Test Report
ANSI/ASSP Z359.11-2021

Pure Safety Group, Inc.
607 East Sam Houston Pkwy S
Suite 800, Pasadena, TX 77053

Test Report Number: 202404303740657
Job Number: Test 129, Test 800
Product SKU#: 3740657
Product Type: Full Body Harness
Product Description: Harn, B7 Arc Flash Comfort, Waist Pad, S, QC Chest, QC Leg, Sternal D, Hip D
Testing Standard: ANSI/ASSP Z359.11-2021 Safety Requirements for Full Body Harnesses
Dates of Manufacture: 3/01/2024
Date(s) of Testing: 3/10/2023, 2/21/2024, 4/02/2024, 4/03/2024, 4/04/2024

REQUIREMENT VERIFICATION

Requirement Description	Clause/Section	Result
Requirements	3. Requirements	Meets or Exceeds
Markings and Literature	5. Marking and Reference Literature	Meets or Exceeds

QUALIFICATION TESTING

Test Description	Test Date	Clause/Section	Result
Dynamic Performance FF (Dorsal)	4/02/2024	4.3.3 Dynamic Feet First Drop Test	Pass
Dynamic Performance FF (Sternal)	4/02/2024	4.3.3 Dynamic Feet First Drop Test	Pass
Dynamic Performance HF (Dorsal)	4/03/2024	4.3.4 Dynamic Head First Drop Test	Pass
Static Strength FF (Dorsal)	4/04/2024	4.3.5 Static Feet First Test	Pass
Static Strength FF (Sternal)	4/04/2024	4.3.5 Static Feet First Test	Pass
Static Strength FF (Hip)	4/04/2024	4.3.5 Static Feet First Test	Pass
Fall Arrest Indicator (Dorsal)	4/03/2024	4.3.6.1 Visual Indicator Test, Dynamic Test Method	Pass
Static Lanyard Parking Attachment	3/10/2023	4.3.7 Static Feet First Test for Lanyard Parking Attachment Element	Pass
Abrasion Test	2/21/2024	7.1.2 FED-STD-171A/5309, Abrasion Resistance of Textile Webbing	Pass

This test report covers these additional products:

3740626, 3740627, 3740628, 3740629, 3740630, 3740631, 3740632, 3740633, 3740634, 3740635, 3740636, 3740637, 3740650, 3740651, 3740652, 3740653, 3740654, 3740655, 3740656, 3740658, 3740659, 3740660, 3740661

Please contact quality@guardianfall.com for signed report.

Test Equipment		
Equipment	**Model**	**Serial**
Load Cell	1220ACK-5K-B	1071229A
Load Cell	1220ACK-25K-B	347989A
Test Torso	220 lb	TOR01
Measuring Tape (Pasadena)	TX1-25	20243699
Scale	Totalcomp	02314063019
Digital Protractor	950-317	170400992

Notes

3.1	Design Requirements	
3.1.1	**Values**. 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.	Meets or Exceeds
3.1.1.1	**Tolerances**. Unless otherwise specified, the values stated in this standard are expressed as nominal values. Except for temperature limits, values which are not stated as maxima or minima shall be subject to a tolerance of ± 5%. Unless otherwise specified, the ambient temperature for testing shall be between 35°F (1.7°C) and 100°F (37.7°C) and the temperature limits shall be subject to an accuracy of ± 2°F (± 1°C).	Meets or Exceeds
3.1.2	FBHs shall permanently incorporate a dorsal attachment element described in 3.2.1. FBHs may contain any combination of other elements but limited to those described in Section 3.2. Additionally, FBHs shall permanently include a load bearing sub-pelvic strap, except those described in 3.1.14.	Meets or Exceeds
3.1.3	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 ANSI/ASSP Z359.12.	Meets or Exceeds
3.1.4	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 instructionsonto the test torso defined in 4.2.2, some portion of the back strap or waist belt shall be located between datum levels G and K.	Meets or Exceeds
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 3.2 while attached to a compatible FBH.	N/A
3.1.5.1	Modular components shall be attached to the harness using connections that meet Section 3.3.3, and those connections shall have a minimum breaking strength of 5,000 pounds (22.2kN). Connections may be a single choked connection as in an attachment element extender. If buckles are used, they must meet ANSI/ASSP Z359.12 and at least be used in pairs.	Meets or Exceeds
3.1.5.2	When attached to the FBH, an attachment element extender shall be no longer than 24 inches (610mm). This distance shall be measured from the new bearing point of the extended attachment element, along the extender's length to a point on the main body of the FBH which would be adjacent to the user's body when donned.	N/A
3.1.6	For FBHs integrated into a vest or other garment, the design of the garment shall allow visual inspection of the FBH.	N/A
3.1.7	All FBHs shall be equipped with a visual indicator that will deploy during dynamic testing defined in 3.2.1.3.1 and 3.2.1.3.2, when attached to the dorsal attachment element. All indicators shall be located where they can be visually inspected.	Meets or Exceeds
3.1.7.1	If visual indicators are present on other attachment elements of the FBH, they must activate when tested in accordance with 4.3.6.	Meets or Exceeds
3.1.8	FBH with attached connecting subsystem combinations shall meet the requirements of ANSI/ASSP Z359.11 for the FBH and the appropriate Z359 component standard for the attached subsystem(s) when tested respectively. 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 combinations that cannot be separated and tested individually are outside the scope of this standard and cannot be marked as meeting ANSI/ASSP Z359.11. A specific example of this configuration is reviewed in section 3.1.8.1.	Meets or Exceeds

