

Test Report

PPE against fall from a height EN 358:2018 Belts and Lanyards for work positioning or restraint

Report no: 2.19.10.16

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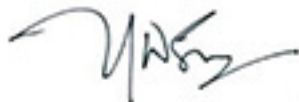
Client order: T/0635

Order received: 23 September 2019

Model: JE148141

Dates of tests: 26 September 2019 to 30 October 2019

Signed:



Steven Sum, Laboratory Manager

Issued: 31 October 2019

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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.

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Summary of assessment*

Clause	Requirement	Assessment (See Key)
4.1	Design, construction and ergonomics	Pass
4.2	Materials	Ltd
4.3	Connectors	NAp
4.4	Static strength	Pass
4.5	Dynamic strength	Pass
4.6	Corrosion resistance	Pass
4.7 / 6	Marking	Pass
4.7 / 7	Information supplied by the manufacturer	Pass

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. (2G164+)
Full body harness with waist belt, model JE148141	06	19 September 2019	01 – 06

Procedures

The specimens detailed within the submission(s) above were used for the tests covered by this report.

Testing was performed in accordance with EN 358:2018 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, construction and ergonomics****4.1.1 Waist belt**

Specimen 2G16401 was assessed.

4.1.1.1 The waist belt was capable of adjustment within the size range specified by the manufacturer. **Pass**

4.1.1.2 The specimen incorporated two load bearing attachment elements. **Pass**

One was located in the right and one in the left. Both were located in the front quarter of the waist belt. **Pass**

4.1.1.3 All parts of the specimen were free from sharp edges and burrs. **Pass**

4.1.1.4 The specimen was fitted with a back support. **Pass**

The maximum radial length (waist size) specified by the manufacturer was 1280 mm. Half the circumference of the waist belt when adjusted to the maximum radial length was 640 mm.

The minimum length of the back support was 760 mm.

The requirement that the minimum length of the back support shall be 50 mm longer than half the circumference of the work positioning belt when adjusted to the maximum radial length (waist size) specified by the manufacturer was satisfied. **Pass**

The coverage area of the back support, symmetrically arranged on the spine of the wearer was 440 cm². This exceeds the minimum 200 cm² specified. **Pass**

The minimum width of the back support of this 440 cm² coverage area, symmetrically arranged on the spine of the wearer, was 100 mm. This was not less than the minimum 100 mm specified. **Pass**

The minimum width of the back support elsewhere was 65 mm. This was not less than the minimum 60 mm specified. **Pass**

4.1.1.5 The waist belt was specified in the user instructions to be used for restraint. The minimum width of the belt was 45 mm. This exceeds the minimum 43 mm specified. **Pass**

4.1.2 Fastening and adjustment elements of the waist belt

Specimen 2G16402 was assessed.

- | | | |
|---------|---|------|
| 4.1.2.1 | At least two different deliberate manual actions were required to release the fastening elements of the waist belt. | Pass |
| 4.1.2.2 | The fastening elements of the waist belt could not unintentionally open. | Pass |
| 4.1.2.3 | The specimen was not fitted with fastening elements that requires pushing two buttons. Therefore, this clause was not applicable. | N/A |
| 4.1.2.4 | There was no slippage of the webbing through the adjustment elements of the waist belt. | Pass |
| 4.1.2.5 | This clause is not applicable to the product tested. | N/A |

4.1.4 Length adjustment device

Specimen 2G16401 was assessed.

- | | | |
|---------|---|------|
| 4.1.4.1 | The specimens were free from sharp edges and burrs. | Pass |
| 4.1.4.2 | The length adjustment devices were non-detachable. | Pass |
| 4.1.4.3 | Not applicable. | N/A |
| 4.1.4.4 | Not applicable. | N/A |

4.2 Materials

Specimen 2G16401 was assessed.

- | | | |
|-------|---|------|
| 4.2.1 | Possible effects of contact by materials of the waist belts with the skin of the user were not assessed. Manufacturer to certify. | N/A |
| 4.2.2 | The materials used for webbing and threads and their characteristics were not assessed. Manufacturer to certify. | N/A |
| 4.2.3 | Threads used for sewing the specimen were red colour. This contrasted with the blue colour of the webbing. | Pass |
| 4.2.4 | This clause is not applicable to the type of lanyard tested. | N/A |

4.3 Connectors

The specimens were not lanyards.

