INSPEC TESTING SERVICES

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Test Report

ANSI Z359.11-2021
Full Body Harnesses

Report no:	2.25.10.12
Customer:	Frontline Fall Protection Inc. 6 Lee Blvd, Malvern PA 19355 USA
Manufacturer: **as advised by the Customer**	Frontline Fall Protection Inc.
Customer orders:	T/1090 and T/1569
Orders received:	29 Nov. 2022 and 30 Sept. 2025 respectively
Model:	110CTB-MX
Dates of tests:	15 Mar. 2023 to 27 Apr. 2023 and 25 Oct. 2025

Signed: 

Steven Sum, Laboratory Manager

Issued: 28 October 2025

Conditions

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Specimens will be disposed of four weeks from the date of this report, unless otherwise instructed.

Opinions, comments and interpretations expressed in this report are shown in italics.

Copies of INSPEC interpretations referenced in this report are available upon request.

Tests marked ☒ are not included in our ANAB Scope of Accreditation.

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Summary of assessment *

Clause	Requirement	Assessment (See Key)
3.1	**Design requirements**	**Ltd**
3.1.10	Static Feet-First test - Lanyard parking attachment	**Pass**
3.2	**Attachment Element Requirement**	
3.2.1	**Dorsal**	**Pass**
3.2.1.3.1	Dynamic Feet-First test	**Pass**
3.2.1.3.2	Dynamic Head-First test	**Pass**
3.2.1.3.3	Static Feet-First test	**Pass**
3.2.1.3.4	Visual Indicator test	**Pass**
3.2.2	**Sternal**	
3.2.2.3.1	Dynamic Feet-First test	
3.2.2.3.2	Static Feet-First test	
3.2.2.3.3	Visual Indicator test	
3.2.3	**Frontal**	
3.2.3.1.1	Dynamic Feet-First test	
3.2.3.1.2	Static Feet-First test	
3.2.4	**Shoulder**	
3.2.4.1.1	Static Feet-First test	
3.2.5	**Waist, Rear**	
3.2.5.2.1	Static Feet-First test	
3.2.6	**Hip**	**Pass**
3.2.6.1.1	Static Feet-First test	**Pass**
3.2.7	**Suspension Seat**	
3.2.7.1.1	Static Feet-First test	
3.3	**Component Requirements**	**Ltd**
3.3.1.1	Load bearing straps - width	**Pass**
3.3.1.2	Strap tensile test	**Pass**
3.3.1.5	Strap tensile test (after abrasion)	**Pass**
3.3.3.1	Connecting Components (except soft loop attachments)	**NAs**
3.3.3.3	Strap tensile test - soft loops attachments	
	Strap tensile test – soft loops attachment (after abrasion)	
5.1	Marking requirements	**Ltd**
5.2	Instructions requirements	**Ltd**

Key

	Shading shows the clauses requested. Any other clauses were not requested.
Pass	Requirement satisfied.
Ltd	Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information.
Fail	Requirement not satisfied. Refer to the "Result details" section for more information.
NAs	Assessment not carried out.
NAp	Requirement not applicable.
NT	Requested but not tested due to early termination following failure.

* Assessment relates only to those specimens which were tested and are the subject of this report.

Submission details

Product	Quantity	Dates received	INSPEC specimen no.
Waistbelt, chest strap and back strap (black), part no. 10#	15 m	11 Mar. 2023	2L05902A to 02J (cut into 10 equal lengths)
Leg straps (black), part no. 64#	15 m		2L05903A to 03J (cut into 10 equal lengths)
Shoulder straps (orange), part no. 599#	15 m		2L05904A to 04J (cut into 10 equal lengths)
Full body harness, model 110CTB-MX	07		2L06601 to 2L06607
User Instructions	e-copy	30 Sept. 2025	-

Procedures

The specimens detailed within the submission above were used for the tests covered by this report.

Testing was performed in accordance with ANSI Z359.11-2021 unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received by INSPEC.

