TEST REPORT

BS EN 892:2012+A3:2023

Mountaineering equipment — Dynamic mountaineering ropes — Safety requirements and test methods

Report Number.....:	**SHUN2606023175S**
Compiled by (position+printed name+signature).....:	File administrators Luna Ni
Supervised by (position+printed name+signature).....:	Technique principal Allen Lin
Approved by (position+printed name+signature).....:	Manager Ryan Du
Date of issue.....:	June 05, 2026
Name of Testing Laboratory preparing the Report.....:	**Shenzhen Shunjin Testing Technology Co., Ltd.** A4-811, A4-812, A4-813, A4-818, Internet Era E, Ma'antang Community, Zhongxing Road, Bantian Street, Longgang District, Shenzhen, China.
Applicant's name.....:	Zeluga Inc.
Address.....:	75244, 4548 MCEWEN RD FARMERS BRANCH
Test specification:	
Standard.....:	**BS EN 892:2012+A3:2023**
Test procedure.....:	--
Non-standard test method.....:	N/A
Test Report Form No.....:	BSEN892
Test Report Form(s) Originator.....:	SHUNJ
Master TRF.....:	Dated 2026
General disclaimer: The test results presented in this report relate only to the object tested.	
Test item description.....:	CLIMBING ROPE
Trade Mark.....:	ZELUGA
Manufacturer.....:	Taizhou Bestor Rope Products Co., Ltd Room 401, Building 5, No. 99 Xianglong Road , gaoxing zone, TaizhouCity, Jiangsu Province, China
Model/Type reference.....:	Zeluga 15-133, Zeluga15-525, Zeluga15-135, Zeluga 15-224, Zeluga 15-225, Zeluga 15-226
Ratings.....:	10mm
Result .....:	Pass

List of Attachments (including a total number of pages in each attachment):

The sample(s) tested complies with the requirements of BS EN 892:2012+A3:2023.

standards.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Appendix 1: BS EN 892:2012+A3:2023.

Annex 1: Photos.

Summary of testing: EN 892:2012+A3:2023.

Tests performed:	**Testing location:**
The submitted samples were found to comply with requirements of standards: BS EN 892:2012+A3:2023.	Shenzhen Shunjin Testing Technology Co., Ltd. A4-811, A4-812, A4-813, A4-818, Internet Era E, Ma'antang Community, Zhongxing Road, Bantian Street, Longgang District, Shenzhen, China.

Summary of compliance with National Differences (List of countries addressed):

☒ **The product fulfils the requirements of BS EN 892:2012+A3:2023.**

Copy of marking plate:

CLIMBING ROPE

All the model are the same except model name and color.

CLIMBING ROPE

Model:Zeluga 15-133

10mm

2026/05

the length of the rope:XXm

Taizhou Bestor Rope Products Co., Ltd

Room 401, Building 5, No. 99 Xianglong Road , gaoxing zone, TaizhouCity, Jiangsu Province, China

Test item particulars..... :	
Classification of installation and use.....:	To be defined in final product
Supply Connection.....:	/
Weight.....:	<5kg
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	2026-06-02
Date (s) of performance of tests.....:	2026-06-02 to 2026-06-05

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

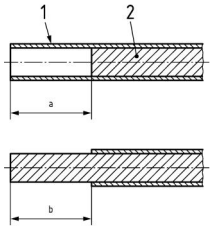
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies).....:	Taizhou Bestor Rope Products Co., Ltd Room 401, Building 5, No. 99 Xianglong Road , gaoxing zone, TaizhouCity, Jiangsu Province, China

General product information and other remarks:

The product is Climbing Rope.

