TEST REPORT

Product.....:	Fiberglass multipurpose ladder
Model.....:	AY-FL403, AY-FL404, AY-FL405, AY-FL406
Trademark.....:	/
Prepared For.....:	ZHEJIANG LEADER INDUSTRY AND TRADE CO LTD 2TH FLOOR BUILDING 6, NO.8 LONGTAI ROAD, LONGSHAN TOWN YONGKANG JINHUA, ZHEJIANG PROVINCE,CHINA
Prepared By .....:	Shenzhen Boke Testing Co., Ltd. Floor 2, Complex Building, No. 438 Industrial Park, Donghuan Road, Xiner Community, Xinqiao Street, Bao'an District, Shenzhen, GuangDong, China Mail:admin@boke-lab.com Web: http://www.boke-lab.com Tel.:0755-27782934
Test Result.....:	Pass

TEST REPORT

EN 131-1:2015+A1:2019 Ladders--Part 1: Terms, types, functional sizes
EN 131-2:2010+A2:2017 Ladders--Part 2: Specification for requirements testing, marking
EN131-3:2018 Ladders-- Part 3: Marking and user instructions
EN 131-4:2020 Ladders-Part 4: Single or multiple hinge-joint ladders

Report Number.....:	BOKE-230501436S
Date of issue.....:	May 29, 2023
Total number of pages.....:	38 pages
Testing Laboratory.....:	**Shenzhen Boke Testing Co., Ltd.**
Address.....:	Floor 2, Complex Building, No. 438 Industrial Park, Donghuan Road, Xiner Community, Xinqiao Street, Bao'an District, Shenzhen, GuangDong, China
Applicant's name.....:	**ZHEJIANG LEADER INDUSTRY AND TRADE CO LTD**
Address.....:	2TH FLOOR BUILDING 6, NO.8 LONGTAI ROAD, LONGSHAN TOWN YONGKANG JINHUA, ZHEJIANG PROVINCE,CHINA
Test specification:	
Standard.....:	EN 131-1:2015+A1:2019 & EN 131-2:2010+A21:2017 EN 131-3:2018 & EN 131-4:2020
Test procedure.....:	Test report
Non-standard test method.....:	N/A
Test Report Form No.....:	EN 131F
Test Report Form(s) originator...:	BOKE
Master TRF.....:	Dated 2014-02
Test item description.....:	Fiberglass multipurpose ladder
Trademark.....:	Obastyle
Manufacturer.....:	Same as applicant
Model/Type reference.....:	AY-FL403, AY-FL404, AY-FL405, AY-FL406
Ratings.....:	Max Load:150 Kg

Name and address of the testing laboratory:

Shenzhen Boke Testing Co., Ltd.
Floor 2, Complex Building, No. 438 Industrial Park,
Donghuan Road, Xiner Community, Xinqiao Street,
Bao'an District, Shenzhen, GuangDong, China

Date of Test.....: May 18, 2023- May 28, 2023

Tested by (name + signature).....: Laney Xie

Reviewed by (name + signature)..... : Summer Yang

Approved by (name + signature)..... : Levi Lee

List of Attachments (including a total number of pages in each attachment):

Attachment I: --

Summary of testing:

The products covered by this report have been tested complying with the applicable requirements of this standard.

Tests performed (name of test and test clause):	**Testing location:**
EN 131-1:2015+A1:2019 & EN 131-2:2010+A21:2017 EN 131-3:2018 & EN 131-4:2020	**Shenzhen Boke Testing Co., Ltd.** Floor 2, Complex Building, No. 438 Industrial Park, Donghuan Road, Xiner Community, Xinqiao Street, Bao'an District, Shenzhen, GuangDong, China

Summary of compliance with National Differences:

List of countries addressed:

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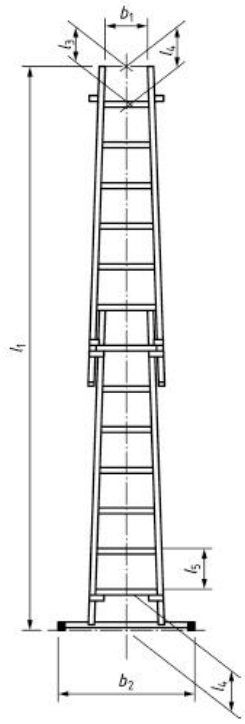
☒ **The product fulfils the requirements of EN 131-1:2015+A1:2019 & EN 131-2:2010+A21:2017 EN 131-3:2018 & EN 131-4:2020**

Possible test case verdicts: **- test case does not apply to the test object..... :** N/A **- test object does meet the requirement.....:** P (Pass) **- test object does not meet the requirement..... :** F (Fail)
Testing.....: **Date of receipt of test item.....:** May 18, 2023 **Date (s) of performance of tests.....:** May 18, 2023- May 28, 2023
General remarks:
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**
When differences exist; they shall be identified in the General product information section.
Name and address of factory (ies).....: Same as applicant
General product information: All models are same as AY-FL403 except model name, all tests are carried out on AY-FL403. All models are the same material and load capacity(max. 150kg)

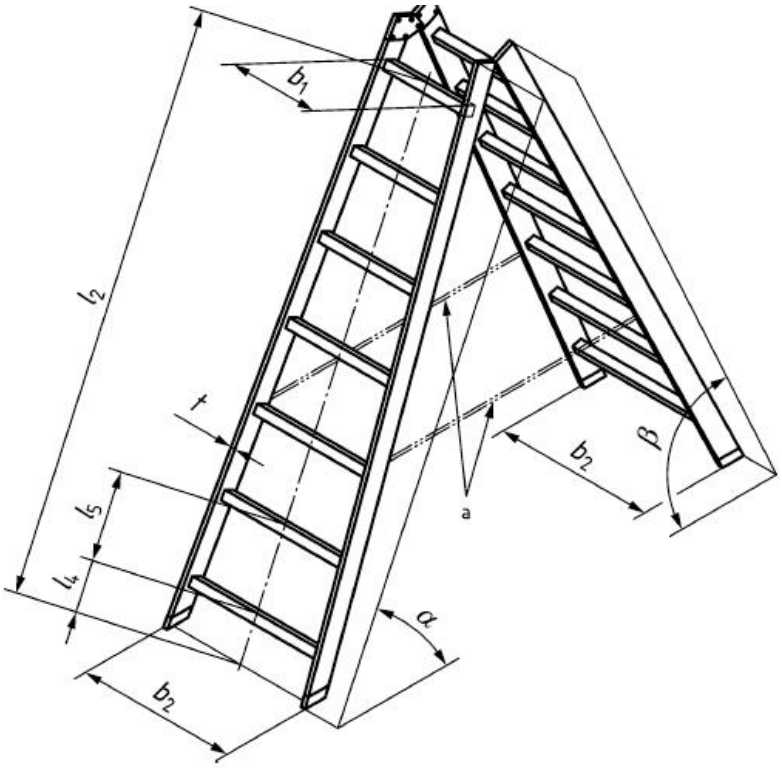
EN 131-1:2015+A1:2019

Clause	Test Description	Remark	Result
4 Function sizes			
4.2 Leaning rung ladders (mm)			

