

TEST REPORT

ANSI/ASSP Z359.11-2021

American National Standard: Safety Requirements for Full Body Harnesses

Report Number.....: **SHUN2510246567S**

Test by (name+signature).....: File administrators Luna Ni

Compiled by (+signature).....: Technique principal Allen Lin

Approved by (+signature).....: Manager Ryan Du

Date of issue.....: Nov. 03, 2025

Testing laboratory: **Shenzhen Shunjin Testing Technology Co., Ltd.**

Address: A4-811, A4-812, A4-813, A4-818, Internet Era E, Ma'antang Community, Zhongxing Road, Bantian Street, Longgang District, Shenzhen, China.

Testing location: As above

Applicant's name.....: Zeluga Inc.

Address.....: 4548 MCEWEN RD FARMERS BRANCH, TX 75244

Test specification:

Standard.....: **ANSI/ASSP Z359.11-2021**

Test procedure.....: Safety

Non-standard test method.....: N/A

Test Report Form No.....: **ANSI/ASSEZ359_21**

Test Report Form(s) Originator.....: SHUNJ

Master TRF.....: N/A

Product Name.....: Full Body Safety Harness

Trade Mark.....: Zeluga

Manufacturer.....: Taizhou Bestor Rope Products Co., Ltd

Address.....: Room 401, Building 5, No. 99 Xianglong Road , gaoxing zone , Taizhou City, Jiangsu Province, China

Model/Type reference.....: 15-540

Rated.....: 23KN, Min. Safe drop: 1.2 m

Test result.....: **Pass**

Summary of testing:	
Tests performed (name of test and test clause): ANSI/ASSP Z359.11-2021 The submitted samples were found to comply with the requirements of above specification.	Testing location: 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.

Test item particulars.....:	
Temperature.....:	24°C
Relative humidity.....:	≤50%
Atmospheric pressure.....:	(9.0±0.2)kPa
Mass of the equipment (kg).....:	--
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.....:	Oct. 24, 2025
Date (s) of performance of tests.....:	Oct. 24, 2025 to Nov. 03, 2025

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(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.

Clause numbers between brackets refer to clauses in ANSI/ASSP Z359.11-2021

Attachment No. 1: photos.

General product information:

The product is Full Body Safety Harness.

Product Name:	Full Body Safety Harness
Model No:	15-540
Manufacturer:	Taizhou Bestor Rope Products Co., Ltd
Manufacturer Address:	Room 401, Building 5, No. 99 Xianglong Road , gaoxing zone , Taizhou City, Jiangsu Province, China
Date of manufacture:	2024-2-10
Load Rating:	23KN
Test Standard:	ANSI/ASSE Z359.11-2021
Minimum drop height:	4 feet (1.2m1.2 m1.2)

Summary of Test Results:**TEST REQUEST****CONCLUSION**

A ANSI/ASSP Z359.11-2021 American National Standard: Safety Requirements for Full Body Harnesses

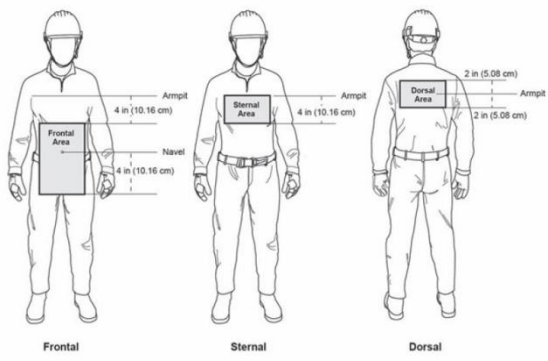
PASS

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict

Results:

ANSI/ASSP Z359.11-2021 American National Standard: Safety Requirements for Full Body Harnesses