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
4	Safety requirements		P
4.1	Construction		P
	Dynamic ropes in accordance with this European Standard shall be made in a kernmantel construction. Diameter and mass per unit length are relevant characteristics. See test method in 5.3. If the properties of the rope change along its length, for example: diameter, strength, markings, samples from each section shall be submitted for testing. The information to be supplied shall all correspond to the lowest performance section of the rope.		P
4.2	Sheath slippage		P
	(in positive or negative direction) shall not exceed 1 % (20 mm) (see Figure 3).		P
	 **Key** 1 sheath 2 core a positive sheath slippage ≤ 20 mm b negative sheath slippage ≤ 20 mm **Figure 3 — Sheath slippage**		P
4.3	Static elongation		P
	When tested in accordance with 5.5, the static elongation shall not exceed: — 10 % in single ropes (single strand of rope); — 12 % in half ropes (single strand of rope); — 10 % in twin ropes (double strand of rope).	single strand of rope 5%	P
4.4	Dynamic Elongation		P
	When tested in accordance with 5.6, the dynamic elongation shall not exceed 40 % during the first drop for each test sample.		P
4.5	Peak force during fall arrest, number of drops		P
4.5.1	Peak force in the rope		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	When tested in accordance with 5.6, the peak force in the rope, during the first drop, for each test sample, shall not exceed: — 12 kN in single ropes (single strand of rope); — 8 kN in half ropes (single strand of rope); — 12 kN in twin ropes (double strand of rope).		P
4.5.2	Number of drops		P
	When tested in accordance with 5.6, each rope sample shall withstand at least 5, for twin ropes at least 12, consecutive drop tests without breaking		P
5	Test methods		P
5.1	Test samples		P
	A test sample with a length of: — 40 m for single and half ropes, — 80 m or 2 × 40 m for twin rope;	40 m for single and half rope	P
	shall be available for the tests. Carry out the tests in accordance with 5.3 on an unused test sample. Carry out the tests in accordance with 5.4 on two unused test samples with a length of (2 250 ± 10) mm. Carry out the test in accordance with 5.5 on two unused test samples with a length of at least 1 500 mm. Carry out the tests in accordance with 5.6 on three unused test samples with a minimum length of 5 m for single and half ropes, and 10 m for twin ropes, cut out of the available test sample.		P
5.2	Conditioning and test conditions		P
	Dry the test samples for at least 24 h in an atmosphere of (50 ± 5) °C and less than 20 % relative humidity. Then condition these test samples in an atmosphere of (23 ± 2) °C and (50 ± 2) % relative humidity for at least 72 h. Then start testing these samples at a temperature of (23 ± 5) °C within 10min.		P
5.3	Construction, diameter, and mass per unit length		P
5.3.1	Procedure		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	Clamp the test sample at one end.		P
	Load the test sample without shock with a mass1) of: — (10 ± 0,1) kg for single ropes, — (6 ± 0,1) kg for half ropes, — (5 ± 0,1) kg for twin ropes		P
	at a distance of at least 1 200 mm from the clamp.		P
	After applying the load for 60 s mark within the next 10 s a reference length of (1 000 ± 1) mm on the test sample. The distance of the marking from the clamp or attachment for the test sample shall be at least 50 mm.		P
	Within a further 3 min measure the diameter in two directions around the diameter starting at points 90° apart at each of three levels approximately 100 mm apart. If the rope cross section is not circular, the maximum and minimum diameter are to be determined in each section. The length of the contact areas of the measuring instrument shall be (50 ± 1) mm. The rope cross-sectional area shall not be subject to any compression during the measurement.		P
	Then cut out the marked portion of the test sample and determine the mass to the nearest 0,1 g		P
	Check that the construction of the rope is a kernmantel construction.		P
5.3.2	Expression of results		P
	Express the diameter as the arithmetic mean of the six measurements to the nearest 0,1 mm.		P
	Express the mass per unit length in ktex or g/m to the nearest 1g.		P
5.4	Sheath slippage		P
5.4.1	Principle		P
	The rope is drawn through the apparatus illustrated in Figure 4, where the movement is restricted by radial forces. The resulting frictional force on the sheath causes slippage of the sheath relative to the core. The extent of this slippage is measured.		P
5.4.2	Preparation of the test samples		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse one end of the sheath and core of each test sample together. Before cutting the other end of each test sample to size, apply a short length of adhesive tape around the rope, where it is to be cut, at right angles to the axis of the rope. The adhesive tape shall be at least 12 mm wide before cutting, and the angle of wrap around the rope, Θ, shall be 150° ≤ Θ ≤ 180°. After affixing the adhesive tape, cut the sample to a length of (2 250 ± 10) mm with a sharp knife, within the width of the tape, at right angles to the axis of the rope (see Figure 5) such that the adhesive tape remaining on the test sample has a width of (10 ± 5) mm. The characteristics of the adhesive tape and the method of application should be such as to reduce the extent to which the cut end of the sheath unravels during the test, whilst not interfering with the slippage taking place between the core and the sheath of the rope sample.		P
5.4.3	Apparatus		P
	The apparatus shall consist of a frame made out of four steel plates each 10 mm thick, kept equal distances apart by three spacers. These spacers shall have rectangular slots in which three inserted steel plates are able to slide in a radial direction. The spacers shall be arranged in such a way as to allow each of the three inserted plates to slide at an angle of 120° (see Figure 5).		P
	Each of the seven plates shall have an opening with a diameter of 12 mm; their internal surfaces shall be semitoroidal and have a radius of 5 mm. The polished surfaces of the semi-torus shall show: — an arithmetical mean deviation of the profile of Ra = 0,4 µm and — a surface roughness of Rmax = 4 µm.		P
	The moving plates shall have a locked position in which the openings in the fixed plates and the openings in the moving plates all lie in line along a central axis. When not in their locked position each of the moving plates shall apply a radial force of (50 ± 0,5) N to the test sample in the direction in which the plate moves. The test apparatus shall be rigidly mounted with its axis horizontal. Means shall be provided to support, on a smooth surface, the test sample in a horizontal position in line with the axis of the test apparatus, in both directions of travel.		P

