

Test Report

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

Report no: 2.12.01.15

Client: INSPEC Asia Pacific
Room 515, Huawen Plaza,
No. 999, West Zhongshan Road,
Changning District, Shanghai 200051,
China

Client order: TA11/0223

Order received: 27 December 2011

Manufacturer: Jinhua Jech Tools Co., Ltd

Model: JE1119

Dates of tests: 4 January 2012 to 13 January 2012

Signed:



Steven Sum, Laboratory Manager

Issued: 16 January 2012

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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 | NAP |
| 4.6 | Marking and information | See 6 & 7 below |
| 6 | Marking | Fail |
| 7 | Information | |
| 8 | Packaging | Pass |

① *INSPEC Interpretations 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. |
|---------------------------|----------|------------------|---------------------|
| Full body harness, JE1119 | 05 | 26 December 2011 | 2X19701 to 2X19705 |

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 2X19701 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 8 of this report.

4.2 Materials and construction

Specimen 2X19701 and 2X19702 were 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 grey colour. This contrasted with the orange colour of the webbing. 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 45 mm. This is more than the permitted minimum of 40 mm. Pass

The minimum width of secondary straps was 45 mm. This is more than the permitted minimum of 20 mm. Pass

During the static strength test 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. Pass

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

The harness was not incorporated within a garment. NAs

It was possible visually to inspect the whole harness. Pass

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

Metallic elements incorporated into specimen 2X19705 satisfied the corrosion protection requirements specified in 4.4 of EN 362:1992. Pass

No base metal corrosion was found on the metallic elements after the corrosion test.

4.3 Static strength

Specimens 2X19701 and 2X19702 were assessed.

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

Fall arrest indicators were activated during the test.

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

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

The stitching on both shoulder straps separated during the 10 kN test.

4.4 Dynamic performance

When specimen 2X19704 was tested at the back attachment element, the harness withstood the feet-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 10 degrees, which is less than the maximum 50 degrees permitted. Pass

During the feet-first drop test, fall arrest indicators were activated.

When specimen 2X19704 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 8 degrees, which is less than the maximum 50 degrees permitted. Pass

When specimen 2X19703 was tested at the front attachment element, the harness withstood the feet-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 29 degrees, which is less than the maximum 50 degrees permitted. Pass

When specimen 2X19703 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 23 degrees, which is less than the maximum 50 degrees permitted. Pass

After the head-first drop test performed on the front attachment element, stitching on both shoulder straps were found separated.

4.5 Additional elements

There was no additional attachment element.

N/A

4.6 Marking and information - see clauses 6 and 7 below.**6 Marking**

Specimen 2X19701 was assessed against the specific requirements of EN 361 and the results are detailed below.

Results of the assessment of the same specimen against the requirements specified in clause 2.2 of EN 365:1992 are given on page 8 of this report.

- | | | |
|----|---|------|
| a) | The harness was marked with a pictogram. The marking was printed on a label and stitched on to the harness. | Pass |
| b) | The fall arrest attachment element located at the back of the harness was marked with the capital letter "A". The marking was embossed on the black plastic webbing holder. | Fail |

The marking is of the same color as the black plastic webbing holder and becomes illegible from a distance. It is our opinion that dirt and grit will form on the embossed area thus covering the markings.

The fall arrest attachment elements located at the front of the harness were marked with "A/2". The markings were printed on a label and stitched on to the harness.

The height of the letter "A" for the back attachment element was 9 mm.
The height of "A/2" for the front attachment element was 9 mm.

These were less than the minimum 10 mm recommended by Recommendation for use sheet CNB/P/11.057, issued by the Co-ordination of Notified Bodies Committee.

The separation between both "A/2" and the fall arrest attachment elements were 45 mm. These were less than the maximum 50 mm separation recommended by Recommendation for use sheet CNB/P/11.057, issued by the Co-ordination of Notified Bodies Committee.

- | | | |
|----|--|------|
| c) | The harness was not marked with the model / type identification. | Fail |
| d) | The harness was not marked with "EN 361". | Fail |

7 Information supplied by the manufacturer

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|----------------|-----|
| Not requested. | NAs |
|----------------|-----|

8 Packaging

Specimen 2X19701 was assessed.

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| The harness was wrapped in a fabric bag. | Pass |
|--|------|

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; | Yes |
| - 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; | Yes |
| - 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. | Yes |

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.

EN 365:1992, Clause 2.2, Marking

Each detachable component of a system shall be clearly, indelibly and permanently marked, by any suitable method not having a harmful effect on the materials, with the following information:

Identification mark comprising:

- | | |
|--|----|
| - the last 2 digits of the year of manufacture; | No |
| - the manufacturer's or supplier's name, trademark or other means of identification; | No |
| - the manufacturer's batch number or serial number of the component. | No |

| | |
|--|----|
| The characters in the identification mark shall be readable and discernible. | No |
|--|----|

Estimates of the uncertainty of measurement

| Clause | Test | Uncertainty |
|--------|----------------------------|-------------|
| 4.1 | Design & ergonomics | - |
| 4.2 | Materials and construction | - |
| 4.3 | Static strength | ±2.3% |
| 4.4 | Dynamic performance | ±0.6% |
| 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, model JE1119



INSPEC Testing Services' sample number 2X19701

30 December 2011