3	REQUIREMENTS.	Pass
3.1	Design Requirements.	Pass
	In this standard, values for measurement are followed by a metric equivalent in parentheses, but only the first stated value shall be regarded as the requirement. Values in parentheses may be approximate.	Pass
3.1.2	All FBHs shall permanently incorporate a dorsal attachment element described in 3.2.1. All FBHs may contain any combination of other elements, but limited to those described in Section 3.2.	Pass
3.1.2	All FBHs shall permanently include a load bearing sub-pelvic strap, except those described in 3.1.14.	Pass
3.1.3	All shoulder straps on FBHs shall come together at the dorsal location and either cross, be connected by webbing that meets the requirements of Section 3.3 or attach with a connector meeting the requirements of Z359.12.	Pass
3.1.4	All FBHs shall permanently incorporate a waist belt or back strap, or other means of controlling the separation of the shoulder straps on the back of the FBH. When the FBH is mounted per manufacturer's instructions onto shall be located between datum levels G and K.	Pass
3.1.5	Modular components or assemblies for FBHs designed for the removal of different attachment elements (such as suspension seats or belts) shall meet the specific attachment element requirements of Section 3 while attached to a compatible FBH	Pass
3.1.6	For FBHs integrated into a vest or other garment, the design of the garment shall allow visual inspection of the FBH	Pass
3.1.7	All FBHs shall be equipped with a fall arrest indicator that will deploy during dynamic testing defined in Section 3.2, when attached to the dorsal attachment element. All indicators shall be located where they can be visually inspected.	Pass
3.1.8	FBH with attached connecting subsystem combinations shall meet the FBH component standard for the attached subsystem(s) when tested respectfully. All elements that are included in the combination shall be qualified with either the FBH or the connecting subsystem in the same configuration as they would be when integrated. Any cannot be separated and tested individually are outside the scope of this standard and cannot be marked as meeting ANSI/ASSP Z359.11.	Pass
3.1.9	All FBHs shall include strap retainers (keepers) or other components which serve to control the loose ends of straps.	Pass
3.1.10	All FBHs shall include at least one lanyard parking attachment element having a disengagement load of not more than 120 pounds (0.5 kN) when tested in accordance with 4.3.7. testing of multiple lanyard parking attachment elements of the same design is not required.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
3.1.11	It shall not be possible to remove elements of the FBH that support the shoulders/upper torso from those that support the legs/lower torso.	Pass
3.1.12	All single point attachment elements shall be located laterally within 2 inches (51 mm) of the vertical centerline of the FBH.	Pass
3.1.13	Sternal attachments that consist of two elements intended to be connected at a single point for use shall be fixed and not adjustable vertically. Both elements shall be clearly marked to only be used together.	Pass
3.1.14	FBHs that do not include a sub-pelvic strap shall incorporate both frontal and sternal attachment elements, an integral waist belt and leg loop suspension straps (satisfying the requirements specified in 3.3), two at the front and two at the rear, all integrally attached to the waist belt (see figure 1d).	Pass
3.2	Attachment Element Requirements.	Pass
3.2.1	Dorsal. 	Pass
3.2.1.1	The dorsal attachment may also be used in travel restraint or rescue.	Pass
3.2.1.2	When supported by the dorsal attachment during a fall, the design of the FBH shall direct load through the shoulder straps supporting the user and around the thighs.	Pass
3.2.1.3	Dorsal Attachment Element Requirements.	
3.2.1.3.1	Dynamic Feet First.	Pass
a	FBH shall not release the test torso.	Pass
b	FBH shall support the test torso for a period of 5 minutes post fall.	Pass
c	FBH shall support the test torso, post fall at an angle not greater than 30° to vertical. (See figure 7).	Pass
d	At least one fall arrest indicator shall be deployed visibly and permanently.	Pass
e	FBH stretch shall not exceed 18 inches (457 mm), or that which is stated in the manufacturer's instructions, whichever is less.	Pass
3.2.1.3.2	Dynamic Head First.	Pass
a	FBH shall not release the test torso.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
b	FBH shall support the test torso for a period of 5 minutes post fall.	Pass
c	FBH shall support the test torso, post fall at an angle not greater than 30° to vertical (see figure 7).	Pass
d	At least one fall arrest indicator shall be deployed visibly and permanently.	Pass
3.2.1.3.3	Static Feet First.	Pass
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25 mm).	Pass
c	the strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing.	Pass
3.2.1.3.4	Visual Indicator Test.	Pass
	When tested in accordance with 4.3.6 using the dorsal attachment element, at least one visual indicator shall deploy visibly and permanently.	Pass
3.2.2	Sternal	Pass
	The sternal attachment may be located as shown in Figure 2, and used as an alternative fall arrest attachment in applications where the dorsal attachment is determined to be inappropriate by a competent person and where there is no chance to fall in a direction other than feet first.	Pass
3.2.2.1	the sternal attachment may also be used for travel restraint or rescue.	Pass
3.2.2.2	When loaded at the sternal attachment to arrest a fall, the design of the FBH shall direct load through the shoulder straps supporting the user and around the thighs.	Pass
3.2.2.3	Sternal Attachment Element Requirements.	Pass
	Each test may use a new FBH.	
3.2.2.3.1	Dynamic Feet First.	Pass
a	FBH shall not release the test torso.	Pass
b	FBH shall support the test torso for a period of 5 minutes post fall.	Pass
c	The FBH shall support the test torso, post fall, at an angle not greater than 50° to vertical (see figure 8).	Pass
d	If incorporated into the FBH per the requirements of 3.1.7.1, at least one sternal fall arrest indicator shall be deployed visibly and permanently.	Pass
e	FBH stretch shall not exceed 18 inches (457 mm), or that which is stated in the manufacturer's instructions, whichever is less.	Pass
3.2.2.3.2	Static Feet First.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25 mm)	Pass
c	The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	Except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing.	Pass
3.2.2.3.3	Visual Indicator Test.	Pass
	If the harness is equipped with a visual indicator for the sternal attachment element, when tested in accordance with 4.3.6 using the sternal attachment element, at least one visual indicator shall deploy visibly and permanently.	Pass
3.2.3	Frontal.	Pass
