EN

Instruction manual for shock absorbing lanyards, certified according to EN 354 and EN 355

< 100 kg

DELTA 1	DELTA 2	DELTA 1 RS	DELTA 2 RS
			

VIPER	CHAMELEON	VIPER VARIO	CHAMELEON VARIO
			

Thank you for choosing EDGE SAFETY EQUIPMENT! You have purchased a high quality product that will reliably protect you and will be your companion for a long time when working at heights and depths. This manual must be read and understood before using the product! This product will be used with other equipment (components) thus forming a system for working at heights. Please refer to the instruction manual of each component in your system for compatibility and correct use! Following these instructions accordingly is essential for your safety. Failure to do so can result in serious or even fatal accidents! Keep these instructions together with the product, accessible to all users, so they can consult them whenever is needed!

WARNING! These instructions are a basic comprehensive guide to the safe use of the purchased equipment. They contain general information about the product, intended to help the user, but cannot cover all the situations that may occur in the daily activities and cannot in any case replace the specialized training courses for safety at heights. This PPE against falls from heights can only be used by well-trained users, who are familiar with the relevant legislation and who have successfully completed a special safety training course for working at heights.

WARNING! For works with risk of falling from heights or in depths, a risk assessment must be carried out in advance in accordance with current regulations and legal provisions (EN standards or specific national rules) that will provide adequate measures for safety and rescue!

WARNING! Instructions for use are updated when technical or legislative changes occur. The latest version of the instructions overwrites previous versions and is the only valid version. Please make sure you follow the instructions of the most recent version. You can download the most recent instructions from our website www.edge-safety.eu by accessing the section of each product. For help or additional questions, please contact us at sales@edge-safety.eu or Tel. +31 (0) 118.745760.

FIELD OF USE: Along with other tested and certified components, the shock absorbing lanyards are used in fall arrest systems. The purpose of these systems is to stop the free fall of the user, absorbing most of the shock and distributing the remaining force evenly, while holding the users body in a proper position until he or she is rescued. In case of fall, the energy absorber will deploy and dissipate the energy efficiently, keeping the arising forces below 6 kN. The product must be used exclusively as a PPEaF (Personal Protective Equipment against Fall), in usual environments with temperatures between -30°C and +50°C, without potentially explosive atmospheres, far away from flames, sparks or hot metal splash.

Avoid contact with sharp edges, electricity, chemicals, corrosive solutions and substances, excessive heat, oils, paints or any other contaminants. The structures used for anchoring have to meet the requirements of EN 795-2012, must have NO sharp edges and must be capable to withstand minimum 12 kN. The anchor point must be located as high as possible above the user and as close as possible to the vertical axis of the user's position, thus reducing the fall distance and prevent dangerous swing falls. The minimum free space below the user (fall clearance) must be ensured to prevent hitting the ground or any obstacles while the fall is arrested.

DESCRIPTION: EDGE shock absorbing lanyards are of two main construction types: single string lanyards and forked lanyards.

- The **single** string type lanyard it is meant to be used mostly for stationary works/applications, where the user is protected until he arrives at his workplace, and then, by connecting the shock absorbing lanyard accordingly, the user can carry out his work, being protected against falls.
- Due to its shape, the **forked type** lanyard is suitable for a wider variety of applications. The forked type allows the user to alternately connect two ends of the lanyard to anchor points, thus being able to move, while having at all times one end attached to an anchor point / anchor structure. The forked type shock absorbing lanyards can be used for climbing ladders, poles or other metallic structures. This type of lanyard offers high mobility and safety, including the possibility to connect, both ends to the different anchor points, at the same time.

A shock absorbing lanyard comprises the following elements: end connector, lanyard (rope or webbing), the energy absorber and its connector. The connector of the energy absorber will be attached to the dorsal or sternal attachment point of a full body harness. The sternal attachment point can be a metallic ring (marked A) or two textile loops (each marked A/2), which will need to be connected simultaneously. The connector(s) at the other end (usually, a large opening connector) will be attached to a suitable anchor point. If a structural anchor point is used (e.g. steel beam) make sure it has a breaking load of minimum 12 kN and its size and shape will not cause incorrect loading of the connector.