Notes

3.1.8.1	**FBH with Integral Energy Absorber.** A FBH that includes an energy absorber or energy absorbing lanyard permanently connected can be marked to ANSI/ASSP Z359.11.	
1)	Samples of the harness and energy absorber or energy absorbing lanyard shall be tested independently via procedures and quantities from their respective standards ANSI/ASSP Z359.11 and ANSI/ASSP Z359.13.	N/A
2)	The energy absorber or energy absorbing lanyard shall be tested with the connector used in the full body harness.	N/A
3)	The harness and energy absorber or energy absorbing lanyard shall be marked and labeled per their most recent respective standards ANSI/ASSP Z359.11 and ANSI/ASSP Z359.13.	N/A
3.1.9	All FBHs shall include strap retainers (keepers) 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 120 pounds (0.5kN) when tested in accordance with 4.3.7. Testing of multiple lanyard parking attachment elements of the same design is not required.	Meets or Exceeds
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.	Meets or Exceeds
3.1.12	Single point attachment elements shall be located laterally within 2 inches (51mm) 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. Both elements shall be clearly 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 (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).	N/A

Notes

5	**Markings and Instructions**	
5.1	**Marking Requirements**	
5.1.1	Markings shall be in English	
5.1.2	The legibility and attachment of required markings shall be designed to endure for the life of the component, subsystem or system being marked. When pressure-sensitive labels are used, they shall comply with the applicable provision of 7.2.1. When labels are concealed, a permanent marking shall be visible to the unaided eye that describes how to access the labels.	Meets or Exceeds
5.1.3	Full body harnesses shall be marked with:	
a)	a. The material of construction.	Meets or Exceeds
b)	b. The size or range of sizes.	Meets or Exceeds
c)	c. Part number and/or model designation.	Meets or Exceeds
d)	d. The month and year of manufacture.	Meets or Exceeds
e)	e. The manufacturer's name or logo.	Meets or Exceeds
f)	f. An identifying number, unique to each individual FBH produced by the manufacturer.	Meets or Exceeds
g)	A warning to follow manufacturer instructions included with the equipment at the time of shipment from the manufacturer.	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)	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.	Meets or Exceeds
j)	If the FBH 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.	Meets or Exceeds
k)	Applicable pictograms in Figure 12 with a minimum height of 0.8 inch (20mm) or applicable pictograms from CSA Z259.10-18 Figure 1-Figure 8.	Meets or Exceeds
l)	A label as defined in Figure 11a and 11b:	Meets or Exceeds
1)	The label shall be placed in a prominent location on the FBH.	Meets or Exceeds
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.	Meets or Exceeds
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 Figure 11a and 11b.	Meets or Exceeds
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 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.	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 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)	An illustration demonstrating the load indicator before and after deployment.	Meets or Exceeds
j)	Reproduction of printed information on all markings.	Meets or Exceeds
k)	Inspection procedures (including frequency) required to assure the equipment is in serviceable condition and operating correctly.	Meets or Exceeds
l)	Criteria for discarding equipment that fails inspection.	Meets or Exceeds
m)	Procedures for cleaning, maintenance and storage.	Meets or Exceeds
n)	Reference to ANSI/ASSP Z359.11 (full body harnesses) and applicable regulations governing occupational safety.	Meets or Exceeds
o)	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 subsystems, 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 distancefrom 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 distancefrom 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 # 10	Sample # 11	Sample # 12
Drop Height (in.)	60	54	56
Max Arrest Force >3,600 lb	4613.71	3725.07	3839.70
Hi - Initial Height (in.)	75.75	75.75	75.0
Hf - Final Height (in.)	60.75	63.5	63.0
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°	7	9	9
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	15	12	12
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Dynamic Feet First Drop Test - Sternal

Requirements per Section 3.2.2.3.1

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 distancefrom 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 distancefrom 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 - Sternal