N/A

4.4 Static strength**4.4.1 Specimen 2G16402 was assessed.**

The waist belt withstood the 15 kN force applied for 3 minutes without releasing the cylinder. **Pass**

4.4.2 Not applicable **NAP****4.4.3 Not applicable** **NAP****4.4.4 Not applicable** **NAP****4.5 Dynamic strength****4.5.1 Specimen 2G16403 was assessed.**

Following the drop test, the torso dummy was held clear of the ground. **Pass**

4.5.2 This clause is not applicable to the type of product tested. **NAP****4.5.3 This clause is not applicable to the type of product tested.** **NAP****4.6 Corrosion resistance**

Specimen 2G16406 was assessed.

When tested in accordance with 5.8, all metallic elements incorporated into the specimen did not show evidence of corrosion of the base metal. **Pass**

6 Marking

Electronic labels were provided for marking assessments against the requirements of clause 4.8 of EN 365:2004 and the results are given on page 9 of this report.

The same labels were assessed against the requirements of EN 358 and the results are detailed below.

On the lanyard;

a) The maximum rated load in kilograms. **NAP**

b) The maximum lanyard length. **NAP**

On the waist belt;

c) the size range in cm were marked, thus [85-128 cm] **Pass**

d) use only for restraint, the letter "R". **Pass**

7 Information supplied by the manufacturer

An electronic copy of the User Instructions was provided and used for assessment against the requirements of clauses 4.1 to 4.7 of EN 365:2004, and the results are given from page 10 to 13 of this report. In addition, it shall contain the following information and advice.

The language assessed was English.

- | | |
|---|------|
| a) For the waist belt, the size range in cm, the correct way to put it on and instructions on how to obtain the optimum fit; | Pass |
| b) For the waist belt, the essential need to regularly check fastening and adjustment elements during use; | Pass |
| c) That the waist belt is approved for a user, including tools and equipment, with a weight of up to 150 kg; | Pass |
| d) For the waist belt identification of attachment elements, the correct method of connecting to them, and a clear and unambiguous statement which states the purpose of each attachment element; | Pass |
| e) A warning that the equipment is not suitable for fall arrest purposes and that a waist belt should not be used if there is a foreseeable risk of the user becoming suspended or being exposed to unintended tension by the waist belt; | Pass |
| f) That when using the work positioning system, the user normally relies on the equipment for support, therefore it is essential to consider the need of using a back-up, e.g. a fall arrest system; | Pass |
| g) An instruction on how to position and/or adjust the work positioning lanyard so that the lanyard is kept taut; | NAP |
| h) For work positioning a warning to emphasize that it is essential for safety to use an anchor point positioned at or above waist level. | Pass |

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 arise about its conditions for safe use or; | Pass |
| | 2) it has been used to arrest to fall | Pass |
| | 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; | Pass |
| o) | where relevant, instruction on how to connect to the anchor device or structure; | Pass |
| p) | where relevant, an instruction detailing the correct harness attachment point to use, and how to connect to it; | Pass |
| 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; | Pass |
| 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; | Pass |
| 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; | Pass |
| 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; | Pass |
| u) | instruction as relevant on how to protect the equipment against damage during transportation; | Pass |
| v) | information on the meaning of any markings and/or symbols on the equipment; | Pass |
| w) | statement describing the equipment model, type, identification marks and, if appropriate, the document and year to which it conforms; | Pass |
| 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; | Pass |
| 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; | Pass |
| 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. | Pass |

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: Pass

- 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. Pass

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; NAP
- 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 was not allowed

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:

- | | |
|--|------|
| 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

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
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Estimates of the uncertainty of measurement

Clause	Test	Uncertainty
4.1	Design, construction and ergonomics	±0.59mm
4.2	Material	-
4.3	Connectors	See report
4.4	Static strength	Tensile test See Note 1
		Slippage ±0.7%
4.5	Dynamic strength	See Note 1
4.6	Corrosion resistance	See Note 1
4.7 / 6	Marking	-
4.7 / 7	Information	-

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)

END OF REPORT

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