	The frontal attachment shall be located as shown in Figure 2 and serves as a ladder climbing connection for guided type fall arresters where there is no chance to fall in a direction other than feet first. It may also be used for work positioning, travel restraint or rescue.	Pass
3.2.3.1	Frontal Attachment Element Requirements. Each test may use a new FBH.	Pass
3.2.3.1.1	Dynamic Feet First.	Pass
a	FBH shall not release the test torso.	Pass
b	FBH shall support the test torso for a period of 5 minutes post fall	Pass
c	FBH shall support the test torso for a period of 5 minutes post fall if a fall occurs on the frontal attachment element, shall be deployed visibly and permanently	Pass
d	FBH stretch shall not exceed 18 inches (457 mm), or that which is stated in the manufacturer's instructions, whichever is less.	Pass
3.2.3.1.2	Static Feet First.	
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25 mm)	Pass
c	The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	Except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing .	Pass
3.2.4	Shoulder.	Pass
3.2.4.1	Shoulder Attachment Elements Requirements. Each test may use a new FBH.	Pass
3.2.4.1.1	Static Feet First.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25 mm).	Pass
c	The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	Except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing .	Pass
3.2.5	Waist, Rear.	Pass
3.2.5.1	The waist, rear attachment shall only be subjected to minimal loading through the waist of the user, and shall never be used to support the full through the waist of the user, and shall never be used to support the full	Pass
3.2.5.2	Waist, Rear Attachment Elements Requirements. Each test may use a new FBH.	Pass
3.2.5.2.1	Static Feet First.	Pass
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25mm).	Pass
c	The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	Except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing.	Pass
3.2.6	Hip.	Pass
3.2.6.1	Hip Attachment Element Performance Requirements.	Pass
3.2.6.1.1	Static Feet First.	Pass
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25mm).	Pass
c	The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	Except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing.	Pass
3.2.7	Suspension Seat.	Pass
	The suspension seat attachment elements (labeled "Saddles" in Figure 6) shall be used as a pair and shall be used solely for positioning. The suspension seat attachment elements shall not be used for fall arrest.	Pass
3.2.7.1	Suspension Seat Attachment Element Performance Requirements.	Pass
3.2.7.1.1	Static Feet First.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
a	FBH shall not release the test torso.	Pass
b	Slippage through any adjuster shall not exceed 1 inch (25mm).	Pass
c	The strap to which a buckle and eyelet adjuster is fitted shall not tear urther than the eyelet ad jacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet.	Pass
d	Except for the straps of the buckle and eyelet adjusters, straps shall not show any signs of tearing.	Pass
3.3	Component Requirements.	Pass
3.3.1	Load Bearing Straps.	Pass
3.3.1.1	Straps shall not be less than 1-5/8 inches (4 1mm) in width.	Pass
3.3.1.2	When tested in accordance with reference 7.1.1, straps shall have a breaking strength not less than 5,000 pounds (22.2 kN).	Pass
3.3.1.3	Straps shall be made from pure, non-recycled synthetic material having the strength, aging, abrasion and heat resistance characteristics equivalent or superior to polyamide or polyester. Synthetic materials other than those stated herein are permitted only when it can be demonstrated by testing that all requirements of this standard are met and, additionally, that the durability, reliability and other properties pertinent to the intended uses have been evaluated and determined suitable by testing. Any restrictions on the use of such materials shall be marked on the FBH.	Pass
3.3.1.4	Straps shall be either hot cut, sealed, covered or stitched to prevent fraying.	Pass
3.3.1.5	After abrasion conditioning in accordance with reference 7.1 .2, straps shall have a breaking strength of not less than 3, 600 pounds (16.0 kN) when tested in accordance with reference 7.1.1	Pass
3.3.1.6	Straps in contact with metal connectors at attachment elements and tongue buckles shall be protected from wear.	Pass
3.3.1.7	the spacing between hole centers of adjacent eyelets for buckle and eyelet type adjustors used in FBHs shall be no more than 2 inches (50mm) and not less than 1-1/8 inches (29mm).	Pass
3.3.2	Thread and Stitching.	Pass
3.3.2.1	All thread shall be of the same material as the load bearing straps.	Pass
3.3.2.2	All stitching shall be lock stitched and be securely backstitched to prevent unraveling.	Pass
3.3.2.3	All stitching used to connect load bearing members shall be contrasting in color to the load bearing straps of the FBH to facilitate visual inspection.	Pass
3.3.3	Connecting Components.	Pass
3.3.3.1	All connecting components, except soft loop attachments, used for FBH construction shall conform to ANSI/ASSE Z359.12.	Pass
3.3.3.2	Soft loop attachments may be used in place of metal connecting components at all FBH attachment element locations.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
3.3.3.3	Soft loop attachments may be used in place of metal connecting requirements of Section 3.3. 1, excluding section 3.3.1.1.	Pass
3.3.3.4	Soft loop attachments shall include protection from wear over the entire inside surface .	Pass
4	Performance Requirements	Pass
4.1	Full Body Harnesses	Pass
	All FBHs shall undergo qualification and verification testing according to ANSI/ASSP Z359.7, Qualification and Verification Testing of Fall Protection Products.	Pass
4.2	Test Equipment	Pass
4.2.1	Drop Test Structure.	Pass
	Refer to Section 4.1 of ANSI/ASSP Z359.7 for specification.	Pass
4.2.2	Test Torso	Pass
	The torso shaped test weight used for testing FBHs shall be constructed of rigid material with hard wood surfaces in accordance with dimensions set forth in Figures 8 and 9 and shall weigh 220 ± 2 pounds (100 ± 1 kg).	Pass
4.2.3	Test Lanyards	Pass
	Refer to Section 4.1 of ANSI/ASSP Z359.7 for specification. Test lanyard length to be selected by the test technician as needed to facilitate the specific test.	Pass
4.2.4	Quick Release Mechanism	Pass
	Refer to Section 4.1 of ANSI/ASSP Z359.7 for specification.	Pass
4.2.5	Test Instrumentation.	Pass
	Refer to Section 4.1 of ANSI/ASSP Z359.7 for specification.	Pass
4.2.6	Static Test Equipment.	Pass
	The static test equipment shall pull at a uniform rate of not greater than 2 inches (50mm) per minute and shall measure a force within an accuracy of $\pm 3\%$ of the specified load.	Pass
4.2.7	Test Shackles.	Pass
	Test shackles shall be 1/2-inch (13mm) and of the screw pin anchor type.	Pass
4.2.8	Test Yoke.	Pass
	Test yokes shall be constructed in accordance with 4.2.3 and Figure 10 in a "Y" arrangement of sufficient length to facilitate the specific test.	Pass
4.3.2	FBH to Test Mass.	Pass
4.3.3	Dynamic Feet First Drop Test.	Pass
4.3.4	Dynamic Head First Drop Test.	Pass

