

Test Report

On Behalf of

ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD.

ALUMINUM TELESCOPIC LADDER

**Model: AY-ZJ3032, AY-ZJ3038, AY-ZJ3044, AY-ZJ3050, AY-ZJ3056,
AY-ZJ3062, AY-ZJ3064, AY-ZJ3074, AY-ZJ3082**

Prepared For : Zhejiang Leader Industry & Trade Co., Ltd.

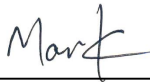


**2th Floor Building 6, No.8 Longtai Road, Longshan Town,
Yongkang City,Zhejiang Province, China**

Prepared By : Eport (Shenzhen) Electronics Co., Ltd.

**Rm 5-508, Haibin City Plaza, 46 Section, Baoan
District, Shenzhen, P.R.C**

Date of Test : July 12-18, 2023
Date of Report : July 19-20, 2023
Report Number : EPTC-LD-S230J665

Test Report EN 131-1:2015+A1: 2019 Ladders – Part 1: Terms, types, functional sizes EN 131-2:2010+A2: 2017 Part 2: Specification for requirements testing, marking EN 131-3:2018 Part 3: Marking and User instructions EN 131-6:2019 Part 6: Telescopic ladders	
Testing laboratory	Eport (Shenzhen) Electronics Co., Ltd.
Address	Rm 5-508, Haibin City Plaza, 46 Section, Baoan District, Shenzhen, P.R.C
Testing location	Eport (Shenzhen) Electronics Co., Ltd. Rm 5-508, Haibin City Plaza, 46 Section, Baoan District, Shenzhen, P.R.C
Applicant	ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD.
Address	2TH FLOOR BUILDING 6, NO.8 LONGTAI ROAD, LONGSHAN TOWN, YONGKANG, JINHUA, ZHEJIANG PROVINCE, CHINA
Standard	EN 131-1:2015+A1: 2019 & EN 131-2:2010+A2: 2017 & EN 131-3:2018 & EN 131-6: 2019
Result	Comply with: EN 131-1:2015+A1: 2019 & EN 131-2:2010+A2: 2017 & EN 131-3:2018 & EN 131-6: 2019
Procedure deviation	N.A.
Non-standard	N.A.
Type of verdict object	ALUMINUM TELESCOPIC LADDER
Trademark	---
Model/type reference	AY-ZJ3032
Manufacturer	ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD.
Address	2TH FLOOR BUILDING 6, NO.8 LONGTAI ROAD, LONGSHAN TOWN, YONGKANG, JINHUA, ZHEJIANG PROVINCE, CHINA
Material	Aluminum

Possible case verdicts :	
Case does not apply to the verdict object :	N (.A.)
Verdict object does meet the requirement:	P(ass)
Verdict object does not meet the requirement ... :	F(ail)
Name and address of the testing laboratory: <u>Eport (Shenzhen) Electronics Co., Ltd.</u> <u>Rm 5-508, Haibin City Plaza, 46 Section, Baoan District, Shenzhen, P.R.C</u>	
Reported by : _____ Signature	 <u>Mark Zhang / Project Engineer</u> Name and Title
Approved by : _____ Signature	 <u>Eliza Chen / Manager</u> Name and Title
	 <u>July 20, 2023</u> Date

General remarks:	
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"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced except in full without the written approval of the testing laboratory.

Attached with:

- A. 1 page of photo documentation

Remark 1:

1. All tests were conducted on AY-ZJ3032 unless otherwise special.
2. All models are the same material and load capacity (max.150kg)

Remark 2:

Copy of marking plate see appendix 2

EN 131-1			
Clause	Requirement – Test	Result - Remark	Verdict
4.	Functional sizes		P
4.1	General		P
	The drawings are examples only and products need not correspond. However, dimensions are binding.		P
	The rungs and steps of a ladder shall be equally spaced with a tolerance of $\pm 2\text{mm}$.		P
	In addition to the requirements on the complete ladder, sections which can be dismantled without the use of tools shall conform, section by section, with the requirements for one piece leaning ladders or leaning rung ladders.		P
4.2	Leaning rung ladders	$b_1=330\text{mm}$, $b_2=465\text{mm}$	P
4.2.1	General		P
	Functional sizes are given in Table 2.		P
	The minimum permanently available base width for leaning rung ladders shall be derived from the formula b_2 in Table 2. Combination and multi-hinge ladders shall also meet the minimum base width requirements in leaning ladder modes of use. For leaning ladders the method of achieving the permanently available minimum base width is at the discretion of the manufacturer but it shall be permanently incorporated in the design and not provided by removable components or accessories. It is permissible for a device which provides the required base width to be supplied for assembly by the end user with the use of tools. It is permissible for the design to allow for the base width b_2 or its position to be temporarily adjusted by the user. Where the base width can be temporarily adjusted by the user then instructions and markings shall be provided in accordance with the requirements of EN 131-3.		P
4.2.2	One-piece leaning rung ladders		N

