

Test Report

PPE against fall from a height EN 353-2 : 2002 Fall arresters and flexible anchor lines

Report no: 2.16.09.01

Client: INSPEC Certification Services
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Salford,
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United Kingdom

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

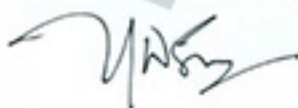
Client order: TA16/0071

Order received: 20 July 2016

Model: JE3211B20

Dates of tests: 25 July 2016 to 2 September 2016

Signed:



Steven Sum, Laboratory Manager

Issued: 10 September 2016

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Conditions

This report may be reproduced and distributed to your clients, provided that it is reproduced and distributed in full.

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.

This report has been provided in accordance with our standard Terms of Business, which can be viewed at, and printed from:

<http://inspec-international.com/ToB.pdf>

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Summary of assessment*

Clause	Requirement	Assessment (See Key)
4.1	Design and ergonomics	NAp
4.2	Materials and construction	Ltd
4.2	Lanyard	NAp
4.2	Energy absorber	NAs
4.2	Connectors	NAs
4.3.1	Locking after conditioning – hot/cold/wet	Pass
4.3.2	Locking after optional conditioning	NAp
4.4	Static strength	Pass
4.5	Dynamic performance	Pass
4.6	Corrosion resistance	Pass
4.7 / 6	Marking	
4.7 / 7	Instructions	
8	Packaging	

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	Dates received	INSPEC specimen no. (2D109 +)
Guided type fall arrester, model JE3211B20	03	16 June 2016	01 to 03
Guided type fall arrester, model JE3211B20 (shorten length - 2m)	01		04
Flexible Anchor line, length 2m	01	1 August 2016	05

Procedures

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

Testing was performed in accordance with EN 353-2:2002, 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.

7.0 Information supplied by the manufacturer was assessed using a document provided electronically.

Result details**4.1 Design and ergonomics**

Specimen 2D10901 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 7 of this report.

4.2 Materials and construction

Specimen 2D10901 was assessed.

Anchor line

The anchor line was made from synthetic fibre rope. Pass

EN 354:2002, clause 4.2.2 was not assessed. Manufacturer to certify. NAs

The specimen included a termination at its upper end, to facilitate connection to an anchor point. Pass

The lower end included an end stop. Pass

Fall arrester

The specimen did not have a manual locking feature. NAP

The specimen was equipped with an integral energy absorber and a connector (carabiner).

The length L of the energy absorber and connector was 360mm. Pass

Testing of the energy absorber was not requested. NAs

Testing of the connectors was not requested. NAs

4.3 Locking**4.3.1 Locking after conditioning**

Specimen 2D10902 was assessed.

After conditioning as described in clause 5.1.2.1 and testing as described in clause 5.1.2.3, the specimen locked and remained locked until released. Pass

4.3.2 Locking after optional conditioning

The manufacturer did not claim the use of the fall arrester under specific conditions. NAP

4.4 Static strength**4.4.1 Anchor line**

Specimen 2D10905 sustained the 22 kN force applied for 3 minutes.

Pass

4.4.2 Fall arrester

Specimen 2D10904 sustained the 15 kN force applied for 3 minutes.

Pass

4.5 Dynamic performance

Specimen 2D10901 was assessed.

The maximum braking force developed was 4.25 kN. This is less than the 6 kN maximum permitted. See the Annex for the force/time curve.

Pass

The arrest distance, H , was 388 mm.

The requirement is that H shall be less than the value $(2L + 1,000)$ mm, where L is 360 mm, the length of the energy absorber and carabiner reported in 4.2 above. Thus, this value is 1720 mm. The requirement was therefore satisfied.

Pass

4.6 Corrosion resistance

Specimen 2D10903 was assessed.

After testing as described in clause 5.4, there was no corrosion present.

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; NAp
- 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; NAp
- 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. NAp

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.

Estimates of the uncertainty of measurement

Clause	Test	Uncertainty
4.1	Design and ergonomics	-
4.2	Materials and construction	•
4.2	Lanyard	•
4.2	Energy absorber	•
4.2	Connectors	•
4.3.1	Locking after conditioning – hot/cold/wet	•
4.3.2	Locking after optional conditioning	N/Ap
4.4	Static strength	•
4.5	Dynamic performance	±3.2%
4.6	Corrosion resistance	•
4.7 / 6	Marking	-
4.7 / 7	Instructions	•
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.

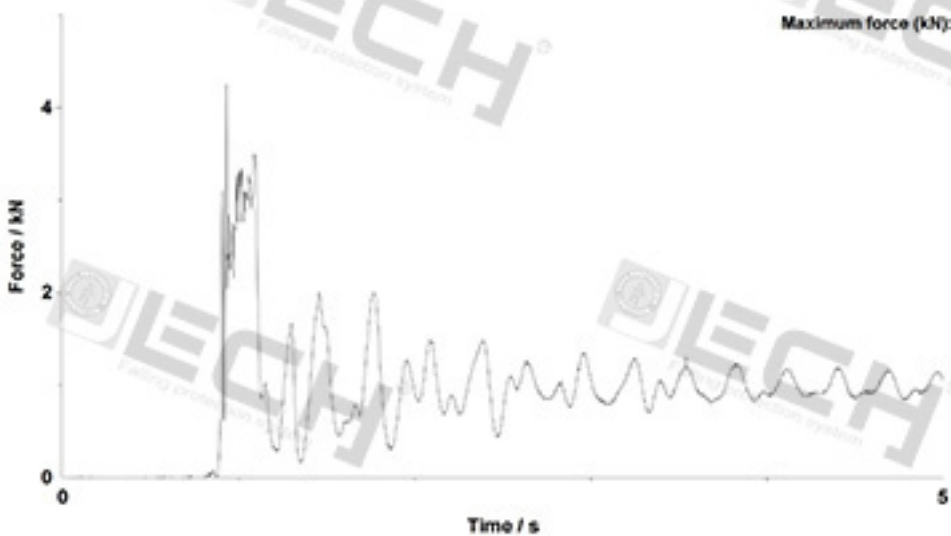
ANNEX

This Annex comprises two sections.

1. Plot of for the force/time curve. (1 page)
2. Photograph of the product tested. (1 page)

INSPEC Technical Services

Technician: Lu/SS
Standard: EN353-2:2002 Guided type fall arrester
Sample / File name: 2D10901
Drop item: K0079 EN Drop mass, 100kg
Orientation/Attachment Point: Centre eyebolt
Time and Date of Test: 10:52 30/05/16



Results do not achieve full ANAB status until a formal test report has been issued.

Jinhua Jech Tools Co., Ltd –
Guided type fall arrester,
model JE3211B20



INSPEC Testing Services' specimen 2D10901

25 July 2016