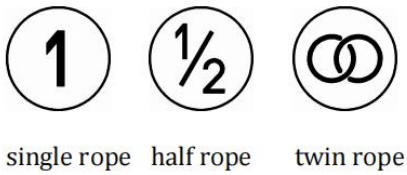
BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4	Procedure		P
5.4.4.1	At the start of the test the moving plates shall be in their locked position.		P
5.4.4.2	Introduce the fused end of the test sample into the apparatus and pull to a length of (200 ± 10) mm through the test apparatus (see Figure 7). Ensure that the remainder of the test sample is not subjected to any load and lies in a horizontal position in a straight line.		P
5.4.4.3	Release the moving plates from their locked position and apply a force of (50 ± 0,5) N to the test sample via each of the three moving plates and pull the test sample through the apparatus at a rate of (0,5 ± 0,2) m/s for a distance of (1 930 + 0 30) mm.		P
5.4.4.4	Remove the loads from the moving plates and return them to their locked position. Carefully get hold of the short end of the test sample and slowly and gently pull it back through the test apparatus to its initial position.		P
5.4.4.5	Repeat the procedure described in 5.4.4.3 and 5.4.4.4 three times. Then carry out the procedure described in 5.4.4.3 once more. Whilst the test sample is still in the test apparatus, and with the loads still applied to the moving plates, measure the relative slippage of the sheath along the core at the open end of the test sample		P
5.4.5	Expression of results		P
	Calculate the sheath slippage in percentage of the sample length (2 000 mm).		P
	Express the value for each test sample to the nearest 0,1 %.		P
5.5	Determination of static elongation		P
5.5.1	Procedure		P
	Carry out the test on a: — single strand of rope for single ropes; — single strand of rope for half ropes; — double strand of rope for twin ropes. Clamp the test samples such that the free length between the clamps is 1500mm.		P
	Load the test sample without shock within 10s with a mass of (80 ± 0,1)kg and maintain this load for (180 ± 15) s.		P
	Remove the load from the test sample and allow it to remain at rest for 10min.		P
	Load the test sample without shock within 10s with a mass of 5 kg.		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	After applying the load for 60s, mark within the next 10s a reference length of 1000 mm.		P
	Increase the load to (80 ± 0,1) kg without shock , within (10s and maintain this load for (60 ± 5) s.		P
	Measure the new distance l1 between the markings on the stressed test sample within the next 5 s		P
5.5.2	Expression of results		P
	Express the elongation as a percentage of the unloaded length: that is (l1 – 1 000)/10. Express the results to the nearest 0,1 % for each test sample.		P
5.6	Drop test for determination of peak force, dynamic elongation and number of drops		P
5.6.1	Test conditions		P
	Carry out the first drop test within 10 min of the respective test sample's removal from the conditioning atmosphere.		P
5.6.2	Drop test apparatus		P
5.6.2.1	General		P
	The drop test apparatus shall be set up in accordance with Figures 8, 10, 11, 12 and 13, and shall consist essentially of a bollard and clamp, orifice plate, falling mass and guidance rails, means for measuring the peak force in the rope, and means for measuring the peak extension of the rope. In addition, there shall be a means for timing the descent of the mass to check that the guidance system is not interfering with the free fall of the mass. The apparatus shall be sufficiently precise and rigid as to achieve the required accuracy and reproducibility of the results.		P
5.6.2.2	Bollard and clamp		P
	The bollard shall consist of a steel bar with a diameter of (30 ± 0,1) mm and a surface roughness as follows: — arithmetic mean deviation of the profile of Ra ≤ 0,8 µm; — surface roughness Rmax ≤ 6,3 µm.		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	The bar shall be fixed rigidly with its axis horizontal and without the possibility of rotation. To maintain rigidity, the bar shall be as short as reasonably practicable whilst allowing two twin ropes or one single rope each to be wound around its circumference three times. There shall be two clamps fixed rigidly in relation to the bollard in accordance with the dimensions in Figures 10 and 11, and capable of fixing the free end(s) of the rope(s).		P
5.6.2.3	Orifice plate		P
	The orifice plate shall be manufactured from steel with a surface hardness of at least 52 HRC according to EN ISO 6508-1. There shall be a cylindrical hole machined through the orifice plate at right angles to its surface. The inside edge of the orifice shall be semi-toroidal in shape, with dimensions in accordance with Figure 8. The orifice plate shall be mounted vertically in the apparatus, and fixed rigidly in relation to the bollard in accordance with the dimensions in Figures 10 and 11.		P
	There shall not be any structure below the orifice plate which might come into contact with the rope(s) during a drop. When fixed in position in the apparatus, the lower edge of the orifice plate shall be horizontal with a radius of at least 5 mm, and a dimension relative to the orifice as shown in Figure 8. The semi-toroidal surface of the orifice shall have a roughness as follows: — arithmetic mean deviation of the profile of Ra ≤ 0,2 µm; — surface roughness Rmax ≤ 2 µm.		P
	The surface of the orifice plate below the orifice (see Figure 8) shall have a roughness as follows: — arithmetic mean deviation of the profile of Ra ≤ 0,4 µm; surface roughness Rmax ≤ 4 µm.		P
5.6.2.4	Falling mass and guidance rails		P
5.6.2.5	Means for measuring the peak force in the rope		P
	The measurements obtained have to equal the force which the rope(s) applies to the falling mass.		P
	If the device is interposed between the falling mass and the means for attachment of the rope, it shall be sufficiently rigid that the requirements of 5.6.2.4.b) are met.		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	The apparatus for measuring and recording the force in the rope shall correspond with ISO 6487, channel frequency class (CFC) 30 (see Figure 14 and Table 1). The sampling frequency shall be at least 1 kHz.		P
	The force transducer, in its operating position, shall not have a resonant frequency below 150 Hz.		P
	The channel amplitude class (CAC) as defined in ISO 6487 shall be at least 20 kN.		P
	The error in the measurement and recording of force in the rope shall be less than 1 % in accordance with ISO 6487.		P
5.6.2.6	Means for measuring the peak extension of the rope		P
	The measurement obtained has to equal the peak downward movement of any reference point on the falling mass during the drop, measured from an initial datum point. The initial datum point shall be the position of said reference point when the mass is hanging from the end of the test sample, and the end of the test sample is a nominal 2 500 mm below the lowest edge of the orifice. The peak extension shall be measured with an accuracy of ± 5 mm.		P
5.6.2.7	Means for timing the descent of the falling mass		P
5.6.2.8	Rigidity of the apparatus		P
5.6.2.9	Checks and calibration of the apparatus		P
5.6.3	Procedure		P
	When testing single and half ropes, attach the test sample to the means for rope attachment to the falling mass by means of a figure-of-eight knot (see Figure 10) with an internal loop length of (50 ± 10) mm.		P
	Tighten the knot by hand, pulling each strand of rope alternately, using pliers to grip the short end as necessary. Ensure that the two strands of rope are parallel and equally tight throughout the knot.		P
	When testing twin ropes, attach to the means for rope attachment to the falling mass in the middle of the rope with a single figure-of-eight knot (see Figure 11). Ensure that the two strands of rope are parallel and equally tight throughout the knot.		P
	Pass the test sample, both strands of rope in a double strand test, through the orifice in the orifice plate, wind each strand three times round the bollard and secure using the clamp(s)		P

BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	Ensure that the falling mass is situated at a position (3000 ± 200) mm below the orifice.		P
	Load the test sample with the falling mass as a static load for a period of 60 s.		P
	Raise the falling mass to a height at which the attachment point is (2 300 ± 10) mm below the lowest edge of the orifice		P
	Open the clamp(s), leave the strand(s) wound three times round the bollard. Load the test sample with a 10 kg mass below the clamps for a period of (60s. Ensure there is no contact between the clamps and the 10 kg mass and ensure there is no slack in the rope between the bollard and the orifice plate.		P
	Then fix the rope in the clamp(s). In a two strand test ensure that the tensions in the two strands of the rope are similar.		P
5.6.4	Expression of results		P
	For each valid test sample, express the peak force during the first drop to the nearest 0,1 kN. For each valid test sample, calculate the dynamic elongation by expressing the peak extension of the rope during the first drop as a percentage, to the nearest 1 %, using the formula: Dynamic elongation = (Hmax – H0)/((H0 + 300) × 100) State the number of drops sustained without breaking for each valid test sample.		P
6	Marking		P
	Ropes shall have durable bands at both ends with a maximum width of 30 mm (measured along the length of the rope). The bands shall be marked clearly, indelibly and permanently with at least the following information: a) name of the manufacturer or his authorised representative; NOTE For a definition of manufacturer and authorised representative see Regulation 765/2008. b) diameter (which is ± 0,2 mm of the rope diameter specified in 5.3.2.); c) the corresponding graphical symbol as specified in Figure 15; d) the year of manufacture of the rope; e) the length of the rope.		P