Testing was performed at INSPEC's laboratory in Kunshan, China.

Result details

3 Design Requirements

3.1 Design Requirements

Specimen 2L06602 was assessed.

3.1.2	The specimen permanently incorporated a dorsal attachment element.	**Pass**
	The specimen incorporated another attachment element. The other attachment element was located at the hip location.	
	The specimen incorporated a load bearing sub-pelvic strap.	**Pass**
3.1.3	All shoulder straps on the specimen came together at the dorsal location and were crossed and attached with a (D-ring) connector.	**Pass**
	Testing of the (D-ring) connector was not requested.	**NAs**
3.1.4	The specimen permanently incorporated a back-strap as a mean to control the separation of the shoulder straps on the back of the full body harness.	**Pass**
	When the specimens were mounted on to the torso as per manufacturer's instructions, some portion of the back-strap was located between datum levels G and K.	**Pass**
3.1.5 / 3.1.5.1	The specimen was not equipped with modular components or assemblies.	**NAp**
3.1.5.2	The specimen was not equipped with attachment element extenders; therefore, this clause is not applicable.	**NAp**
3.1.6	The specimen was not integrated into a vest or garment.	**NAp**
3.1.7	The specimen was equipped with two visual indicators at the dorsal area.	**Pass**
	Both visual indicators deployed during dynamic testing defined in sections 3.2.1.3.1 and 3.2.1.3.2 when attached to the dorsal attachment element.	**Pass**
	It was visually possible to inspect both visual indicators.	**Pass**
3.1.7.1	The specimen was not equipped with other visual indicators.	**NAp**
3.1.8	The specimen was not equipped with connecting subsystem combinations.	**NAp**
3.1.9	The specimen did include strap retainers (keepers) which serve to control the loose ends of straps.	**Pass**

3.1.10 Static Feet-First Test - Lanyard Parking Attachment Element

Specimen 2L06601 was assessed.

The specimen was equipped with two lanyard parking attachment elements. Both lanyard parking attachment elements did not differ in design.

During the static feet-first test, the lanyard parking attachment element disengagement load was 83.2 pounds. This value was less than the maximum 120 pounds permitted. **Pass**

Specimen 2L06602 was assessed.

3.1.11 It was not possible to remove elements of the full body harness that support the shoulders / upper torso from those that support the legs / lower torso. **Pass**

3.1.12 The dorsal attachment element was located laterally along the vertical centreline of the full body harness. **Pass**

3.1.13 The specimen did not incorporate sternal attachment elements. **NAp**

3.1.14 The specimen did include a sub-pelvic strap. **NAp**

3.2 Attachment Element Requirements

3.2.1 Dorsal

Specimen 2L06602 was assessed.

The dorsal attachment element was located in the dorsal area shown in figure 2 of the standard. **Pass**

The dorsal attachment element was specified in the User Instructions to be used for fall arrest. **Pass**

3.2.1.1 The dorsal attachment was specified in the User Instructions to be used in travel restraint or rescue.

3.2.1.2 During the dynamic performance test, it was confirmed that the design of the full body harness directed the 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 Test

Specimen 2L06602 was assessed.

During the dynamic feet-first test, the test torso was not released.	**Pass**
The harness did support the test torso for a period of five minutes post fall.	**Pass**
During this period, the angle of the test torso to vertical was 10 degrees. This value was less than the maximum 30 degrees permitted.	**Pass**
Both visual indicators deployed visibly and permanently.	**Pass**

Full body harness stretch was 11.4 inches.

Full body harness stretch stated in the manufacturer's instructions was 18 inches.

Full body harness stretch shall not exceed 18 inches, or that which is stated in the manufacturer's instructions, whichever is less, was satisfied	**Pass**

3.2.1.3.2 Dynamic Head-First Test

Specimen 2L06603 was assessed.

During the dynamic head-first test, the test torso was not released.	**Pass**
The harness did support the test torso for a period of five minutes post fall.	**Pass**
During this period, the angle of the test torso to vertical was 8 degrees. This value was less than the maximum 30 degrees permitted.	**Pass**
Both visual indicators deployed visibly and permanently.	**Pass**

3.2.1.3.3 Static Feet-First Test

Specimen 2L06604 was assessed.

During the static feet-first test, the test torso was not released from the harness.	**Pass**
During the static feet-first test, all adjusters did not slip.	**Pass**
The straps which buckle and eyelet adjusters were fitted did not tear.	**Pass**
All other straps of the full body harness did not show signs of tearing.	**Pass**

3.2.1.3.4 Fall Arrest Indicator Test

Specimen 2L06605 was assessed.

When tested in accordance with 4.3.6.1 using the dorsal attachment element, both visual indicators deployed visibly and permanently.	**Pass**

3.2.6 Hip

Specimen 2L06606 was assessed.

The hip attachment elements were specified in the User Instructions to be used as a pair. **Pass**

The hip attachment elements were specified in the User Instructions to be used solely for work positioning or travel restraint. **Pass**

The hip attachment elements were specified in the User Instructions not to be used for fall arrest. **Pass**

3.2.6.1 Hip Attachment Element Requirements

3.2.6.1.1 Static Feet-First Test

Specimen 2L06606 was assessed.

During the static feet-first test, the test torso was not released from the harness. **Pass**

During the static feet-first test, all adjusters did not slip. **Pass**

The straps which buckle and eyelet adjusters were fitted did not tear. **Pass**

All other straps of the full body harness did not show signs of tearing. **Pass**

3.3 Components Requirements

3.3.1 Load Bearing Straps

Specimen 2L06601 was assessed.

3.3.1.1	The minimum width of the load bearing straps was 1.73 inches (44 mm). This is more than the minimum 1-5/8 inches (41 mm) specified.	**Pass**
3.3.1.2	Strap specimens 2L05902A to 02E, 2L05903A to 03E and 2L05904A to 04E withstood the tensile tests of 5,000 pounds applied for 1-minute without breaking.	**Pass**
3.3.1.3	The material and characteristics of load-bearing straps were not assessed. Manufacturer to certify.	**NAs**
3.3.1.4	The ends of load bearing straps were hot-cut to prevent fraying.	**Pass**
3.3.1.5	Following abrasion conditioning, strap specimens 2L05902F to 02J, 2L05903F to 03J and 2L05904F to 04J withstood the tensile tests of 3,600 pounds applied for 1-minute without breaking.	**Pass**
3.3.1.6	Straps in contact with metal connectors at attachment elements were protected from wear. Plastic sleeves were used.	**Pass**
	Straps in contact with tongue buckles were protected from wear. Grommets were used.	**Pass**
3.3.1.7	The spacing between holes centres of adjacent eyelets for buckle and eyelet type adjusters used in the specimen was 1.85 inches (47 mm). This is no more than 2 inches (50 mm) and no less than 1-1/8 inches (29 mm) specified.	**Pass**

3.3.2 Thread and Stitching

Specimen 2L06601 was assessed.

3.3.2.1	The material and characteristics of threads used was not assessed. Manufacturer to certify.	**NAs**
3.3.2.2	All types of stitching were not assessed. Manufacturer to certify.	**NAs**
3.3.2.3	Threads used for sewing the harness were white colour. This contrasted with the orange and black colours of the load bearing straps.	**Pass**

3.3.3 Connecting Components

Specimen 2L06601 was assessed.

3.3.3.1	Testing of connecting components was not requested.	**NAs**
3.3.3.2	Soft loop attachment was not used.	**NAp**
3.3.3.3	Soft loop attachment was not used.	**NAp**
3.3.3.4	Soft loop attachment was not used.	**NAp**

5 Marking and Instructions

5.1 Marking Requirements

Markings in English were provided electronically by the manufacturer and used for assessment.