In the event of a fall, impressive forces occur depending on the falling distance and weight of the falling person! The energy absorber is reducing the forces generated below 6kN. A major part of the generated kinetic energy will be dissipated by the special tear-up webbing of the energy absorber, thus keeping the force to a tolerable level. EDGE shock absorbing lanyards are manufactured using high tensile PA ropes, PES or PA webbings and steel / aluminum hardware.

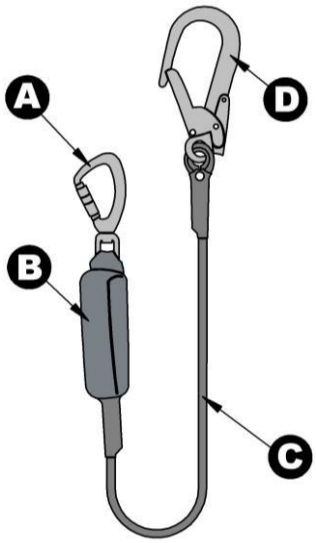
MAIN COMPONENTS

A – connector
(for attaching to the full body harness)

B – energy absorber
(shock absorber)

C – lanyard
(elastic webbing)

D – connector
(for attaching to the anchor point)



TYPES OF LANYARDS

single string

absorber pack + lanyard
(elastic webbing)

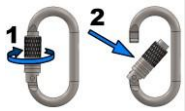
forked

absorber pack + two lanyards
(elastic webbing)

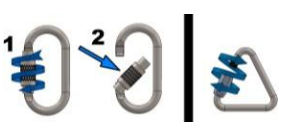
GATE OPENING / CLOSING

Auto-Lock

Tri-Lock

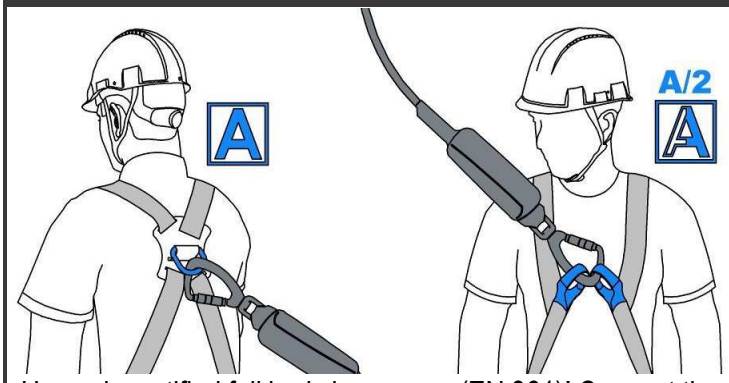


Twist-Lock



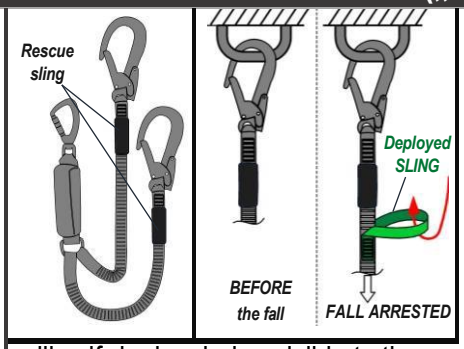
Screw

CONNECTING TO THE HARNESS



Use only certified full body harnesses (EN 361)! Connect the absorber end to an attachment point on your harness that is marked with **"A"** or **„A/2"**. These are the only points approved for fall arrest.
The points are usually metal rings or textile loops and in case of A/2 marking, the two points need to be connected together!
Refer to your full body harness manual for complete attachment instructions!

RESCUE SLING („RS" versions)



Models: **DELTA 1 RS** & **DELTA 2 RS** are equipped with rescue slings.

These slings are made of high visibility, high tensile webbings and are covered by elastic sleeves. When the fall is arrested, the rescue sling will self-deploy, being visible to the rescuers. The deployed sling is oriented laterally (almost perpendicular to the main lanyard), making it accessible for the rescuers!

