

## Test Report

### PPE against fall from a height EN 813 : 2008 Sit harnesses

**Report no:** 2.16.11.19

**Client:** INSPEC Certification Services  
56 Leslie Hough Way,  
Salford,  
Greater Manchester,  
M6 6AJ,  
United Kingdom

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

**Client orders and dates received:** TA16/0098 (10 October 2016)  
TA16/0098a (24 October 2016)  
TA16/0098b (01 November 2016)

**Model:** JE148141

**Dates of tests:** 18 October 2016 to 16 November 2016

**Signed:**



Steven Sum, Laboratory Manager

**Issued:** 28 November 2016

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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	Ergonomics	Pass
4.2	Design, materials and construction	Ltd
4.3	Dynamic strength	Pass
4.4	Static strength	Pass
4.5	Corrosion resistance	Pass <sup>①</sup>
6	Marking	
7	Information	
8	Packaging	

<sup>①</sup> *INSPEC Interpretation applies*

**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. (2D172 +)
Full body harness with waist belt and sit harness, model JE148141	14	29 September 2016	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 813:2008 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 Ergonomics**

Specimen 2D17201 was assessed.

- |   |      |
|---|------|
| a) The sit harness was capable of adjustment to enable correct positioning of each test subject.  | Pass |
| b) The sit harness was able to support each test subject in an upright sitting position.  | Pass |
| c) The sit harness allowed each test subject to undertake the specified range of movements without undue discomfort.                    | Pass |
| d) No metal fittings of the sit harness contacted the groin, inside of the thighs, armpits or small of the back of either test subject. | Pass |
| e) The sit harness remained correctly adjusted during the test on each test subject.  | Pass |

**4.2 Design, materials and construction**

Specimens 2D17201 and 2D17209 were assessed.

**4.2.1 Materials**

- |   |      |
|---|------|
| 4.2.1.1 The materials used for webbing and threads and their characteristics were not assessed. Manufacturer to certify.                            | NAs  |
| 4.2.1.2 Threads used for sewing the harness were red and black colours. These contrasted with the blue and red colours of the webbing respectively. | Pass |

**4.2.2 Attachment elements**

- |   |      |
|---|------|
| 4.2.2.1 The specimen incorporated one sit harness attachment element. This was located at the front centre. | Pass |
| 4.2.2.2 Side attachment elements were fitted to the specimen.   | NAs  |

The sit harness satisfied the requirements specified in EN 358. See INSPEC Test Report 2.16.11.18.

- |   |      |
|---|------|
| 4.2.2.3 The specimen was an element of a full body harness. It was fitted with shoulder straps. The shoulder straps were not fitted with attachment elements. | Pass |
|---|------|

#### 4.2.3 Load bearing parts

4.2.3.1 It was visually confirmed during the ergonomics tests that the following parts of the specimen were load bearing parts:

1. Leg loops
2. Waist belt
3. Sit strap

4.2.3.2 The minimum width of the load bearing parts in contact with body was as follows:

1. Leg loops 44 mm
2. Waist belt 44 mm
3. Sit strap 44 mm

The above values are more than the minimum 43 mm permitted.

Pass

#### 4.2.4 Back support

4.2.4.1 A back support was fitted to the harness.

Pass

4.2.4.2 The length of the back support was 810 mm. Half the circumference of the waist belt when adjusted to its maximum specified length of 1515 mm was 758 mm. The requirement that the back support shall be at least 50 mm longer than this half circumference was therefore satisfied.

Pass

The width of the back support, for a length of 200 mm centred on the spine of the wearer was 140 mm. This is more than the 100 mm minimum permitted.

Pass

The width of the back support, other than for the length of 200 mm centred on the spine of the wearer was 70 mm. This is more than the 60 mm minimum permitted.

Pass

#### 4.2.5 Sit harness fastening and adjustment elements

4.2.5.1 Fastening and adjustment elements of the specimen could be released only by at least two different, deliberate manual actions.

Pass

4.2.5.2 All metal parts of the specimen were free from sharp edges and burrs which could injury

Pass

4.2.5.3 During the static strength test, the buckles and other adjustment elements did not slip.

Pass

#### 4.2.6 Accessibility

The sit harness was not incorporated within a garment.

It was possible visually to inspect the whole sit harness.

Pass

#### 4.3 Dynamic strength

Specimen 2D17208 was assessed. The mass of the torso dummy used for the test was 100 kg.

When tested at the front attachment element, the sit harness withstood the drop test without releasing the torso dummy and no load bearing element broke, ruptured or became detached.

Pass

#### 4.4 Static strength

Specimen 2D17209 was assessed.

When tested at the front attachment element, the sit harness withstood the 15 kN force applied for 3 minutes without releasing the torso dummy and no load bearing element broke, ruptured or became detached.

Pass

#### 4.5 Corrosion resistance

Specimen 2D17214 was assessed.

Metal fittings incorporated into the specimen satisfied the corrosion protection requirements.

Pass

**Estimates of the uncertainty of measurement**

Clause	Test	Uncertainty
4.1	Ergonomics	*
4.2.3	Load bearing parts	*
4.2.4	Dimensions of back support	±0.65mm
4.2.5	Dimensions of fastening and adjustment elements	±0.65mm
4.3	Dynamic performance	*
4.4	Static strength	±3.9%
4.5	Corrosion resistance	*
6	Marking	-
7	Information	-

\* 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 sit harness,  
model JE148141**



INSPEC Testing Services' specimen 2D17201

18 October 2016

**Jinhua Jech Tools Co., Ltd. -  
Full body harness with waist belt and sit harness,  
model JE148141**



INSPEC Testing Services' specimen 2D17201

18 October 2016