

Test Report

EN 362 : 2004 Connectors

Report no:	2.24.12.28
Customer:	CCQS Certification Services Limited Block 1, Blanchardstown Corporation 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 orders:	T/0719 and T/1439
Orders received:	10 Sept. 2019 and 28 Nov. 2024 respectively
Model:	510029
Dates of tests:	13 Jan. 2020 to 14 June 2020 and 6 Dec. 2024 to 9 Dec. 2024

Signed:



Steven Sum, Laboratory Manager

Issued: 12 December 2024

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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	General ①	Ltd
4.2	Static strength ①	Pass
4.3	Gate function	Pass
4.4	Gate resistance ①	Pass
4.5	Corrosion resistance	Pass
4.6	Marking	Pass
	Information	Pass

① 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. (2H005+)
Carabiner, model 510029	10	8 January 2020	01 to 10

Procedures

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

Testing was performed in accordance with EN362-2004 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 City, China

The connector was first tested and reported in INSPEC Test Report 2.20.06.12.

The Customer changed the model number of the connector. This report was issued to cover the change.

Result details**4.1 General**

Specimen 2H00501 was assessed.

- | | | |
|-------|---|-------------|
| 4.1.1 | The specimen had no sharp edges or burrs that may cause injury to the user, or that may cut, abrade or otherwise damage webbing or rope. | Pass |
| 4.1.2 | Effects of the material of the specimen on human skin were not assessed. Manufacturer to declare. | NAs |
| 4.1.3 | The connector incorporated a gate. The gate-locking feature was automatic (self-locking). | Pass |
| 4.1.4 | The connector incorporated an automatic (self-locking) gate. The gate locked automatically when gate closed. | Pass |
| | At least two different, deliberate, manual actions were required to open the gate. | Pass |
| 4.1.5 | The specimen did not incorporate a manual-locking gate; therefore this clause is not applicable. | NAP |
| 4.1.6 | The specimen was not a screwlink (Class Q) connector; therefore this clause is not applicable. | NAP |
| 4.1.7 | The gate opening specified by the manufacturer was 22 mm. A calibrated rod of 22 mm could pass through the gate opening and allowed correct closure and locking of the gate. There was free movement of the rod within the connector. | Pass |

4.2 Static strength

The major axis minimum static strength claimed by the manufacturer was 23 kN

The specimen incorporated an automatic locking gate; therefore testing was only performed along the major axis with gate closed and locked.

When tested along the major axis, with the gate closed and locked, specimen 2H00502 withstood the 23 kN force applied for 3-minutes without the gate opening.	Pass
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When tested along the minor axis, with the gate closed, specimen 2H00503 withstood the 7 kN force applied for 3-minutes without the gate opening.	Pass
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4.3 Gate function

Following the gate-function test, performed with the gate closed and locked, specimen 2H00504 withstood the 6 kN force applied for 10s and the gate subsequently opened as intended.	Pass
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4.4 Gate resistance

4.4.1 Following the gate-face test, performed with the gate closed and locked, the specimen 2H00505 withstood the 1-kN force applied for 90s and the gate subsequently functioned correctly. **Pass**

The connector incorporated a gate-locking feature that encircled the connector body; therefore testing of the separation of the gate locking feature from the latch of the connector was not applicable. **NAP**

4.4.2 The connector incorporated a gate-locking feature that encircled the connector body; therefore gate-side testing was not applicable. **NAP**

4.5 Corrosion resistance

Specimen 2H00508 was assessed.

Following the salt spray test, the gate still functioned correctly. **Pass**

There was no evidence of corrosion of the base metal of the specimen. **Pass**

4.6 Marking and information

6 Marking

Marking in English were provided electronically and used for assessment.

The specimen was assessed against the requirements specified in clause 4.8 of EN365-2004. The results are given on page 8 of this report.

In addition, the same specimen was assessed against the specific requirements of EN 362-2004 and the results are detailed below.

a) The connector was marked with the model / type identification, [510029] **Pass**

b) The connector was marked with the standard number and class of connector, [EN362:2004/B] **Pass**

c) The connector was marked "23 kN" as the minimum strength for the major axis, as claimed by the manufacturer. This corresponds with the value achieved during testing (see clause 4.2). **Pass**

7 Information supplied by the manufacturer

User Information was provided electronically and use for assessment.

The User Information was assessed against the specific requirements of EN 362 and the results are detailed below.

The same User Information was assessed against the relevant requirements specified in clauses 4.1 to 4.7 of EN 365-2004. The results are given on pages 9 to 12 of this report.

The instructions to users have been assessed as detail below, with reference only to the relevant requirements of the Standard.

INSPEC has not assessed these instructions with respect to claims made by the manufacturer outside of these requirements, and therefore accepts no responsibility for the legitimacy of any such claims.

If a connector is a component, it shall be provided with information supplied by the manufacturer.	Pass
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A manufacturer who incorporates a connector into another component, e.g. a lanyard, an energy absorber or a fall arrester shall adopt the information supplied by the manufacturer of the connector.	NAP
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The information supplied by the manufacturer shall be provided in at least the language(s) of the country of destination and shall include at least advice or information as follows:

The language assessed was English.

- | | |
|---|-------------|
| a) the specific conditions under which the connector may be used; | Pass |
| b) for connectors with a self-closing and manual-locking gate, a recommendation that they should only be used where the user does not have to attach and remove the connector frequently, i.e. many times during a working day; | Pass |
| c) that care should be taken to avoid loading a connector across its gate; | Pass |
| d) for screwlink connectors (class Q), a statement that they should only be used where connections are infrequent; | NAP |
| e) for screwlink connectors (class Q), a warning that they are only safe for use when the screw-motion gate is fully closed and information how the user can check it; | NAP |
| f) the materials from which the connector is made; | Pass |
| g) the number of this document and the letter of the class, e.g. EN 362:2004/A; | Pass |
| h) the gate opening 'a' in mm; | Pass |
| i) advice that the length of the connector should be taken into account when used in any fall arrest system, as it will influence the length of a fall; | Pass |
| j) a warning for situations which may reduce the strength of the connector, e.g. connecting to wide straps. | 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**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. **Pass**

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 have 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 is it 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; **NAP**
- 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**

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. **Pass**

4.4 Instructions for periodic examinations

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 permitted by the 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:

- | | |
|--|-------------|
| 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 manufacture 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	General		Not applicable
4.2	Static strength		See Note 1
4.3	Gate function		See Note 1
4.4	Gate resistance	Force	See Note 1
		Gap measurement	±0.1%
4.5	Corrosion resistance		See Note 1
4.6	Marking and Information supplied by the manufacturer		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 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. –
Carabiner, model 510029

