INSPEC Technical Services (Kunshan) Co Ltd • 8 Jin Yang East Road • Lu Jia Zhen • Kunshan • Jiangsu • China
Email: testing@inspec.asia
Website: www.inspec-international.com
Tel: +86 (512) 5011 2646
Fax: +86 (512) 5011 2656

Test Report

Personal Fall Arrest Equipment
ANSI/ASSE Z359.11-2014
Full Body Harness

Report no:	2.15.09.21
Client:	Jinhua Jech Tools Co., Ltd No.10 Jinlong Road, Bailongqiao Town, Jinhua City, Zhejiang, China
Manufacturer:	Jinhua Jech Tools Co., Ltd
Client order:	Email confirmation
Order received:	17 September 2015
Model:	JE113048
Dates of test:	18 September 2015 to 25 September 2015

Signed:

Steven Sum, Laboratory Manager

Issued: 25 September 2015

Conditions

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

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Summary of assessment *

Clause	Requirement	Assessment (See Key)
3.1	Design requirements	Ltd
3.2	**Attachment Element Requirement**	
3.2.1	Dorsal	Pass
3.2.1.3.1	Dynamic Feet First	Pass
3.2.1.3.2	Dynamic Head First	Pass
3.2.1.3.3	Static Feet First	Pass
3.2.1.3.4	Fall Arrest Indicator	Pass
3.2.2	Sternal	
3.2.2.3.1	Dynamic Feet First	
3.2.2.3.2	Static Feet First	
3.2.2.3.3	Fall Arrest Indicator	
3.2.3	Frontal	
3.2.3.1.1	Dynamic Feet First	
3.2.3.1.2	Static Feet First	
3.2.4	Shoulder	
3.2.4.1.1	Static Feet First	
3.2.5	Waist, Rear	
3.2.5.2.1	Static Feet First	
3.2.6	Hip	
3.2.6.1.1	Static Feet First	
3.2.7	Suspension Seat	
3.2.7.1.1	Static Feet First	
3.3	**Component Requirements**	
3.3.1	Load bearing straps	Ltd
3.3.1.2	Strap tensile test	Pass
3.3.1.5	Strap tensile test (after abrasion)	Pass
3.3.2	Thread and Stitching	Ltd
3.3.3	Connecting components	
3.3.1.2	Strap tensile test (soft loops)	
3.3.1.5	Strap tensile test (soft loops - after abrasion)	
5.1	Marking requirements	
5.2	Instructions requirements	

Key

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

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

Submission details

Product	Quantity	Dates received	INSPEC specimen no. (job number +)
Full body harness, model JE113048	06	23 August 2015	2C15501 to 2C15506
Webbing, part no. JEW-1B2Y	01	27 July 2015	2C095A to 2C095J
Webbing, part no. JEW-2BLACK			2C095K to 2C095T

Procedures

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

Testing was performed in accordance with ANSI Z359.11-2014 unless otherwise specified below. Reference should be made to the standard when reading this report.

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

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

Webbing, part number JEW-1B2Y and JEW-2BLACK were first tested at Inspec's job number 2C095 and the results were reported in Inspec Test Report 2.15.09.18

These webbings satisfied the requirements of clause 3.3.1.2 and 3.3.1.5

The client has declared that these same webbings were used to manufacture this harness. Therefore re-testing of these webbings was not performed.