5.1.1		Markings shall be in English.	**Pass**
5.1.2		The legibility and attachment of required markings shall be designed to endure for the life of the component, subsystem or system been marked. Manufacturer to certify.	**NAs**
		When pressure-sensitive labels are used, they shall comply with the applicable provision of the reference in Section 7.2.1 Manufacturer to certify.	**NAs**
		When labels are concealed, a permanent marking shall be visible to the unaided eye that describes how to access the labels.	**NAs**
5.1.3	a.	The material of construction. [Polyester]	**Pass**
	b.	The size or range of sizes.	**Pass**
	c.	Part number and/or model designation. [110CTB-MX]	**Pass**
	d.	The month and year of manufacture.	**Pass**
	e.	The manufacturer's name or logo. [FRONTLINE]	**Pass**
	f.	An identifying number, unique to each individual full body harness produced by the manufacturer.	**Pass**
	g.	A warning to follow manufacturer's instructions included with the equipment at the time of shipment from the manufacturer.	**Pass**
	h.	A label permanently attached to the lanyard parking attachment which either state "Park Lanyard Here. See instructions." verbally or conveys this by means of a pictogram.	**Pass**
	i.	If the harness stretch measurement for the frontal attachment exceeds 18 inches (457mm) in 3.2.3.1.1, then the harness shall include a warning with the stated stretch out distance.	**NAp**
	j	If the full body harness includes an integrated D-ring extender, a warning shall be included on the D-ring extender that increased free fall should be considered when using this product.	**NAp**
	k.	Applicable pictograms in Fig. 12 with a minimum height of 0.8 inches (20mm) or applicable pictograms from CSA Z259.10-18 Fig. 1 to Fig. 8	**Ltd**
		(the heights of the pictograms could not be measured)	
		A label as defined in Figure 11a.	**Ltd**
	l.	1. The label shall be placed in a prominent location on the full body harness.	**Pass**
		2. If the label is part of a label pack or book, the label shall be placed so that the user will see it first.	**NAs**
		3. The label may be modified to include the mark of the qualification body and may include a part number located on the label outside of the border as needed by the manufacturer as defined in Fig. 11a and 11b.	**NAp**

5.2 Instruction Requirements

User Instructions in English were provided electronically by the manufacturer and used for assessment.

The instructions to users have been assessed as detail below, with reference only to the relevant requirements of the Standard.

INSPEC has not assessed these instructions with respect to claims made by the manufacturer outside of these requirements and therefore accepts no responsibility for the legitimacy of any such claims.

5.2.1	Instructions shall be provided to the user in English and affixed to the equipment at the time of shipment from the manufacturer.	**Ltd**
5.2.2	**Instructions shall contain the following information:**	
a.	Annex A in its entirety, either incorporated throughout the manufacturer's instructions, as an appendix to the manufacturer's instructions, or separately provided with the product along with the manufacturer's instructions.	**Pass**
b.	A statement that the manufacturer's instructions shall be provided to the users.	**Pass**
c.	Manufacturer's name, address and telephone number.	**Pass**
d.	Manufacturer's part number and/or model designation for the equipment.	**Pass**
e.	Intended use and purpose of the equipment.	**Pass**
f.	Length of FBH Stretch HS, and warning to include other factors such as D-ring/ connector length, setting of the user's body and all other contributing elements when calculating fall clearance.	**Pass**
g.	Proper method of use and limitations of the equipment.	**Pass**
h.	Illustrations showing locations and markings on the equipment.	**Pass**
i.	An illustration demonstrating the load indicator before and after deployment.	**Pass**
j.	Reproduction of printed information on all markings.	**Pass**
k.	Inspection procedures (including frequency) required to assure the equipment is in serviceable condition and operating correctly.	**Pass**
l.	Criteria for discarding equipment that fails inspection.	**Pass**
m.	Procedures for cleaning, maintenance and storage.	**Pass**
n.	Reference to ANSI/ASSE Z359.11 (full body harnesses) and applicable regulations governing occupational safety.	**Pass**
o.	Acceptable use for all attachment elements (see Annex A).	**Pass**