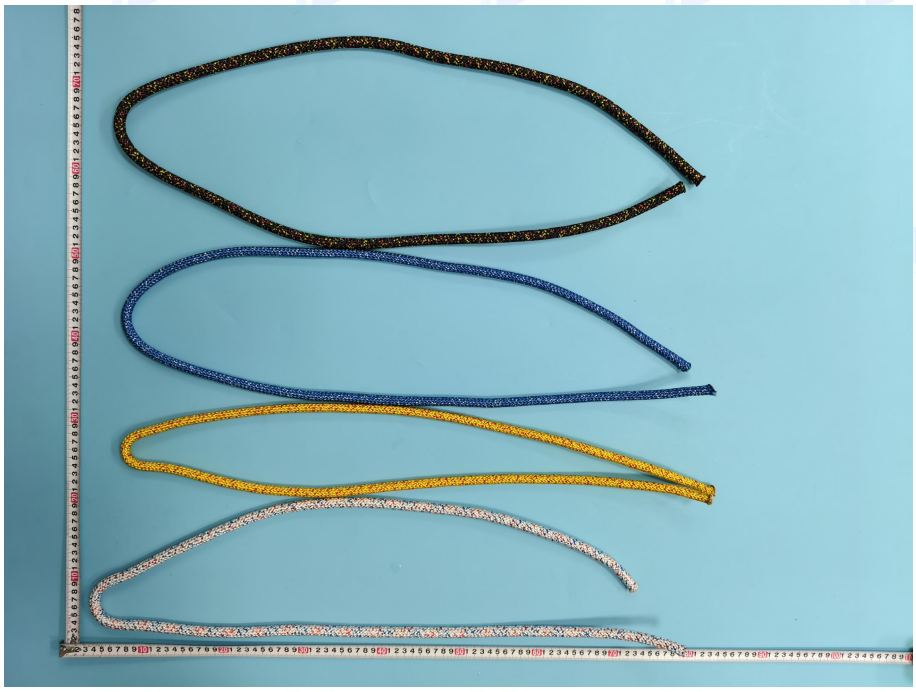
BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	 **Figure 15 — Graphical symbols for ropes**		P
7	Information to be supplied by the manufacturer		P
	The information shall contain at least the following:		P