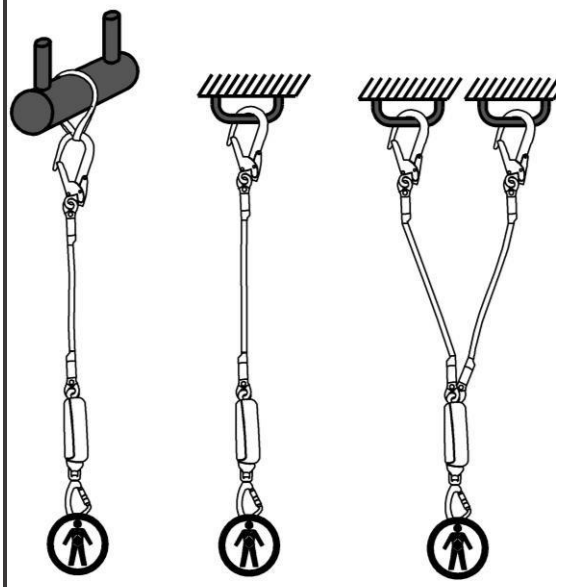
WARNING! These slings will be used only in rescue operations, by trained personnel, which need to temporarily lift the person!
DO NOT use the rescue slings for any other purposes than the one they were designed for! It is strictly forbidden to use these slings in fall arrest applications!

(!) ALLOWED USER WEIGHT (user + equipment):

▪ The shock absorbing lanyards type **Delta 1, Delta 2, Delta 1 RS, Delta 2 RS, Viper, Chameleon, Viper Vario** and **Chameleon Vario** are tested and certified according to EN 354 and EN 355, with a rigid test mass of 100 kg (fall factor=2), thus being **approved for users with a total mass of maximum 100 kg (user + equipment).**

Below some examples of correct / incorrect use of shock absorbing lanyards and carabiners are presented. Note that these are the most encountered situations in use, but a full list of all possible incorrect uses cannot be covered by this manual. Use only certified components (carabiners, lanyards, etc.) and read / follow their instructions carefully!

✓ CORRECT USE

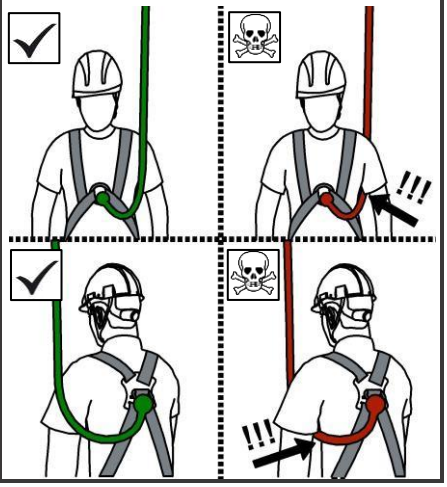


WARNING !