5.2.3	Instructions shall require that only the equipment manufacturer, or persons or entities authorized in writing by the manufacturer, make repairs to the equipment.	**Pass**
5.2.4	Instructions shall require the user to remove equipment from service if it has been subjected to the forces of arresting a fall and will include information on inspection of load indicators.	**Pass**
5.2.5	Instructions shall require the user to have a rescue plan and means at hand to implement it when using the full body harness for fall arrest.	**Pass**
5.2.6	Instructions shall provide warnings against:	
a.	Altering equipment	**Pass**
b.	Misusing equipment	**Pass**
c.	Using combinations of components or sub-systems, or both, which may affect or interfere with the safe function of each other.	**Pass**
d.	Exposing the equipment to chemicals, heat, flames or other environmental conditions, which may produce a harmful effect and to consult the manufacturer in case of doubt.	**Pass**
e.	Using the equipment around moving machinery and electrical hazards.	**Pass**
f.	Using the equipment near sharp edges or abrasive surfaces.	**Pass**
g.	Exposure to light (UV degradation)	**Pass**

Estimates of the uncertainty of measurement

Clause	Test		Uncertainty
3.1	Design Requirements		Not applicable
3.1.3	Connector		See Test Report
3.1.5.1	Modular Components		See Test Report
3.1.5.2	Attachment Element Extender	Length	±0.1 inches
3.1.8	Connecting Subsystem Combinations		See Test Report
3.1.10	Lanyard Parking Attachment Element	Static Feet-First test	±3.4%
3.2	Attachment Element Requirement		Not applicable
3.2.1.3.1	Dorsal attachment element	Dynamic Feet-First test	±3.4%
3.2.1.3.2		Dynamic Head-First test	±3.4%
3.2.1.3.3		Static strength test	See Note 1
		Slippage	±1.3%
3.2.1.3.4		Visual Indicator test	See Note 1
3.2.2.3.1	Sternal attachment element	Dynamic Feet-First test	±3.4%
3.2.2.3.2		Static strength test	See Note 1
3.2.2.3.2		Slippage	±1.3%
		Visual Indicator test	See Note 1
3.2.3.1.1	Frontal attachment element	Dynamic Feet-First test	±3.4%
3.2.3.1.2		Static strength test	See Note 1
		Slippage	±1.3%
3.2.4.1.1	Shoulder attachment element	Static strength test	See Note 1
		Slippage	±1.3%
3.2.5.2.1	Waist, Rear attachment element	Static strength test	See Note 1
		Slippage	±1.3%
3.2.6.1.1	Hip attachment element	Static strength test	See Note 1
		Slippage	±1.3%
3.2.7.1.1	Suspension Seat attachment element	Static strength test	See Note 1
		Slippage	±1.3%

Clause	**Test**		**Uncertainty**
3.3	Component Requirements		Not applicable
3.3.1.1	Load Bearing Straps	Width	±0.1 inch
3.3.1.2		Static strength test	See Note 1
3.3.1.5		Static strength test (after abrasion)	See Note 1
3.3.1.7		Buckle & eyelet type adjusters (Spacing)	±0.1 inch
3.3.3.1	Connecting components (except soft loop attachments)		See Test Report
3.3.3.3	Soft loop attachments	Static strength test	See Note 1
		Static strength test (after abrasion)	See Note 1
5	Markings and Instructions		Not applicable

Note 1 The acceptance criterion for this test is a straightforward “Pass/Fail”, rather than a numerical value. Consequently, as there is no value to be reported, uncertainty has not been reported either.

Note 2 The uncertainty value is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides for a confidence level of approximately 95%. Values expressed as a percentage (%) are relative.

Note 3 It should be noted that the above values have not been taken into account when making assessment to the pass/fail criteria.

ANNEX

This Annex comprises one section.

1. Photograph of the product tested. (1 page)

END OF REPORT

Frontline Fall Protection INC. –
Full body harness, model 110CTB-MX

INSPEC Testing Services' specimen 2L06601 28 October 2025