Requirements per Section 3.2.2.3.1

Samples	Sample # 13	Sample # 14	Sample # 15
Drop Height (in.)	54	54	54
Max Arrest Force >3,600 lb	4267.69	4303.76	4180.79
Hi - Initial Height (in.)	77.5	75.75	78.0
Hf - Final Height (in.)	66.0	62.5	66.25
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°	31	26	30
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	11.5	13.25	11.75
Result/Assessment	Pass	Pass	Pass

Notes

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 # 16	Sample # 17	Sample # 18
Drop Height (≥6ft Drop, MAF not applicable)	6	6	6
Max Arrest Force	2809.53	2622.27	2589.63
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°	28	24	26
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 # 01	Sample # 02	Sample # 03
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?	0	0	0
Straps tear (other than those above)?	No	No	No
Result/Assessment	Pass	Pass	Pass

4.3.5 Static Feet First Test - Sternal
Requirements per Section 3.2.2.3.2

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 - Sternal
Requirements per Section 3.2.2.3.2

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?	0	0	0
Straps tear (other than those above)?	No	No	No
Result/Assessment	Pass	Pass	Pass

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 # 04	Sample # 05	Sample # 06
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?	0	0	0
Straps tear (other than those above)?	No	No	No
Result/Assessment	Pass	Pass	Pass

4.3.6.2 Alternate Static Test Method
Requirements per Section 3.2.1.3.4 & 3.2.2.3.3

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) Apply a load to the attachment element until a maximum load of 900 pounds (4.0 kN) is achieved as indicated by the static tensile test equipment, or the indicator deploys, whichever occurs first.

d) Release the test torso and evaluate the FBH in accordance with requirements in 3.2 for the attachment element being tested.

4.3.6.2 Alternate Static Test Method
Requirements per Section 3.2.1.3.4 & 3.2.2.3.3

Samples	Sample # 19	Sample # 20	Sample # 21
Fall Arrest Indicator Deployed <900lb?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.3.7 Static Feet First Test for Lanyard Parking Attachment Element

Requirements per Section 3.1.10

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 to the static test equipment using a test lanyard.

c) Apply and steadily increase the load until the connection between the lanyard parking attachment and the test lanyard separates completely.

d) Record the maximum force applied to the attachment element and compare this with the requirement given in 3.1.10.

4.3.7 Static Feet First Test for Lanyard Parking Attachment Element

Requirements per Section 3.1.10

Samples	Sample # 22	Sample # 23	Sample # 24
Parking element broke under 120 lb?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

7.1.2 Abrasion Test

Requirements per Section 3.3.1.5

a) Per FEDSTD191A, place each 54in. (1372mm) sample in abrasion tester with a 5.2lb +/- .02oz weight attached to the end.

b) b) Secure sample to 16in. (406mm) drum.

c) c) Pass the sample over the .250 +/- .001in. (6.35 +/-. 03mm) steel hexagonal rod with a radius of .020 +/- .004in. (.5 +/- .1mm) at a 85 +/- 2 degree angle.

d) Oscillate the drum so the specimen traverses 12+/-1in. (305 +/- 25mm) over the rod at a rate of 60 +/- 2 strokes (30 +/- cycles) per minute for 5,000 strokes (2,500 cycles).

e) Per 3.3.1.5 & 7.1.1, after abrasion, the sample shall be pulled at a rate of 3 +/- 1in. (76 +/- 25mm) per minute until it is ruptured.

f) When sample ruptures, the breaking (actual) load shall be recorded.

Section 7.1.2 Abrasion Test

Requirements per 3.3.1.5 & 7.1.2 post FEDSTD191A

Samples	Sample # 25	Sample # 26	Sample # 27	Sample # 28	Sample # 29
SKU# of Strap	1401076	1401076	1401076	1401076	1401076
Description	WEBBING, 1.75IN, KEVLAR/NOMEX, BLACK	WEBBING, 1.75IN, KEVLAR/NOMEX, BLACK	WEBBING, 1.75IN, KEVLAR/NOMEX, BLACK	WEBBING, 1.75IN, KEVLAR/NOMEX, BLACK	WEBBING, 1.75IN, KEVLAR/NOMEX, BLACK
Actual Load >3,600 lb	9211.40	9486.20	8733.30	8899.10	9398.10
Breaking Strength Maintained?	Yes	Yes	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass	Pass	Pass

Pictured: 3740657

Represents all part #s

Notes

Labels

Applicable to all part #s

1500362 Rev.A-1

ANSI Z359.11-2021

ANSI Z359 recognizes the use of this harness only within the capacity range of:

130–310 lbs

1500362 Rev.A-2

Compliant with:
ASTM F887
OSHA 1910.140
OSHA 1926.502
ANSI Z359.11-2021

Cumplir con:
ASTM F887
OSHA 1910.140
OSHA 1926.502
ANSI Z359.11-2021

Conforme aux normes de:
ASTM F887
l'OSHA 1910.140
de l'OSHA 1926.502
de l'ANSI Z359.11-2021

