



AVANTI Personal Protective Equipment (PPE)

Instructions for use and Record card

AVANTI Personal Protective Equipment (PPE)

Date of publication:

2nd edition July 2010

Manufacturer:

AVANTI Wind Systems A/S

Høgevej 19

3400 Hillerød

Denmark

P: (+45) 4824 9024

F: (+45) 4824 9124

E: info@avanti-online.com

I: www.avanti-online.com

**Sales & Service:**

Australia

China

Denmark

Germany

Spain

UK

USA

India

Avanti Wind Systems PTY LTD

Avanti Wind Systems

Avanti Wind Systems A/S

Avanti Wind Systems GmbH

Avanti Wind Systems SL

Avanti Wind Systems Limited

Avanti Wind Systems, Inc

Avanti Wind Systems, PL

P: +61 (0) 7 3902 1445

P: +86 21 5785 8811

P: +45 4824 9024

P: +49 48142 1570

P: +34 976 149 524

P: +44 0 1706 356 442

P: +1 (262) 641-9101

P: +91 44 6455 591101



AVANTI Personal Protective Equipment (PPE)



If you have other needs related to PPE, response equipment, services, or spare parts, please contact us and we will be pleased to service you.

Limited Warranty

AVANTI Wind Systems A/S warrants that commencing from the date of shipment to the Customer, and continuing for a period of the longer of 365 days thereafter, or the period set forth in the standard AVANTI warranty, the AVANTI PPE described in this Manual will be free from defects in material and workmanship under normal use and service when installed and operated in accordance with the provisions of this Manual.

This warranty is made only to the original user of the Product. The sole and exclusive remedy and the entire liability of AVANTI under this limited warranty, shall be, at the option of AVANTI, a replacement of the Product (including incidental and freight charges paid by the Customer) with a similar new or reconditioned Product of equivalent value, or a refund of the purchase price if the Product is returned to AVANTI, freight and insurance prepaid. The obligations of AVANTI are expressly conditioned upon return of the Product in strict accordance with the return procedures of AVANTI.

This warranty does not apply if the Product (i) has been altered without the authorization of AVANTI or its authorized representative; (ii) has not been installed, operated, repaired, or maintained in accordance with this Manual or other instructions from AVANTI; (iii) has been subjected to abuse, neglect, casualty, or negligence; (iv) has been furnished by AVANTI to Customer without charge; or (v) has been sold on an "AS-IS" basis.

Except as specifically set forth in this Limited Warranty, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, SATISFACTORY QUALITY, COURSE OF DEALING, LAW, USAGE OR TRADE PRACTICE ARE HERBY EXCLUDED TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW AND ARE EXPRESSLY DISCLAIMED BY AVANTI. IF, PURSUANT TO ANY APPLICABLE LAW, TO THE EXTENT AN IMPLIED WARRANTY CANNOT BE EXCLUDED AS PROVIDED IN THIS LIMITED WARRANTY, ANY IMPLIED WARRANTY IS LIMITED IN TIME TO THE SAME DURATION AS THE EXPRESS WARRANTY PERIOD SET FORTH ABOVE. BECAUSE SOME STATES DO NOT PERMIT LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES, THIS MAY NOT APPLY TO A GIVEN CUS*TOMER. THIS LIMITED WARRANTY GIVES CUSTOMER SPECIFIC LEGAL RIGHTS, AND CUSTOMER MAY HAVE OTHER LEGAL RIGHTS UNDER APPLICABLE LAWS. This disclaimer shall apply even if the express warranty fails of its essential purpose.

The Avanti PPE corresponds with the regulations of the European safety requirements (CE-guideline 89/686/CEE of 21.12.89)

The Q5 full body Harness Conforms to the following standards:
EN 361 (full body harnesses); EN 358 (work positioning belts); EN 364 (test methods)
The shock absorber Y: Conforms to the following standards: EN 355/354

Notified Body: CE 0402.SP Sveriges Tekniska
Forskningsinstitut Box 857501 15 Borås Sweden.

The Avanti Helmet Conforms to the following standards: EN 397
Notified Body: CE 0086, BSI Product Services Maylands Avenue, Hemel Hempstead,
Hertfordshire HP2 4SQ, United Kingdom

The Avanti Work Positioner SK 14 Conforms to following standards: EN 358
Notified Body: CE 0158 Dekra Exam GmbH, Dinnendahlstraße 9, D-44809 Bochum, Germany

Cautions



CAUTION!

Avoid injury – follow all instructions!

- a) Users are obligated to read and understand the sections in this user's Manual which correspond to the product(s) purchased. Avanti PPE is only to be operated by users trained in the use and inspection of the equipment, and uses it for its intended purpose.
- b) A competent user must be familiar with and trained with the AVANTI PPE system and EN 341, 358, 361, 363, 364, 365 and 1496 (or applicable local and/or federal requirements). Any technician who has successfully participated in the AVANTI Fall Protection course is deemed competent; this includes familiarity with the PPE usage and intended purposes.
- c) The PPE may only be used by a person trained and competent in regard to its intended purpose and its safe use.
- d) It is necessary to have an emergency plan which incorporates rescue response measures for all practical emergency situations that may occur during daily work.
- e) Prior to first use an expert/competent person must inspect the PPE.
- f) Prior to use, the user must visually inspect the PPE to ensure proper working order.

Danger



DANGER!

- a) PPE must be replaced or repaired (by certified Avanti personnel) when:
 - Damage to webbing materials, stitching, or seams (tears, cuts, deep abrasions)
 - Damage to plastic and/or metal fittings
 - A "shock load" has been placed on the equipment resulting from a fall
 - After the designated application period has elapsed
 - Any other faults occur that could jeopardize the safety.
- b) The PPE may not be used by persons under influence of alcohol, drugs, or other substances deemed impermissible by the user's employer.
- c) The employer must ensure that a rescue plan is prepared to deal with any emergency that could arise during daily work, including work performed at heights. The employer equally ensure the users are familiar with the plan.
- d) The PPE may not be used outside its limitations or for any other purpose not defined within this manual.

List of content

1133 Full Body Harness.....6

Shock Absorber Y.....10

AVANTI Work Positioner SK14.....13

Rescue Equipment RESQ RED.....16

AVANTI Helmet.....17

1133 Full Body Harness



1133 Full Body Harness

1. Instructions for use

The full body harness is intended to ensure the safety of people in working areas where the risk of falling is present, and may only be used for this intended purpose.

This instruction and record log must be kept with the product for future reference during periodic inspection.

Assign an INVENTORY number to your full body harness for easy identification and enter it into the prepared label on the product and the record log. If product repairs are recognized at the time of inspection, the Record card must accompany the product in question.

2. Regulations for the holder of the equipment

The full body harness should be assigned to one individual user.

Immediately before and after each use, an examination of the full body harness must be carried out to guarantee that it is in proper working condition. A product which no longer appears safe or does not pass inspection must NOT BE USED and should be replaced immediately. Please note:

- Damage to webbing materials, stitching, or seams (tears, cuts, deep abrasions)
- Damage to plastic and/or metal fittings

This examination may only be omitted, if the product is part of emergency equipment and has been inspected and put into a sealed container by a competent person. Observe the label for the next regular inspection and the maximum period of use (according to Application period). A competent person is a person authorized by the manufacturer to inspect the Harness.

3. Maintenance and storage

Harness and rope in PPE are made out of polyester materials. All cleaning must be made with a soft brush, lukewarm water (max. 40° C) and mild soap if necessary. After cleaning with mild soap it is important to rinse the PPE with a moderate amount of lukewarm water to ensure all soap has been flushed out of the polyester material.

After washing and rinsing the PPE, all metal parts must be wiped with a dry cloth and the PPE shall be hung up in a straight and natural position (harness on a coat hanger) in a dry, well ventilated place that is well protected from ultraviolet light (UV) and direct heating sources.

The PPE must be stored and transported in dry conditions protected from UV, chemicals, oil and other substances that could have aggressive influence on the material. For transportation AVANTI recommends a bag, box or similar in order to keep the PPE well protected.

4. Periodic inspections

The Harness must be inspected by the manufacturer or a competent person at least annually. If used in adverse environments on a daily basis or placed under greater stress (e.g. environmental or industrial factors affecting the materials), the Harness should be inspected in an accordingly higher frequency. The competent inspection must include a summary of the Harness condition, which must be entered into the record log.

5. Application period

The application period of the Harness depends on the respective use and can not be generally defined due to the different frequency of use, conditions of use, care and storage. With normal use and observation of these instructions for use, the maximum application of use for full body harnesses is 5 years in use.

If the equipment is used less frequently, this period can be prolonged by max. 50% (e.g. up to 7.5 years instead of 5 years). In case of frequent use, intensive wear or extreme environmental influences though, the allowed period of use can also

1133 Full Body Harness

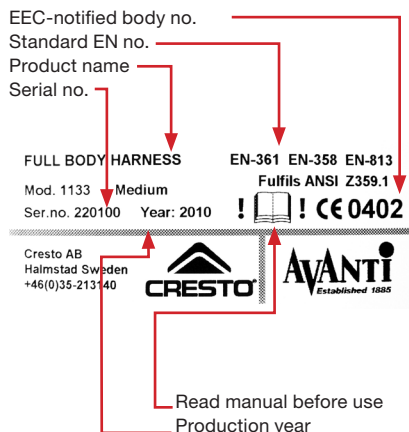
become shorter. Maximum life expectancy from manufacturer year are 10 years from manufacture date, but off course use, wear and tear has to be taken into account.

The decision is up to the responsible competent person within the prescribed periodic inspection. If the competent inspection carried out by the user of the equipment or the competent person results in a failure of requirements, or if the Harness usage time has elapsed, it must be replaced. The replacement must be made in such a way that reusing the gear will not occur (e.g. cut straps, discard properly).

6. Repair

Repair, modification or additions to the Harness generally must be carried out exclusively by a competent person or the Manufacturer.

7. Marking



8. Safety notes

The anchor point from which the equipment is affixed to, should whenever possible be directly above the user (in order to prevent swinging or hitting into structure in case of a fall) and must meet the requirements of EN 795 (in addition to other applicable local or federal regulations). Please take special care that no sharp edges endanger the anchoring device or the safe locking of all connectors (carabiners) and their functions according to EN 362 (in addition to other applicable local or federal regulations). The position of the anchor point should always be chosen in a way that the fall distance is the shortest. Always plan a free fall zone which keeps the user from falling into an obstacle or the next lower level.

9. Application

The full body harness may only be used with tested and approved components for Fall Arrest.

Thereby the full body harness with arresting eyelets according to EN 361 (in addition to other applicable local or federal regulations) is admissible with:

- Retractable type fall arresters according EN 360
- Guided type fall arresters on fixed anchor lines according to EN 353-1
- Guided type fall arresters on flexible anchor Lines/rails according to EN 353-2
- Lanyards with shock absorbers according to EN 354/EN 355
- Descender and rescue devices according to EN 341/EN 1496
- Work positioning and restraint systems according to EN 358

Any further combinations of equipment elements are not allowed and will put your safety at risk. Never modify or use modified components that are not intended for direct use with the fall arrest equipment.

1133 Full Body Harness

10. Fitting the Harness

Fitting 1133 Full Body Harness:

- Hold the full body harness by the fall arrester eye (recognizable by the back plate).
- Hang the full body harness with the shoulder straps like a backpack.
- Pull the leg straps to the front and connect the light metal insertion buckles.
- Connect the waist and chest belt with the light metal insertion buckle.
- Adjust the full body harness to the body size: Tighten the individual belts by pulling on the belt ends – release by simply lifting the buckles.
- Tighten the belt ends into the plastic belt loops, place all loose belt ends like that.

Buckle locking



Buckle opening



- 1 Fall arrester eyelet on the back ("A")**
- 2 Fall arrester eyelet in the chest area ("A")**
(= 2 loops TOGETHER serve as a fall arrester eyelet, not individually)
- 3 Work positioning eyelets on the waist area**



Shock Absorber Y



Shock Absorber Y

1. Instructions for use

The Shock Absorber Y with lanyard is used to arrest persons working at locations where there is a fall hazard.

The Shock Absorber Y itself consists of a 45 mm wide packaged with a sewed-on lanyard as per EN 354 at one end and a sewed-on carabiner at the other end. The lanyard (sheathed core rope 14mm) is manufactured in a non-detachable way with a stitched rope termination to the Shock Absorber Y.

The Shock Absorber Y reduces the arrest forces when catching a falling person. Maximum arrest force is below 6 Kn.

The temperature-dependent utilization range of the Shock Absorber Y lies between ambient temperatures of -30°C to 60°C.

2. Regulations for the user of the equipment

The Shock Absorber Y with the lanyard should belong to one user.

The Shock Absorber Y with lanyards must be visually examined by the user prior to each use in order to confirm that Shock Absorber Y with lanyard and carabiners are in proper condition for use. The visual examination must confirm that the packaged does not show tears or a damaged protective cover. The sheathed core rope of the lanyards must be in good condition without damage, fiber breakage, cuts or wear. The rope terminations must be fixed and complete. The carabiners must be inspected for correct function and a good condition without deformation, corrosion, mechanical or chemical damages.

If the examination shows the Shock Absorber Y with lanyard and carabiners are in proper working condition, they may be used.

3. Maintenance and storage

Harness, rope and similar PPE are made out of polyester materials. All cleaning must be made with a soft brush, lukewarm water (max. 40° C) and mild soap if necessary. After cleaning with mild soap it is important to rinse the PPE with plenty of lukewarm plain water and make sure all soap has been flushed out of the polyester material.

After washing and rinsing the PPE with plenty of plain water, all metal parts are being wiped off with a dry cloth and the PPE is hung up for drying in a straight position (harness e.g. on a coat hanger) and in a place well ventilated, dry and well protected from ultraviolet light (UV) and direct heating sources.

The PPE always needs to be stored and transported under dry conditions protected from UV, chemicals, oil and other substances that could have aggressive influence on the material. For transportation AVANTI recommends a bag, box or similar in order to keep the PPE well protected.

4. Periodic inspections

The Shock Absorber Y must be inspected by the manufacturer or a competent person at least annually.

In the case of numerous uses or greater stressing (e.g. environmental or industrial factors affecting the materials); the Shock Absorber Y should be subjected to inspection in an accordingly higher frequency.

The competent inspection must include the result of the determination of wear and tear. The result of this competent inspection must be entered into the log book. pection has to be entered into the log book.

5. Application period

A utilization period of 6-8 years can be assumed under normal conditions of use.

Shock Absorber Y

6. Repair

With determination of any damage at the shock absorber Y, the sheathed core rope, or the safety carabiners, the equipment must be withdrawn immediately from use and must be delivered to the manufacturer or a competent person for inspection.

7. Marking



8. Safety notes

Eventual repair, modification or additions to the Shock Absorber Y generally must be carried out exclusively by a competent person or the manufacturer.

9. Application

The user must wear a full body harness as per EN361. Please note the respective manual for full body harnesses.

Any anchor point which is used with the shock absorber Y should be located over the head of the user and the anchor point must fulfill the requirements in EN 795.

The carabiners of the shock absorber Y must be mounted into the arresting eye (of the full body harness as per EN 361) intended for such purpose and locked. Securing an attachment element or fall arrester eye to a full body harness is not permitted.

At least one of the lanyard carabiners must be attached to an anchor point according to EN 795. The other lanyard which is not attached to the anchor point must loop free. To change the anchor point, first the lanyard loop carabiner must be attached to the new anchor point according to EN 795. Not until the second attachment by the second lanyard is made, the connection between the first lanyard and the first anchor point is allowed to be removed or unfastened.

The user must be fixed to an anchor point at any time when there is a risk of falling. It should be noted that the lanyard plus the length of the strap type shock absorber must not exceed a total length of 2.0 m. Based on the most unfavorable possibility during a fall (anchor point is in the foot area of the user), a minimum clear height of 7m below the feet of the user is necessary for a safe fall arrest.

The strap shock absorber with lanyard serves for arrest force reduction in the case of a fall during work at locations where there is risk of falling.

AVANTI Work Positioner SK14



AVANTI Work Positioner SK14

1. Instructions for use

The Avanti Work Positioner SK 14 is intended for restraining people carrying out work in places where there is a risk of falling. The Avanti Work Positioner consists of a 14 mm thick kernmantel rope, which has a safety carabiner spliced-in at one end. The other end has an end splice that prevents the rope from slipping through the rope lock.



The rope lock has a free travel motion in the direction of the anchor point (rope end with carabiner) on the Avanti Work Positioner and prevents a fall in the other direction via the automatic locking function. The release after use of the clamping function is done one-handed by pressing in the locking clamp.



The temperature-dependent 'use range' of the Avanti Work Positioner is between the ambient temperatures of -30°C to 80°C.

2. Regulations for the holder of the equipment

Before any use, the Avanti Work Positioner must be visually examined by the user in order to confirm that it is in a safe working condition.

The rope material must be protected from welding sparks and the touch of sharp edges must be avoided.

The examination should confirm that the safety rope does not have any cut strands or torn fibers and that the spliced end terminations are in a perfect condition. The gate function of the carabiners and the locking function of the rope lock on the rope should also be inspected. The safety carabiners must not show signs of corrosion, deformation or mechanical damage.

3. Maintenance and storage

Harness, rope and similar in PPE are made out of polyester materials. All cleaning must be made with a soft brush, lukewarm water (max. 30° C) and mild soap if necessary. After cleaning with mild soap it is important to rinse the PPE with plenty of lukewarm water and make sure all soap has been flushed out of the polyester material. After washing and rinsing the PPE with plenty of plain water, all metal parts are being wiped of with a dry cloth and the PPE shall be hung up for drying in a straight position (harness e.g. on a coat hanger) and in a place well ventilated, dry and well protected from ultraviolet light (UV) and direct heating sources. The PPE always needs to be stored and transported under dry conditions protected from UV, chemicals, oil and other substances that could have aggressive influence on the material. For transportation AVANTI recommends a bag, box or similar in order to keep the PPE well protected.

4. Periodic inspections

The Avanti Work Positioner must be inspected by the manufacturer or a competent person at least annually. In the case of numerous uses or greater stressing (e.g. environmental or industrial factors affecting the materials); the Avanti Work Positioner should be subjected to inspection in an accordingly higher frequency. The competent inspection must include the result of the determination of wear and tear. The result of this competent inspection must be entered into the record log.

AVANTI Work Positioner SK14

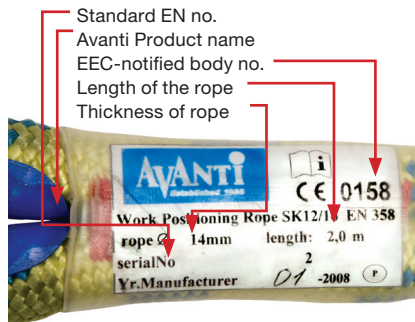
5. Application period

Under normal use conditions or non-use, textile ropes should be withdrawn from use after 8 years.

6. Repair

If damage to the Avanti Work Positioner is identified it must be immediately withdrawn from use and sent to the manufacturer for inspection or competent person.

7. Marking



8. Safety notes

The Avanti Work Positioner must be protected from sharp edges in order to avoid the rope being damaged or cut. The Avanti Work Positioner should not be wrapped around tight construction elements because doing so may prevent the desired free fall rate.

Modifications or additions to the Avanti Work Positioner are not permitted.

Only trained and qualified persons may use this personal protection equipment.

Only the ropes supplied by the manufacturer may be used.

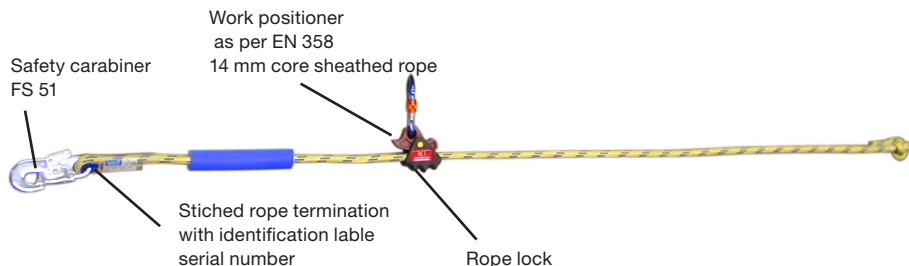
9. Application

Personal safety on ladders, mast or similar constructions

The person to be secured must be wearing a harness as per EN 361/ EN 358 that has lateral attachment elements. Observe the Instructions for Use for the used harness.

The rope lock on the Avanti Work Positioner is connected to one of the lateral attachment elements on the full-body harness via a carabiner. The free end of the Avanti Work Positioner is then routed around the construction and connected to the other lateral attachment element of the full-body harness.

