Declaration of Conformity

In Accordance with ANSI/ISEA 125-2014 and ANSI/ASSP Z359.7-2019

Declaration #: DOC-UFH16201GP(BL)
Declaration Date: 10/10/2023

Item #: UFH16201GP(BL)

Description: KStrong® Kapture™ Essential+ 5-Point FBH with Removable Back/Shoulder Pad, TB Legs, Web Loop Added Under Dorsal D-ring (ANSI)

Brand Name: KStrong

Manufacturer: KStrong

Address: 150 N. Radnor Chester Road, Suite F200, Radnor, PA 19087

Additional Items Conforming Under this Declaration (If Applicable):

UFH16201GP(BL)(S-M)
UFH16201GP(BL)(M-L)
UFH16201GP(BL)(L-XL)
UFH16201GP(BL)(XL-2XL)

KStrong declares that the product(s) listed above is in conformity with the requirements of the following performance standard(s):

ANSI Z359.11-2021

Conformity Assessment Method in accordance with ANSI/ISEA 125-2014

- ○ **Level 1:** KStrong Lab Outside the Scope of ISO/IEC Standard 17025:2017
- ○ **Level 2:** KStrong Lab Within the Scope of ISO/IEC Standard 17025:2017
- ● **Level 3:** Independent 3rd Party Lab accredited to ISO/IEC Standard 17025:2017

Supporting Documentation: KS-Test-UFH16201GP(BL).pdf

This Certificate is a guarantee that the above standard(s) was met by the requirements of such standard. Testing was performed under normal operation mode. The results of testing apply only to the particular sample tested and the specific test carried out. This Certificate is only issued for products which have passed the testing requirements of listed standard(s).

Authorized Signature:

John H. Kemp Jr.
President - KStrong

ISO 17025 Accredited Test Laboratory

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TEST DATA EXTENSION REPORT

KStrong Inc 150 N. Radnor Chester Rd Suite F200 Radnor PA 19087 USA	SATRA reference:	SPC3062T1H5
		2337 1
	Report ID/Issue number:	33129/3
	Your reference:	
	Date samples received:	
	Date(s) work carried out:	10/10/2022 to 12/10/2022
	Date of report:	10/10/2023

Testing Requirements

Verification testing of harnesses described as "UFH10211G" & "UFH10201G" in accordance with ANSI Z359.11 - 2021

This report is an extension of a previously issued SATRA test report, the details of which can be found within the content of this Test Data Extension Report.

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For SATRA's statements regarding the confidentiality, publication and dissemination of this report, decision rules and UKAS accreditation please see the final page of this technical report.

Report Signed by:

Jake Bellingham **Report Signatory**

Work Requested

Samples of full body harness (FBH), described as “UFH10211G”, were received by SATRA on the 15th August 2022, for testing in accordance with ANSI Z359.11 – 2021

The harnesses have 2 different available variants, with the differences listed below:
“UFH10201G” is identical to “UFH10211G”, but does not include a sternal attachment
“UFH10201G(GB)” is identical to “UFH10201G” but in grey
“UFH16201GP” is identical to “UFH10201G” with black webbing and blue strips with non-removable padding
“UFH16201GP(BL)” is identical to “UFH10201G” with blue webbing and black strips with non-removable padding

Full verification testing was carried out on “UFH10211G”

This report is an extension of SPC0327212 /2208 /1, dated the 31st of October 2023

Conclusions

Sample Reference	Standard	Clause / Property	Pass / Fail
UFH10211G	ANSI Z359.11 - 2021	3.1 Design Requirements	Not fully assessed
		3.2.1 Attachment Element Requirements – Dorsal	PASS
		3.2.2 Attachment Element Requirements – Sternal	PASS
		3.3 Component Requirements	Not fully assessed

Testing

Testing was carried out in accordance with ANSI Z359.11 – 2021 between the 10th & 12th October 2022

Samples were tested as received, and were not subject to any pre-conditioning processes other than those stated in individual test clauses

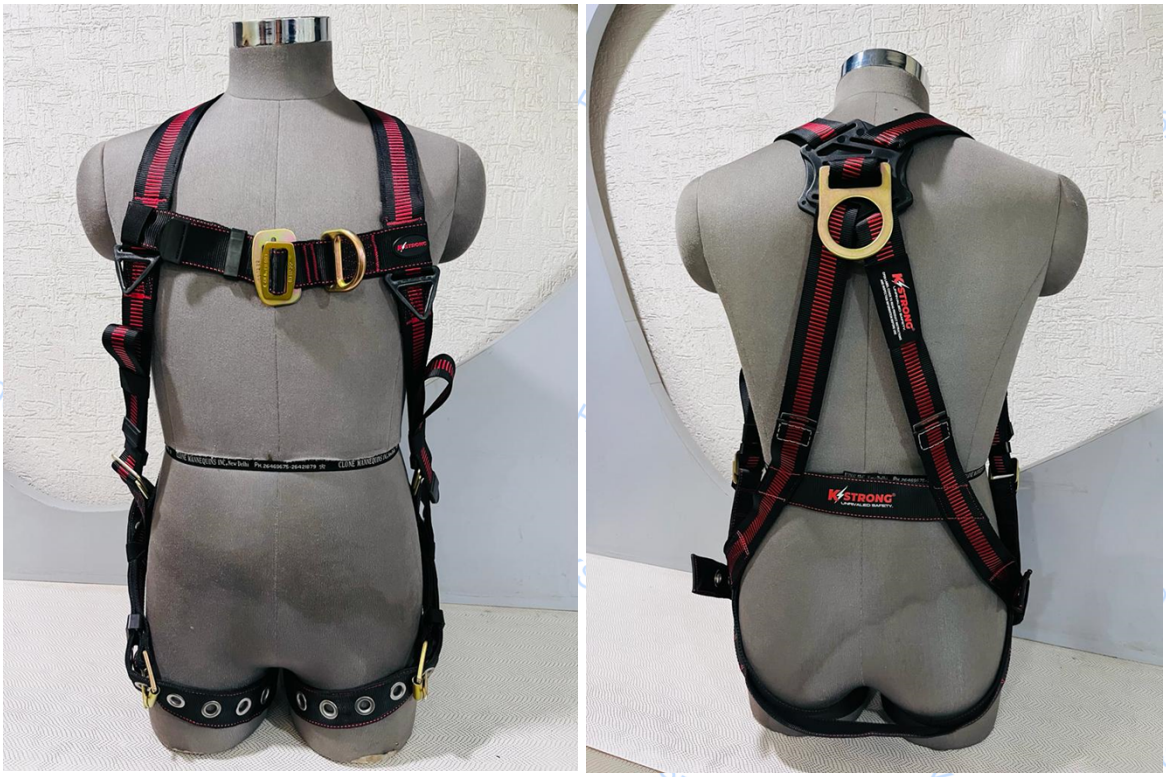

Figure 1 – Harness described as “UFH10211G” (Photo provided by customer)

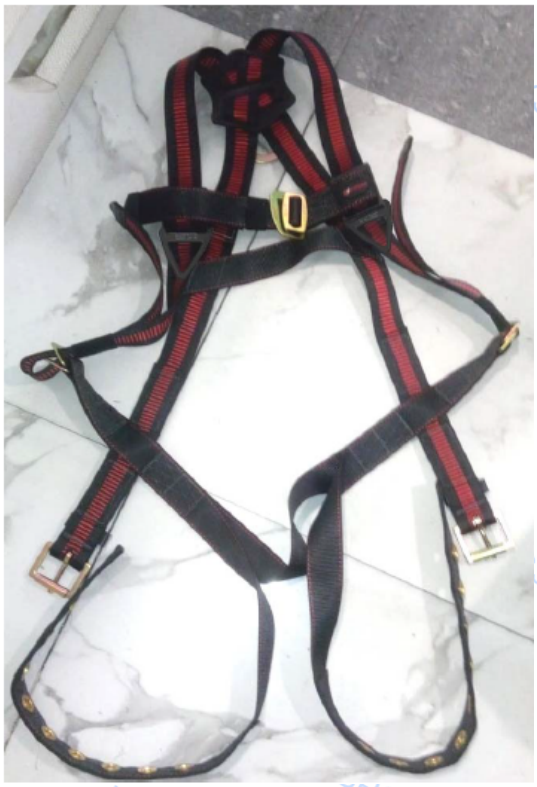

Figure 2 – Harness described as “UFH10201G” (Photo provided by customer)

Test Results

Table 1 – Testing of harness described as “UFH10211G” in accordance with ANSI Z359.11 – 2021

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.1 Design Requirements	3.1.2 FBHs shall permanently incorporate a dorsal attachment element.	A dorsal attachment element is permanently included	PASS
	FBHs may contain any combination of other elements but limited to those described in section 3.2	The harness also includes a sternal attachment element	PASS
	FBHs shall permanently include a load bearing sub-pelvic strap, except those described in 3.1.14	The full body harness includes a load bearing sub-pelvic strap	PASS
	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 or attach with a connector meeting Z359.12	Shoulder straps come together at the dorsal location and cross over each other	PASS
	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	The harness permanently includes a back strap to control the separation of the shoulder straps on the back of the harness	PASS
	When the FBH is mounted onto the test torso, some portion of the back strap or waist belt shall be located between datum levels G and K	The back strap is located between datum points G & K	PASS
	3.1.5 Modular components or assemblies for FBHs designed for the removal of different attachment elements shall meet the specific attachment element requirements of section 3 while attached to a compatible FBH	Not applicable – no modular components	N/A

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.1 Design Requirements (continued)	3.1.5.1 Modular components shall be attached to the harness using connections that meet section 3 and those components shall have a minimum breaking strength of 5,000 pounds (22.2kN).	Not applicable – no modular components	N/A
	If buckles are used, they must meet ANSI Z359.12 and at least be used in pairs	Not assessed	Not assessed
	3.1.5.2 When attached to the FBH, an attachment element extender shall be no longer than 24 inches (610mm).	Not applicable – no attachment element extenders	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	Not applicable – harness is not integrated into a garment	N/A
	3.1.7 All FBHs shall be equipped with a fall arrest indicator that will deploy during dynamic testing defined in section 3.2, when attached to the Dorsal element.	Fall indicators are included on the dorsal and deploy during the dynamic testing defined in section 3.2	PASS
	All indicators shall be located where they can be visually inspected	The indicators can be visually inspected	PASS
	3.1.7.1 If fall arrest indicators are present on other attachment elements of the FBH, they must activate when tested in accordance with 4.3.6	Not applicable – indicators are not present on any other attachment elements	N/A
	3.1.8 FBH with attached connecting subsystem combinations shall meet the requirements of ANSI Z359.11 for the FBH and the appropriate Z359 component standard for the attached sub-system(s) when tested respectfully	Not applicable – no attached connecting subsystem combinations	N/A

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.1 Design Requirements (continued)	3.1.9 All FBHs shall include retainers (keepers) or other components which serve to control the loose ends of straps	Retainers are present to control the loose ends of straps	PASS
	3.1.10 All FBHs shall include at least one lanyard parking attachment element having a disengagement load of not more than 120 pounds (0.5kN).	2 lanyard parking elements are present Triangular attachment disengagement load: 0.05kN Circular attachment disengagement load: 0.05kN	PASS
	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	The upper torso cannot be removed from the lower torso	PASS
	3.1.12 All single point attachment elements shall be located laterally within 2 inches (51mm) of the vertical centreline of the FBH	The dorsal and sternal attachment elements are located within 51mm of the vertical centreline of the harness	PASS
	3.1.13 Sternal attachments that consist of two elements intended to be connected at a single point for use shall be fixed and not adjustable vertically. Both elements shall be clearly marked to only be used together	Not applicable – sternal attachment consists of only 1 element	N/A
	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	Not applicable – harness includes a sub-pelvic strap	N/A

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.2.1 Attachment Element Requirements - Dorsal	3.2.1 The dorsal attachment element shall be located as shown in figure 4 of ANSI Z359.11, and used as the fall arrest attachment, unless the application allows the use of an alternate attachment as defined in 3.2.2 or 3.2.3	The dorsal attachment element is located as shown in figure 4, and is used as the fall arrest attachment	PASS
	3.2.1.1 The dorsal attachment may also be used in travel restraint or rescue	The dorsal attachment may also be used in travel restraint or rescue	PASS
	3.2.1.2 When supported by the dorsal attachment during a fall, the design of the FBH shall direct load through the shoulder straps supporting the user around the thighs	During a fall, the load is directed through the shoulder straps supporting the user around the thighs	PASS
	3.2.1.3.1 When tested for dynamic feet first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) FBH shall support the test torso for a period of 5 minutes post fall c) FBH shall support the test torso, post fall at an angle not greater than 30° to vertical d) At least one fall arrest indicator shall be deployed visibly and permanently FBH stretch shall not exceed 18 inches (457mm), or less if stated by manufacturer	*Feet first drop*: Dummy restrained by FBH and held for 5 minutes Angle of dummy from vertical: 7.9° Fall arrest indicator deployed and is visible: Yes FBH stretch: 220mm	PASS

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.2.1 Attachment Element Requirements – Dorsal (continued)	3.2.1.3.2 When tested for dynamic head first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) FBH shall support the test torso for a period of 5 minutes post fall c) FBH shall support the test torso, post fall at an angle not greater than 30° to vertical d) At least one fall arrest indicator shall be deployed visibly and permanently	*Head first drop*: Dummy restrained by FBH and held for 5 minutes Angle of dummy from vertical: 23.2° Fall arrest indicator deployed and is visible: Yes	PASS
	3.2.1.3.3 When tested for static strength feet first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) Slippage through any adjuster shall not exceed 1 inch (25mm) c) The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet d) Except for the straps of the buckle and eyelet adjusters, straps shall not allow any signs of tearing	*Feet first static:* 3,600 pounds (16kN) sustained for 1 minute in the direction of the neck without release Slippage through adjusters: 0mm Eyelet adjusters included: Yes Eyelet adjuster tearing distance: 55mm – eyelet tore into adjacent eyelet, but did not tear any further Any sign of tearing of straps: No tearing of straps other than from the eyelet adjusters	PASS
	3.2.1.3.4 When tested for the fall arrest indicator test, at least one fall arrest indicator shall deploy visibly and permanently	Both indicators deployed at a force lower than 4kN	PASS

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.2.2 Attachment Element Requirements - Sternal	3.2.2 The sternal attachment element shall be located as shown in figure 4 of ANSI Z359.11, and used as an alternative fall arrest attachment in applications where the dorsal attachment is determined to be inappropriate by a competent person and where there is no chance to fall in a direction other than feet first	The sternal attachment element is located as shown in figure 4 and is used as an alternative fall arrest attachment element	PASS
	3.2.2.1 The sternal attachment may also be used in travel restraint or rescue	The sternal attachment element can also be used in travel restraint or rescue	PASS
	3.2.2.2 When loaded at the sternal attachment to arrest a fall, the design of the FBH shall direct load through the shoulder straps supporting the user around the thighs	During a fall, the load is directed through the shoulder straps supporting the user around the thighs	PASS
	3.2.2.3.1 When tested for dynamic feet first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) FBH shall support the test torso for a period of 5 minutes post fall c) FBH shall support the test torso, post fall at an angle not greater than 50° to vertical d) If incorporated into the FBH per the requirements of 3.1.7.1, at least one fall arrest indicator shall be deployed visibly and permanently e) FBH stretch shall not exceed 18 inches (457mm), or less if stated by manufacturer	*Feet first drop*: Dummy restrained by FBH and held for 5 minutes Angle of dummy from vertical: 29.9° Fall arrest indicator deployed and is visible: N/A – no sternal fall indicators present FBH stretch: 190mm	PASS

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.2.2 Attachment Element Requirements – Sternal (continued)	3.2.2.3.2 When tested for static strength feet first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) Slippage through any adjuster shall not exceed 1 inch (25mm) c) The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet d) Except for the straps of the buckle and eyelet adjusters, straps shall not allow any signs of tearing	*Feet first static:* 3,600 pounds (16kN) sustained for 1 minute in the direction of the neck without release Slippage through adjusters: 0.5mm Eyelet adjusters included: Yes Eyelet adjuster tearing distance: 1mm Any sign of tearing of straps: No	PASS
	3.2.2.3.3 if the harness is equipped with a fall arrest indicator for the sternal attachment element, when tested for the fall arrest indicator test, at least one fall arrest indicator shall deploy visibly and permanently	Not applicable – no fall indicators present	N/A

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.3.1 Component Requirements – Load bearing straps	3.3.1.1 Straps shall not be less than 1-5.8 inches (41mm) in width	Width of straps: 44mm	PASS
	3.3.1.2 When tested in accordance with reference 7.1.1, straps shall have a breaking strength not less than 5,000 pounds (22.2kN)	Not assessed	Not assessed
	3.3.1.3 Straps shall be made from pure, non-recycled synthetic material having the strength, aging, abrasion and heat resistance characteristics equivalent or superior to polyamide or polyester. Synthetic materials other than those stated herein are permitted only when it can be demonstrated by testing that all requirements of this standard are met and additionally, that the durability, reliability and other properties pertinent to the intended uses have been evaluated and determined suitable by testing. Any restrictions on the use of such materials shall be marked on the FBH	Not assessed	Not assessed
	3.3.1.4 Straps shall be either hot cut, sealed, covered or stitched to prevent fraying	Straps are hot cut and sealed to prevent fraying	PASS
	3.3.1.5 After abrasion conditioning in accordance with reference 7.1.2, straps shall have a breaking strength of not less than 3,600 pounds (16.0kN) when tested in accordance with reference 7.1.1	Not assessed	Not assessed
	3.3.1.6 Straps in contact with metal connectors at attachment elements and tongue buckles shall be protected from wear	Straps in contact with metal connectors at attachment points are protected from wear	PASS

ANSI Z359.11 – 2021 Clause / Test	ANSI Z359.11 – 2021 Requirement	Result / Comment	Pass / Fail
3.3.1 Component Requirements – Load bearing straps (continued)	3.3.1.7 The spacing between hole centres of adjacent eyelets for buckle and eyelet type adjustors used in FBHs shall be no more than 2 inches (50mm) and not less than 1-1/8 inches (29mm)	Distance between hole centres of adjacent eyelets: 42mm	PASS
3.3.2 Component Requirements – Thread and stitching	3.3.2.1 All thread shall be of the same material as the load bearing straps	Not assessed	Not assessed
	3.3.2.2 All stitching shall be lock stitched and be securely backstitched to prevent unravelling	Stitching is lock stitched and back stitched to prevent unravelling	PASS
	3.3.2.3 All stitching used to connect load bearing members shall be contrasting in colour to the load bearing straps of the FBH to facilitate visual inspection	Stitching is of a contrasting colour to facilitate visual inspection	PASS
3.3.3 Component Requirements – Connecting components	3.3.3.1 All connecting components, except soft loop attachments, used for FBH construction shall conform to ANSI Z359.12	Not assessed	Not assessed
	3.3.3.2 Soft loop attachments may be used in place of metal connecting components at all FBH attachment element locations	Not applicable – no soft loop attachments	N/A
	3.3.3.3 Soft loop attachments shall be constructed using material that meets the requirements of section 3.3.1, excluding 3.3.1.1	Not applicable – no soft loop attachments	N/A
	3.3.3.4 Soft loop attachments shall include protection from wear over the entire inside surface	Not applicable – no soft loop attachments	N/A

ADDITIONAL INFORMATION / NOTES

Table 2 – Additional uncertainty of measurement information (see note 1)

Clause / Test	Test / Component	UoM
Dynamic, feet first 3.2.1.3.1 3.2.2.3.1 3.2.3.1.1	Applied force (to test sample)	± 0.855%
	Angle measurement	± 0.161°
Dynamic, head first 3.2.1.3.2	Applied force (to test sample)	± 0.894%
	Angle measurement	± 0.161°
Static, feet first 3.2.1.3.3 3.2.2.3.2 3.2.3.1.2 3.2.4 3.2.5 3.2.6 3.2.7	Applied force (to test sample)	± 50N
Dynamic, indicator test 3.2.1.3.4 3.2.2.3.3	Free fall distance	± 2.05mm
Static, indicator test 3.2.1.3.4 3.2.2.3.3	Applied force (to test sample)	± 314N
Component requirements 3.3.1	Determination of length	± 2.05mm

Note 1 – Estimated uncertainty of measurement applied at point of test (e.g. to applied force or to tolerance limits) to ensure product meets requirements of the standard

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Tests marked ¥ are performed under SATRA's Flexible UKAS Schedule.

Uncertainty of Measurement and Decision Rules

Where values for uncertainty of measurement are included within the report then the uncertainty of the corresponding results are based on a standard uncertainty multiplied by a coverage factor k=2, which provides a coverage probability of approximately 95%.

When reporting results against a conformance statement (Pass/Fail or the allocation of a class or level) then uncertainty of measurement is taken into account based on a non-binary acceptance which itself is based on the guard band being equal to the expanded uncertainty.

Where the result corrected for uncertainty falls within the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 2.5% and SATRA will in this instance quote a Pass/Fail, class, or level.

Where the result corrected for uncertainty falls outside of the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 50%. In this instance SATRA will not provide a Pass/Fail statement or a class or level but will include information in the notes in relation to the result obtained.

Where a report contains SATRA guidelines values then uncertainty of measurement values have been taken into account when determining the guideline values and as such are not considered when determining pass/ fail criteria.