1500362 Rev.A-3

GUARDIAN

guardianfall.com

Material: Kevlar®, Nomex®, nylon, aluminum, steel
Materiales: Kevlar®, Nomex®, nailon, aluminio, acero
Matériaux: Kevlar®, Nomex®, nylon, aluminium, acier

Designed, tested and assembled in USA

Diseñado, probado y ensamblado en los Estados Unidos

Conçu, testé et assemblé aux États-Unis

DO NOT REMOVE LABELS
NO DESPRENDA LAS ETIQUETAS
NE RETIREZ PAS LES ÉTIQUETTES

1500362 Rev.A-4

Make only compatible connections. Prior to use, inspect equipment for rips, tears, fraying, or any possible structural deficiency that might compromise the equipment in a fall. Avoid contact with sharp and abrasive surfaces.

Haga solo conexiones compatibles. Antes de usar este equipo, inspecciónelo para detectar desgarres, roturas, deshilachados o cualquier otro defecto estructural que podría poner en peligro el equipo en caso de una caída. Evite el contacto con superficies afiladas y abrasivas.

Ne faites que des connexions compatibles. Avant l'utilisation, inspectez l'équipement pour détecter les accrocs, les déchirures, l'effilochage ou toute défectuosité de structure possible qui pourraient nuire à l'équipement lors d'une chute. Évitez tout contact avec des surfaces tranchantes et abrasives.

1500362 Rev.A-5

⚠ WARNING!
Prior to use, understand all manufacturer instructions included with equipment at time of shipment. Improper use of this equipment could result in serious injury or death. IMMEDIATELY remove from service if subjected to a fall or if harness fails inspection.

⚠ ADVERTENCIA!
Antes de usar este producto, entienda todas las instrucciones del fabricante que vienen con el equipo. El uso incorrecto del equipo puede causar lesiones graves o muerte. Ponga DE INMEDIATO el equipo fuera de servicio si estuvo expuesto a una caída o si el arnés no pasa la inspección.

⚠ AVERTISSEMENT!
Avant l'utilisation, comprenez toutes les instructions du fabricant incluses avec l'équipement au moment de l'expédition. L'utilisation abusive de cet équipement pourrait entraîner des blessures graves ou la mort. Mettez IMMÉDIATEMENT le harnais hors service s'il est soumis à une chute ou s'il ne satisfait pas l'inspection.

1500362 Rev.A-6

User must inspect prior to EACH use. Competent Person must complete formal inspection every 12 months. Competent Person to inspect and initial.

Product lifetime is indefinite as long as equipment passes pre-use and Competent Person inspections.

El usuario debe inspeccionar el equipo antes de CADA uso. Una persona competente debe completar una inspección formal al menos cada 12 meses. La persona competente debe inspeccionar y firmar con sus iniciales.

La vida útil del producto es indefinida, siempre que pase las inspecciones previas al uso y las inspecciones de la persona competente.

L'utilisateur doit inspecter l'équipement avant CHAQUE utilisation. Une personne compétente doit effectuer une inspection officielle au moins tous les 12 mois. Elle doit inspecter et apposer ses initiales.

La durée de vie du produit est indéterminée à condition que l'équipement soit conforme aux inspections avant l'utilisation et par une personne compétente.

1500362 Rev.A-7

INSPECTION GRID
CUADRÍCULA DE INSPECCIÓN
GRILLE D'INSPECTION

Initials:	Date:

Date of First Use:

1500362 Rev.A-8

Refer to below chart for allowed worker weight capacity range per specific fall protection regulation. Always defer to applicable connecting device to determine permitted worker weight capacity range for complete system.

Consulte la siguiente tabla para conocer el rango de capacidad de peso permitido para el trabajador según la regulación específica de protección contra caídas. Siempre diferir a el dispositivo de conexión correspondiente para determinar el rango de capacidad de peso para trabajador permitido para el sistema completo.

Reportez-vous toujours au dispositif de connexion applicable pour déterminer la plage de capacité de charge de travail autorisée pour un système complet. Reportez-vous toujours à la gamme de poids de votre connecteur pour déterminer la capacité du système complet.

	ANSI	OSHA
130-310 lb (59-141 kg)	✓	
100-420 lb (45-191 kg)		✓

1500362 Rev.A-9

Part Number:

Serial Number:

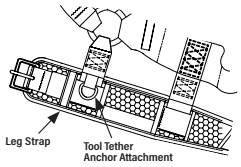
Lot:

Date of Manufacture:

Size:

1500362 Rev.A-10

Tool Tether Anchor Attachment / Anclaje para sujetador de herramienta / Fixation d'ancrage d'attache d'outil
ANSI/ISEA 121-2018



Max. Tether Length / Longitud máxima de sujetador / Longueur maximale d'attache: 48" (1.2 m)
Max. Tool Weight / Peso máximo de herramienta / Poids maximum de l'outil: 5 lb (2.3 kg)

⚠ WARNING / ADVERTENCIA / AVERTISSEMENT!

