

Test Report

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

Report no:	2.22.05.07A
Customer:	CCQS Certification Services Limited Block 1 Blanchardstown Corporate Park Ballycoolin Road Blanchardstown Dublin 15, D15 AKK1 Ireland
Manufacturer: as advised by the Customer	Jinhua Jech Tools Co., Ltd. No. 1448 Tongxi Road, Linjiang Industrial Park Wucheng District Jinhua City, Zhejiang China
Customer order:	T/1010
Order received:	12 April 2022
Model:	JE145001N
Dates of tests:	9 April 2022 to 16 May 2022

Signed:



Steven Sum, Laboratory Manager

Issued: 19 May 2022

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This report is a revision to report number 2.22.05.07 and replaces the original report, which are hereby withdrawn.

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	Ltd
4.4	Dynamic performance	Ltd
4.5	Additional elements	See Test Report
4.6 / 6	Marking	Ltd
4.6 / 7	Information	Pass
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. (2K057 +)
Full body harness, model JE145001N	06	23 March 2022	01 to 06

Procedures

The specimens detailed within the submission 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.

Clause 4.3 and 4.4 The Customer requested performance testing to be carried out on the frontal fall arrest attachment element only.

Result details**4.1 Design and ergonomics**

Specimen 2K057001 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 9 of this report.

4.2 Materials and construction

Specimen 2K05703 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 black and orange colour. This contrasted with the orange and black colour of the webbing respectively. **Pass**

The harness incorporated straps in the pelvic area. **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, 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. **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.

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

The securing buckles of the specimen could not be assembled in more than one manner; thus they can only be assembled in the correct manner. **Pass**

Metallic elements incorporated into the specimen 2K05704 satisfied the corrosion protection requirements specified in 4.4 of EN 362:1992. **Pass**

4.3 Static strength

When tested at the front attachment element, specimen 2K05703 withstood the 15 kN force applied upwards for 3 minutes without releasing the torso dummy. **Pass**

When tested at the front attachment element, specimen 2K05703 withstood the 10 kN force applied downwards for 3 minutes without releasing the torso dummy. **Pass**

4.4 Dynamic performance

When specimen 2K05702 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 17 degrees. This was less than the maximum 50 degrees permitted. **Pass**

When specimen 2K05702 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 20 degrees. This was less than the maximum 50 degrees permitted. **Pass**

4.5 Additional elements

All specimens were equipped with elements for the use of the harness in a system for rescue.

The rescue system elements satisfied the requirements specified in EN 1497. See INSPEC Test Report 2.22.05.06A

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

Specimen 2K05701 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 4.8 of EN 365:2004 are given on page 10 of this report.

a) The harness was marked with an 'information' pictogram. **Pass**

b) The back fall arrest attachment element was marked with a capital letter "A". **Pass**

The height of the letter "A" was 11 mm. This is more than the minimum 10 mm recommended by Recommendation for use sheet CNB/P/11.057, issued by the Co-ordination of Notified Bodies Committee. **Pass**

The harness has variable length straps and the position of the letter "A" relative to the back attachment point varies depending upon the size of the wearer. **NAs**

The frontal fall arrest attachment element was marked with a capital letter "A". **Pass**

The height of the letter "A" was 11 mm. This is more than the minimum 10 mm recommended by Recommendation for use sheet CNB/11.057, issued by the Co-ordination of Notified Bodies Committee. **Pass**

The location of the letter "A" was 30 mm from the frontal attachment point. This is less than the maximum 50 mm recommended by Recommendation for use sheet CNB/11.057, issued by the Co-ordination of Notified Bodies Committee. **Pass**

c) The harness was marked with the model / type identification, [JE145001N]. **Pass**

d) The harness was marked with "EN 361". **Pass**

7 Information supplied by the manufacturer

User Instructions were provided electronically and used for assessment against the specific requirements of EN 361 and the results are detailed below.