EN 131-1			
Clause	Requirement – Test	Result - Remark	Verdict
4.2.3	Sectional ladders		N
4.2.4	Extending ladders		N
	If the top ladder element is more than 3 000 mm then it should not be separable if the design introduces new hazards in use.		N
	The design of the stabilizer shall not create the possibility of foreseeable misuse or introduce additional hazards. See Figure 32.		N
	The dimension of the overlap depends on calculation and design of the ladder. It is determined by the manufacturer. The function and carrying capacity of the overlap shall be verified by means of the test according to EN 131-2.		N
4.3	Standing rung ladders		N
	The legs are connected with hinge joints and shall be secured from sliding apart		N
4.4	Combination ladders		N
4.4.1	General	Be used as standing ladders, the ladder parts be secured from sliding apart	N
4.4.2	Two-piece combination ladder		N
	If the top ladder element is more than 3000mm then it should not be separable if the design introduces new hazards in use. See Figure 32.		N
4.4.3	Three-piece combination ladder		N
	If the top ladder element is more than 3 000 mm then it should not be separable if the design introduces new hazards in use. See Figure 32.		N
4.5	Leaning step ladders		N
	The permissible inclination α applies to the height of the touch-down surface above floor level, when the steps are in horizontal position. Functional sizes are given in Table 6.		N
4.6	Standing step ladders		N

EN 131-1			
Clause	Requirement – Test	Result - Remark	Verdict
	The legs are connected with hinges joints and shall be secured from sliding apart.		N
	During the use of tadder the steps shall be in horizontal position.		N
	The projection of the handrail onto the platform shall not go beyond the latter.		N
	The radius of the horizontal edges of a platform shall be max 15 mm (see Figure 37) in order to avoid slipping at the edges of the platform.		N
	Functional sizes are given in Table 7.		N
4.7	Standing rung and step ladder		N
	The rung section shall be designed in accordance with 4.3 and the step section in accordance with 4.6.		N

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
4.	Requirements		P
4.1	General		P
	Be based upon a maximum total load of 150kg		P
	Note: Ladder are determined to be use by one person at a time per ascending leg of ladder		P
4.2	Materials		P
4.2.1	Aluminium – alloy Have an elongation A ₅ at rupture of minimum 5% and a thickness of at least 1.2mm	Made from 1.5mm thickness aluminum alloy 6063.	P
4.2.2	Steel		N
4.2.3	Plastics		N
4.2.4	Timber		N
4.2.4.1	Different kind of timber		N
4.2.4.2	General requirements		N
4.2.4.3	Knots		N
4.2.4.3.1	Knots in stiles and supporting elements		N
4.2.4.3.2	Knots in rungs, steps, braces		N
4.2.4.4	Moisture content at time of manufacture		N
4.2.4.5	Laminated wood		N
4.2.4.6	Adhesives		N
4.3	Design		P
	Shearing points or squeeze points shall be avoided		P
	All connections shall be durable and have a strength corresponding to the strain		P
	The connections shall be designed in a manner that arising notch tensions remain low		P
	Screws and nuts shall be secured against self-acting slackening		P

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
	Nails are allowed when their function is related to the production process		P
	Welding of joints is permitted if welding procedures and welding personnel are suitable		P
4.4	Surface finish		P
	Accessible edges, corners, and protruding parts	Be free of burrs, chamfered or rounded	P
	Metals parts susceptible to corrosion shall be protected by means of a paint coating or other coating		P
	Aluminium alloys are not susceptible to corrosion		P
	Wooden parts shall be treated on all sides	Not use wooden	N
	The coating be transparent and permeable to water vapour		N
4.5	Hinges(turning points)		N
	Hinges shall connect the legs of the standing rung ladders and the standing step ladders durably		N
	Hinges shall be designed in such a manner that no abutment of the ladder parts over the hinges is formed during use of the ladder		N
	The hinge pin is to be secured against unintentional loosening		N
	The diameter of steel hinge pins shall not be less than 5.3mm		N
	If the pin has several shearing points there is no restriction as to the hinge pin diameter		N
4.6	Opening restraints	No such devices, be instead of locking devices	N
	The legs of the standing ladders shall be prevented from opening beyond the normal use configuration by means of opening restraints		N
	If chains are used, all chain links with the exception of the first one shall be free to move		N

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
	The opening restraints shall satisfy the tests according to clause 5.8		N
4.7	Rungs/steps/platforms		P
	Be made of metal or plastics shall have a textured surface on the working fact to reduce slipping	Be metal	P
	The contact surface of the coverings shall adhere firmly to the rungs or steps		P
	Rungs and steps shall be firmly and durably connected to the stiles		P
	For wooden rungs		N
	Round rungs shall have a diameter greater than or equal to 25mm	Not be round rungs	N
	The top surface of flat standing surfaces shall have an angle less than or equal to 25° to the horizontal.		P
	For leaning ladders the angle related to the stile shall be 65° to 90° for rungs and 60° to 70° for steps		P
4.8	Platform	No such platform	N
4.9	Ladder feet and anti-skid devices		P
	Bottom ends of the ladder shall be slip resistant	By safety rubber shoes	P
4.10	Extending and sectional ladders		N
4.10.1	Rung/step hooks/locking devices		N
4.10.2	Ropes		N

5.	Testing		P
5.1	General		P
	Measurements tolerances apply: ±1mm for longitudinal; ±5 mm for between the supports and the overhanging length; ±1° for angles; ±1% for static forces and torque.		P
5.2	Strength test for all ladders	Ladder use at the max. extension.	P

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
	Ladder class 1: Non- professional Test load F : 2250N	The ladder shall remain functional with no fracture or visible cracks. The ladder shall sustain the load without ultimate failure. Permanent deformation shall be allowed.	P
	Ladder class 1.44: Non- professional Test load F : 2700N	The ladder shall remain functional with no fracture or visible cracks. The ladder shall sustain the load without ultimate failure. Permanent deformation shall be allowed.	N
5.3	Bending test of the stiles		P
	A test load F of 750N shall be applied vertically on the centre of the ladder for a duration of at least 1 minute		P
5.4	Lateral deflection test of the ladder		P
	A pre-load of 100N shall be applied for the duration of one minute		P
	A load F of 250N shall be applied to the lower stile equidistant from the supports		P
5.5	Bottom stile ends test	Neither fracture nor visible cracks	P
	A vertical force F of 1100N is placed in the middle of the load block and is maintained for one min.		P
5.6	Vertical load on rungs, steps and platforms		P
	A pre-load F of 200N be applied for the duration of one min.		P
	For rungs and steps, a test load F of 2600N be applied vertically on the mid-point for the duration of one min.	After test, the max permanent deformation \leq 5% b1	P