Required	b_1[a,e]	b_2[a] where $l_1 \leqslant 3000$	b_2[a] where $l_1 \geqslant 3000$	e[b]	l_3 and l_4	l_5	α
min	280	340	$b_1 + 0{,}1\ l_1 + 2\ t$[d]	—	$0.5 \cdot l_5$	250	65°
max	—	—[c]	—[c]	*45*	l_5+15	300	75°

a This dimension applies also to single parts of a ladder if they can be used separately e.g. as leaning ladder.
b The dimension e for extending ladders is relevant only when the upper section slides over the lower section.
c The dimension b2 for leaning ladders may be limited to maximum of 1200 mm at the discretion of the manufacturer.
d The thickness of the stile *t* is the outside dimension of the stile.
e The minimum usable distance between the inner sides of the stiles at any point shall be 280 mm.

Type	**Measured**						
AY-FL403	315	NA	605	22	198	285	70°

4 Function sizes						
4.3 Standing rung ladders (mm)						
Required	b_1[b]	b_2	l_4	l_5	α	β
min	280	$b_1 + 0{,}1\ l_2 + 2\ t$[a]	$0.5 \cdot l_5$	250	65°	65°
max	—	—	l_5+15	300	75°	75°
a The thickness of the stile *t* is the outside dimension of the stile. b The minimum usable distance between the inner sides of the stiles at any point shall be 280 mm.						
Type	**Measured**					
AY-FL403	315	605	198	285	70°	70°

Remarks: it is regulated in the user's manual that the inclination should between 65°～75°.

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
4	**Requirements**		Pass
4.1	**General** The requirements are based upon a maximum total load of 1 471N (150 kg). Ladders are determined to be used by one person at a time but this excludes any person footing (stabilising) the ladder.	Max. Capacity: 150 kg.	Pass
4.2	**Materials**		Pass
4.2.1	**Aluminium - alloy** All load bearing parts made of aluminium alloy shall have an elongation A_5 at rupture measured according to EN ISO 6892-1 of minimum 5%. All load bearing parts made of aluminium alloy shall have a thickness of at least 1.2 mm.	Alu. 6063-T5 used as load-bearing parts. A=7.8 > 5. Min thickness of all Al exceed 1.2 mm.	Pass
4.2.2	**Steel** If cold rolled steel or a special alloy-steel is used the ratio between 0.2% yield-stress and ultimate strength (R_p 0.2/Rm) shall be lower than 0.92. All load bearing parts made of steel shall have a thickness of at least 1.0 mm.	Q235 used as load-bearing parts, Rp 0.2/Rm of Q235=0.69<0.92 Min. Thickness of all steel exceed 1 mm.	Pass
4.2.3	**Plastics** Glass-fibre reinforced plastics shall be protected against penetration of water and dirt. The surface shall be smooth. The fibres shall be embedded. The Barcol hardness according to EN 59 shall be at least 35. The test methods and acceptance criteria for defining the characteristics of the composite and reinforced thermoplastic materials are given in 5.16. They apply to the load-bearing elements of the structure of ladders at time of use. Thermoplastic materials without reinforcements shall not be used for load bearing-elements. The minimum thickness for load-bearing elements made of thermoset plastics and composite material is 2 mm. When using plastics materials, ageing and temperature resistance shall be taken into account.		Pass
4.2.4	**Timber**	No timber	N/A
4.3	**Design** The design shall seek to minimize the existence of shearing and squeeze points and where they do exist to minimize the		Pass

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	shearing and squeezing effects as far as practicable. All connections should be durable and have a strength corresponding to the strain. The connections should be designed in a manner that arising notch tensions remain low. Screws and nuts shall be secured against loosening. Nails are allowed only if their function is related to the production process. Welding of joints is permitted if welding procedures and welding personnel are suitable. EN ISO 14731 and EN ISO 3834-1 to EN ISO 3834-4 have to be observed.		
4.4	**Surface finish** In order to avoid injuries, accessible edges, corners, and protruding parts shall be free of burrs, for example chamfered or rounded. Metal parts susceptible to corrosion shall be protected by means of a paint coating or other coating. Under normal conditions aluminium alloys are not susceptible to corrosion. Wooden parts shall be smoothed and coated on all sides. The coating shall be transparent and permeable to water vapour.	No sharp edges. Steel parts are galvanized. No wooden parts.	Pass
4.5	**Hinges (turning points)** Hinges shall connect the legs of the standing rung ladders and the standing step ladders durably. 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. The hinge pin shall be secured against unintentional loosening. Pins shall have at least the same strength as M 6 (5,3 mm) pins of steel 8.8. If the pin has several shearing points (piano hinge) there is no restriction as to the hinge pin diameter. The opening restraints shall satisfy the tests according to 5.8.		Pass
4.6	**Opening restraints** The legs of the standing ladders shall be prevented from opening beyond the normal use configuration by means of opening restraints. If chains are used, all chain links with the exception of the first and the last one shall be free to move. The opening restraints shall satisfy the tests according to 5.8.		Pass
4.7	**Rungs/steps/platforms** Rungs, steps and platforms made of metal or plastics shall have a textured surface on the working face to reduce slipping. The contact surface of the coverings shall adhere firmly to the rungs	Rung surface textured.	Pass