The adjustment and the position of the Avanti Work Positioner should be chosen so that the Avanti Work Positioner is kept taut and positioned above the waist of the user. The free movement restricted to a maximum of 0.6 m.



Rescue equipment ResQ RED



*₁

- Lowering and evacuation equipment that works on the principle of centrifugal force.
- Constant lowering speed (0.8 m/s) regardless of person weight and height.
- Easy-to-use, facilitating speedy evacuation from wind turbines.
- Tested and approved according to EN 341, EN 1496, CSA Z259,2,3-99(R2004) type 1E, ANSI Z359.1 and ANSI Z359.4

Contact AVANTI WIND SYSTEMS for further information

**₁ ResQ RED can be delivered vacuum packed (patent pending). Vacuum packing means that the first equipment inspection is after a minimum of 6 years, (the vacuum packing should be checked every 12 months). When the rescue equipment is stored in e.g. wind power plants the vacuum packaging ensures that the line is not damaged by vibrations.*

AVANTI Helmet



AVANTI Helmet

1. Instructions for use

The Avanti Helmet is made to absorb the energy of an impact by partial destruction or damage to the shell or straps and even through such damage may not be readily apparent; Avanti Helmets subjected to severe impact should be replaced. The attention of users is also drawn to the danger of modifying or removal of the original component parts of the Avanti Helmet, other than as recommended by the Avanti Helmet manufacturer. Accessories and/or replacement straps, chin straps, ear defenders, visors and helmet mounted lamps are available with fitting instructions from Avanti.

2. Regulations for the holder of the equipment

The Avanti Helmet is a complete system consisting of shell and straps. The Avanti Helmet's useful life is affected by many factors including the cold, heat, chemicals, sunlight and misuse.

3. Maintenance and storage

The Avanti Helmet may be cleaned with soap and warm water and dried with a soft cloth. The Avanti Helmet should not be cleaned with abrasive substances or solvents and must not be stored in direct sunlight or in contact with solvents.

4. Periodic inspections

The Avanti Helmet should be inspected daily for obvious sign of cracking, brittleness or damage to either helmet or straps. A destructed Avanti Helmet shall immediately be taken out of service.

5. Application periode

The date of manufacture is molded into the peak of this helmet. While the Avanti Helmet is free from defects it is suitable for its intended purpose. Under normal circumstances the Avanti Helmet should offer adequate protection for 2-3 years.

AVANTI Helmet

6. Repair

Accessories and/or replacement straps, chin straps, ear defenders, visors and helmet mounted lamps are available with fitting instructions from AVANTI.

7. Marking

EN 397: 1995	The European Standard Number for Industrial Safety Helmets and its year of publication
ANSI Z 89.1 - 1997	personal protection protective headwear for industrial workers type 1-Class C
53- 63 CM	The size range of the helmet, head circumference
-20°C/ -30°C	The helmet will provide some protection when worn in an environment at or above these temperatures
440 Volts	The helmet will protect the user against short term, accidental contact with live electrical conductors up to a voltage of 440 V
LD	The helmet will provide some protection from lateral compressive loads

8. Safety notes

Do not apply paint, solvents, adhesives or self-adhesive labels, except in accordance with the instructions from the helmet manufacturer. Replacement of the components in the helmet is only allowed to be done with JPS components.

9. Application

The protecting helmet is constructed to protect the head from injuries by splitting a concentrated bump all over the shock absorbing inner frame. It's possible to supply the helmet with ear protectors, eye protectors and headlights. The safety helmet got a limited life expectancy and it is important to discard the helmet immediately if it has been subjected to strong bumps, got deformation, a crack or more. Further the inner absorbing frame must be fitted at the wearers head and with fully functionality at all times.

10. Fitting the helmet

For adequate protection this helmet must fit or be adjusted to the size of the users head. The helmet must be worn with the peak facing forward. To alter the fit the chinstrap and adjust the straps at the rear of the helmet to ensure a comfortable fit is made around the crown of the head. When not in use or during transportation, this helmet should be stored in a container such that it is out of direct sunlight, away from chemicals and abrasive substances and cannot be damaged by physical contact with hard surfaces/items.