ANSI/ASSE Z359.11-2014		
Clause	Requirement + Test	Verdict
4.3.5	Static Feet First Test.	Pass
4.3.6	Fall Arrest Indicator Test.	Pass
4.3.7	Static Feet First Test For Lanyard Parking Attachment Element.	Pass
5	MARKINGS AND INSTRUCTIONS	Pass
5.1	MARKINGS AND INSTRUCTIONS	Pass
5.2	Instructions Requirements.	Pass

Dynamic Feet First Drop Test. (4.3.3)					
4.3.3	Impact test				Pass
Test part:	High	weight	H _I	H _F	H _S
Fall arrest safety belt	4.5m	100kg	1000mm	950mm	50mm
test time:					

Dynamic Head First Drop Test. (4.3.4)					
4.3.4	Impact test				Pass
Test part:	Max. Instantaneous load gravity	weight	Average Instantaneous load gravity	Limit	Result
Fall arrest safety belt	14.1kN	100kg	13.6kN	23 kN	Pass
test time: --			No damaged the Shock absorber		

Strength of belt (4.3.5)			
4.3.5	Strength of safety belt		Pass
Test part:	Diameter	Force	Result
safety belt	--	16kN	Pass
--test time: 1min		No damaged	

Strength of ring(4.3.6)			
4.3.6	Strength of Ring		Pass
Test part:	Diameter	Force	Result
Ring	--	4kN	Pass
--test time: 2s		No damaged	

buckle strength (4.3.6)			
4.3.6	major axis with gate closed		Pass
Test part:	Diameter	Force	Result
Minor axis	--	4kN	Pass
--test time: 2s		No distort, No damaged	

Photos







****Modified History****

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	2025/11/03	Luna Ni

*******End of Test Report*******