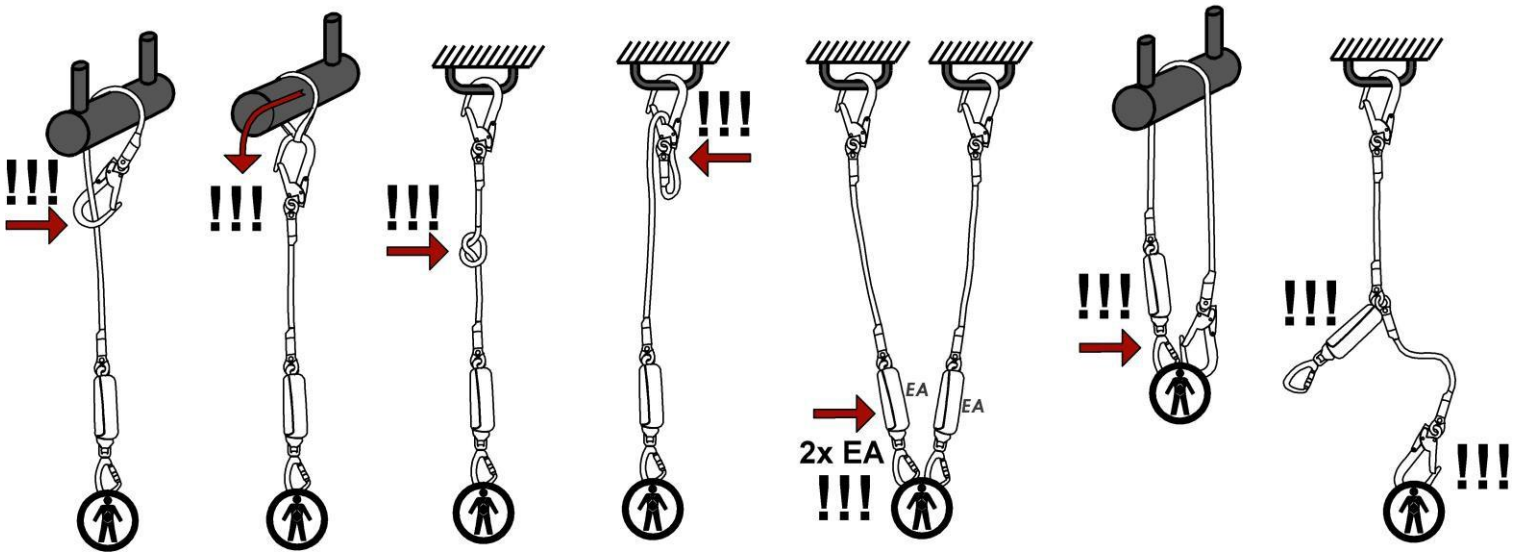
When using forked lanyards, having one string connected to the anchor point, connect the second, unused string, only to approved **lanyard parking elements** on your harness! (e.g. plastic ring). In case of fall, a lanyard parking element will break easily, allowing correct deployment of the absorber!

WARNING !

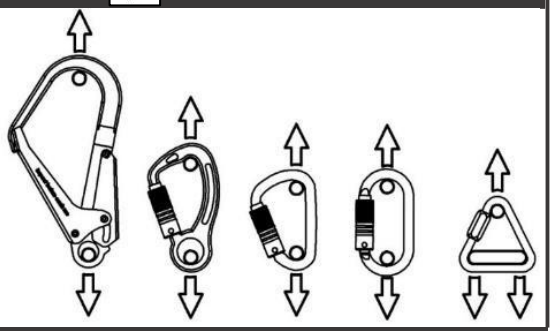
Connect and use your shock absorbing lanyard making sure that the rope / webbing is NEVER passed under your arm(s).
Failure to do so can result in serious or even fatal accidents!



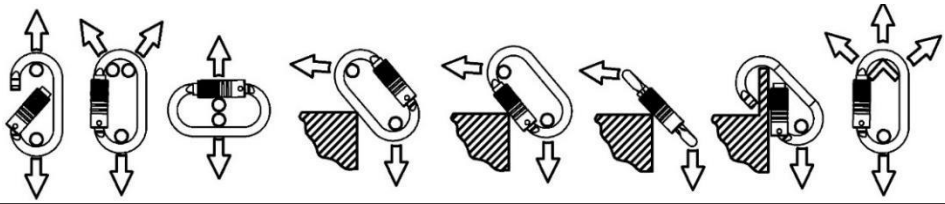
INCORRECT AND DANGEROUS USE



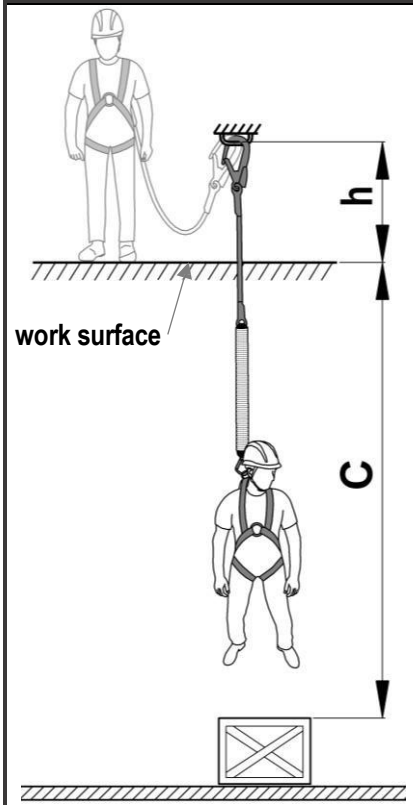
CORRECT USE



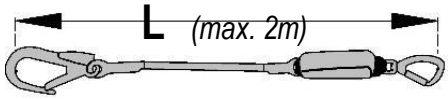
INCORRECT AND DANGEROUS USE



!!! FALL CLEARANCE !!!