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	or steps. Rungs and steps shall be firmly and durably connected to the stiles. Wooden rungs shall be tenoned and mortised into the stiles and glued and wedged in the case of through tenon construction. The minimum dimensions of wooden rungs are specified in Figure 7. Round rungs shall have a diameter greater than or equal to 25 mm. The top surface of flat standing surfaces shall have an angle less than or equal to 25° to the horizontal. For leaning ladders the angle related to the stile shall be 65° to 90° for rungs and 60° to 70° for steps. Rungs/steps/platforms shall satisfy the tests according to 5.6 and 5.7.	Firmly and durably No wooden rung	
4.8	**Platform** If the topmost walking surface of a standing ladder is designed as a foldable platform, the latter shall be lifted up by a device when the ladder is folded. The platform shall satisfy the kick-up test according to 5.10.		N/A
4.9	**Ladder feet and anti-skid devices** Bottom ends of the ladder shall be slip resistant. NOTE: A test for the base slip resistance of leaning ladders is contained in 5.18.	Antiskid with plastic feet made of PVC.	Pass
4.10	**Extending and sectional ladders**		--
4.10.1	**Rung/step hooks/ locking devices** The ladder parts of push-up extension ladders shall be secured from unintentional closing and separation in the position of use. All sectional and extending ladders shall be fitted with a locking device to keep the ladders hooks engaged on the rung during use. It is the choice of the manufacturer whether the operation of the locking device is manual or automatic. The locking device shall be capable of supporting the weight of the lower parts of the ladder. Locking devices on rope-operated extending ladders shall reliably ensure a safe catch. The rung/step hooks of rope-operated extension ladders shall be designed in such a way that the upper ladder parts cannot fall down by more than one rung per ladder part if the rope loosens or breaks. This safety requirement shall apply both when the ladder is vertical and in the position of use.		N/A

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	During use of the ladder the rungs overlapping one another shall be in the same plane perpendicular to the stiles or in one horizontal plane or in any other plane between these.		
4.10.2	**Ropes** Ropes for extending ladders shall have a minimum strength of 4 000 N. Hand operated ropes shall have a minimum diameter of 8 mm. Synthetic ropes shall be stabilized against ultra violet light.	No ropes	N/A
5	**Testing**		--
5.1	**General** For all tests,unless otherwise stated in the particular test, the following tolerances apply: ± 1 mm for longitudinal measurements; ± 5 mm for measurement of the distance between the supports and the overhanging length; ± 1° for measurement of angles; ± 1 % for static forces and torque.	Information	Pass

<table>
<tr><th colspan="4">EN 131-2:2010+A2:2017</th></tr>
<tr><th>Clause</th><th>Test Description</th><th>Remark</th><th>Result</th></tr>
<tr><td>5.2</td><td>
Strength test for all ladders
In the case of an extending ladder, the test shall be carried out with the ladder fully extended.
In the case of a combination ladder , the test shall be carried out with the ladder fully extended in all of its usable configurations.
Where the ascendable side of the ladder cannot be determined by the construction of the product, it shall be tested twice. For the test on the second side a new ladder shall be used. Prior to carrying out the test on the second side of the new ladder, it shall be subjected to all of the preceding tests in the test sequence given in table A.1.
Ladders with separately extending stiles shall be tested with their stiles in the least favourable position.
Lateral or pole type stabilizers shall not be deployed in this test if the design permits the ladder to be used with the lateral or pole type stabilizers removed or temporarily adjusted as permitted by EN 131-1:2015, 4.2.1, General.
Erect the ladder in its position of use at the maximum extension.
Leaning ladders shall be erected at (65 ± 0,5)° (measured at vertical height of 1 m) with the top resting against a smooth vertical surface and with the base of the ladder restrained where it makes contact with the ground to prevent it slipping. The test load F in Figure 10 from Table 2 shall be applied to the rung or tread nearest the center of the ladder 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.
Where the test ladder includes a base stabilizer bar then clearance under both stiles of the ladder of a minimum 10 mm shall exist throughout the test, e.g. by putting distance pads under the feet. On completion of the test remove the load and inspect the ladder.
Requirements: 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.
Table 2 — Strength test for all ladders
<table>
<tr><th>Ladder class</th><th>Test load F(N)</th></tr>
<tr><td>Non-professional</td><td>2250</td></tr>
<tr><td>Professional</td><td>2700</td></tr>
</table>
</td><td>The functional was normal and no fracture and visible cracks after test.</td><td>Pass</td></tr>
</table>

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
5.3	**Bending test of the stiles** A pre-load of 100 N shall be applied for the duration of 1 minute. The position of the ladder after removal of the pre-load is the origin for the measurement. A test load *F* of 750 N shall be applied vertically on the center of the ladder for a duration of at least 1 min. Thereby the maximum permissible deflection f_{max} as a function of the distance *l* between the supports shall be: -- $f_{max} = 5 \times l^2 \times 10^{-6}$ for ladders of length less than or equal to 5m. -- $f_{max} = 0.043 \times l - 90$ mm for ladders of length more than 5m and less than or equal to 12m; -- $f_{max} = 0.06 \times l - 294$ mm for ladders of length more than 12 m. (*l* = the distance between the supports)		Pass
5.4	**Lateral deflection test of the ladder** A pre-load of 100 N shall be applied for a duration of 1 min. The position of the ladder after removal of the pre-load is the origin for measurement. A load *F* of 250 N shall be applied to the lower stile equidistant from the supports. The deflection is measured equidistant from the supports 1 min after loading. The max permissible deflection f_{max} as a function of the distance l between the supports shall be $f_{max} = 0.005 \times l$, in millimeters (*l* = the distance between the supports)		Pass
5.5	**Bottom stile ends test** A vertical force *F* of 1100 N is placed in the middle of the load block and is maintained for 1 min. The permanent deflection after removal of the test load together with any damages are noted. The test is repeated on the lower stile without turning the ladder. Requirement: the permanent deflection *f* in each test shall not exceed 2 mm. Neither fracture not visible cracks are allowed.		Pass
5.6	**Vertical load on rungs, steps and platforms**		--
5.6.1	**General** A pre-load *F* of 200 N shall be applied for the duration of one min. The position of the rung/step/platform after removal of the pre-load is the origin for measurement.	Informative	Pass

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
5.6.2	**Rungs and steps** In the position of use of the ladder a test load F of 2600 N 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 1 min. The max permanent deformation after removal of the test-load shall be less than or equal to 0.5% of the inner width b_1, measured underneath the tested step.		Pass
5.6.3	**Platform** The platform shall be tested at two positions, in the center and at a corner of the front edge. With the ladder positioned as in use, a test load *F* of 2600 N, uniformly distributed over an area of 100 mm × 100 mm shall be applied for the duration of one min. The max permanent deformation after removal of each test load shall be less than or equal to 0.5% of the inner width b_1, measured from above the platform parallel to the rungs or 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 b_1 is visible at the connection between platform and stile measured from the underside.	Not platform	N/A
5.7	**Torsion test or rungs and steps** A torque *M* of 50 Nm shall be applied on the midpoint of the rung or step via a 100 mm wide clamping device. The torque shall be applied alternately 10 times in clockwise and 10 times in counter-clockwise direction for a period of 10 s each. During testing there shall be no relative movement in the connection between stile and rung/step. After the test a permanent deformation shall be 1° at max with a tolerance of ± 0.2°.	The products share same step construction. △α=0.8°＜±1°	Pass
5.8	**Test of opening restraints and hinges of standing ladders**		--

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
5.8.1	**General** This test is for standing ladders or combination ladders used as standing ladders. For the purpose of this test, the working position for these ladders is two parts connected at the top and secured against sliding away from each other. Where a ladder is fitted with both automatic and manual restraint devices, only the automatic device shall be employed. The engagement of a ladders manual restraint device is only permitted where no automatic device is fitted. NOTE 1 In some countries the use of only manual restraint devices is not permitted. NOTE 2 A locking hinge is considered an automatic restraint device. Each leg of the ladder in the working position is placed on a platform provided with multi-directional rollers (see Figure 18). The effects of friction, from both the rollers and floor surface, shall be negligible. The test is to be conducted on a clean, smooth finish concrete floor. After removal of the test loads of the tests according to 5.8.2 to 5.8.4 no visible permanent deformation shall occur on the hinge joints, opening restraint devices and their attachments. The ladder shall not show any visible damages such as cracks, indentations, etc. Permanent deformation is acceptable only if it does not impair the fitness for use of the ladder.	According to 5.8.2, there are no visible permanent deformation occurred on the hinge joints,and the ladder did not show any visible damages.	Pass
5.8.2	**Bilaterally ascendable ladder** The test load *F* of 2 600 N is divided into two loads of 1 300 N, distributed over two plates each 100 mm long with a width at least equal to the surface of the rung or step to be applied to the uppermost rung or step as close as possible to the stiles for a duration of 1 min. This test is then repeated on the other leg.		Pass
5.8.3	**Standing ladder with platform** The test load *F* of 2 600 N is divided into two loads of 1 300 N, distributed over two plates that are each 100 mm × 100 mm to be applied to front edge of the platform as close as possible to the stiles for a duration of 1 min. This test is then repeated on the rear edge of the platform.	No platform	N/A
5.8.4	**Unilaterally ascendable ladder** The test load *F* of 2 600 N is divided into two loads of 1 300 N, distributed over two plates each 100 mm long with a width at least equal to the surface of the rung or step to be applied to the		N/A

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	uppermost rung or step of the ascending leg as close as possible to the stiles for a duration of 1 min.		
5.9	**Test for ladder rung/step hooks of extending ladders and combination ladders** The ladder is extended by at least one rung/step distance and placed in a vertical position. The length of the test piece will be left to the choice of the tester. A uniformly distributed test load *F* of 3 500 N shall be applied vertically to the upper part of the ladder for a period of 1 min. After removal of the test load, there shall be no permanent deformation which impairs the fitness for use of the ladder.		Pass
5.10	**Kick-up test of the platform of standing ladders** Place the standing ladder in the working position on a level surface and apply a force F of 100 N over a 100 mm width to the pivoted edge of the platform at an angle of 90° to the horizontal towards the vertical center line of the steps. The platform shall not lift from its stop by more than 6°.		Pass
5.11	**Feet pull test**		--
5.11.1	**For ladder feet made of one part** Fix the ladder. Attach a fixing to the center 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.	After test, the foot remain functional and show a separation from the stile of 1mm ≤ 4 mm	Pass
5.11.2	**For feet made of one part on stabilizer bars supplied by the ladder manufacturer** Prevent the ladder from moving by placing stops around one pair of feet. Apply the force to a free foot in the position and direction most likely to separate the foot from the stabilizer bar. A load of 150 N shall be applied for 1 min (see Figure 22). After the test, the foot shall remain functional and show a movement from its original position of less than or equal to 4 mm.	No pull not under load of 150 N.	Pass
5.11.3	**For ladder feet and feet of stabilizer bars made of more than one part** The relevant test in 5.11.1 or 5.11.2 shall be performed. Additionally, the section of the foot that generates resistance to movement relative to the ground shall have a load of 150 N applied for 1 min in a location and direction that is likely to be		N/A

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	the most critical, as determined by the tester (see Figure 23). After the test, there shall be no indication of separation between the different parts of the foot. If the sections of the ladder foot that provide the friction between the ladder and the ground are loosened or lost, this shall be clearly visible when the ladder is in the position of use. When these sections are worn through, this shall also be visible during the pre-use inspection of the ladder. The sections of the ladder foot that are designed to provide the friction between the ladder and the ground shall be the only part of the foot in contact with the ground under user or test load with in the position of use. This part of the ladder foot, even when worn, shall not be capable of being pushed inside the upper part of the foot when the ladder is in the position of use.		
5.12	**Test on hand-/kneerails**		--
5.12.1	**Standing ladder top hand-/kneerails** The standing ladder shall be fixed horizontally. A vertical load of 300 N is applied to the top centre of the hand-/kneerail (see Figure 24). The load shall be applied for 1 min over a length of 100 mm and a width at least equal to the hand-/kneerail material. After the test, the hand-/kneerail shall not show any visible permanent deformation, which does impair the fitness for use of the ladder.		N/A

<table>
<tr><th colspan="4">EN 131-2:2010+A2:2017</th></tr>
<tr><th>Clause</th><th>Test Description</th><th>Remark</th><th>Result</th></tr>
<tr><td>5.12.2</td><td>Side handrail
Set up the ladder at its maximum length (fully extended) and adjust it in accordance with the manufacturer's instructions, perpendicular to the pivot line of the top hinge. Place a stop to prevent movement of the foot of the stile to which the handrail being tested is attached. Apply a static load F of 400 N over a 100 mm pad to the centre of the rung or tread nearest the centre of the extended ladder (see Figure 25). Maintain this load in position for the duration of the tests. Apply each test force according to Table 2 sufficiently slowly to eliminate any dynamic effects. Apply each force 10 times and maintain it for 5 s each time. Apply outward forces A, B and C in two directions (perpendicular and parallel to the plane of the ladder) and downward force D parallel to the plane of the ladder. Apply the forces given in Table 2 at the positions shown in Figure 25 and apply the outward forces A, B and C also at any other point on the handrail which due to its design is likely to cause failure. Apply each force separately.
Upon completion of the tests there shall be no failure of handrail fixings. The permanent deformation at the points of application of load shall not exceed 15 mm. The distance between the stile and the handrail during the test shall not be less than 15 mm.
Table 2 test loads for handrail test
<table>
<tr><th>Direction</th><th>Force (N)</th></tr>
<tr><td>Outward force A</td><td>100</td></tr>
<tr><td>Outward force B</td><td>100</td></tr>
<tr><td>Outward force C</td><td>100</td></tr>
<tr><td>Outward force D</td><td>500</td></tr>
<tr><td>Static load F</td><td>400</td></tr>
</table></td><td></td><td>Pass</td></tr>
<tr><td>5.13</td><td>Maximum extension of ladder
Extend the ladder to the maximum possible length. The lower stile ends of the upper sections are not permitted to pass the second rung from top of the section underneath.</td><td></td><td>N/A</td></tr>
<tr><td>5.14</td><td>3-part combination ladder in A-position test
For a three part combination ladder in the “A” position with the top section fully extended in the working position, the free movement of the top section shall be less than or equal to 5° .</td><td></td><td>N/A</td></tr>
<tr><td>5.15</td><td>Torsion test for standing ladders
The test shall be carried out on all standing ladders and all</td><td>The front stile of the ladder that is not</td><td>Pass</td></tr>
</table>

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	combination ladders in standing ladder mode. The test shall be carried out with the standing ladder in the position of use on a flat, smooth and level floor. One stile of the front section shall be secured to locate the ladder. Mark the floor adjacent to the other stile to form a datum for measurement. A rigid steel load bar is secured to the front face of the ladder at the level of the topmost rung or step or in the case of a platform ladder, at the level of the platform. The load bar shall project sideways 0,5 m horizontally from the centre line of ladder and on the opposite side of the ladder to the clamp. A vertical load F_1 of 736 N uniformly distributed, is applied to topmost rung or step or the platform of the ladder. A horizontal load F_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. **Requirement:** The front stile of the ladders that is not clamped to the floor shall not move more than 25 mm from its datum position whilst the horizontal load is applied.	clamped to the floor, and move 20 mm.	
5.16	**Test methods for plastic ladders**		N/A
5.16.1	**Thermoset plastics and composite materials**		N/A
5.16.2	**Reinforced thermoplastics**		N/A
5.16.3	**Dielectric test**		N/A
5.17	**Durability test for standing ladders**		Pass
5.17.1	**General** This test is for standing ladders or any ladder that can be used as a standing ladder. The test has criteria of 10 000 cycles for non-professional class and 50 000 cycles for professional class and this test to be a conditioning test before the test of opening restraints and hinges of standing ladders.		Pass
5.17.2	**Principle** The standing ladder is placed in position of use on the testing surface with the 4 standing ladder stiles constrained to a fixed part by elastic rope/tape to prevent excessive progressive movement of the standing ladder. Two equal loads P1 and P2 are applied to the standing ladder by testing apparatus following a welldefined load versus time law of cycles: one load is applied to the topmost rung/step/platform and the other one is applied to the rung/step		Pass

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	in the middle of the ascending leg. The load application shall continue until the defined load value is no longer maintained by the thrust device or until to the collapse of standing ladder or until the defined number of cycles for each class has been achieved. The maximum number of cycles is registered.		
5.17.3	**Apparatus**		Pass
5.17.3.1	**Example of apparatus that could be used to apply the load**		Pass
5.17.3.2	**Thrust surface/pad** The two loads shall be applied to the rung/step/platform by a cylindrical rubber pad as thrust surface. Pad dimension shall be the following: 60 mm of diameter and a height of 25 mm. Pad shore hardness shall be in the following range: (60 ± 5) SHA.		Pass
5.17.3.3	**Rigid structure to secure the cylinders and pads position** The structure shall be so rigid in such manner to be capable to support the two cylinders so that during the test their central vertical axes are indeed vertical and so that it does not move. The structure shall permit to adjust the two cylinders position in x, y and z direction (see Figure 31) in order to meet the pads position respect to the stile both to the rung/step and platform as shown in Figures 32 and 33.		Pass
5.17.3.4	**Testing surface** Stainless steel plate such as number 1.4301, type 2B (cold rolled ground) conforming to EN 10088-2:2014 shall be used as testing surface. The plates shall be cleaned before testing. For cleaning use pure industrial grade ethanol, and a low particulate, dry hygiene wipe suitable for use in an ISO class 5 clean room according to EN ISO 14644-1. After cleaning remove any remaining ethanol with another clean-room dry hygiene wipe. Prior to carrying out the test, the feet of the ladder shall be cleaned with a dry hygiene wipe suitable for use in an ISO class 5 clean room according to EN ISO 14644-1. The supporting surfaces shall be left to dry for 20 min before positioning the ladder.		Pass
5.17.3.5	**Elastic ropes/tapes** The four elastic ropes/tapes shall be installed in order to maintain the ladder position during the test in an average position respect to the initial position. The characteristics of the		Pass

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	ropes/tapes shall not produce measurable changes in the constraint of simple support between the base of the uprights and the test surface.		
5.17.4	**Test condition - Ambient condition** The ambient temperature shall be (20 ± 5) ° C before testing and remain within this temperature range during the test.		Pass
5.17.5	**Test requirements** The load shall be applied to achieve the pattern of loading as shown in Figure 34.		Pass
5.17.6	**Test procedure**		Pass
5.18	**Base slip test for leaning ladders**		--
5.18.1	**Ladders to be tested** All leaning ladders or ladders that may be used as a leaning ladder shall be tested in accordance with Table 5. Where the ascendable side cannot be determined, the test shall be repeated. For the second test the ladder shall be rotated 180° about its longitudinal axis. Optionally, a second ladder may be used. Where ladders have stabilizing devices they should be deployed in this test the way the manufacturer designed. In the case of combination ladders that may be used as a leaning ladder, they shall be tested as a leaning ladder. The feet of the ladder shall be new. The surface supporting the base of the ladder shall be a sheet of float glass conforming to the requirements of EN 572-2. The glass shall be of a suitable thickness to support the weight of the ladder. The surface supporting the upper end of the ladder shall be firm and smooth stainless steel, smooth glass or smooth high pressure laminate.		Pass
5.18.2	**Pre-test procedures** Prior to carrying out the test, the float glass surface supporting the base of the ladder and the surface supporting the upper end of the ladder shall both be cleaned using pure industrial grade ethanol, and a clean-room dry hygiene wipe. After cleaning remove any remaining ethanol with another clean-room dry hygiene wipe. Prior to carrying out the test, the feet of the ladder shall be cleaned with a low particulate, dry hygiene wipe suitable for use in an ISO class 5 clean room according to EN ISO 14644-1.		Pass

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	The supporting surfaces shall be left to dry for 20 min before positioning the ladder.		
5.18.3	**Test procedure** A vertical downwards test load of 1 471 N shall be applied to the midpoint of the fourth rung down from the top of the ladder. The feet of the ladder shall be allowed to settle for a period of 2 min. The restraint preventing outward movement of the base of the ladder shall then be removed. After a period of 1 min the restraint preventing outward movement of the ladder shall be replaced.		Pass
5.18.4	**Test requirement** The ladder feet shall not move outwards more than 40 mm with respect to the origin for measurement.		Pass
5.19	**Strength test for lateral type stabilizers on leaning ladders which are in the plane of the ladder**		--
5.19.1	**Test procedure** Position the ladder against a supporting vertical surface as shown in Figure 37, at an angle α of (75 ± 0,5)°. The supporting surface at the base of the ladder shall be smooth and level. Fix or block the ladder at the bottom end of the stiles to prevent outward movement during the test. Apply a vertical test load F of 1 471 N, through a point on a loading device (see Figure 36) which is attached to the rung/tread, 100 mm outside of the stile of the ladder and level with the first rung of the ladder above the uppermost connection point between the ladder and the stabilizer for a duration of 1 min. Remove the test load.		N/A
5.19.2	**Test requirement** After removal of the test load the ladder, stabilizers and their connections shall remain functional with no fracture or visible cracks.		N/A
5.20	**Strength test for pole type stabilizers on leaning ladders which are not in the plane of the ladder**		N/A
5.20.1	**Test procedure** Position the ladder in a tripod configuration on a smooth and level supporting surface at an angle α of (75 ± 0,5)° with its upper end unsupported as shown in Figure 38.		N/A

EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	Extending ladders shall be set in the closed position. Fix or block the ladder and the poles at the bottom end to prevent movement during the test. Apply a vertical downwards test load *F* of 1471 N to a rigid block 100 mm wide, positioned centrally on the first rung of the ladder below the uppermost connection point between the ladder and the stabilizer for a duration of 1 min. Remove the test load.		
5.20.2	**Test requirement** After removal of the test load the ladder, stabilizers and their connections shall remain functional with no fracture or visible cracks.		N/A
5.21	**Torsion test for leaning ladders**		--

<table>
<tr><th colspan="4">EN 131-2:2010+A2:2017</th></tr>
<tr><th>Clause</th><th>Test Description</th><th>Remark</th><th>Result</th></tr>
<tr><td>5.21.1</td><td>Test Procedure
The test shall be carried out on the complete ladder. In the case of extending ladders and combination ladders the test shall be carried out on the complete extended ladder.
Sectional ladders shall be tested at full length with all permitted pieces.
Where the ascendable side of the ladder cannot be determined by construction of the product it shall be tested twice. For the test on the second side a new ladder shall be used. Prior to carrying out the test on the second side of the new ladder, it shall be subjected to all of the preceding tests in the test sequence given in Table A.1.
The ladder shall be placed horizontally with the climbing face uppermost on supports situated 200 mm from each end of the ladder. The supports shall be cylindrical with diameters between 25 mm and 100 mm and one shall be free to rotate about its longitudinal axis and the other shall be fixed (see Figure 39).
Measure the clear span between the supports. This is regarded as the test span for the purpose of this test.
Apply a preload as given in Table 6, vertically, at the middle of the ladder, distributed over 50 mm for a duration of 30 s, so that the stiles are loaded equally. Remove this load and establish a datum. Then apply a test load as given in Table 6, to the centre point of one stile distributed over 50 mm.
After a period of not less than 30 s from the application of the full test load, by any convenient means, measure the vertical deflection at the centre of the effective span of both stiles from the established datum.
Loads for Torsion test
<table><tr><th>Preload</th><th>Test load type</th></tr><tr><td>491 N</td><td>638 N</td></tr></table></td><td></td><td>N/A</td></tr>
<tr><td>5.21.2</td><td>Test Requirement
When tested in accordance with 5.21.1, the difference between the deflections of the two stiles shall meet the following equation:
$f_1 - f_2 \leqslant 0{,}07b_u$
Where
f_1 is the vertical displacement of the centre of the stile which was loaded;</td><td></td><td>N/A</td></tr>
</table>

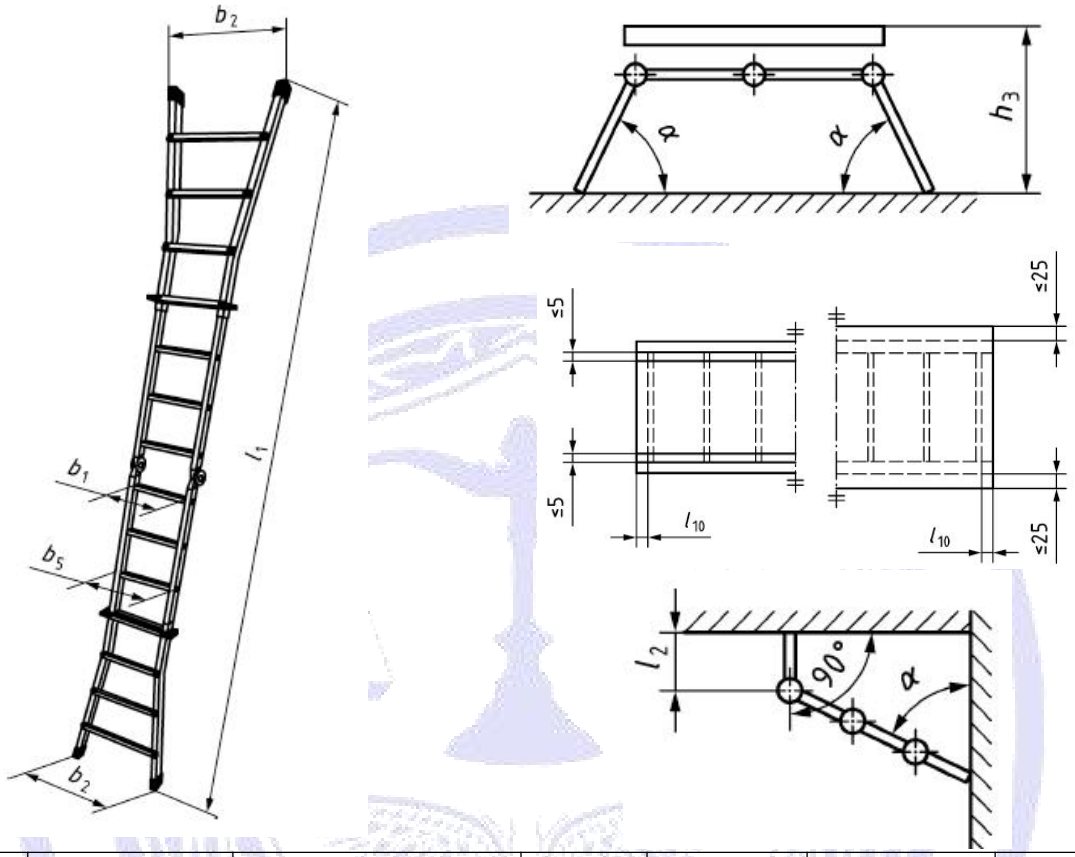
EN 131-2:2010+A2:2017			
Clause	**Test Description**	**Remark**	**Result**
	f_2 is the vertical displacement of the centre of the stile which was not loaded; b_u is the external width of the ladder section at the location of the applied load;		
6	**Marking and user instructions** Ladders should be marked with the relevant parts of EN 131 to which they fully comply and the year of revision(s). The marking shall be in accordance with EN 131-3. Marking shall be durable. The durability of the marking shall be checked by inspection and by rubbing the marking lightly, first for 15 s with a cloth soaked in water and then for 15 s with a cloth soaked in petroleum spirit. There shall be no reduction in legibility at the conclusion of the test. Adhesive labels, where used, shall not have worked loose or become curled at the edges. User instructions in accordance with EN 131-3 shall be provided.	See EN 131-3:2018 And see appendix 2	Pass

EN 131-3:2018			
Clause	**Test Description**	**Remark**	**Result**
4	**Provision of Safety marking and user instructions** The producer shall be responsible for the content of the safety marking and user instructions and the provision of the instructions with each ladder. The safety marking and user instructions shall be in the language of the country where the ladder is originally placed on the market. The user instruction shall indicate that it shall be read before using the ladder. The distributor should ensure that the safety marking and user instructions are provided with each ladder and that the user instruction are provided in the official languages of the country where the ladder is placed on the market. The following list of text within supplementary safety information symbols need not be translated: a) Max.; b) Min.; c) H_2O; d) Oil; e) Up; f) Stop.		Pass
5	**Reasons for accidents** The following list of hazards and examples of their causes, which is not exhaustive, are common reasons for accidents encountered when using ladders and are the basis on which the information in this standard has been developed: a) loss of stability; b) From handing; c) Slip, trip and fall of user; d) Structural failure of ladder; e) Electrical hazards.		Pass
6	**Marking**		--
6.1	**General** All marking detailed under Clause 6 shall be fixed permanently, according to EN 131-2, to the ladder surface. In 6.3, the minimum requirements for marking and user instructions are specified. The user instruction shall list the items to be inspected and checked. The minimum list of items is shown in Annex A. Details of how to obtain the pass/fail criteria shall be in the		Pass

EN 131-3:2018			
Clause	**Test Description**	**Remark**	**Result**
	user instructions or marked on the ladder. The user instruction shall supplied with the ladder and should be made available on the producer's website also. The user instruction shall include identity and address of the producer and/or distributor including website address. User instructions shall repeat all safety marking which are on the ladder. 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.		
6.2	**Basic marking on the ladder** Basic marking information may be given in the form of safety signs or text. The marking shall include: a) Identity and address of the producer and/or distributor including website address for information about the ladder; b) Type of ladder and possible modes of use; c) Classification of use" professional" or " non-professional" as specified in EN 131-2; d) Number of the general standard EN 131 of if a dedicated standard exists the number of this standard; e) Month and year of production and/or serial number; f) Weight of the ladder and maximal total load; 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.		Pass
6.3	**Safety marking and user instructions**		Pass
6.3.1	**General** the basic safety marking shall be attacked to all ladders and ladder parts which can be used separately as an easily viewed symbol. The marking to indicate the top most rung/step that shall be used for standing on, shall be placed: - 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. 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.		Pass

EN 131-3:2018			
Clause	**Test Description**	**Remark**	**Result**
6.3.2.1	**Basic safety signs** 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.		Pass
6.3.2.2	**Supplementary safety information symbols** The supplementary safety information symbols are meant to instruct the user of a ladder about what is necessary and what is not allowed for a safe use of a ladder in order to avoid accidents e.g. by falling from the ladder. “Necessary” is indicated by a green tick and “ Not allowed” is indicated by a red X. Compared to the basic safety signs according to 6.3.2.1 supplementary safety information symbols may include numbers, letters and more detailed symbols. The minimum height *h* of supplementary safety information symbols is 15 mm.		Pass
6.3.3	**Basic safety marking and user instructions for all ladders** Table 1 shows the minimum requirements for safety marking, user instructions and the mandatory symbols for all ladders..		Pass
6.3.4	**Leaning ladders** Table 2 shows in addition to the basic requirements the minimum requirements for safety marking, user instructions and the mandatory symbols for leaning ladders.		Pass
6.3.5	**Standing ladders** Table 3 shows in addition to the basic requirements the minimum requirements for safety marking, user instructions and the mandatory symbols for standing ladders.		Pass
6.3.6	**Combination ladders** Where a 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. Where a combination ladder is designed to be used as a standing ladder, the safety marking and user instructions shall comply with the requirements of 6.3.5. Table 4 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/A
6.3.7	**Extending ladders**		N/A

