


GUARDIAN® ANSI/ASSP Z359.11-2014

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Test Report Number: 2022033021077
Job Number: 102912130CRT-002
Product SKU#: 21077
Product Type: Full Body Harness
Product Description: Cyclone Harness Black/Yellow, HUV / TB Legs / PT Chest / Side D-rings / Size Universal
Testing Standard: ANSI/ASSP Z359.11-2014 Safety Requirements for Full Body Harnesses
Date(s) of Testing: 2/10/2017

REQUIREMENT VERIFICATION

<u>Requirement Description</u>	<u>Clause/Section</u>	<u>Result</u>
General Requirements	3.1 Design Requirements	Meets or Exceeds
Markings and Instructions	5. Markings and Instructions	Meets or Exceeds

QUALIFICATION TESTING

<u>Test Description</u>	<u>Test Date</u>	<u>Clause/Section</u>	<u>Result</u>
Dynamic Performance FF (Dorsal)	2/10/2017	4.3.3 Dynamic Strength Testing of Full Body Harness (Feet First)	Pass
Dynamic Performance HF (Dorsal)	2/10/2017	4.3.4 Dynamic Strength Testing of Full Body Harness (Head First)	Pass
Static Strength FF (Dorsal)	2/10/2017	4.3.5 Static Strength Testing of Full Body Harnesses (Feet First)	Pass
Static Strength FF (Hip)	2/10/2017	4.3.5 Static Strength Testing of Full Body Harnesses (Feet First)	Pass
Fall Arrest Indicator	2/10/2017	4.3.6 Dynamic Strength Testing of Full Body Harness Fall Arrest Indicators	Pass

This test report covers these additional products:

21029, 21030, 21031, 21032, 21033, 21034, 21035, 21036, 21041, 21042, 21043, 21044, 21045, 21046, 21047, 21048, 21052, 21053, 21054, 21055, 21060, 21061, 21062, 21063, 21064, 21065, 21066, 21067, 21077, 21078, 21081

Please contact quality@guardianfall.com for signed report.

3.1	Design Requirements	
3.1.1	All FBHs shall permanently incorporate a dorsal attachment element	Meets or Exceeds
3.1.2	All FBHs shall permanently include a load bearing sub-pelvic strap	Meets or Exceeds
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, or attach with a connector meeting the requirements of Z359.12.	Meets or Exceeds
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.	Meets or Exceeds
3.1.5	Modular components or assemblies for FBHs designed for the removal of different attachment elements shall meet the requirements of Section 3.	Meets or Exceeds
3.1.5.1	Modular components shall be attached to the harness using connections that meet Section 3 and shall have a minimum breaking strength of 5,000 lbs.	Meets or Exceeds
3.1.5.2	Attachment element extenders shall not be longer than 24 inches from new bearing point to a point on the FBH that is adjacent to the user's body	Meets or Exceeds
3.1.6	For FBHs integrated into a vest or other garments, the design shall allow visual inspection of the FBH.	Meets or Exceeds
3.1.7	All FBHs shall be equipped with a fall arrest indicator that will deploy during dynamic testing defined in Section 3.2	Meets or Exceeds
3.1.7.1	If fall arrest indicators are present on other attachments elements of the FBH, they must activate when tested in accordance with 4.3.6.	Meets or Exceeds
3.1.8	FBHs with attached connecting subsystem combinations shall meet ANSI Z359.11 for the FBH and the respective ANSI standard for the subsystem.	Meets or Exceeds
3.1.9	All FBHs shall include strap retainers or other components which serve to control the loose ends of straps.	Meets or Exceeds
3.1.10	All FBHs shall include at least one lanyard parking attachment element having a disengagement load of not more than 120lb when tested as in 4.3.7.	Meets or Exceeds
3.1.11	It shall not be possible to remove the elements of the FBH that support the shoulders/upper torso from those that support the legs/lower torso.	Meets or Exceeds
3.1.12	All single point attachment elements shall be located laterally within 2 inches of the vertical centerline of the FBH.	Meets or Exceeds
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. Elements shall be marked to only be used together	Meets or Exceeds
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, two at the front and two at the rear, all integrally attached to the waist belt.	Meets or Exceeds

Notes

5	Markings and Instructions	
5.1	Marking Requirements	
5.1.1	Markings shall be in English	Meets or Exceeds
5.1.2	Markings shall remain legible and endure for the life of the component, subsystem, or system being marked. Pressure-sensitive labels must conform to UL 969-2001, Marking and Labeling Systems	Meets or Exceeds
5.1.3	Full body harnesses shall be marked with:	
	a) The material of construction	Meets or Exceeds
	b) The size or range of sizes	Meets or Exceeds
	c) Part number and/or model designation	Meets or Exceeds
	d) The month and year of manufacture	Meets or Exceeds
	e) The manufacturer name or logo	Meets or Exceeds
	f) An identifying number, unique to each individual FBH produced by the manufacturer	Meets or Exceeds
	g) A warning to follow manufacturer's instructions included with the equipment at the time of shipment	Meets or Exceeds
	h) A label permanently attached to the lanyard parking attachment which either states, "Park Lanyard Here. See Instructions," verbally, or conveys this by means of a pictogram.	Meets or Exceeds
	i) A label defined as defined in 10a and 10b.	Meets or Exceeds

Notes

5.2	Instruction Requirements	
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.	Meets or Exceeds
5.2.2	Instructions shall contain the following information:	
	a) Annex A in its entirety, either incorporated in the manufacturer's instructions, as an appendix to the manufacturer's instructions, or separately provided with the product along with the manufacturer's instructions	Meets or Exceeds
	b) A statement that the manufacturer's instructions shall be provided to the users	Meets or Exceeds
	c) Manufacturer's name, address, and telephone number	Meets or Exceeds
	d) Manufacturer's part number and/or model designation for the equipment.	Meets or Exceeds
	e) Intended use and purpose of the equipment	Meets or Exceeds
	f) Length of FBH Stretch Hs, and a warning to include other factors such as D-ring/connector length, settling of the user's body, and all other contributing elements when calculating fall clearance.	Meets or Exceeds
	g) Proper method of use and limitations of the equipment	Meets or Exceeds
	h) Illustrations showing locations and markings on the equipment	Meets or Exceeds
	i) Reproduction of printed information on all markings	Meets or Exceeds
	j) Inspection procedures (including frequency) required to assure the equipment is in serviceable condition and operating correctly	Meets or Exceeds
	k) Criteria for discarding equipment that fails inspection	Meets or Exceeds
	l) Procedures for cleaning maintenance and storage.	Meets or Exceeds
	m) Reference to ANSI/ASSE Z359.11 (Full Body Harnesses) and applicable regulations governing occupational safety.	Meets or Exceeds
	n) Acceptable use for all attachment elements (see Annex A).	Meets or Exceeds
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.	Meets or Exceeds
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	Meets or Exceeds
5.2.5	Instructions shall require the user to have a rescue plan and the means at hand to implement it when using the FBH for fall arrest.	Meets or Exceeds
5.2.6	Instructions shall provide warnings against:	
	a) Altering equipment	Meets or Exceeds
	b) Misusing equipment.	Meets or Exceeds
	c) Using combinations of components or sub-systems, or both, which may affect or interfere with the safe function of each other	Meets or Exceeds
	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.	Meets or Exceeds
	e) Using the equipment around moving machinery and electrical hazards	Meets or Exceeds
	f) Using the equipment near sharp edges or abrasive surfaces	Meets or Exceeds
	g) Exposure to light (UV degradation)	Meets or Exceeds

4.3.3 Dynamic Feet First Drop Test - Dorsal
Requirements per Section 3.2.1.3.1

- a. For an FBH with a sliding dorsal attachment element, position the bearing point of the attachment element on the FBH in accordance with manufacturer’s instructions.
- b. Attach the hoist/quick-release mechanism to the neck of the test torso and raise as needed to attach the test lanyard from the point of the test anchorage to the attachment element of the FBH using test shackles. Connection to bilateral attachment elements shall be through the use of the test yoke described in 4.2.8, except those described in 3.1.13, which will be connected at a single point.
- c. Using the hoist, lower the torso to an elevation where all slack is removed from the test lanyard and connecting components, but not placing a load on the attachment element.
- d. For dorsal, sternal and frontal attachment elements, measure and record the initial height (HI) as the vertical distance from the lowest point on the test torso to the floor.
- e. Raise the torso to a height necessary to apply a peak impact load of not less than 3,600 pounds (16kN) to the attachment element(s) of the FBH when released.
- f. Release the test torso and evaluate the FBH in accordance with requirements in 3.2 for the attachment element(s) being tested.
- g. Measure and record the MAF. Any failure above 4,000 pounds (17.7kN) negates the test, and the test has to be repeated; however, any pass above 3,600 pounds (16kN) is acceptable.
- h. For dorsal, sternal and frontal attachment elements, measure and record the final height (HF) as the vertical distance from the lowest point on the test torso to the floor, post fall. To calculate FBH stretch (HS): $HS = HI - HF$.

4.3.3 Dynamic Feet First Drop Test - Dorsal
Requirements per Section 3.2.1.3.1

Samples	Sample # 01	Sample # 02	Sample # 03
Drop Height (in.)	50	50	45
Max Arrest Force >3,600 lb	4353	5198	4318
Hi - Initial Height (in.)	140	140	140
Hf - Final Height (in.)	150	148	147
FBH shall not release test torso	Yes	Yes	Yes
FBH shall support test torso for 5 min post fall	Yes	Yes	Yes
FBH shall support test torso at <30°	4.2	0.3	6.2
At least one fall arrest indicator deployed visibly and permanently	Yes	Yes	Yes
FBH stretch <18” or that which is stated by mfg - whichever is less	10	8	7
Result/Assessment	Pass	Pass	Pass

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4.3.4 Dynamic Head First Drop Test - Dorsal
Requirements per Section 3.2.1.3.2

- a. For a FBH with a sliding dorsal attachment element, position the bearing point of the attachment element on the FBH 8 inches ± 1 inch (200mm ± 25mm) below the top of the shoulder module (datum level A of Figure 5) on the test torso or at the maximum lowest position on the FBH.
- b. Attach the hoist/quick-release mechanism to the crotch of the test torso and raise as needed to attach the test lanyard from the point of the test anchorage to the attachment element of the FBH using test shackles.
- c. Using the hoist, lower the torso to an elevation where all slack is removed from the test lanyard and connecting components, but not placing a load on the attachment element.
- d. Raise the torso to a height of 6 feet (1.8m) or to a height necessary to apply a peak impact load of not less than 3,600 pounds (16kN) to the attachment element(s) of the FBH when released, whichever is less.
- e. Release the test torso and evaluate the FBH in accordance with requirements in 3.2 for attachment element(s) being tested.
- f. Measure and record the MAF. Any failure above 4,000 pounds (17.7kN) would negate the test and would need to be repeated; however, any pass above 3,600 pounds (16kN) or with a drop height of 6 feet (1.8m) or greater is acceptable.

4.3.4 Dynamic Head First Drop Test - Dorsal
Requirements per Section 3.2.1.3.2

Samples	Sample # 04	Sample # 05	Sample # 06
Drop Height (in.)	100	100	100
Max Arrest Force >3,600 lb	4579	5184	3985
FBH shall not release test torso	Yes	Yes	Yes
FBH shall support test torso for 5 min post fall	Yes	Yes	Yes
FBH shall support test torso <30°	23.7	25.8	10
Min. one fall arrest indicator deployed visibly and permanently	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.3.5 Static Feet First Test - Dorsal
Requirements per Section 3.2.1.3.3

- a. Secure the crotch of the test torso to the static test equipment ensuring the direction of the pull on the attachment simulates a feet first fall.
- b. Connect the attachment element(s) to the static test equipment using either a test lanyard or test yoke as appropriate.
- c. Prior to loading the FBH, mark the location of buckles and adjusters as needed to facilitate measurement of tearing or slippage.
- d. Apply a load of 3,600 pounds (16kN) to the attachment elements and maintain the load for a period of 1 minute.
- e. Release the load and evaluate the FBH in accordance with requirements in 3.2 for the attachment element being tested.

4.3.5 Static Feet First Test - Dorsal
Requirements per Section 3.2.1.3.3

Samples	Sample # 07	Sample # 08	Sample # 09
FBH released test torso?	No	No	No
Slippage through any adjuster <1 in?	No	No	No
Tongue buckle tears <1 in. or to the adjacent eyelet?	No	No	No
Straps tear (other than those above)?	No	No	No
Result/Assessment	Pass	Pass	Pass

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4.3.5 Static Feet First Test - Hip
Requirements per Section 3.2.6.1.1

- a. Secure the crotch of the test torso to the static test equipment ensuring the direction of the pull on the attachment simulates a feet first fall.
- b. Connect the attachment element(s) to the static test equipment using either a test lanyard or test yoke as appropriate.
- c. Prior to loading the FBH, mark the location of buckles and adjusters as needed to facilitate measurement of tearing or slippage.
- d. Apply a load of 3,600 pounds (16kN) to the attachment elements and maintain the load for a period of 1 minute.
- e. Release the load and evaluate the FBH in accordance with requirements in 3.2 for the attachment element being tested.

4.3.5 Static Feet First Test - Hip
Requirements per Section 3.2.6.1.1

Samples	Sample # 10	Sample # 11	Sample # 12
FBH released test torso?	No	No	No
Slippage through any adjuster <1 in?	No	No	No
Tongue buckle tears <1 in. or to the adjacent eyelet?	No	No	No
Straps tear (other than those above)?	No	No	No
Result/Assessment	Pass	Pass	Pass

4.3.6.1 Fall Indicator Test
Requirements per Sections 3.2.1.3.4 & 3.2.2.3.3

- a. Attach the hoist/quick-release mechanism to the neck of the test torso.
- b. Attach an ANSI/ASSP Z359.13 compliant 6-foot (1.8m) free fall personal energy absorber from the point of the test anchorage to the attachment element to be tested using test shackles. Connection to bilateral attachment elements shall be through the use of the test yoke described in 4.2.8, unless the bilateral connections are designed to come together as a single connection point as described in 3.1.13.
- c. Using the hoist, lower the torso to an elevation where the test shackles are straight, but not placing a load on the attachment element.
- d. Raise the torso 24 inches (610mm).
- e. Release the test torso and evaluate the FBH in accordance with requirements in 3.2 for the attachment element being tested.

4.3.6.1 Fall Indicator Test - Dorsal
Requirements per Sections 3.2.1.3.4

Samples	Sample # 13	Sample # 14	Sample # 15
One Fall Arrest Indicator Deployed?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

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