The fall clearance (C) or the minimum free space below the work surface is the distance from the surface the user walks on, to the nearest obstacle!
Make sure that there is enough clearance (C) below your work surface, before starting the work!

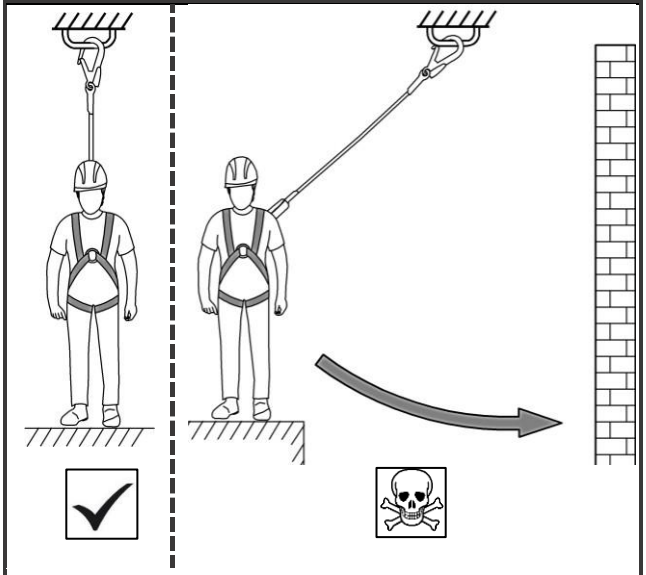


$$C = (L + 4{,}5m) - h$$

C = fall clearance [m];
L = length of the shock absorbing lanyard including connectors [m];
h = height of the anchor point, measured from the work surface to the bearing point of the anchor [m];

WARNING! If there are any doubts / uncertainties regarding the calculated fall clearance (C) ensure a minimum safety height of 6,5m below the work surface!

SWING FALL HAZARD



The anchor point must be located as high as possible above the user and as close as possible to the vertical axis of the user, thus reducing the fall distance and preventing dangerous swing falls!

DANGER: SHARP EDGES!

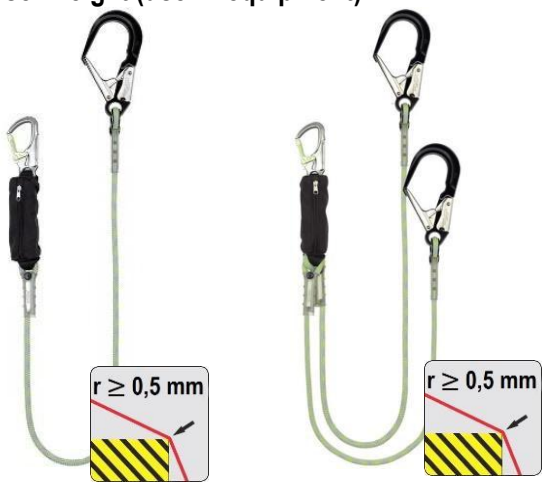
KEEP CLEAR of sharp edges, abrasive surfaces or any other factors that can inflict damage to your equipment!

WARNING! Before use, the integrity and compatibility of the equipment must be checked. If damage is identified, the equipment must be immediately withdrawn from use! If the lanyard is equipped with SCREW locking carabiners, please make sure that the gate is fully closed and tightened correctly, before using it!