Results of the assessment of the same User instruction against the requirements specified in clause 4.1 to 4.7 of EN 365:2004 are given on page 11 to page 14 of this report.

The information supplied by the manufacturer shall be provided in the languages of the country of destination and shall include at least advice or information as follows.

The language assessed was English.

- | | |
|---|------|
| a) the correct way to put on the full body harness; | Pass |
| b) the specific conditions under which the full body harness may be used; | Pass |
| c) the characteristics required for a reliable anchor point; | Pass |
| d) on how to connect to a reliable anchor point, to a connecting sub-system, e.g. an energy absorber, lanyard and connector, and to other components of a fall arrest system; | Pass |
| e) which attachment elements of the full body harness shall be used in a fall arrest or in a work positioning system; | Pass |
| f) on how to ensure the compatibility of any components to be used in conjunction with the full body harness, e.g. by reference to other European Standards; | Pass |
| g) that consideration should be given to the necessary minimum clearance below the feet of the user in order to avoid collision with the structure or ground in a fall from a height and that specific advice will be given with the sub-system, e.g. energy absorber or fall arrester; | Pass |
| h) the materials from which full body harness is made; | Pass |
| i) on limitations of the materials in the product or hazards which may affect its performance, e.g. temperature, the effect of sharp edges, chemical reagents, electrical conductivity, cutting, abrasion, UV degradation, other climatic conditions; | Pass |
| j) that, before and during use, consideration should be given as to how any rescue could be safely and efficiently carried out; | Pass |
| k) that the product should be only used by a trained and/or otherwise competent person or the user should be under the direct supervision of such a person; | Pass |
| l) on how to clean the product, including disinfection, without adverse effect; | Pass |
| m) if information exists, the expected lifespan or the product (obsolescence) or how this may be determined; | Pass |
| n) on how to protect the product during transportation; | Pass |
| o) the model/type identification mark of the full body harness; | Pass |
| p) on the meaning of any markings on the product; | Pass |
| q) the number of this European Standard, i.e. EN 361. | Pass |

8 Packaging

- | | |
|--|------|
| Specimen 2K05701 was wrapped in a clear plastic 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; | 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.

EN 365:2004, Clause 4.8, Marking

4.8.1 Each item of PPE or other equipment shall be clearly, indelibly and permanently marked by the manufacturer in the official language of the country of destination, by any suitable method not having a harmful effect on the materials so marked, and shall include at least:

The language assessed was English.

- a) means of identification, e.g. manufacturer's name, supplier's name, or trademark; **Pass**

Note 1. When PPE is marked with the supplier's name this should be with the approval of the Notified Body.

- b) manufacturer's production batch or serial number or other means of traceability; **Pass**

- c) model and type/identification; **Pass**

- d) number and year of the document to which the equipment conforms; **Pass**

- e) pictogram or other method to indicate the necessity for users to read the instructions for use; **Pass**

Note 2: Any additional relevant marking specific to the item of equipment should also be included.

4.8.2 The characters in the markings shall be legible and unambiguous. **Pass**

EN 365:2004, Clause 4.1 to 4.7, Instructions**4.1 General**

The manufacturer shall prepare instructions for use, for maintenance and for periodic examination for each item of PPE or other equipment, in the official languages of the country of destination.

The language assessed was English.

Note. The instruction for use, for maintenance and for periodic examination may be supplied in separate documents.