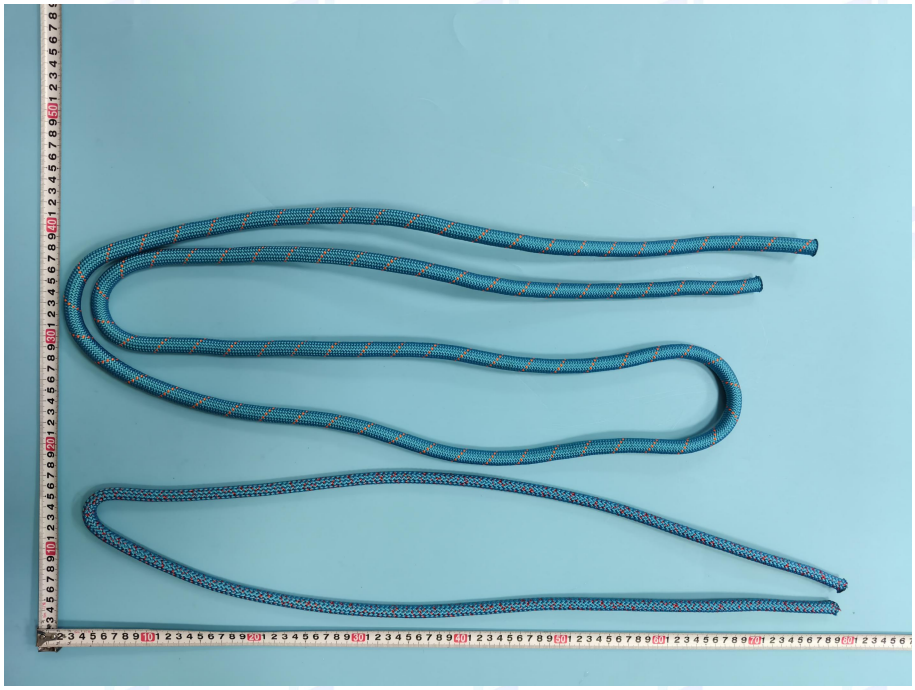
BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	Stated values shall be the values which the manufacturer ensures at the date of production and shall not exceed. a) name of the manufacturer or his authorised representative; b) the number of this European Standard: EN 892; c) the length of the rope in metres; d) diameter (which is ± 0,2 mm of the rope diameter specified in 5.3.2.); e) the model name and type (single, half or twin rope) as defined in 3; f) the year of manufacture of the rope; g) the mass per unit length of the rope as specified in 5.3.2; h) static elongation expressed as a percentage to the nearest 0,1 %, not less than the largest value obtained in 5.5, and which the manufacturer guarantees will not be exceeded at the date of production; i) dynamic elongation expressed as a percentage to the nearest 1 %, not less than the largest value obtained in 5.6.4, and which the manufacturer guarantees will not be exceeded at the date of production; j) peak force expressed in kN to the nearest 0,1 kN not less than the largest value obtained in 5.6.4, and which the manufacturer guarantees will not be exceeded at the date of production; k) number of drops sustained without breaking, not more than the smallest value obtained in 5.6.4, and which the manufacturer guarantees will be achieved at the date of production; l) the sheath slippage expressed as a percentage to the nearest 0,1 % not less than the largest value obtained in 5.4.5, and which the manufacturer guarantees will not be exceeded at the date of production; m) the meaning of any markings on the product; n) how to use the product (e. g. single, half or twin ropes); o) how to choose other components for use in the system; p) how to maintain/service the product, on the effects of chemical reagents and how to disinfect the product without adverse effect; q) the lifespan of the product and how to assess it and that after a serious fall the rope should be withdrawn from use as soon as possible;		P