Note: **SCREW locking** carabiners shall NOT be used at workplaces where the user must connect/disconnect frequently! If the lanyard is equipped with AUTO-LOCK, TRI-LOCK or TWIST-LOCK carabiners, make sure thet the gate is fully closed and secured before use. We recommend to use this PPE with other components from EGDE to have guaranteed 100% compatibility of the elements! If there is any doubt regarding the condition of the equipment DO NOT USE IT, instead send it to the manufacturer or to an authorized representative of the manufacturer for a professional evaluation!

HORIZONTAL USE: edge tested lanyards

The models **„VIPER”** and **„CHAMELEON”** have been successfully tested according to **CNB/P/11.074** and are approved for use over edges (horizontal use). **(!) Allowed user weight (user + equipment):**



Max. 100 kg for „VIPER” and „CHAMELEON”

Warning: Use over edges poses greater risks to the user, compared with regular use! When the fall is arrested, the user can hit the building or any other obstacles below the workplace! Avoid or try to minimise use over edges, as much as possible!
For horizontal use (use over an edge), the following precautions must be taken BEFORE starting the work:

► If the risk assessment shows that the edge is particularly „sharp” and/or „not free from burrs” (e.g. an unclad proof parapet, a sharp concrete edge) you need to take all necessary measures to rule out the risk of falling over the edge or to install adequate protection (e.g. edge protectors)! Seek advice from the manufacturer if there are any doubts!
► MAKE SURE that the edge has a **rounding radius (r) of more than 0,5 mm** and **a deflection angle (α) of more than 90°** **(fig. A)**!
► The anchor point must be located ABOVE the work surface! Anchoring below foot level is NOT allowed in this case!
► Make sure the there is enough **fall clearance** beneath the edge. For your safety, a fall clearance of minimum **6.5m** must be ensured, before starting the work. If the shock absorbing lanyard is connected to an EN 795 - C anchor device (e.g. horizontal lifeline with wire rope line), the **deflection of the anchor device must be taken into account!** This will increase the fall clearance required! Refer to the instruction manual of the anchor device for this value!
► **The lanyard must be used in such way that NO SLACK is created in the rope!**
► Make sure that **lateral movement** in relation to the fixed anchor point **does NOT exceed 1,5 m!** **(fig. B)** In other cases, no individual (fixed) anchor points should be used, but rather a Class C or D anchor device pursuant to EN 795 (e.g. lifeline systems with cable or rail).
► **KEEP CLEAR of areas where the fall can occur over an inclined edge! (fig. C) (e.g. the edge of an inclined roof).**
► **Special rescue measures** must be determined and practiced, in order to rescue a person that felt over an edge!

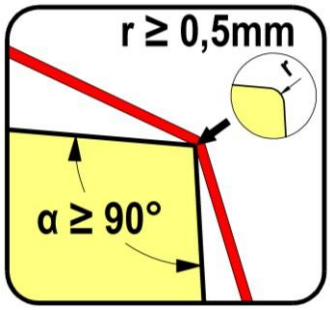


Fig. A

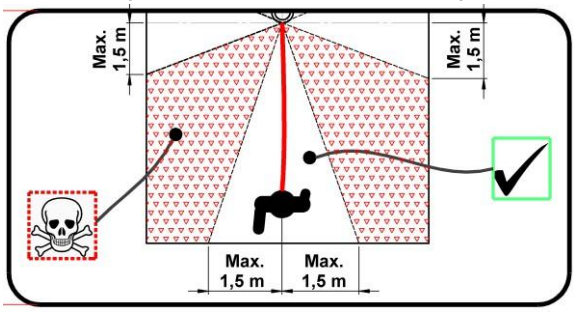


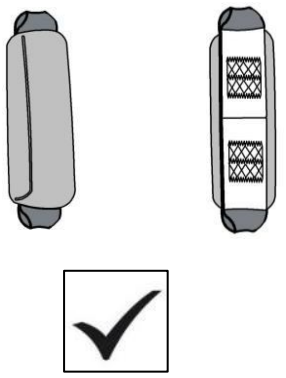
Fig. B

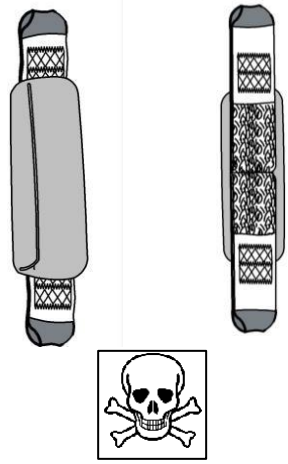
Fig. C

WARNING! This product is designed as a Personal Protective Equipment against Fall (PPEaF). Modifying it or assigning other uses are strictly forbidden! Each user shall use his own PPEaF as well as his own rescue equipment. The user must know the performances and also the limitations of his equipment! In case of uncertainty regarding the equipment or its safe use, seek advice from the manufacturer or your qualified distributor.

