

**Test Report Number:** 2020072411140  
**Job Number:** Qualification 373  
**Product SKU:** 11140  
**Product Type:** 5 Point, Full Body Harness  
**Product Description:** Seraph Rescue/Retrieval HUV Harness  
**Manufacturer:** Pure Safety Group  
**Factory:** 9201 Winkler Drive, Houston, TX 77017  
**Testing Standard(s):** Z359.11-2014 Safety Requirements for Full Body Harnesses  
**Dates of Manufacture:** 12/01/2018  
**Date(s) of Testing:** 12/07/2018, 06/05/2020

**Requirement Verification**

<u>Requirement Description</u>	<u>Clause/Section</u>	<u>Result</u>
General Requirements	3. Requirements	Pass
Markings and Instructions	5. Markings and Instructions	Pass

**Qualification Testing**

<u>Test Description</u>	<u>Test Date</u>	<u>Clause/Section</u>	<u>Result</u>
Dynamic Performance FF (Dorsal)	12/07/2018	4.3.3 Dynamic Feet First Drop Test	Pass
Dynamic Performance HF (Dorsal)	12/07/2018	4.3.4 Dynamic Head First Drop Test	Pass
Static Strength FF (Dorsal)	12/07/2018	4.3.5 Static Feet First Test	Pass
Static Strength FF (Shoulder)	12/07/2018	4.3.5 Static Feet First Test	Pass
Fall Arrest Indicator	12/07/2018	4.3.6 Fall Arrest Indicator Test	Pass
Abrasion Resistance	06/05/2020	7.1.2, 3.3.1.5 Abrasion Resistance Testing	Pass

This report covers these additional products:

11141, 1142, 1144, 1145, 11160, 11161, 11162, 11163, 11164, 11165, 11166, 11167, 11169

Please contact [CustomerService@PureSafetyGroup.com](mailto:CustomerService@PureSafetyGroup.com) for signed report.

<b>Test Equipment</b>		
<b>Equipment</b>	<b>Model</b>	<b>Serial</b>
Load Cell	1210AF-10K-B	916507A
Load Cell	1220ACK-25K-B	347989A
Scale	Totalcomp	02314063019
Measuring Tape	48-22-7125	GFP0023

<b>3.1</b>	<b>Design Requirements</b>	
<b>3.1.1</b>	All FBHs shall permanently incorporate a dorsal attachment element	Pass
<b>3.1.2</b>	All FBHs shall permanently include a load bearing sub-pelvic strap	Pass
<b>3.1.3</b>	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.	Pass
<b>3.1.4</b>	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.	Pass
<b>3.1.5</b>	Modular components or assemblies for FBHs designed for the removal of different attachment elements shall meet the requirements of Section 3.	Pass
<b>3.1.5.1</b>	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.	Pass
<b>3.1.5.2</b>	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	Pass
<b>3.1.6</b>	For FBHs integrated into a vest or other garments, the design shall allow visual inspection of the FBH.	Pass
<b>3.1.7</b>	All FBHs shall be equipped with a fall arrest indicator that will deploy during dynamic testing defined in Section 3.2	Pass
<b>3.1.7.1</b>	If fall arrest indicators are present on other attachments elements of the FBH, they must activate when tested in accordance with 4.3.6.	Pass
<b>3.1.8</b>	FBHs with attached connecting subsystem combinations shall meet ANSI Z359.11 for the FBH and the respective ANSI standard for the subsystem.	Pass
<b>3.1.9</b>	All FBHs shall include strap retainers or other components which serve to control the loose ends of straps.	Pass
<b>3.1.10</b>	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.	Pass
<b>3.1.11</b>	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.	Pass
<b>3.1.12</b>	All single point attachment elements shall be located laterally within 2 inches of the vertical centerline of the FBH.	Pass
<b>3.1.13</b>	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	Pass
<b>3.1.14</b>	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.	Pass

**4.3.3 Dynamic Feet First Drop Test**  
*Requirements per Section 3.2.1.3.1*

- a) Position D-ring per product instructions
- b) Connect test shackle to D-ring
- c) Lower test torso to remove slack and measure vertical distance to floor (HI).
- d) Raise torso to required height
- e) Release torso and evaluate in accordance with 3.2
- f) Measure and record MAF
- g) Record final height (HF)
- h) Calculate FBH stretch:  $HS = HI - H$

