

Test Report

PPE against fall from a height EN 361 : 2002 Full body harnesses

Report no: 2.17.05.18

Client: INSPEC Certification Services
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United Kingdom

On behalf of: Jinhua Jech Tools Co., Ltd.

Client order: TA17/0022

Order received: 14 April 2017

Model: JE138141B

Dates of tests: 4 May 2017 to 18 May 2017

Signed:



Steven Sum, Laboratory Manager

Issued: 22 May 2017

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Conditions

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

Opinions, comments and interpretations expressed in this report are shown in italics.

Copies of INSPEC interpretations referenced in this report are available upon request.

Tests marked are not included in our ANAB Scope of Accreditation.

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Summary of assessment*

Clause	Requirement	Assessment (See Key)
4.1	Design & ergonomics	Ltd
4.2	Materials and construction	Ltd
4.3	Static strength	Pass
4.4	Dynamic performance	Pass
4.5	Additional elements	See Inspec Test Reports
4.6	Marking and information	
6	Marking	
7	Information	
8	Packaging	

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	Date received	INSPEC specimen no. (2E063+)
Full body harness with waist belt and rescue harness, model JE138141B	14	12 April 2017	01 to 14

Procedures

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

Testing was performed in accordance with EN 361:2002 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.

Result details**4.1 Design and ergonomics**

Specimen 2E06304 was assessed against the general requirements specified in clause 4.1 of EN 363:2002. The detailed results of the assessment are given on page 7 of this report.

4.2 Materials and construction

Specimen 2E06301 was assessed.

The materials used for webbing and threads and their characteristics were not assessed. Manufacturer to certify. NAs

Threads used for sewing the harness were red and black colours. These contrasted with the black and red colours of the webbing respectively. Pass

The harness incorporated pelvic straps. Pass

The harness incorporated shoulder straps. Pass

The harness incorporated means to adjust the straps to fit the wearer. Pass

The straps did not migrate or self-loosen. Pass

The minimum width of primary straps was 44 mm. This is more than the permitted minimum of 40 mm. Pass

The minimum width of secondary straps was 44 mm. This is more than the permitted minimum of 20 mm. Pass

During the static strength test performed on specimen 2E06302, it was confirmed that the straps which supported, and exerted pressure on, the torso dummy were primary straps. Pass

The specimen incorporated two fall arrest attachment elements. One was located at the back and one was located at the front of the chest.

The location of fall arrest attachment elements were at a level above the centre of gravity of the torso dummy. Pass

The harness was not incorporated within a garment.

It was possible visually to inspect the whole body harness. Pass

The securing buckles of the specimen could not be assembled in more than one manner. Pass

Metallic elements incorporated into specimen 2E06314 satisfied the corrosion protection requirements specified in 5.13 of EN 364:1992. Pass

4.3 Static strength (back attachment element)

When specimen 2E06302 was tested at the back attachment element, the harness withstood the 15 kN force applied upwards for 3 minutes without releasing the torso dummy. Pass

When specimen 2E06302 was tested at the back attachment element, the harness withstood the 10 kN force applied downwards for 3 minutes without releasing the torso dummy. Pass

4.3 Static strength (front attachment element)

When specimen 2E06303 was tested at the front attachment element, the harness withstood the 15 kN force applied upwards for 3 minutes without releasing the torso dummy. Pass

When specimen 2E06303 was tested at the front attachment element, the harness withstood the 10 kN force applied downwards for 3 minutes without releasing the torso dummy. Pass

4.4 Dynamic performance (back attachment element)

When specimen 2E06304 was tested at the back attachment element, the harness withstood the feet-first drop test without releasing the mass and without rupturing. The torso dummy was arrested in the head-up position and the angle of its back to the vertical was 12 degrees, which is less than the maximum 50 degrees permitted. Pass

When specimen 2E06304 was tested at the back attachment element, the harness withstood the head-first drop test without releasing the torso dummy and without rupturing. The torso dummy was arrested in the head-up position and the angle of its back to the vertical was 15 degrees, which is less than the maximum 50 degrees permitted. Pass

4.4 Dynamic performance (front attachment element)

When specimen 2E06305 was tested at the front attachment element, the harness withstood the feet-first drop test without releasing the mass and without rupturing. The torso dummy was arrested in the head-up position and the angle of its back to the vertical was 45 degrees, which is less than the maximum 50 degrees permitted. Pass

When specimen 2E06305 was tested at the front attachment element, the harness withstood the head-first drop test without releasing the torso dummy and without rupturing. The torso dummy was arrested in the head-up position and the angle of its back to the vertical was 48 degrees, which is less than the maximum 50 degrees permitted. Pass

4.5 Additional elements

The specimen was equipped with elements for the use of the harness in a system for work positioning, restraint, rope access and rescue.

The work positioning / restraint system element was tested against the requirements specified in EN 358. See INSPEC Test Report 2.17.05.19.

The rescue system element was tested against the requirements specified in EN 1497. See INSPEC Test Report 2.17.05.20.

EN 363:2002, Clause 4.1, Design and ergonomics

A fall arrest system shall be so designed and manufactured:

- that, in the foreseeable conditions of use for which it is intended, the user can perform the risk-related activity normally while enjoying appropriate protection of the highest possible level; NAs
- as to preclude risks and other nuisance factors under foreseeable conditions of use; NAs
- as to facilitate correct positioning on the user and to remain in place for the foreseeable period of use, bearing in mind ambient factors, movements to be made and postures to be adopted. For this purpose, it shall be possible to optimize the adoption of a full body harness to user morphology by all appropriate means, such as adequate adjustment elements or the provision of an adequate size range; Pass
- that it is as light as possible without prejudicing design strength and efficiency; NAs
- as to become not incorrectly adjusted without the user's knowledge under the foreseeable conditions of use; Pass
- that, under the foreseeable conditions of use, the vertical drop of the user is minimized to prevent collision with obstacles and the braking force does not, however, attain the threshold value at which physical injury or the tearing or rupture of any component or element which might cause the user to fall can be expected to occur; NAs
- that, after arresting, the user is maintained in a correct position in which he may await help if necessary. Pass

Only the characteristics given in indents 3, 5 and 7 lend themselves to objective assessment. Compliance or otherwise with the relevant European standard, against which the specimen has been tested, support the assessments made against those characteristics.

The characteristics given in the other indents, whilst being desirable attributes, cannot be objectively assessed by a testing laboratory, because they involve parameters about which the technician may have only an opinion, not factual knowledge.

Estimates of the uncertainty of measurement

Clause	Test	Uncertainty
4.1	Design & ergonomics	-
4.2	Materials and construction	-
4.3	Static strength	±3.5%
4.4	Dynamic performance	±0.9%
4.5	Additional elements	-
4.6	Marking and information	-
6	Marking	-
7	Information	-
8	Packaging	-

* 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.

Values expressed as a percentage (%) are relative.

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 with waist belt and rescue harness, model JE138141B**



INSPEC Testing Services' specimen 2E06301

4 May 2017