Not for personal fall protection / No lo use para proteccion personal contra caidas / Pas pour la protection personnelle contre les chutes!

Never use to store unused lanyard legs / Nunca use para colocar las eslingas de posicionaimento que no estan en uso / Ne jamais utiliser pour ranger les pattes de longe inutilisées!

Test Report
ASTM F887-2020

Pure Safety Group, Inc.
607 East Sam Houston Pkwy S
Suite 800, Pasadena, TX 77053

Test Report Number: 202412033740657
Job Number: K-581029-2401H03-R00, Test 0036
Product SKU#: 3740657
Product Type: Full Body Harness
Product Description: B7-Comfort Arc Flash Harness, Waist Pad, Sternal D, Hip D, QC-QC, Size S
Testing Standard: ASTM F887-2020
Date(s) of Manufacture: 1/01/2024
Date(s) of Testing: 1/18/2024, 2/14/2024

REQUIREMENT VERIFICATION

Requirement Description	Clause/Section	Result
Classification	18. Classification	Meets or Exceeds

QUALIFICATION TESTING

Test Description	Test Date	Clause/Section	Result
Electric Arc Testing	1/18/2024	22. After Exposure to an Electric Arc	See Appended Report
Dynamic Performance (Post-Arc, Dorsal, Feet First)	2/14/2024	25.5.2 Drop Test Procedures	Pass
Dynamic Performance (Post-Arc, Dorsal, Head First)	2/14/2024	25.5.2 Drop Test Procedures	Pass
Dynamic Performance (Post-Arc, Sternal, Feet First)	2/14/2024	25.5.2 Drop Test Procedures	Pass

This test report covers these additional products:

3740626, 3740627, 3740628, 3740629, 3740630, 3740631, 3740632, 3740633, 3740634, 3740635, 3740636, 3740637, 3740650, 3740651, 3740652, 3740653, 3740654, 3740655, 3740656, 3740658, 3740659, 3740660, 3740661

Please contact quality@guardianfall.com for signed report.

Test Equipment		
Equipment	**Model**	**Serial**
Scale	Totalcomp	02314063019
Digital Protractor	950-317	170400992
Measuring Tape (Pasadena)	TX1-25	20243699
Test Torso	220 lb	TOR01

18	Classification	
18.1	Harnesses (see Fig. 24) covered under this standard shall be designated as Type A or B as follows:	
18.1.1	Type A—Full body harness.	Meets or Exceeds
18.1.2	Type B—Full body harness with body belt attachment	Meets or Exceeds
18.2	Ordering Information:	
18.2.1	Orders for equipment under this standard should include the following information:	
18.2.1.1	Nomenclature	Meets or Exceeds
18.2.1.2	Type	Meets or Exceeds
18.2.1.3	Material, and	Meets or Exceeds
18.2.1.4	Size. (See Table 4).	Meets or Exceeds
18.2.2	The listing of equipment, type, and sizes is not intended to mean that all shall necessarily be available from the manufacturer; the listing signifies only that, if made, the equipment, types, and sizes shall conform to the details of this standard. Additional designs or modifications of equipment or hardware may be specified by the user for a particular application providing equipment or hardware meets the performance requirements of this standard.	Meets or Exceeds
18.3	Sizing:	
18.3.1	Sizes—Harnesses may be manufactured and designated by the sizes small, medium, large, X-large, and XX-large. The manufacturer's harness design shall accommodate the height and chest sizes shown in Table 4	Meets or Exceeds
18.4	Marking:	
18.4.1	Harnesses manufactured under this standard shall be labeled as meeting this standard providing they satisfy the following requirements:	Meets or Exceeds
18.4.1.1	All load bearing webbing used in the construction of the harness shall have a minimum breaking strength of 7000 lbf (31.14 kN).	Meets or Exceeds
18.4.1.2	All harnesses marked as meeting the requirements of this standard shall also meet all applicable requirements specified in ANSI/ASSE Z359.11-2014, Safety Requirements for Full Body Harnesses.	Meets or Exceeds
18.4.1.3	Harnesses shall meet the qualification testing requirements in Section 22 and 25.5 of this standard.	Meets or Exceeds

25.5.2 Drop Test Procedures (Post-Arc, Dorsal, Feet First)

Requirements per Section 25.5.3

a) The drop test is to be done on the samples exposed to the arc test as indicated in Table 5. A new harness may be used for each test

b) The harness shall be snugly secured about the test mass. One end of the wire rope shall be hooked into the fall arrest attachment and the other to the test structure anchorage point. The quick-release mechanism shall be hooked into the same point.

c) Raise the mass until the opposite end of the wire rope can be snapped into the test-structure anchorage point. Note the level of the fall arrest attachment point and raise the test mass until the fall arrest attachment point has been raised a distance of 39.4 in. (1 m). The torso shall be lifted to a point no more than 12 in. (305 mm) horizontally from the anchorage.

d) Release the test mass by means of the quick-release mechanism.

e) After the drop, the torso is to remain suspended by the harness for a period of 5 min.