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
	For platform, a test load F of 2600N be applied vertically in the centre and at a corner of the front edge for the duration of one min		N
5.7	Torsion test of rungs and steps		P
	A torque M of 50Nm be applied on the midpoint alternately 10 times in clockwise and 10 times in counter-clockwise direction for a period of 10s each	No relative movement in the connection between stile and rung	P
5.8	Test of opening restraints and hinges of standing ladders		N
	The test load F of 1300N be applied to each uppermost rung as close as possible to the stiles for a duration of 1min		N
5.9	Test for ladder rung/step hooks of extending ladders and combination ladders		P
	A uniformly distributed test load F of 3500N be applied vertically to the upper part of the ladder for a period of 1 min	No permanent distortion in locking devices	P
5.10	Kick-up test of the platform of standing ladders		N
	A force F of 100N be applied to the pivoted edge of the platform at an angel of 90° to the horizontal	Not lift from its stop by more than 6°	N
5.11	Feet pull test		P
5.11.1	For ladder feet made of one part		P
	Fix the ladder. Attach a fixing to the centre of a ladder foot. The force is to be applied in a direction most likely to separate the foot from the stile. A load of 150 N shall be applied for 1 min.	After the test, the foot shall remain functional and show a separation from the stile of less than or equal to 4 mm.	P
5.11.2	For feet made of one part on stabilizer bars supplied by the ladder manufacturer		N
	A load of 150N be applied to a free foot in the position and direction most likely to separate the foot from the stabilizer bar for 1 min	Remain functional and show a movement from its original position of less than or equal to 4mm	N
5.11.3	For ladder feet and feet of stabilizer bars made of more than one part		N

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
5.12	Test on hand-/kneerails		N
5.12.1	Standing ladder top hand-/kneerails		N
	A vertical load of 300N be applied to the top centre of the hand for 1min	Not show any visible permanent deformation	N
5.12.2	Side handrail		N
5.13	Maximum extension of ladder	The lower stile ends of the upper sections are no permitted to pass the second rung from top of the section underneath.	N
5.14	3-part combination ladder in A-position test	The free movement of the top section be less than or equal to 5°	N
5.15	Torsion test for standing ladders		N
	A vertical load <i>F</i> ₁ of 736 N uniformly distributed, is applied to topmost rung or step or the platform of the ladder.		N
	A horizontal load <i>F</i> ₂ of 137 N shall be applied to the end of the load bar towards the rear of the ladder perpendicular to the bar and parallel to the ground.		N
5.16	Test methods for plastic ladders		N
5.17	Durability test for standing ladders	Ambient temperature 20±5°	N
	This test is for standing ladders or any ladder that can be used as a standing ladder.		N
	The test has criteria of 10 000 cycles for non-professional class		N
	50 000 cycles for professional class		N
5.18	Base slip test for leaning ladders	Ambient temperature (20+2)°, <i>F</i> 150kg, repeat test 4 times.	P
	The ladder feet shall not move outwards more than 40 mm with respect to the origin for measurement.		P
5.19	Strength test for lateral type stabilizers on leaning ladders which are in the plane of the ladder	<i>F</i> 150kg 1 min.	N

EN 131-2			
Clause	Requirement – Test	Result - Remark	Verdict
	After removal of the test load the ladder, stabilizers and their connections shall remain functional with no fracture or visible cracks.		N
5.20	Strength test for pole type stabilizers on leaning ladders which are not in the plane of the ladder	<i>F</i> 150kg 1 min.	N
	After removal of the test load the ladder, stabilizers and their connections shall remain functional with no fracture or visible cracks.		N
5.21	Torsion test for leaning ladders		P
	Preload 491N not less than 30 s, Test load type 638N not less than 30 s.		P
6.	Markings and user instructions		P
	Ladders should be marked with the relevant parts of EN 131 to which they fully comply and the year of revision(s)	EN131	P
	The marking and user instructions in accordance with EN 131-3		P
	Marking shall be durable		P
	User instructions in accordance with EN 131-3 be provided.		P
7.	Certification		P
	This standard may be a basis for a certification.		P

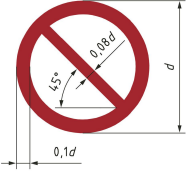
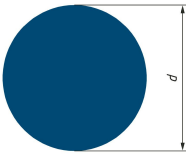
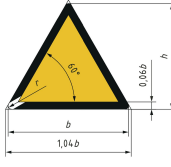
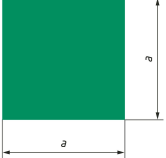
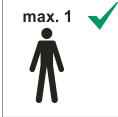

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
4.	Provision of safety marking and user instructions		P
	The producer shall be responsible for the content of the safety marking and user instructions and the provision of the instructions for each ladder		P
	The distributor should ensure that the safety marking and user instructions are provided for each ladder		P
	The user instruction shall indicate that it shall be read before using the ladder.		P
	the user instructions are provided in the official languages of the country where the ladder is placed on the market.	English	P
	The following list of text within supplementary safety information symbols need not be translated:		P
	a) max.;		-
	b) min.;		-
	c) H20;		-
	d) Oil,		-
	e) Up;		-
	f) Stop.		-

5.	Reasons for accidents		P
	a) loss of stability		P
	1) incorrect choice of ladder;		-
	2) incorrect positioning of the ladder;		-
	3) slide outwards at the bottom;		-
	4) side slip, and top flip for leaning ladders;		-
	5) falling sideways;		-
	6) condition of the ladder;		-



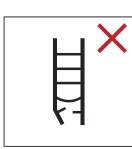












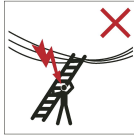

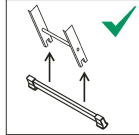
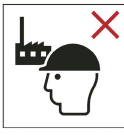

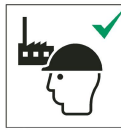

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	7) stepping off an unsecured ladder at height;		-
	8) ground conditions;		-
	9) adverse weather conditions;		-
	10) collision with the ladder;		-
	b) from handling		P
	1) transferring the ladder to the work position;		-
	2) erecting and dismantling the ladder;		-
	3) carrying items up the ladder;		-
	c) slip trip and fall of user		P
	1) inappropriate footwear;		-
	2) contaminated rungs or steps;		-
	3) unsafe user practices;		-
	4) ground conditions;		-
	d) structural failure of ladder		P
	1) condition of the ladder;		-
	2) overloading the ladder;		-
	3) unintended use;		-
	e) electrical hazards		P
	1) incorrect selection of type of ladder for electrical work;		-
	2) unavoidable live working;		-
	3) positioning ladders too close to live electrical equipment;		-
	4) ladders damaging electrical equipment;		-
6.	Marking and user instruction		P
6.1	General		P


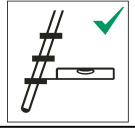






EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	All marking detailed under Clause 6 shall be fixed permanently, according to EN 131-2, to the ladder surface.		P
	In 6.3, the minimum requirements for marking and user instructions are specified.		P
	The user instruction shall list the items to be inspected and checked. Details of how to obtain the pass/fail criteria shall be in the user instructions or marked on the ladder;		P
	The user instruction shall be supplied with the ladder and should be made available on the producer's website also.		P
	The user instruction shall include identity and address of the producer and/or distributor including website address.	ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD. 2TH FLOOR BUILDING 6, NO.8 LONGTAI ROAD, LONGSHAN TOWN, YONGKANG, JINHUA, ZHEJIAGN PROVINCE, CHINA	P
	User instructions shall repeat all safety markings which are on the ladder.		P
	The maximum number of safety signs should be reduced to a number that users are able to identify and comply with when using the ladder.		P
6.2	Basic marking on the ladder		P
	Basic marking information may be given in the form of safety signs or text. The marking shall include:		P
	a) Identity and address of the producer and/or distributor including website address for information about the ladder;	ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD. 2TH FLOOR BUILDING 6, NO.8 LONGTAI ROAD, LONGSHAN TOWN, YONGKANG, JINHUA, ZHEJIAGN PROVINCE, CHINA	-

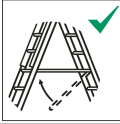



EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	NOTE EU Directive 2001/95/EC requires an address of the distributor inside the European Community if the producer is established outside the European Community.		-
	b) Type of ladder and possible modes of use;	ALUMINUM TELESCOPIC LADDER	-
	c) Classification of use “professional” or “non-professional” as specified in EN 131-2;	non-professional	-
	d) Number of the general standard EN 131 or if a dedicated standard exists, the number of this standard (e.g. EN 131-4).;	EN 131-6	-
	e) Month and year of production and/or serial number (may also be stamped);	July, 2023	-
	f) Weight of the ladder (in kg) and maximal total load (in kg);	Weight: 11kg Max Load: 150kg	-
	g) Insulation, if any. Information a), b), c) and f) shall also appear on the packaging or be otherwise clearly visible to the consumer before the purchase.		-
6.3	Safety marking and user instructions		P
6.3.1	General		P
	The basic safety marking shall be attached to all ladders and ladder parts which can be used separately as an easily viewed symbol.		P
	The marking to indicate the top most rung/step that shall be used for standing on, shall be placed;		P
	— on the stile of the ladder adjacent to or on the last /allowed; or		-
	— on the first /not allowed rung/step; or		-
	— on the label for safety marking.		-
	NOTE 1 EU Directive 2001/45/EC requires that a secure handhold and secure support is available to the user at all times.		-

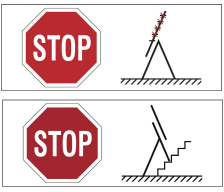

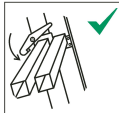
EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The user instructions shall be written in the official languages of the country where the ladder is placed on the market in accordance with EN 82079-1.		-
	NOTE 2 According to EN 82079-1 the minimum size of text in the user instruction is 9 PT.		-
6.3.2	Safety signs		P
6.3.2.1	Basic safety signs		P
	The geometric shape of basic safety signs shall be in accordance with ISO 3864-1, ISO 3864-3 and be based upon the EN ISO 7010 template for safety signs with a minimum size d and h of 15 mm		P
	   		
	a) Prohibition sign	b) Mandatory action sign	c) Warning sign
	d) Safe condition sign		
6.3.2.2	Supplementary safety information symbols		P
	The minimum height h of supplementary safety information symbols is 15 mm.		-
			
	a) Necessary action		b) Not allowed
6.3.3	Basic safety marking and user instructions for all ladders	See marking label	P
	1) Warning, fall from the ladder. This warning sign shall appear on each marking on the ladder at the first place.		-
	2) Refer to instruction manual/booklet		-
	3) Inspect the ladder after delivery. Before every use visually check the ladder is not damaged and is safe to use. Do not use a damaged ladder.		-
	4) Maximum total load		-
	5) Do not use the ladder on a unlevel or unfirm base.		-

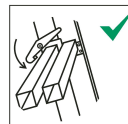
EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	6) Do not overreach.		-
	7) Do not erect ladder on contaminated ground.		-
	8) Maximum number of users		-
	9) Do not ascend or descend unless you are facing the ladder.		-
	10) Keep a secure grip on the ladder when ascending and descending. Maintain a handhold whilst working from a ladder or take additional safety precautions if you cannot.		-
	11) Avoid work that imposes a sideways load on ladders, such as side-on drilling through solid materials.		-
	12) Do not carry equipment which is heavy or difficult to handle while using a ladder.		-
	13) Do not wear unsuitable footwear when climbing a ladder.		-
	14) Do not use the ladder if you are not fit enough. Certain medical conditions or medication, alcohol or drug abuse could make ladder use unsafe.		-
	15) Do not spend long periods on a ladder without regular breaks (tiredness is a risk).		-
	16) Prevent damage of the ladder		-
	17) Ensure the ladder is suitable for the task.		-
	18) Do not use the ladder if contaminated,		-
	19) Do not use the ladder outside in adverse weather conditions		-
	20) For professional use a risk assessment		-
	21) When positioning the ladder take into account risk of collision with the ladder		-
	22) Warning, electricity hazard		-


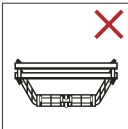


EN 131-3					
Clause	Requirement – Test	Result - Remark	Verdict		
	23) Use non-conductive ladders for unavoidable live electrical work.		-		
	24) Do not use the ladder as a bridge.		-		
	25) Do not modify the ladder design.		-		
	26) Do not move a ladder while standing on it.		-		
	27) For outdoor use caution to the wind.		-		
	28) If a ladder is delivered with stabilizer bars and these bars should be fixed by the user before the first use this shall be described on the ladder and in the user instruction.		-		
	29) Ladder for domestic use		-		
	30) Ladder for professional use		-		
	Shows the minimum requirements for safety marking, user instructions and the mandatory symbols for all ladders.		-		
 EN ISO 7010-W008 1	 EN ISO 7010-M002 2	 3	 4	 5	 6
 7	 8	 9	 10	 11	 12
 13	 14	 EN ISO 7010-W012 22	 22	 24	 28
 29	 29	 30	 30		
6.3.4	Leaning ladders	See marking label	P		




EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Shows in addition to the basic requirements (see 6.3.3) the minimum requirements for safety marking, user instructions and the mandatory symbols for leaning ladders.		-
	1) Leaning ladders with rungs shall be used at the correct angle.		-
	2) Leaning ladders with steps shall be used that the steps are in a horizontal position.		-
	3) Ladders used for access to a higher level shall be extended at least 1 m above the landing point and secured, if necessary.		-
	4) Only use the ladder in the direction as indicated, only if necessary due to design of ladder.		-
	5) Do not lean the ladder against unsuitable surfaces.		-
	6) Ladder shall never be moved from the top.		-
	7) Do not stand on the top three steps/rungs of a leaning ladder. For telescopic ladders the last metre shall not be used (see 6.3.9).		-
6.3.5	Standing ladders	See marking label	N
	Shows in addition to the basic requirements (see 6.3.3) the minimum requirements for safety marking, user instructions and the mandatory symbols for standing ladders.		-
	1) Do not step off the side of standing ladder onto another surface.		-
	2) Open the ladder fully before use.		-



EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	3) Use the ladder with restraint devices engaged only.		-
	4) Standing ladders shall not be used as a leaning ladder unless it is designed to do so.		-
	5) Do not stand on the top two steps/rungs of a standing ladder without a platform and a hand/knee rail.		-
	6) Any horizontal surface which looks like a platform on a standing ladder that is not designed for standing on shall be clearly indicated on that surface,		-
6.3.6	Combination ladders	See marking label	N
	The combination ladder is designed to be used as a leaning ladder, the safety marking and user instructions shall comply with the requirements of 6.3.4.		N
	The combination ladder is designed to be used as a standing ladder, the safety marking and user instructions shall comply with 6.3.5.		N
	Shows in addition to the requirements of 6.3.3 and 6.3.4 and/or 6.3.5 where relevant, the minimum requirements for safety marking, user instructions and the mandatory symbols for combination ladders.		N
	NOTE See EN 131–1 for the definition of a combination ladder.		N

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>1) Do not climb above the rung or tread recommended by the producer, of a combination ladder used in the standing ladder position, with extending ladder at the top or in the stairway position. The minimum requirement shall always be: Do not climb above the top four steps/rungs. When the safety marking is indicated on the rung, the minimum height of these symbols shall be 15 mm and the minimum width shall be 30 mm. Alternatively, the rungs or treads not to be used may be indicated on the ladder.</p>	 <p>to be indicated on the rung</p>  <p>to be indicated on the ladder</p>	-
	<p>2) Locking devices shall be checked and be fully secured before use if not operated automatically.</p>		-
	<p>The symbol shows a particular design which might differ from the real product. The manufacturer may use a different symbol showing the particular design of his specific product.</p>		

6.3.7	Extending ladders		N
	Shows in addition to the requirements of 6.3.3 and 6.3.4 the minimum requirements for safety marking, user instructions and the mandatory symbols for extending ladders.		N
	NOTE See EN 131–1 for the definition of an extending ladder.		N
	1) Locking devices shall be checked and be fully secured before use if not operated automatically.		-
	<p>The symbol shows a particular design which might differ from the real product. The manufacturer may use a different symbol showing the particular design of his specific product.</p>		-
	2) The loose end of the rope shall be tied to the ladder		-
6.3.8	Single or multi-hinge joint ladders	See marking label	N

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The single or multi-hinge joint ladder is designed to be used as a leaning ladder, the safety marking and user instructions shall comply with the requirements of 6.3.4.		N
	The single or multi-hinge joint ladder is designed to be used as a standing ladder, the safety marking and user instructions shall comply with 6.3.5.		N
	Shows in addition to the requirements of 6.3.3 and 6.3.4 and/or 6.3.5 and 6.3.7 where relevant, the minimum requirements for safety marking, user instructions and the mandatory symbols for single or multi-hinge joint ladders.		N
	NOTE See EN 131-4 for the definition of single or multi-hinge joint ladders.		-
	1) Single or multiple joint ladders should be unfolded/folded when lying on the ground and not in its use position.		-
	2) If the ladder is used as a platform, only deckings recommended by the ladder producer shall be used. The decking shall be secured before use		-
	3) Prohibited positions (see EN 131-4:2007, Clause 7): M-position, upside-down position (only if necessary due to design of ladder).		-
	4) Max. load of platform in scaffold position (see EN 131-4:2007, Clause 7) declared by the manufacturer (120 kg to 150 kg) (only if necessary due to design of ladder).		-
	5) Ensure that the hinges are locked.		-
The symbol shows a particular design which might differ from the real product. The manufacturer may use a different symbol showing the particular design of his specific product.			
6.3.9	Telescopic ladders	See marking label	P

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The telescopic ladder is designed to be used as a leaning ladder, the safety marking and user instructions shall comply with the requirements of 6.3.4.		P
	The telescopic ladder is designed to be used as a standing ladder, the safety marking and user instructions shall comply with 6.3.5.		P
	Shows in addition to the requirements of 6.3.3 and 6.3.4 and/or 6.3.5 where relevant, the minimum requirements for safety marking, user instructions and the mandatory symbols for telescopic ladders.		P
	NOTE See EN 131-6 for the definition of telescopic ladders.		-
	1) All locking mechanisms for all extended rungs/steps shall be checked and be locked before use.		-
	2) Instruction for handling of locking mechanisms including indication of locked or unlocked position.		-
	3) Do not bring your hands / fingers in rung area		-
	The symbol shows a particular design which might differ from the real product. The manufacturer may use a different symbol showing the particular design of his specific product.		-
	4) Do not stand on the last metre of a telescopic ladder.		-
6.3.10	Mobile ladders with platform	See marking label	N
	Shows in addition to the basic requirements (see 6.3.3) the additional requirements for safety marking, user instructions and the mandatory symbols for mobile ladders with platform.		N
	NOTE See EN 131-7 for the definition of mobile ladders with platform.		-

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
	1) Do not step off the side of the mobile platform ladder onto another surface.		-
	2) Fully open before use (foldable mobile platform ladders).		-
	3) Use the ladder with restraint devices engaged only (only if necessary due to design of ladder).		-
	4) Any horizontal surface which looks like a platform on a mobile platform ladder that is not designed for standing on shall be clearly indicated on that surface, (only if necessary due to design of ladder).		-
	5) Use only with stabilizer (if part of the ladder).		-
	The symbol shows a particular design which might differ from the real product. The manufacturer may use a different symbol showing the particular design of his specific product.		-
	6) Use only with ballast (if part of the ladder).		-
	Shows a particular design which might differ from the real product. The manufacturer may use a different symbol showing the particular design of his specific product.		-
	7) Use only with activated brakes (if part of the ladder).		-
	8) Do not use ladders outdoors which are not intended for this purpose.		-

EN 131-3			
Clause	Requirement – Test	Result - Remark	Verdict
7.	Repair, maintenance and storage		P
	Repairs and maintenance shall be carried out by a competent person and be in accordance with the producer's instructions.		P
	NOTE A competent person is someone who has the skills to carry out repairs or maintenance, e.g. by a training by the manufacturer.		P
	For repair and replacement of parts, e.g. feet, if necessary contact the producer or distributor.		P
	Ladders should be stored in accordance with the producer's instructions.		P
	Ladders made of or using thermoplastic, thermosetting plastic and reinforced plastic materials should be stored out of direct sunlight.		N
	Ladders made of wood should be stored in a dry place and shall not be coated with opaque and vapour-tight paints.		N

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
5.	Requirements		P
5.1	General requirements	See EN 131-1	P
	The drawings in this part of EN131 are examples only and products do not need to correspond. However, dimensions are binding.		P
5.2	Distance between rungs/steps		P
	When the ladder is in its position of use the rungs/steps allowed to stand on shall always be equally spaced in accordance with EN 131-1:2015, 4.1.		P
	In the position of use the construction shall not allow different distances between the rungs/steps with a tolerance of ± 2 mm in the ascendable part of the ladder and ensure that the rung/step sections that are not extended shall be stacked at the top of the ladder.		P
	Manufacturer shall take all necessary precautions to prevent these distances been altered without manipulation and the use of tools.		P
5.3	Additional requirements for the top of leaning ladders		P
	The top of the ladder shall be designed in a way that a 2-point area of contact between the top of the ladder and a vertical plane can be ensured.		P
5.4	Locking of the rung/step sections		P
	The ladder shall be designed in way that all extended rung/step sections are locked when the ladder is in the position of use.		P
	Every rung/step section shall have a locking mechanism for each stile. With the ladder in position of use it shall be clearly visible to the user that all of the locking mechanisms are locked or unlocked.		P
5.5	Design		P
	Screws and nuts shall be secured against loosening, for example by means of self- locking or mechanically locked safety mechanisms.		P
	It shall not be possible to separate rung/step sections without using tools.		P
	The unlocking and sliding in of the ladder shall be possible in a safe way. The ladder shall be designed in a way that squeezing between the rungs/steps is avoided when the ladder is used in accordance to the user instructions.		P

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
	Protection against squeezing can be ensured by a breaking function that reduces any impact load on the user's hands when the ladder is collapsed according to the manufacturer's instruction. If a permanent breaking function is used a typical time for collapsing a section of 300 mm is 1,5 s if the movement is uniform.		P
	If only a distance device is used for protection against squeezing between the rung/steps this device shall be located at least 80 mm from the manufacturers recommended position of the user's hands during collapse of the ladder.		P
5.6	Base width b_2	$b_2=465\text{mm}$	P

6.	Testing		P
6.1	General		P
	Telescopic ladders shall be tested to and comply with the requirements defined in EN 131-6. For all tests, unless otherwise stated in the particular test, the following tolerances apply:		-
	- ± 1 mm for longitudinal measurements;		P
	- ± 5 mm for the measurement of the distance between the supports and the overhanging length;		P
	- $\pm 1^\circ$ for the measurement of angles;		P
	- ± 1 % for static forces and torque.		P
	Tests shall be performed at a temperature between 15 °C and 25 °C.		P
	Where the ascendable side cannot be determined by the construction of the product, or where it is a multiple part combination ladder, the ladder shall be tested twice regarding 6.3 and 6.4. Conduct strength test and bending test on one side then rotate the ladder 180 ° about the longitudinal axis and repeat 6.3 and 6.4. The second test can be carried out on a new ladder.		N
	Inspect the ladder before testing to confirm condition and operation of all parts by fully extending the ladder.		P
6.2	Ladder preconditioning		P
6.2.1	General		-

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
	Ladders for testing shall be preconditioned according to 6.2.2.		P
	After preconditioning the following requirement shall be met:		-
	— no rupturing of parts shall be observed;		P
	— the release function and/or locking indicator shall work correctly;		P
	— the locking mechanism shall work correctly;		P
	— there shall be no relative movement between the connectors and the rungs/steps;		P
	— permanent deformation is only acceptable providing the ladder remains fully functional and it does not impair the fitness for use, or safety, of the ladder;		P
	— the complete ladder shall be fit for use;		P
	— the protection system against squeezing or entrapment shall be fully functional.		P
	The ladder shall pass all the test from test block A, see Annex A		P
6.2.2	Drop test		P
6.3	Strength test of stiles		P
	The test load F according to Table 1 shall then be moved and applied to the highest rung or tread where it's allowed to stand on according to manufacturer's instruction and at a point 50 mm from the inside of one stile and distributed over a 100 mm of the length of the rung or tread for a period of 1 min. Care should be taken to apply the load smoothly.		P
	Where the test ladder includes a base stabilizer bar then clearance under both stiles of the ladder of a minimum 10 mm shall be maintained throughout the test.		P
	On completion of the test remove the load and inspect the ladder.		P
	Requirements:		P
	— no rupturing of parts shall be observed;		P
	— the release function and/or locking indicator shall work correctly;		P
	— the locking mechanism shall work correctly;		P
	— there shall be no relative movement between the brackets and the rungs/steps;		P
	— permanent deformation is only acceptable providing the ladder remains fully functional and it does not impair the fitness for use, or safety, of the ladder.		P

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
6.4	Bending test of the stiles	Comply with the requirements of EN 131-2:2010+A2:2017, 5.3.	P
6.5	Lateral deflection test of the ladder	Comply with the requirements of EN 131-2:2010+A2:2017, 5.4.	P
6.6	Bottom stile ends test	Comply with the requirements of EN 131-2:2010+A2:2017, 5.5.	P
6.7	Vertical load on rungs, steps and platforms		P
6.7.1	General		-
	The ladder shall be erected in the position of use at the maximum angle allowed by the manufacturer's instructions. A pre-load F of 200 N shall be applied for the duration of one minute. The position of the rung/step/platform after removal of the pre-load is the origin for measurement. The ladders shall not be moved/replaced after this measurement.		P
6.7.2	Rungs and steps		P
	In the position of use of the ladder a test load F of 2 600 N (see Figure 4) shall be applied vertically on the mid-point of the weakest rung or step of any design evenly distributed over a width of 100 mm and a depth equal to the rung/step and for the duration of one min.		P
	The maximum permanent deformation after removal of the test-load shall be less than or equal to 0,5 % of the inner width of the longest rung/step of each type measured underneath the tested rung/step.		P
6.7.3	Platform	No such platform	N
	The platform shall be tested at two positions, in the centre and at a corner of the front edge (see Figure 5).		N
	With the ladder positioned as in use, a test load F of 2 600 N, uniformly distributed over an area of 100 mm × 100 mm shall be applied for the duration of one min.		N
	The maximum permanent deformation after removal of each test load shall be less than or equal to 0,5 % of the inner width of the tested platform measured from above the platform parallel to the rungs/steps at the point where the load has been applied. The requirement after the second test shall be that no permanent deformation greater than 0,5 % of the inner width of the tested platform is visible at the connection between platform and stile measured from the underside.		N
6.7.4	Rungs/steps strength test – unlocked position	No rupturing of parts observed	P

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
	Erect the ladder in its position of use at the maximum extension. Ladders shall be erected at 75 ° with the top resting against a smooth vertical surface and with the base of the ladder blocked to prevent it slipping.		P
	Standing ladders shall be erected according to the manufacturer's instructions.		P
	Rungs/steps that can be used in two directions, e.g. hinge joint ladders, shall be tested in both directions. Standing ladders shall be tested on both ascendable and non-ascendable sides. Ladders that can be used as standing or leaning ladders shall be tested in both configurations.		P
	A vertical test load F of 2 600 N shall be applied for the duration of 1 min on the upper most rung/step section allowed to be used according to the user manual as close as possible to the stile over a width of 100 mm while it shall be taken care that an applying by jerks is avoided (see Figure 6).		P
	Before applying the load, unlock the rung/step locking mechanism of this rung/step section on the same side where the load is applied.		P
	After the load has been removed the ladder shall be put in storage position. Extend the ladder again.		P
	Requirements:		-
	— no rupturing of parts shall be observed;		P
	— the release function and/or locking indicator shall work correctly;		P
	— the locking mechanism shall work correctly;		P
	— there shall be no relative movement between the brackets and the rungs/steps;		P
	— permanent deformation is only acceptable providing the ladder remains fully functional and it does not impair the fitness for use, or safety, of the ladder.		P
6.7.5	Torsion test of rungs/steps	Comply with the requirements of EN 131-2:2010+A2:2017, 5.7.	P
6.7.6	Pull out test of rung/step		P
6.8	Test of opening restraints and hinges of standing telescopic ladders		N
6.9	Base slip test for leaning ladders	Comply with the requirements of EN 131-2:2010+A2:2017, 5.18.	P
6.10	Test of locking mechanism		P

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
6.10.1	Cyclic test of locking mechanism	Apply a vertical load of 750 N on each stile for the duration of 3 s to 5 s, repeated 4 000 times, the rung/step locking mechanism work in a proper way during and after the test	P
6.10.2	Static test of locking mechanism		P
6.10.3	Cyclic test of hinge joints		N
6.11	Feet/End cap pull test	Comply with the requirements of EN 131-2:2010+A2:2017, 5.11.	P
6.12	Asymmetrical bending test	Comply with the requirements of EN 131-2:2010+A2:2017, 5.21.	P
6.13	Test methods for plastic ladders	Comply with the requirements of EN 131-2:2010+A2:2017, 5.16.	N
6.14	Test methods for plastic rung/step brackets	Be aluminium – alloy	N
6.15	Durability	Comply with the requirements of EN 131-2:2010+A2:2017, 5.17.	P
6.16	Opening and closing cycle test		P
	Speed not exceed 200 m/s, 4000 cycles	After test. No rupturing of parts, the release and locking work correctly, no relative movement between the connectors and the rungs/steps.	P

7.	Marking and user instructions		P
7.1	General		-
	User instructions in accordance with EN 131-3:2018 shall be provided.		P
	Marking and user instruction shall be durable. The durability shall be checked by inspection and by rubbing the marking/user instruction lightly:		-
	— first for 15 s with a cloth soaked in water;		P
	— then for 15 s with a cloth soaked in petroleum spirit, e.g. n-Hexan.		P
	There shall be no reduction of legibility at the conclusion of the test. Adhesive labels, where used, shall not have worked loose or become curled at the edges.		P

EN 131-6			
Clause	Requirement – Test	Result - Remark	Verdict
7.2	Marking		P
	Marking shall be compliant to EN 131-3:2018. In addition to EN 131-3:2018 also the following requirements apply:		-
	— the handling of the locking/unlocking function shall be explained on the ladder (by text or symbol). If a symbol is used it shall be explained in the user instruction;		P
	— it shall be explained to the user what the ascendable side of the ladder is by marking;		P
	— it shall be stated in the user instruction and marking on a ladder that for a telescopic ladder in the leaning ladder position the user shall not climb beyond the 4th fully accessible rung from the top or do not stand on the last meter.		P
7.3	User instruction		P
	It shall be stated in the user instruction:		-
	— that in the leaning ladder position the user shall not climb beyond the 4th fully accessible rung from the top;		P
	— that the ladder shall be inspected after delivery and before every use to confirm condition and operation of all parts.		P
	User instructions not covered by the above shall be in accordance with EN 131-3.		P
7.4	List of items to be inspected		P
	All checkpoints according to EN 131-3:2018, Annex A shall be mentioned when applicable. Furthermore the following checkpoints shall be added:		-
	— Check if the locking indicators are working and if they are visible		P
	— Check the brackets on cracks and other failures, such as:		P
	— no rupturing of parts shall be observed;		P
	— there shall be no relative movement between the brackets and the rungs/steps.		P
7.5	Storage		P
	All points according to EN 131-3:2018, Annex B shall be mentioned when applicable. The following points shall be added:		P
	— Storage shall be in closed and upright position.		P

Appendix 1

The whole views of 'ALUMINUM TELESCOPIC LADDER'

Model: AY-ZJ3032



Appendix 2

The product marking label view of 'ALUMINUM TELESCOPIC LADDER'

Model: AY-ZJ3032

Marking label

ALUMINUM TELESCOPIC LADDER	
Model No: AY-ZJ3032	
Standard: EN 131	
Max Load: 150Kg	
ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD.	
Manufacture date: July, 2023	

Warning marking



--- END OF REPORT ---