**Feet First DORSAL Attachment**  
*Requirements per Section 3.2.1.3.1*

**Sample # 01**

Drop Height (in.)	48	inches
Max Arrest Force (lb)	3790.16	lb
Hi - Initial Height (in.)	54.75	inches
Hf - Final Height (in.)	45.5	inches
FBH shall not release test torso	Pass	
FBH shall support test torso for 5 min post fall	Pass	
FBH shall support test torso at < 50°	6	degrees
Min. one fall arrest indicator deployed visibly and permanently	Pass	
FBH stretch < 18" or that which is stated by mfg - whichever is less (Hi - Hf)	9.25	inches
<b>COMPLIANT</b>	Yes	

**Feet First DORSAL Attachment**  
*Requirements per Section 3.2.1.3.1*

**Sample # 01**

Drop Height (in.)	48	inches
Max Arrest Force (lb)	3772.67	lb
Hi - Initial Height (in.)	55	inches
Hf - Final Height (in.)	46	inches
FBH shall not release test torso	Pass	
FBH shall support test torso for 5 min post fall	Pass	
FBH shall support test torso at < 50°	5	degrees
Min. one fall arrest indicator deployed visibly and permanently	Pass	
FBH stretch < 18" or that which is stated by mfg - whichever is less (Hi - Hf)	8	inches
<b>COMPLIANT</b>	Yes	

**Feet First DORSAL Attachment**  
*Requirements per Section 3.2.1.3.1*

**Sample # 01**

Drop Height (in.)	48	inches
Max Arrest Force (lb)	3988.35	lb
Hi - Initial Height (in.)	55.75	inches
Hf - Final Height (in.)	46	inches
FBH shall not release test torso	Pass	
FBH shall support test torso for 5 min post fall	Pass	
FBH shall support test torso at < 50°	8	degrees
Min. one fall arrest indicator deployed visibly and permanently	Pass	
FBH stretch < 18" or that which is stated by mfg - whichever is less (Hi - Hf)	9.75	inches
<b>COMPLIANT</b>	Yes	

Notes:

**4.3.4 Dynamic Head First Drop Test**  
*Requirements per Section 3.2.1.3.2*

- a) Position D-ring 8" ± 1" below top of the shoulders
- b) Connect quick-release mechanism to crotch of torso
- c) Connect shackle to attachment element of FBH
- d) Raise torso to required height
- e) Release torso and evaluate in accordance with 3.2
- f) Measure and record MAF

**Head First DORSAL Attachment**  
*Requirements per Section 3.2.1.3.2*

**Sample # 04A**

Drop Height	48	inches
Max Arrest Force	2449.80	lb
FBH shall not release test torso	Pass	
FBH shall support test torso for 5 min post fall	Pass	
FBH shall support test torso <30°	12	degrees.
Min. one fall arrest indicator deployed visibly and permanently	Pass	
<b>COMPLIANT</b>	Yes	

**Head First DORSAL Attachment**  
*Requirements per Section 3.2.1.3.2*

**Sample # 05A**

Drop Height	48	inches
Max Arrest Force	2542.13	lb
FBH shall not release test torso	Pass	
FBH shall support test torso for 5 min post fall	Pass	
FBH shall support test torso <30°	10	degrees.
Min. one fall arrest indicator deployed visibly and permanently	Pass	
<b>COMPLIANT</b>	Yes	

**Head First DORSAL Attachment**  
*Requirements per Section 3.2.1.3.2*

**Sample # 06**

Drop Height	48	inches
Max Arrest Force	2494.25	lb
FBH shall not release test torso	Pass	
FBH shall support test torso for 5 min post fall	Pass	
FBH shall support test torso <30°	14	degrees.
Min. one fall arrest indicator deployed visibly and permanently	Pass	
<b>COMPLIANT</b>	Yes	

Notes:

**4.3.5 Static Feet First Test - Dorsal**  
*Requirements per Section 3.2.2.3.2*

- a) Secure test torso to simulate feet first fall
- b) Connect attachment elements to test equipment
- c) Mark buckle/adjuster locations to measure slippage
- d) Apply load of 3,600lb and maintain for 1 minute.
- e) Release torso and evaluate in accordance with 3.2

**Feet First DORSAL Attachment**  
*Requirements per Section 3.2.2.3.2*

**Sample # 07**

FBH shall not release test torso	Pass	
Slippage - Crotch strap adjuster - Right	0	inches
Slippage - Crotch strap adjuster - Left	0	inches
Slippage -Chest strap adjuster	0	inches
Slippage -Torso strap adjuster - Right	0	inches
Slippage -Torso strap adjuster - Left	0	inches
Slippage -Other	0	inches
Slippage -Other	0	inches
Tongue buckle tears > 1" or adjacent eyelet?	Pass	
Straps tear (other than above)?	Pass	
<b>COMPLIANT</b>	Yes	

**Feet First DORSAL Attachment**  
*Requirements per Section 3.2.2.3.2*

**Sample # 08**

FBH shall not release test torso	Pass	
Slippage - Crotch strap adjuster - Right	0	inches
Slippage - Crotch strap adjuster - Left	0	inches
Slippage -Chest strap adjuster	0	inches
Slippage -Torso strap adjuster - Right	0	inches
Slippage -Torso strap adjuster - Left	0	inches
Slippage -Other	0	inches
Slippage -Other	0	inches
Tongue buckle tears > 1" or adjacent eyelet?	Pass	
Straps tear (other than above)?	Pass	
<b>COMPLIANT</b>	Yes	

**Feet First DORSAL Attachment**  
*Requirements per Section 3.2.2.3.2*

**Sample # 09**

FBH shall not release test torso	Pass	
Slippage - Crotch strap adjuster - Right	0	inches
Slippage - Crotch strap adjuster - Left	0	inches
Slippage -Chest strap adjuster	0	inches
Slippage -Torso strap adjuster - Right	0	inches
Slippage -Torso strap adjuster - Left	0	inches
Slippage -Other	0	inches
Slippage -Other	0	inches
Tongue buckle tears > 1" or adjacent eyelet?	Pass	
Straps tear (other than above)?	Pass	
<b>COMPLIANT</b>	Yes	

Notes:

**4.3.5 Static Feet First Test - Sternal**  
*Requirements per Section 3.2.2.3.2*

- a) Secure test torso to simulate feet first fall
- b) Connect attachment elements to test equipment
- c) Mark buckle/adjuster locations to measure slippage
- d) Apply load of 3,600lb and maintain for 1 minute.
- e) Release torso and evaluate in accordance with 3.2

**Feet First SHOULDER Attachment**  
*Requirements per Section 3.2.2.3.2*

**Sample # 10**

FBH shall not release test torso	Pass	
Slippage - Crotch strap adjuster - Right	0	inches
Slippage - Crotch strap adjuster - Left	0	inches
Slippage - Chest strap adjuster	0	inches
Slippage - Torso strap adjuster - Right	0	inches
Slippage - Torso strap adjuster - Left	0	inches
Slippage - Other	0	inches
Slippage - Other	0	inches
Tongue buckle tears > 1" or adjacent eyelet?	Pass	
Straps tear (other than that above)?	Pass	
<b>COMPLIANT</b>	Yes	

**Feet First SHOULDER Attachment**  
*Requirements per Section 3.2.2.3.2*

**Sample # 11**

FBH shall not release test torso	Pass	
Slippage - Crotch strap adjuster - Right	0	inches
Slippage - Crotch strap adjuster - Left	0	inches
Slippage - Chest strap adjuster	0	inches
Slippage - Torso strap adjuster - Right	0	inches
Slippage - Torso strap adjuster - Left	0	inches
Slippage - Other	0	inches
Slippage - Other	0	inches
Tongue buckle tears > 1" or adjacent eyelet?	Pass	
Straps tear (other than that above)?	Pass	
<b>COMPLIANT</b>	Yes	