Result details

3	**Requirements**	
3.1	**Design Requirements**	
	Specimen 2C15501 was assessed.	
3.1.1	The specimen permanently incorporated a dorsal attachment element.	Pass
	The specimen did not incorporate other attachment element.	
3.1.2	The specimen did incorporate a load bearing sub-pelvic strap.	Pass
3.1.3	All shoulder straps on the specimen came together at the dorsal location and were crossed by webbing.	Pass
	A D-ring was attached to the dorsal location.	
	Testing of the D-ring was not requested.	NAs
3.1.4	The specimen permanently incorporated a back strap as means of controlling the separation of the shoulder straps on the back of the full body harness.	Pass
	When the specimen was mounted on to the torso as per manufacturer's instructions, some portion of the back strap was located between datum levels G and K.	Pass
3.1.5	The specimen was not equipped with modular components or assemblies.	
3.1.5.1	This clause was not applicable.	NAp
3.1.5.2	This clause was not applicable.	NAp
3.1.6	The specimen was not integrated into a vest or garment.	NAp
3.1.7	The specimen was equipped with a fall arrest indicator.	Pass
	The fall arrest indicator deployed during dynamic testing defined in section 3.2.	Pass
	It was possible visually to inspect the fall arrester indicator.	Pass
3.1.7.1	The specimen was not equipped with fall arrest indicator on other attachment element.	NAp
3.1.8	The specimen was not equipped with connecting subsystem combinations.	NAp
3.1.9	The specimen did include strap retainers (keepers) which serve to control the loose ends of straps.	Pass

3.1.10 Static Feet First Test - Lanyard Parking Attachment Element

Specimen 2C15501 was assessed.

The specimen was equipped with two lanyard parking attachment elements.

The design of the lanyard parking attachment elements did not deviate from a previously tested model of a full body harness of this manufacturer.

The previously tested model was JE115021. See INSPEC Test Report 2.15.09.18. Pass

Specimen 2C15501was assessed.

3.1.11	It was not possible to remove elements of the full body harness that support the shoulders / upper torso from those that support the legs / lower torso.	Pass
3.1.12	The dorsal attachment element was located laterally along the vertical centreline of the full body harness.	Pass
3.1.13	The specimen did not consist of a sternal attachment element.	NAp
3.1.14	As the specimen included a sub-pelvic strap, this clause is not applicable.	NAp

3.2 Attachment Element Requirements

3.2.1 Dorsal

Specimen 2C15501 was assessed.

The dorsal attachment element was used for fall arrest. Pass

3.2.1.1	The dorsal attachment was used in travel restrain or rescue.	Pass
3.2.1.2	During the dynamic performance test, it was confirmed that the design of the full body harness directed the load through the shoulder straps supporting the user and around the thighs.	Pass

3.2.1.3 Dorsal Attachment Element Requirements

3.2.1.3.1 Dynamic Feet First Test

Specimen 2C15502 was assessed.

During the dynamic feet first test, the test torso was not released.	Pass
The harness did support the test torso for a period of five minutes post fall.	Pass
During this period, the angle of the test torso to vertical was 6 degrees. This value is less than the maximum 30 degrees permitted.	Pass
Two fall arrest indicators deployed visibly and permanently.	Pass

Full body harness stretch was 8.5 inches.

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

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

3.2.1.3.2 Dynamic Head First Test

Specimen 2C15503 was assessed.

During the dynamic head first test, the test torso was not released.	Pass
The harness did support the test torso for a period of five minutes post fall.	Pass
During this period, the angle of the test torso to vertical was 11 degrees. This value is less than the maximum 30 degrees permitted.	Pass
Two fall arrest indicators deployed visibly and permanently.	Pass

3.2.1.3.3 Static Feet First Test

Specimen 2C15504 was assessed.

During the static feet first tests, the test torso was not released from the harness.	Pass
During the static feet first tests, all adjusters did not slip.	Pass
Except for the straps of the buckle and eyelet adjusters, straps did not show signs of tearing.	Pass

3.2.1.3.4 Fall Arrest Indicator Test

Specimen 2C15505 was assessed.

When tested using the dorsal attachment element, the fall arrest indictor deployed visibly and permanently.	Pass

3.3 Components Requirements

3.3.1 Load Bearing Straps

Specimen 2C15501 was assessed.

3.3.1.1	The minimum width of the load bearing straps was 44 mm. This is more than the minimum 41 mm specified.	Pass
3.3.1.2	Specimens 2C095A to 2C095E and 2C095K to 2C095O withstood a tensile test of 5,000 pounds applied for 1 minute without breaking.	Pass
3.3.1.3	The material and characteristics of load-bearing straps were not assessed. Manufacturer to certify.	NAs
3.3.1.4	The ends of load bearing straps were hot cut and fused so as to prevent fraying.	Pass
3.3.1.5	Following abrasion conditioning, specimens 2C095F to 2C095J and 2C095P to 2C095T withstood a tensile test of 3,600 pounds applied for 1 minute without breaking.	Pass
3.3.1.6	Straps in contact with metal connectors at attachment elements were protected from wear.	Pass
3.3.1.7	This clause was not applicable.	NAp

3.3.2 Thread and Stitching

Specimen 2C15501 was assessed.

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

Estimates of the uncertainty of measurement

Clause	Test		Uncertainty
3.1.1	Dorsal attachment		See Note 1
3.1.2	Sub-pelvic strap		See Note 1
3.1.3	Shoulder straps		See Note 1
	Connector		See report
3.1.4	Waist belt or back strap – control of separation of shoulder straps		See Note 1
3.1.5	Modular components or assemblies, as appropriate		See Note 1
3.1.5.1	Modular components.		See report
3.1.5.2	Attachment element extender	Length	±0.14%
3.1.6	Full body harness integrated into a vest		See Note 1
3.1.7	Fall Arrest Indicator		See Note 1
3.1.8	Harness with attached connecting subsystem combinations		See report
3.1.9	Strap retainers (keepers)		See Note 1
3.1.10	Lanyard parking attachment element - Disengagement load		±2.90%
3.1.11	Support – shoulders/upper torso		See Note 1
3.1.12	Location of single point attachment		See Note 1
3.1.13	Sternal attachment – bilateral elements		See Note 1
3.1.14	Sub-pelvic straps		See Note 1
3.2.1	Dorsal attachment element		See Note 1
3.2.1.3.1	Dorsal attachment element	Dynamic Feet First	±2.92%
3.2.1.3.2		Dynamic Head First	±2.92%
3.2.1.3.3	Dorsal attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.2.1.3.4	Fall Arrest Indicator test – dorsal attachment		See Note 1
3.2.2	Sternal attachment element		See Note 1
3.2.2.3.1	Sternal attachment element	Dynamic Feet First	±2.92%
3.2.2.3.2	Sternal attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.2.2.3.3	Fall Arrest Indicator test – sternal attachment		See Note 1
3.2.3	Frontal attachment element		See Note 1
3.2.3.1.1	Frontal attachment element	Dynamic Feet First	±2.92%
3.2.3.1.2	Frontal attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.2.4	Shoulder attachment element		See Note 1

3.2.4.1.1	Shoulder attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.2.5	Waist, Rear attachment element		See Note 1
3.2.5.2.1	Waist, Rear attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.2.6	Hip attachment element		See Note 1
3.2.6.1.1	Hip attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.2.7	Suspension Seat attachment element		See Note 1
3.2.7.1.1	Suspension Seat attachment element	Static strength	See Note 1
		Slippage	±1.31%
3.3.1.1	Straps	Width	±1.30%
3.3.1.2	Straps	Static strength	See Note 1
3.3.1.3	Straps – material and characteristics		Not applicable
3.3.1.4	Straps - terminations		See Note 1
3.3.1.5	Straps (after abrasion)	Static strength	See Note 1
3.3.1.6	Straps – contact with metal connectors		See Note 1
3.3.1.7	Buckle & eyelet type adjusters	Spacing	±1.30%
3.3.2.1	Threads and stitching – material		See Note 1
3.3.2.2	Lock stitching		Not applicable
3.3.2.3	Stitching – contrasting colour		See Note 1
3.3.3.1	Connecting components (except soft loops)		See report
3.3.3.2	Soft loop attachments		See Note 1
3.3.3.3	Soft loop	Static strength	See Note 1
	Soft loop (after abrasion)	Static strength	See Note 1
3.3.3.4	Soft loop attachments – protection from wear		See Note 1
5.1	Marking requirements		See Note 1
5.2	Instructions requirements		See Note 1

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

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

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

ANNEX

This Annex comprises one section.

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

Jinhua Jech Tools Co., Ltd -
Full body harness, model JE113048

INSPEC Testing Services' specimen 2C15501 18 September 2015