25.5.2 Drop Test Procedures (Post-Arc, Dorsal, Feet First)

Requirements per Section 25.5.3

Samples	Sample # 01	Sample # 02	Sample # 03	Sample # 04
Sample passed ASTM F887-20, 22 Electric Arc Testing?	Yes	Yes	Yes	Yes
Sample maintained test torso?	Yes	Yes	Yes	Yes
Load-bearing elements intact?	Yes	Yes	Yes	Yes
Sample maintained <30° post-drop?	11	11	14	13
Sample maintained torso for 5 minutes, post drop?	Yes	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass	Pass

25.5.2 Drop Test Procedures (Post-Arc, Dorsal, Head First)

Requirements per Section 25.5.3

a) The drop test is to be done on the samples exposed to the arc test as indicated in Table 5. A new harness may be used for each test

b) The harness shall be snugly secured about the test mass. One end of the wire rope shall be hooked into the fall arrest attachment and the other to the test structure anchorage point. The quick-release mechanism shall be hooked into the same point.

c) Raise the mass until the opposite end of the wire rope can be snapped into the test-structure anchorage point. Note the level of the fall arrest attachment point and raise the test mass until the fall arrest attachment point has been raised a distance of 39.4 in. (1 m). The torso shall be lifted to a point no more than 12 in. (305 mm) horizontally from the anchorage.

d) Release the test mass by means of the quick-release mechanism.

e) After the drop, the torso is to remain suspended by the harness for a period of 5 min.

25.5.2 Drop Test Procedures (Post-Arc, Dorsal, Head First)

Requirements per Section 25.5.3

Samples	Sample # 05	Sample # 06	Sample # 07	Sample # 08
Sample passed ASTM F887-20, 22 Electric Arc Testing?	Yes	Yes	Yes	Yes
Sample maintained test torso?	Yes	Yes	Yes	Yes
Load-bearing elements intact?	Yes	Yes	Yes	Yes
Sample maintained <30° post-drop?	23	29	22	26
Sample maintained torso for 5 minutes, post drop?	Yes	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass	Pass

25.5.2 Drop Test Procedures (Post-Arc, Sternal, Feet First)

Requirements per Section 25.5.3

a) The drop test is to be done on the samples exposed to the arc test as indicated in Table 5. A new harness may be used for each test

b) The harness shall be snugly secured about the test mass. One end of the wire rope shall be hooked into the fall arrest attachment and the other to the test structure anchorage point. The quick-release mechanism shall be hooked into the same point.

c) Raise the mass until the opposite end of the wire rope can be snapped into the test-structure anchorage point. Note the level of the fall arrest attachment point and raise the test mass until the fall arrest attachment point has been raised a distance of 39.4 in. (1 m). The torso shall be lifted to a point no more than 12 in. (305 mm) horizontally from the anchorage.

d) Release the test mass by means of the quick-release mechanism.

e) After the drop, the torso is to remain suspended by the harness for a period of 5 min.

25.5.2 Drop Test Procedures (Post-Arc, Sternal, Feet First)

Requirements per Section 25.5.3

Samples	Sample # 09	Sample # 10	Sample # 11	Sample # 12
Sample passed ASTM F887-20, 22 Electric Arc Testing?	Yes	Yes	Yes	Yes
Sample maintained test torso?	Yes	Yes	Yes	Yes
Load-bearing elements intact?	Yes	Yes	Yes	Yes
Sample maintained <30° post-drop?	29	28	31	37
Sample maintained torso for 5 minutes, post drop?	Yes	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass	Pass

ArcWear
A KINECTRICS COMPANY

KINECTRICS

EXPOSURE TO AN ELECTRIC ARC

Requesting Agency:
Guardian
607 East Sam Houston Pkwy S
Suite 800
Pasadena, TX 77503

Reference Test Standard:
ELECTRIC ARC TESTS: ASTM F887-20, SECTION 22
OBSERVATION OF PERSONAL CLIMBING EQUIPMENT EXPOSED TO AN ELECTRIC ARC

Test Report:
K-581029-2401H03-R00

Test Specimen:
Guardian, Style 3740657 - HARNESS, B7 ARC FLASH, WAIST PAD, STERNAL D, HIP D, QC-QC, SIZE S, Webbing: Kevlar/Nomex, Black

Result:
As requested, 12 samples of Guardian harness Style 3740657 were exposed to an electrical arc. Based on the test results, this harness style meets the requirements in Table 1-1 for ASTM F887-20 section 22. The applicable required drop test specified in ASTMF887-20, section 25.5 or 25.6 shall be performed as soon as is practically possible.