4.2 Instructions for use

4.2.1 The instructions for use shall be in a written format, shall be clear, legible and unambiguous, and shall contain appropriate detail, supplemented by diagrams, if necessary, to enable the PPE or other equipment to be used correctly and safely. **Pass**

4.2.2 The instructions for use shall include:

- a) name and contact details of the manufacturer or authorised representative as appropriate; **Pass**
- b) statements describing the equipment, its intended purpose, application and limitations; **Pass**
- c) warning about medical conditions that could affect the safety of the equipment user in normal and emergency use; **Pass**
- d) warning that the equipment shall only be used by a person trained and competent in its safe use; **Pass**
- e) warning that a rescue plan shall be in place to deal with any emergencies that could arise during the work; **Pass**
- f) warning against making any alterations or additions to the equipment without the manufacturer's prior written consent, and that any repair shall only be carried out in accordance with manufacturer's procedures; **Pass**
- g) warning that the equipment shall not be used outside its limitations, or for any purpose other than that for which it is intended; **Pass**
- h) advice as to whether the equipment should be a personal issue item, where this is applicable; **Pass**
- i) sufficient information to ensure the compatibility of items of equipment when assembled into a system; **Pass**
- j) warning of any dangers that may arise by the use of combinations of items of equipment in which the safe function of any one item is affected by or interferes with the safe function of another; **Pass**
- k) instruction for the user to carry out a pre-use check of the equipment, to ensure that it is in a serviceable condition and operates correctly before it is used; **Pass**

Note1. A pre-use check by the user may not be applicable in the case of certain parts of equipment for emergency use which have been pre-packed or sealed by a competent person.

- l) features of the equipment that require the pre-use check, the method of checking, and the criteria against which the user can decide whether or not the equipment is defective; **Pass**

- m) warning stating that it is essential for safety that equipment is withdrawn from use immediately should:
- 1) any doubt arises about its conditions for safe use or;
 - 2) it has been used to arrest to fall
and not used again until confirmed in writing by a competent person that it is acceptable to do so;
- n) requirements of the anchor device or structural member chosen to serve as the anchor point(s), in particular the minimum required strength, the suitability and the position;
- o) where relevant, instruction on how to connect to the anchor device or structure;
- p) where relevant, an instruction detailing the correct harness attachment point to use, and how to connect to it;
- q) for equipment intended for use in fall arrest systems, a warning to emphasise that it is essential for safety that the anchor device or anchor point should always be positioned, and the work carried out in such a way, as to minimise both the potential for falls and potential fall distance. Where it is essential that the anchor device/point is placed above the position of the user, the manufacturer shall make a statement to that effect;
- r) where relevant, an instruction that a full body harness is the only acceptable body holding device that can be used in a fall arrest system;
- s) for equipment intended for use in fall arrest systems, a warning to emphasise that it is essential for safety to verify the free space required beneath the user at the workplace before each occasion of use, so that, in the case of a fall, there will be no collision with the ground or other obstacle in the fall path;
- t) information on the hazards that may affect the performance of the equipment and corresponding safety precautions that have to be observed, e.g. extremes of temperature, trailing or looping of lanyards or lifelines over sharp edges, chemical reagents, electrical conductivity, cutting, abrasion, climatic exposure, pendulum falls;
- u) instruction as relevant on how to protect the equipment against damage during transportation;
- v) information on the meaning of any markings and/or symbols on the equipment;
- w) statement describing the equipment model, type, identification marks and, if appropriate, the document and year to which it conforms;
- x) where it is a requirement that an EC type examination be carried out by a Notified Body, the name, address and identification number of the Notified Body involved with the design stage and of the Notified Body involved in the production control phase;
- y) statement of any known limit to the safe useable life of the product or any part of the product and/or advice on how to determine when the product is no longer safe to use;
- z) warning that it is essential for the safety of the user that, if the product is re-sold outside the original country of destination, the reseller shall provide instructions for use, for maintenance, for periodic examination and for repair in the language of the country in which the product is to be used.

Note 2. Any additional relevant information specific to the item of equipment should also be provided.