👁 VISUAL CHECKS!

Check your equipment BEFORE EACH USE!





▪**DO NOT USE the equipment** if the energy absorber had deployed (was involved in a fall arrest or was subjected to loads) or if any damage had been identified!

The equipment must be immediately removed from service if:

1. The marking/label is missing or is unreadable.
2. **DAMAGE has been identified (incisions, cuts, tearing, worn seams, discoloration, hardened or thinned areas, burns, melted areas, rust, plastic deformations) if any other abnormalities of the parts or structure have been found or if the product had suffered any changes compared to its original condition**!
3. Contact with paints or unknown chemicals had occurred (irreversible contaminations).
4. The equipment was involved in a fall arrest or had been subjected to heavy loading.
5. The integrity of the equipment is questionable and the inspection log is incomplete or missing.
6. The equipment was in service longer than **10 years**.

RESCUE! A rescue plan must be made before starting the work at heights or depths! It is mandatory to set up and know the specific rescue plan for every situation and to have designated personnel and appropriate means of intervention!

The SERVICE LIFE * of PPE against falls, made of textile materials is 6-8 years under normal conditions, but a **maximum of 10 years** * from the date of first use. The date of the first use must be noted in the logbook, otherwise the date of manufacture is considered as the date of the first use. **The storage** of new, unused products under optimal conditions (darkness, dryness, original packaging, constant temperature, without chemical vapors, etc.) should not exceed **2 years**. * PPE that belongs to a single user, has not been used excessively and not often, has been subjected to regular checks by experts, has been found to be "safe" and recorded in the log book, has a complete product history, has not been involved in a fall, is carefully treated and cared for, have been stored in accordance with regulations, have not come into contact with oils, fats or aggressive chemicals, (attention - incomplete list) can remain in use for up to 10 years. Intensive use, heavy and demanding working conditions, incorrect application, incorrect maintenance and care can greatly reduce the service life of the equipment. Certain events, such as falls, high exposure to heat, exposure to corrosive chemicals, can limit the use of your equipment to a single time. A generally valid, binding statement about the duration of use of textile PPE cannot be made, as this depends on a large number of factors such as UV light exposure, working conditions, contact with various substances, etc. The service life of the equipment ends when one of the cases mentioned in the previous chapter occurs or when the inspector / certified expert decides this on the basis of other facts. The theoretical total service life of textile PPE against falls (Storage time + Service life) is limited to a maximum of 12 years from the date of manufacture.

STORAGE, MAINTENANCE, TRANSPORT

The equipment should be stored in a dry, cool and well-ventilated room, if possible, in its original packaging. While in storage, this PPEaF must be protected from UV radiation, solar radiation, heat, sparks, incandescent metal splash, electricity, chemicals, sharp objects, heat

sources, dust, cement, oils and greases or any kind of contaminants. If necessary, the textile parts can be cleaned using warm water (30°C) then rinsed. Drying the wet equipment will be made by hanging it in well-ventilated room away from any heat source. When fully dried, the equipment can be stored accordingly in its packaging (bag or box). Transport of the equipment must be made in its protective bag or box, away from any factor that could contaminate or inflict damage.

MARKING

All EDGE PPEaF (Personal Protective Equipment against Falls) are fitted with a label which contains the following elements and essential information: name of the manufacturer, name of the model and version (if applicable), length [m], manufacturing date (month and year), standards/norms the product complies to, European CE marking with notified body number, international symbol for reading the instructions before use and the product's serial number. In this case the label also includes warnings and graphic instructions regarding the minimum fall clearance and the allowed user weight [kg]. The label must be always present and readable!