Sample Received	Test Date	Report Date
January 12, 2024	January 18, 2024	February 9, 2024

Prepared by

Claude Maurice
Technical Specialist, HCL
TD Technologies, Kinectrics

Approved by

Brian Shiels
Service Line Manager
ArcWear, Kinectrics AES

Revision History

Rev	Description		
00	Initial report creation		
	Issue Date February 9, 2024	Prepared by Claude Maurice	Approved by Brian Shiels
Rev	Description		
	Issue Date	Prepared by	Approved by

For questions about this test report, please contact Contact.ArcWear@Kinectrics.com

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QUALITY MANAGEMENT

The arc testing performed to the above mentioned Standard is accredited by the Standards Council of Canada (SCC) to conform to the requirements of CAN-P-4E (ISO/IEC 17025:2017). Accreditation by the Standards Council of Canada (SCC) is a mark of competence and reliability

- The test performed does not apply to electrical contact or electrical shock hazard.
- The test result is applicable only to the Test Specimens delivered to Kinectrics, other material, design or color may have a different response.
- It is the clients' responsibility to provide full and accurate information about the items supplied.
- No test is done to validate the fiber content or composition of the test item.
- Photographs of the test specimens and waveforms of the arc current, voltage and calorimeters with the circuit and arc exposure calibration records are available from Kinectrics and provided to the client separately from this report.

1 Test Standard:

Electrical arc test according to ASTM F887-20, Section 22
Standard Specifications for Personal Climbing Equipment, After Exposure to an Electric Arc Evaluation. Specimens are mounted on mannequins having a distance of 30.5 cm (12 inches) from the chest to the centerline of the electrodes. The test standard requires that the finished personal climbing equipment be exposed to a level of 40 cal/cm² ± 5 cal/cm².

1.1 Test Requirements

Harnesses- The test program requires the specimens be placed on mannequins as normally worn. Sufficient quantities shall be exposed on the front and on the back to meet the drop test requirements of Table 5 of the Standard.

Harness with dorsal attachment only: 4 frontal arc exposure, 4 rear arc exposure.
Harness with front and dorsal attachment: 6 frontal arc exposure, 6 rear arc exposure.

Harness accessories, loops etc. - Three specimens of each accessory or loop are required to be exposed to the arc.

Energy Absorbing Lanyard - Three specimens of each lanyard are required to be exposed to the arc.

SRL & SRD- Self-retracting devices (SRDs) are not included in the scope of arc exposure test in ASTM F887-20, Section 22. Their test method, number of samples required, and subsequent drop test and criteria has not been established by ASTM. Until the standard is revised, the arc exposure test is based on the requirements for Energy Absorbing Lanyards (non-retracting). The drop test to verify mechanical integrity following the arc exposure will be arranged by the producer based on the applicable drop method followed for such devices.

Other effects as a result for an arc fault such as the noise, light emissions, pressure rise, hot oil, electric shock, the consequences of physical and mental shock or toxic influences are not covered by this standard.

1.2 Acceptance criteria for products exposed to electrical arc:

The procedure outlined in ASTM F887-20 is followed to verify the electric arc performance of the personal climbing equipment. The product is considered as having passed the visual inspection criteria if the parameters defined in Table 1-1 are met. As proof of performance following the arc exposure, the exposed test specimens shall be subjected to a drop test as soon as practical after the arc exposure.

Table 1-1: Visual inspection Criteria for Electric Arc Performance of ASTM F887-20

Parameter	Criterion
Arc Energy	Electrical arc exposure of 40 cal/cm² ± 5 cal/cm²
Ignition	No electric arc ignition.
After-flame Time	Less than 5 seconds on load bearing materials and less than 15 seconds for accessories or non-load bearing components.
Material Performance	Material shall withstand the arc exposure with good integrity and have no melting and dripping of molten materials to the floor of any load bearing material. Non load bearing accessories may exhibit melting and dripping provided they are not ignited while dripping.

2 Test Condition:

The following test circuit parameters and conditions were used.

- Electric arc current: 8 kA rms ± 10%, 60 Hz
- Open circuit voltage: 2500 V rms ± 10%, 60 Hz
- Nominal Heat Flux Density: 2100 kW/m^2 (50 cal/cm²·s)
- Arc duration: 0.85 seconds ± 0.1 s to obtain required incident energy
- Electrode gap: 305 mm (12 inches)
- Distance from mannequin to electrode: 305 mm (12 inches)
- Deviations and abnormalities: none

Note: The measurement uncertainty, MU, for the measured values of this test method are well within the requirements of the test standard and are defined on a 95% confidence interval basis over the full test range, as follows:

- Temperature: ± 2 °C Incident Energy: ± 1.5%
- Arc Current: ± 2.5% Voltage: ± 2.2%
- Time zero reference: ± 3 ms

3 Test Sample Description:

The following description of the test sample was provided by the client and confirmed by the sample shown in Figure 3.1.

Sample description:	Style 3740657 - HARNESS, B7 ARC FLASH, WAIST PAD, STERNAL D, HIP D, QC-QC, SIZE S
Sample identification:	Serial number of each identified in Table 4-1
Manufacturer:	Guardian
Material of webbing:	Kevlar/Nomex, Black, measured 2.5 mm thickness
Number of samples tested:	12
Notes:	Small textile pouch on each chest webbing with product labels

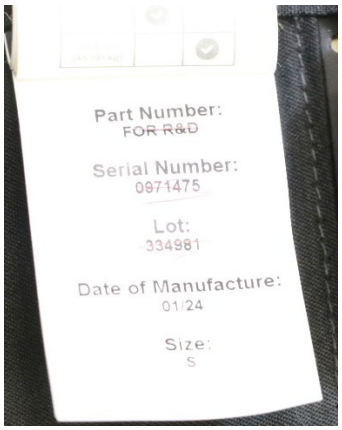

Figure 3.1: Guardian, Style 3740657

4 Test Results:

Two mannequin torsos were placed at 120° in the arc test cage at a distance of 305 mm (12 in) from the electrodes. The samples were placed on each of the two mannequins as shown in Figure 6.1.

After the arc exposure, the samples are examined and observations are given in Table 4-1. Samples having met the visual performance criteria in Table 1-1 are marked as “Meets”. These samples shall then be subjected to a mechanical drop test as indicated in ASTM F887-20. Photographs of the samples before and after the arc exposure are shown in Section 6.

Table 4-1a: Summary of Test Results

	Trial # 24-00213		Trial # 24-00214	
Mannequin	**A**	**B**	**A**	**B**
Serial number	971468	971475	971482	971472
Orientation	Front	Rear	Front	Rear
Incident Energy	37 cal/cm²	39 cal/cm²	38 cal/cm²	37 cal/cm²
After-flame	0s	2s	0s	1s
Ignition	No	No	No	No
Melting and Dripping	No	No	No	No
Acceptance Criteria	Meets	Meets	Meets	Meets

Table 4-1b: Summary of Test Results

	Trial # 24-00215		Trial # 24-00216	
Mannequin	**A**	**B**	**A**	**B**
Serial number	971477	971460	971471	971470
Orientation	Front	Rear	Front	Rear
Incident Energy	38 cal/cm²	36 cal/cm²	41 cal/cm²	40 cal/cm²
After-flame	0s	1s	0s	0s
Ignition	No	No	No	No
Melting and Dripping	No	No	No	No
Acceptance Criteria	Meets	Meets	Meets	Meets

Table 4-1c: Summary of Test Results

	Trial # 24-00217		Trial # 24-00218	
Mannequin	**A**	**B**	**A**	**B**
Serial number	971459	971493	971484	971479
Orientation	Front	Rear	Front	Rear
Incident Energy	36 cal/cm²	41 cal/cm²	36 cal/cm²	41 cal/cm²
After-flame	0s	0s	0s	0s
Ignition	No	No	No	No
Melting and Dripping	No	No	No	No
Acceptance Criteria	Meets	Meets	Meets	Meets

4.1 Observations:

Charring was observed on the webbing, buckles and material around the D-ring and waist pad on all samples. Small afterflame was observed on the material around the D-ring and pad for 1-2 seconds. No afterflame was observed on the webbing

5 Interpretation of Results:

This testing does not assign an arc rating to this product. The purpose of this test is to observe the response characteristics of this harness when exposed to an open-air electric arc as described in ASTM F887-20.

As requested, 12 specimens of Guardian harness Style 3740657 were exposed to an electrical arc. Based on the test results, this harness style meets the requirements in Table 1-1 for ASTM F887-20 section 22. The applicable required drop test specified in ASTMF887-20, section 25.5 or 25.6 shall be performed on the tested specimens as soon as is practically possible.

6 Photographs:

The following photographs are representative of the test results observed.

Figure 6.1: Sample set up before arc exposure.

Figure 6.2: Sample before and after arc exposure, test 24-00213A.

Figure 6.3: Sample before and after arc exposure, test 24-00213B.

Figure 6.4 Sample before and after arc exposure, 24-00216A

Figure 6.5: Sample before and after arc exposure, test 24-00216B