection against all types of attacks—especially in cases of high-impact force or multiple hits to the same location. As the vest does not cover the entire body, stab injuries outside the protected area cannot be prevented.

11.3 Submitting Warranty Claims

In the event of a suspected warranty claim, please contact:

 info@armadillo-tex.com

 +49 (0) 2191 789 05 79

Please have the following information ready:

- Proof of purchase (invoice or delivery note)
- Description of the defect
- Photos of the affected area, if possible

The manufacturer will assess the claim. If the defect is confirmed, the manufacturer will decide whether to repair, replace, or credit the product.

12. Labelling and Traceability

12.1 Product Labelling

Each Armadillo Tex Stab-proof vest Thor is equipped with a permanently affixed label on the inside of the textile cover. This label contains all essential information for identification and safe use:

- Product name and model: Stab-proof vest Thor
- Manufacturer: Armadillo Tex
- Address: Hackenberg 87, 42897 Remscheid, Germany
- Email: info@armadillo-tex.com
- Date of manufacture
- Size information
- Care and usage pictograms
- Warning: “No protection against firearms!”

Important: Do not remove or alter the label. It is essential for traceability and product safety.

12.2 Traceability

The date of manufacture on the label enables the manufacturer to clearly assign the product to its production batch, material lot, and quality inspection.

This marking is necessary to:

- Enable targeted responses in case of product liability or recall measures
- Ensure transparent and complete quality assurance tracking
- Provide reliable service and warranty handling
- Determine the end of the vest’s service life

12.3 User Documentation

It is recommended to document the following information for internal records:

- Date of purchase

- Name of assigned user (for agencies or organizations)
- Relevant maintenance or incident reports (e.g., after deployment)

12.4 Modifications to the Product

Any subsequent modifications to the vest—especially to the protective inserts or fit—will void the CE conformity, as well as any warranty and product liability.

13. Declaration of Conformity

The manufacturer Armadillo Tex,

represented by:

Dr.-Ing. Philip Jungbecker

Armadillo Tex GmbH, Hackenberg 87, 42897 Remscheid, Germany

hereby declares under sole responsibility that the product:

Stab-proof vest Thor

(Concealable vest with multi-layer textile protection system)

is in conformity with the essential requirements of Regulation (EU) 2016/425 on personal protective equipment.

13.1 Product Category

This personal protective equipment falls under:

Category III according to PPE Regulation (EU) 2016/425

Protection against specific physical hazards (stab injuries)

13.2 Testing Standard and Assessment Procedure

The vest has been tested and certified by an independent testing institute through a Certification by Regulation procedure, based on the NIJ standard for stab protection.

The assessment includes evaluation of materials, puncture resistance, workmanship, and ergonomic features.

Testing Institute:

AITEX, Textile Research Institute

Carretera Banyeres nº10, 03801 Alcoy (Alicante), Spain

Certificate No.: 26/10359/00/0161/B

Date of Testing: 25.08.2026

13.3 Place and Date of Declaration

Place: Remscheid

Date: 25.08.2026

A handwritten signature in blue ink, appearing to read 'P. Jungbecker', is written over the printed name.

Dr.-Ing. Philip Jungbecker, Technical Director
(on behalf of Armadillo Tex)