4.3 Instructions for maintenance

4.3.1 The maintenance instruction shall be clear, legible and unambiguous, and shall contain appropriate detail, supplemented by diagrams, if necessary, to enable the PPE or other equipment to be maintained correctly and safely. **Pass**

4.3.2 The maintenance instructions shall include:

- a) cleaning procedures, including disinfection where applicable, without causing adverse effect on the materials used in the manufacture of the equipment, or to the user, and a warning that the procedure is to be strictly adhered to; **Pass**
- b) where appropriate, a warning that, when the equipment becomes wet, either from being in use or when due to cleaning, it shall be allowed to dry naturally, and shall be kept away from direct heat; **Pass**
- c) storage procedures, including all necessary preventative requirements where environmental or other factors could affect the condition of components, e.g. damp environment, sharp edges, vibration, ultraviolet degradation; **Pass**
- d) other maintenance procedures as relevant to the equipment, e.g. lubrication. **NAP**

4.4 Instructions for periodic examination

Instructions for periodic examination shall include:

- a) warning to emphasize the need for regular periodic examinations, and that the safety of users depends upon the continued efficiency and durability of the equipment; **Pass**
- b) recommendation in regard to the frequency of periodic examinations, taking account of such factors as legislation, equipment type, frequency of use, and environmental conditions. The recommendation shall include a statement to the effect that the periodic examination frequency shall be at least every 12 months; **Pass**
- c) warning to emphasize that periodic examinations are only to be conducted by a competent person for periodic examination and strictly in accordance with the manufacturer's periodic examination procedures; **Pass**
- d) where deemed necessary by the manufacturer, e.g. due to the complexity or innovation of the equipment, or where safety critical knowledge is needed in the dismantling, reassembly, or assessment of the equipment, (e.g. a retractable type fall arrester), an instruction specifying that periodic examinations shall only be conducted by the manufacturer or by a person or organisation authorised by the manufacturer; **Pass**
- e) requirement to check the legibility of the product markings. **Pass**

4.5 Instructions for repair

Where the manufacturer permits repair, repair instructions shall be supplied in the official languages of the country in which the item is in service. These instructions shall include a statement to the effect that any repair shall only be conducted by a competent person for repair, who has been authorised by the manufacturer, and that the repair procedure shall be strictly in accordance with the manufacturer's instructions. **NAP**

[Repair not permitted by manufacturer].

4.6 Records

Advice shall be given that a record is kept for each component, subsystem and system. The record should contain headings for, and spaces to allow entry of, the following details: **Pass**

- a) product, (e.g. full body harness), model and type/identification and its trade name; **Pass**
- b) name and contact details of the manufacturer or supplier; **Pass**
- c) means of identification, which could be the batch or serial number; **Pass**
- d) where applicable, the year of manufacturer or life expiry date, (refer to 4.2.2 y); **Pass**
- e) date of purchase; **Pass**
- f) any other information as necessary, e.g. maintenance and frequency of use; **Pass**
- g) date first put into use; **Pass**
- h) history of periodic examinations and repairs, to include:
 - 1) dates and details of each periodic examination and repair, and the name and signature of the competent person who carried out the periodic examination or repair; **Pass**
 - 2) next due date of periodic examination. **Pass**

Note. It is the responsibility of the user organisation to provide the record and enter into the record the details required.

4.7 Periodic examination (see 4.4)

Manufacturers shall provide all the necessary information and equipment e.g. instructions, checklists, spare parts lists and special tools etc, to enable periodic examinations to be carried out by a competent person. **Pass**

Estimates of the uncertainty of measurement

Clause	Test	Uncertainty
4.1	Design & ergonomics	Not applicable
4.2	Materials and construction	Not applicable
	Width of straps	±0.6 mm
4.3	Static strength	See Note 1
4.4	Dynamic performance	±1.4%
4.5	Additional elements	See test report
4.6 / 6	Marking	Not applicable
4.6 / 7	Information	Not applicable
8	Packaging	Not applicable

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 assessments against the pass/fail criteria.

ANNEX

This Annex comprises one section.

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

END OF REPORT

**Jinhua Jech Tools Co., Ltd. –
Full body harness, model JE145001N**



INSPEC Testing Services' specimen 2K05701

9 April 2022