**Feet First SHOULDER Attachment**  
*Requirements per Section 3.2.2.3.2*

**Sample # 12**

FBH shall not release test torso	Pass	
Slippage - Crotch strap adjuster - Right	0	inches
Slippage - Crotch strap adjuster - Left	0	inches
Slippage - Chest strap adjuster	0	inches
Slippage - Torso strap adjuster - Right	0	inches
Slippage - Torso strap adjuster - Left	0	inches
Slippage - Other	0	inches
Slippage - Other	0	inches
Tongue buckle tears > 1" or adjacent eyelet?	Pass	
Straps tear (other than that above)?	Pass	
<b>COMPLIANT</b>	Yes	

**4.3.6 Fall Indicator Test**  
*Requirements per Section 3.2.1.3.4*

- a) Secure harness to test torso
- b) Attach Z359.13 compliant 6 ft. energy absorbing lanyard to D-ring
- c) Raise torso to allow 24 in. fall before energy absorbing component is deployed
- d) Release torso and evaluate in accordance with 3.2

**Fall Arrest Indicator Test (Dorsal)**  
*Requirements per Section 3.2.1.3.4*

**Did at least one fall arrest indicator deploy?**

Sample #: 13	Pass
Sample #: 14	Pass
Sample #: 15	Pass

**7.1.2 Abrasion Test**  
*Requirements per Section 3.3.1.5 & 7.1.2*

- a) Per FEDSTD191A, place each 54in. (1372mm) sample in abrasion tester with a 5.2lb +/- .02oz weight attached to the end.
- b) Secure sample to 16in. (406mm) drum.
- 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**  
*Requirements per 3.3.1.5 & 7.1.2 post FEDSTD191A*

**Did strap maintain minimum breaking strength of <3,600lb (16.0kN) post abrasion?**

Sample	Web Specimen SKU	Description	Actual Load Applied (lb)	Result
Sample #: 02B	D108-0002	1.75" Black Webbing	4599.79	Pass
Sample #: 03B	D108-0002	1.75" Black Webbing	4535.05	Pass
Sample #: 04B	D108-0002	1.75" Black Webbing	4389.81	Pass
Sample #: 05B	D108-0002	1.75" Black Webbing	4177.66	Pass

Notes:

<b>5</b>	<b>Markings and Instructions</b>	
<b>5.1</b>	<b>Marking Requirements</b>	
<b>5.1.1</b>	Markings shall be in English	Pass
<b>5.1.2</b>	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	Pass
<b>5.1.3</b>	<b>Full body harnesses shall be marked with:</b>	
	a) The material of construction	Pass
	b) The size or range of sizes	Pass
	c) Part number and/or model designation	Pass
	d) The month and year of manufacture	Pass
	e) The manufacturer name or logo	Pass
	f) An identifying number, unique to each individual FBH produced by the manufacturer	Pass
	g) A warning to follow manufacturer's instructions included with the equipment at the time of shipment	Pass
	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.	Pass
	i) A label defined as defined in 10a and 10b.	Pass

Notes:

<b>5.2</b>	<b>Instruction Requirements</b>	
<b>5.2.1</b>	Instructions shall be provided to the user in English, and affixed to the equipment at the time of shipment from the manufacturer.	Pass
<b>5.2.2</b>	<b>Instructions shall contain the following information:</b>	
	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	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 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.	Pass
	g) Proper method of use and limitations of the equipment	Pass
	h) Illustrations showing locations and markings on the equipment	Pass
	i) Reproduction of printed information on all markings	Pass
	j) Inspection procedures (including frequency) required to assure the equipment is in serviceable condition and operating correctly	Pass
	k) Criteria for discarding equipment that fails inspection	Pass
	l) Procedures for cleaning maintenance and storage.	Pass
	m) Reference to ANSI/ASSE Z359.11 (Full Body Harnesses) and applicable regulations governing occupational safety.	Pass
	n) Acceptable use for all attachment elements (see Annex A).	Pass
<b>5.2.3</b>	Instructions shall require that only the equipment manufacturer, or persons or entities authorized in writing by the manufacturer, make repairs to the equipment.	Pass
<b>5.2.4</b>	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
<b>5.2.5</b>	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.	Pass

<b>5.2.6</b>	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

Notes: