ZHEJIANG LEADER INDUSTRY & TRADE CO., LTD.
2TH, FLOOR, BUILDING 6, LONGTAI ROAD, LONGSHAN TOWN, YONGKANG CITY, JINHUA,
ZHEJIANG PROVINCE, CHINA.

Sample Description : TELESCOPIC LADDER

Style / Item No. : AY-ZJ1038

As above test item and its relevant information regarding to the submission are provided and confirmed by the applicant. SGS is not liable to either the test item or its relevant information, in terms of the accuracy, suitability, reliability or/and integrity accordingly.

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Sample Receiving Date : Dec 30, 2019

Sample Resubmission Date : Jan 14, 2020

Test Performing Date : Dec 30, 2019 to Jan 20, 2020

Test Performed : Selected test(s) as requested by applicant

Test Result(s) :

Test Requested	Result
EN 131-6:2019	Pass

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

GZHL1912055120LD

Arthur Mak
Authorized Signatory

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Test Conducted: Based on EN 131-6:2019 Ladders-Part 6: Telescopic ladders

1. **Scope**:

   This European Standard specifies the general design features, requirements and test methods and defines terms for leaning and standing telescopic ladders.

   Ladders with extension elements are not covered by this part of EN 131.

   This part of the standard is intended to be used in conjunction with EN 131-1,EN 131-2,EN131-3 and if applicable EN 131-4.

2. **Ladder Type**: Telescopic ladder
3. **Class:** Non-Professional
4. **Client claim maximum permissible load:** 150Kg
5. **Number of Tested Sample:** 2 pieces
6. **Test Results:** Details shown as following table

Table 1 Functional dimensions

Test Item	Test Method	Test Result
Leaning rung ladders	EN131-1:2015 +A1-2019 Clause 4.2	Pass
Standing rung ladders	EN131-1: 2015 +A1-2019 Clause 4.3	NA
Combination ladders	EN131-1: 2015 +A1-2019 Clause 4.4	NA
Leaning step ladders	EN131-1: 2015 +A1-2019 Clause 4.5	NA
Standing step ladders	EN131-1: 2015 +A1-2019 Clause 4.6	NA
L_3 dimensions	EN131-6: 2019 Clause 4.2	NA
L_6 dimensions	EN131-6: 2019 Clause 4.3	Pass

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Table 2: Requirements of EN 131-6:2019 Clause 5:

Test Item	Test Method	Test Principle & Requirements	Test Result
General requirements	EN131-6:2019 Clause 5.1	The drawings in this part of EN 131 are examples only and products do not need to correspond. However, dimensions are binding. For other requirements EN131-2:2010+A2:2017, Clause 4 apply.	Pass See annex 1
Distance between rungs/steps	EN131-6:2019 Clause 5.2	When the ladder is in its position the rungs/steps allowed to stand on shall always be equally spaced in accordance with EN131-1:2015,4.1. 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 on top of the ladder. Manufacturer shall take all necessary precautions to prevent these distances been altered without manipulation and the use of tools.	Pass
Additional requirements for the top of leaning ladders	EN131-6:2019 Clause 5.3	The top of the ladder has to be designed in a way that a 2-point area of contact between the top of the ladder and a vertical plane can be assured.	Pass
Locking of the rung/step sections	EN131-6:2019 Clause 5.4	The ladder shall be designed in way that all extended rung/step sections are locked when the ladder is in the position of use. 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.	Pass
Design	EN131-6:2019 Clause 5.5	Screws and nuts shall be secured against loosening, for example by means of self-locking or mechanically locked safety mechanisms. It shall not be possible to separate rung/step sections without using tools. 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. Protection against squeezing can be ensured by abr 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.	Pass
Base width b2	EN131-6:2019 Clause 5.6	The minimum permanently available base width b2 for leaning ladders with a length l1 of 3 000 mm or more shall be derived from: $b2 = b4 + 0,1 \times l1$ Where b4 is the outside width of the stiles at the bottom of the ladder excluding any rung/step brackets	Pass

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Table 3: Testings of EN 131-6:2019 Clause 6:

Test Item	Test Method	Test Principle & Requirements	Test Result
Testing			
Drop test	EN131-6:2019 Clause 6.2	Place the extended ladder in vertical position. Let the ladder fall in the direction of use from vertical to horizontal position by its own weight. Repeat the test with ladder rotated 180° about the longitudinal axis. Bring the ladder back to storage position.	Pass
Strength test of stiles	EN131-6:2019 Clause 6.3	The measurement shall be taken 1 min after removing the test load. The permanent deformation *f* of the ladder shall not exceed 0.1 % of the distance *l* between the supports.	Pass
Bending test of the stiles	EN131-6:2019 Clause 6.4	The stiles of the telescopic ladders shall be tested to and comply with the requirements of EN 131-2:2010＋A2:2017, 5.3.	Pass
Lateral deflection test of the ladder	EN131-6:2019 Clause 6.5	The stiles of the telescopic ladders shall be tested to and comply with the requirements of EN 131-2:2010+A2:2017,5.4.	Pass
Bottom stile ends test	EN131-6:2019 Clause 6.6	The bottom ends of the stile of the telescopic ladders shall be tested to and comply with the requirements of EN 131-2:2010+A2:2017,5.5.	NA
Vertical load on rung, steps and platforms			
Rungs and steps	EN131-6:2019 Clause 6.7.2	The maximum permanent 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.	Pass
Platform	EN131-6:2019 Clause 6.7.3	The maximum permanent after removal of the 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.	NA
Rungs/steps strength test – unlocked position	EN131-6:2019 Clause 6.7.4	After the load has been removed the ladder shall be put in storage position. Extend the ladder again. Requirements: — no rupturing of parts shall be observed; — the release function and/or locking indicator shall work correctly; — the locking mechanism shall work correctly; — there shall be no relative movement between the brackets and the rungs/steps; — 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.	Pass

Test Item	Test Method	Test Principle & Requirements	Test Result
Torsion test of rungs/steps	EN131-6:2019 Clause 6.7.5	The rungs/steps of the telescopic ladders shall be tested to and comply with the requirements of EN131-2:2010+A2:2017, 5.7.	Pass
Pull out test of rung/step	EN131-6:2019 Clause 6.7.6	After the test the telescopic ladder and the locking mechanism shall function in all sections normally and in accordance with the manufacturer's instructions.	Pass
Test of opening restraints and hinges of standing ladders	EN131-6:2019 Clause 6.8	The test according to EN 131-2:2010+A2:2017,5.8 is also applicable for telescopic ladders when the design is allowing the ladder to stand free.	NA
Base slip test for leaning ladders	EN131-6:2019 Clause 6.9	Telescopic ladder shall be tested to and comply with the requirements of EN 131-2:2010+A2:2017,5.18.	Pass
Test of locking mechanism			
Cyclic test of locking mechanism	EN131-6:2019 Clause 6.10.1	Requirements: — the rung/step locking mechanism shall work in a proper way during and after the test; — if there is visible damage on a rung after the cyclic test, test 6.7.2(rungs/steps — the protection system against squeezing shall work in a correct way; — if there is visible damage on a rung after the cyclic test, test 6.7.2 (rungs/steps strength test – locked position) shall be performed again on that rung. No lubricants shall be added before, or during, the test.	Pass
Static test of locking mechanism	EN131-6:2019 Clause 6.10.2	After removal of the test load, 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.	Pass
Cyclic test of hinge joints	EN131-6:2019 Clause 6.10.3	After the test the following requirements shall be fulfilled. -no rupturing of parts shall be observed. -the release function and /or locking indicator shall work correctly; -the locking mechanism shall work; -there shall be no relative movement between the brackets and the rungs/steps. Permanent deformation or wear is only acceptable providing the ladder remains fully functional and it does not impair the fitness for use, or safety, of the ladder.	NA

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Test Item	Test Method	Test Principle & Requirements	Test Result
Feet /End cap pull test	EN131-6:2019 Clause 6.11	The feet and upper end caps of telescopic ladders shall be tested to and comply with the requirements of EN 131-2:2010+A2:2017,5.11.	Pass
Asymmetrical bending test	EN131-6:2019 Clause 6.12	Telescopic ladders shall be tested to and comply with the requirements of EN 131-2:2010+A2:2017,5.21.	Pass
Test methods for plastic ladders	EN131-6:2019 Clause 6.13	Test methods for plastic ladders shall be tested in accordance with EN131-2:2010+A2:2017, 5.16.	NA
Test methods for plastic rung/step brackets	EN131-6:2019 Clause 6.14	If a rung/step bracket consists of plastic material EN131-2:2010+A2:2017, 5.16.2.2 is applicable. The acceptance criteria before and after the ageing test shall be ≤20% of the results obtained at the time of the shock test according to EN 131-2:2010+A2:2017,5.16.1.4.	NA
Durability	EN131-6:2019 Clause 6.15	Telescopic ladders that can be used as free standing ladders shall be tested to and comply with the requirements of EN 131-2:2010+A2:2017,5.17.	NA
Opening and closing cycle test	EN131-6:2019 Clause 6.16	After the 4000 cycles the following requirement shall be met: -No rupturing of parts shall be observed; - The release function and/or locking indicator shall work correctly; - The locking mechanism shall work correcty; - There shall be no relative movement between the connectors and the rungs/steps. - 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; — the complete ladder shall be fit for use; — the protection system against squeezing or entrapment shall be fully functional, according to 5,5; — the ladder shall fullfill all the test from block A, see Annex A.	Pass

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Table 4: Testings of EN 131-6:2019 Clause 7:

Test Item	Test Method	Test Principle & Requirements	Test Result
Marking and User Instruction			
General	EN131-6:2019 Clause 7.1	User instructions in accordance with EN 131-3:2018 shall be provided. 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; — then for 15 s with a cloth soaked in petroleum spirit, e.g. n-Hexan. 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.	Pass
Marking	EN131-6:2019 Clause 7.2	Marking shall be compliant to EN 131-3:2018.In addition to EN 131-3:2018 also the following requirements apply: - The handling 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; - It shall be explained to the user what the ascendable side of the ladder is by marking; 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.	Pass
User instruction	EN131-6:2019 Clause 7.3	**User instruction** 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. — that the ladder shall be inspected after delivery and before every use to confirm condition and operation of all parts; — that before using the ladder it shall be checked that all locking mechanisms are working properly. If the mechanism is not working properly, do not use the ladder; — where the user shall put the hands when bringing the ladder from extended to storage position. User instructions not covered by the above have to be in accordance with EN 131-3.	Pass
List of items to be inspected	EN131-6:2019 Clause 7.4	All checkpoints according to EN 131-3：2018，Annex A shall be mentioned when applicable. Futhermore the following checkpoints shall be added. -Check if the locking indicators are working and if they are visible. Check the brackets on cracks and other failures, such as: -no rupturing of parts shall be observed; -there shall be no relative movement between the brackets and the rungs/steps.	Pass
Storage	EN131-6:2019	All point according to EN 131-3：2018,Annex B shall be mentioned when applicable. The following points shall be	Pass

	Clause 7.5	added: -Storage shall be in closed and upright position.	

Remark: 1. NA = Not applicable.

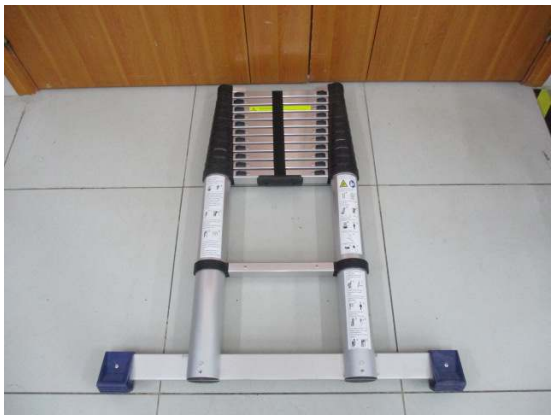
Annex 1 (SGS Ref. No.: GZIN2001001741ML)

Tensile Test:

Test Method: EN ISO 6892-1:2016

Test item	Specimen type	Elongation after fracture, A_{50mm} (%)
Result-Leg	Tubular Strip specimen	11.5
Result-Beam	Rectangular specimen	10.5

Sample Photo(s):



Sample as received

End of Report