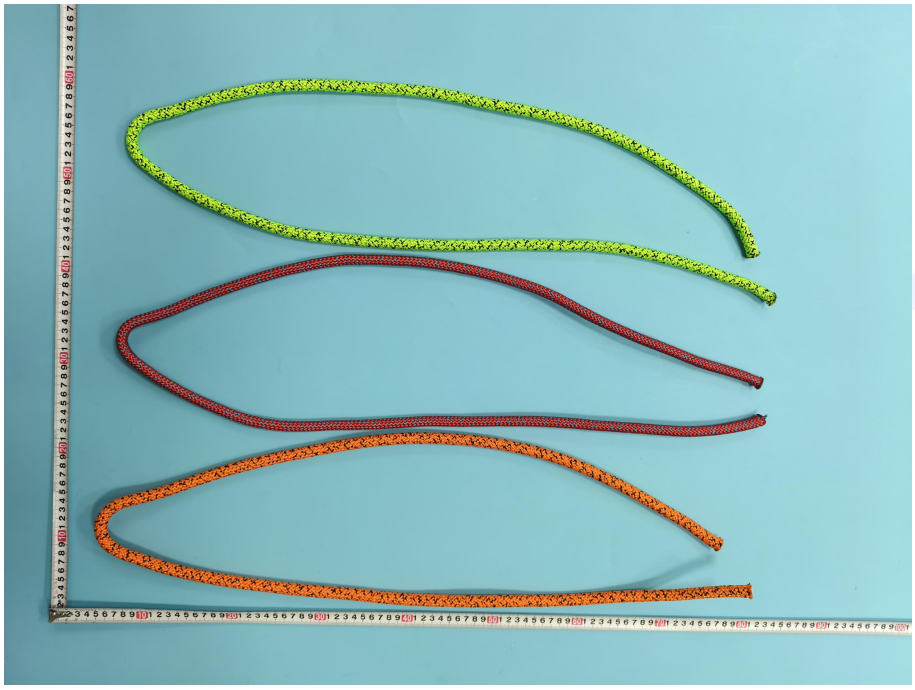
BS EN 892			
Clause	Requirement + Test	Result - Remark	Verdict
	r) influence of wet and icy conditions; s) danger of sharp edges; t) influence of storage and ageing due to use.		

4.5	Peak force during fall arrest, number of drops			Pass
Location	Peak force during fall arrest	Test time	Observations	result
rope	12kN	5	No damaged	Pass

Photos of product







Shenzhen Shunjin Testing Technology Co., Ltd.
A4-811, A4-812, A4-813, A4-818, Internet Era E, Ma'antang Community, Zhongxing Road,
Bantian Street, Longgang District, Shenzhen, China.
Web:http://www.shunjlab.com E-mail:shunjin@shunjinlab.com Tel: 86-755-28280192

Modified History

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	2026/06/05	Luna Ni

*** End of the Report ***