PERIODIC INSPECTIONS AND CHECKS

The user must perform a visual and functional inspection of his equipment before and after each use! During use, it is important to monitor your equipment in order to identify possible damages inflicted in use, without being aware of it. The equipment must be inspected **at least once every 12 months** or more often if required, depending on the working conditions and compulsory after every incident it has been involved in. Inspections can be carried out only by the manufacturer or by an authorized inspections center. **If the periodic inspections were not performed at least once every 12 months, were carried out by unqualified persons, or without strictly respecting the manufacturer's instructions, the warranty is lost and the manufacturer declines any responsibility related to the equipment!**

Inspection Log!

Every PPEaF is delivered with an Inspection Log. This document must be kept safely and sent along with the product for every inspection.

The Log (table) contains important data regarding your equipment. The date, signature of the inspector and the results are also recorded. The **date of first use** must be written in the Inspection Log by the user!

Repairs or any other modifications can be performed only by the manufacturer! Any repairs, modifications or additions (even minor ones) performed by anyone else are strictly forbidden, lead to the loss of the manufacturers guarantee and any responsibility related to this product!

WARRANTY AND LIABILITY!

The manufacturer offers a **24 month** warranty for this PPEaF from the date of first use. The user has the obligation to write the date of first use in the Inspection Log. If the date of first use was not filled in, the warranty period will be calculated from the manufacturing date. The warranty is applicable only for material or manufacturing defects! Damage resulting from normal wear and tear, corrosion, poor maintenance (or no maintenance at all), those resulted from carelessness, accidents, fall arrest, unauthorized repairs or modifications, wrong use of this PPEaF or any other reasons are NOT covered by the warranty! The warranty does NOT cover the springs of the carabiners as these can be damaged due to inadequate storage or improper use.

Warranty claims only apply to the product. All claims by the user or any other party for the direct, indirect or any consequential damages resulting from the use of this PPEaF are excluded from guarantee and liability assumptions. Any claims in this regard are hereby expressly rejected.

The user must be informed regarding the dangers of work at heights and depths. They should be aware of the risks and they are the only responsible person for eventual damage, accidents or even death which may result from the use of this equipment. If the user is unable to do so or if they do not have the competence to do so, they cannot use this PPEaF.

EDGE SAFETY EQUIPMENT herewith rejects any liability claims for direct, indirect, accidental or consequential damages resulting from the use of this PPEaF (Personal Protective Equipment against Fall).

The EU / EC type examination was carried out by: INCDPM (The National Research and Development Institute for Occupational Safety-Bucharest). European notified body: NB 2756.

The **EU / EC Declaration of Conformity** can be obtained from our website www.edge-safety.eu or via e-mail sales@edge-safety.eu

(RO) REGISTRU INSPECȚII **(EN) INSPECTION LOG** **(DE) PRÜFBUCH** **(IT) REGISTRO DI CONTROLLO** **(FR) JOURNAL D'INSPECTION** **(ES) REGISTRO DE INSPECCIÓN**	**PROPRIETAR / OWNER / EIGENTUMER / PROPRIETARIO / PROPRIÉTAIRE / DUEÑO** **UTILIZATOR / USER / BENUTZER / UTILIZZATORE / USAGER / UTILIZADOR** **PRIMA UTILIZARE / FIRST USE / ERSTBENUTZUNG / PRIMO UTILIZZO / PREMIÈRE UTILISATION / PRIMER USO** ***dd / mm / yyyy***	**PRODUCT DETAILS** **ITEM:** _____ **SERIAL N°:** _____ **MANUFACTURED:** _____ **MANUFACTURER:** _____

Inspection date *dd / mm / yyyy*	**Results of the inspection:**	**Inspection passed**		**Signature of the inspector:**	**Next inspection due latest:** ***dd/mm/yy***
		YES	**NO**		

Manufacturer: EDGE SAFETY EQUIPMENT B.V.
Anodeweg 52
4338 RA Middelburg, The Netherlands

EDGE SAFETY EQUIPMENT