EN 131-3:2018			
Clause	**Test Description**	**Remark**	**Result**
	Table 5 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.		
6.3.8	**Single or multi-hinge joint ladders** Where a 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. Where a 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. Table 6 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.		Pass
6.3.9	**Telescopic ladders** Where a 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. Where a telescopic ladder is designed to be used as a standing ladder, the safety marking and user instructions shall comply with 6.3.5. Table 7 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.		N/A
7	**Repair, maintenance and storage** Repair and maintenance shall be carried out by a competent person and be in accordance with the producer's instructions. For repair and replacement of parts, e.g. feet, if necessary contact the producer or distributor. Ladder should be stroed in accordance with the producer's instructions. Ladders made of or using thermoplastic, thermosetting plastic and reinforced plastic materials should be stored out of direct sunlight. Ladders made of wood should be stored in a dry place and shall not be coated with opaque and vapour-tight paints.		Pass

EN 131-4:2020			
Clause	**Test Description**	**Remark**	**Result**
4	**Function sizes**		
4.3 4.4 4.5			

Required	b_1	b_2	h_3	l_{10}	l_2	α
min	280	b_5 + 0,05 l_1	—	—	—	65°
max	—	—	1000	50	1200	75°
a The dimension b2 for leaning ladders may be limited to maximum of 1200 mm at the discretion of the manufacturer.						
Type	**Measured**					
AY-FL403	315	605	**980**	30	1160	70°

EN 131-4:2020			
Clause	**Test Description**	**Remark**	**Result**
5	**Requirements**		--
5.1	**General** The requirements are based upon a max total load of 150kg Hinge-joint ladders are determined to be used by one person at a time.	All products share the maximum load allowed:150 kg.	Pass
5.2	**Decking component** If supplied, the decking component shall be secured against unintentional movement and shall have an anti-skid working surface. It shall be designed so as to be unable to slip and tilt on the ladder.	fixed to the platform frame and with anti-skid surface	Pass
5.3	**Ladder hinged in the longitudinal direction** The ladder shall have at least one fixed lockable position for utilisation. Note the storage position is not required too be lockable		Pass
6	**Test methods**		--
6.1	**General** General provisions, see EN 131-2 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. After the test fold the ladder completely to its storage/transportation position and open it again completely. During this movement the locking system shall function without any interference. After the test the hinges/locking systems shall remain functional in all positions.		Pass
6.2	**Test method for ladders hinged in the longitudinal direction**		--
6.2.1	**Principle** Ladders conforming to Clause 3 shall comply with all tests mentioned in Annex A.		Pass
6.2.2	**Strength test for ladders with more than one pair of hinges in longitudinal direction** The test shall be carried out on the complete ladder. The test shall be carried out on the maximum extended ladder according to the manufacturers' instruction. Where the ascendable side cannot be determined by the construction of the product the ladder shall be tested twice.		Pass

EN 131-4:2020			
Clause	**Test Description**	**Remark**	**Result**
	For the second test the ladder shall be rotated 180° about the longitudinal axis. Erect the ladder in its position of use at the maximum extension. Leaning ladders shall be erected at (65 ± 0,5)° (measured at vertical height of 1 m) with the top resting against a smooth vertical surface and with the base of the ladder restrained where it makes contact with the ground to prevent it slipping. The test load F in Figure 14 from Table 4 shall be applied to the rung or tread nearest the centre of the ladder 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. Where the test ladder includes a base stabilizer bar then clearance under both stiles of the ladder of a minimum 10 mm shall exist throughout the test, e.g. by putting distance pads under the feet. On completion of the test remove the load and inspect the ladder. For ladders with a different design of hinge in the middle of the ladder and on the top of the ladder, the following will also apply:		
	Strength test on the top hinge outside Erect the ladder in its position of use at the maximum extension. Leaning ladders shall be erected at (65 ± 0,5)° with the top resting against a smooth vertical surface and with the base of the ladder restrained where it makes contact with the ground to prevent it slipping. The test load F in Figure 15 from Table 4 shall be applied to the rung or tread nearest to the top hinge of the ladder 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. For the second test the ladder shall be rotated 180° about the longitudinal axis.		Pass
	Requirements: Ladders tested according to the strength test for ladders with more than one pair of hinges in the longitude direction shall fulfill: — the locking mechanism shall work correctly; — the ladder shall remain upright and not break; — permanent deformation is only acceptable providing the		Pass

EN 131-4:2020			
Clause	**Test Description**	**Remark**	**Result**
	ladder remains fully functional and it does not impair the fitness for use, or safety, of the ladder.		
6.2.3	**Cyclic test of hinge joint** These tests are conducted on hinge joint with an automatic locking device. To test their operation, hinge joints shall withstand the cyclic tests. A pair of hinge joints comprising the max number of positions shall be subjected to a series of 4000 cycles from the closed position to the fully open position. The hinge joint shall be locked and unlocked in each of its positions during the course of each cycle at the normal utilisation speed. No oil shall be added to the hing joints during the tests. **Requirement:** Automatic locking function shall operate with no manual intervention for a duration of 4000 cycles.	All products share same hinge joint construction, no damage after 4000 cycles.	Pass
6.2.4	**Test of the ladder in the platform position**		---
6.2.4.1	**General** The tests shall be conducted on the complete assembly of decking components with the ladder in the platform position		Pass
6.2.4.2	**Strength test of the decking component** Carry out the test with a load placed in the most unfavourble position at the center of each decking component. The test force of 1000 N is distributed over a 200mm × 200mm rigid steel plate. The weight of the steel plate is included in the test force. Deformation under load shall be less than or equal to 1% of the decking component length. Residual deformation shall be less than or equal to 0.1% of the decking component length.		Pass
6.2.4.3	**Safety test of the ladder** Carry out a test with a load placed at the center of the decking component. The load is distributed over a 200mm × 200mm × rigid steel plate and is equivalent to 1.5 times the max. Load. Deformation under load shall be less than or equal to 2% of the assembly of decking components length. A test with a load equal to 2 times the max total load is then conducted. The product shall remain functional after this test. The max load shall be stated by the manufacturer and shall not be less than 120 kg for non-professional use / 150 kg for		Pass

EN 131-4:2020			
Clause	**Test Description**	**Remark**	**Result**
	professional use.		
6.2.4.4	**Stability test of the ladder** Apply a load of 750 N distributed over a 200 × 200mm rigid steel plate located on the side of the decking component. The edge of the plate is aligned with the edge of the decking component. The plate shall be centered in the longitudinal direction of the decking component. A horizontal force *F* of 300 N shall be applied to the decking component in the most unfavourable direction. **Requirement:** The ladder shall not topple.		Pass
6.2.4.5	**Test of decking component sliding** A horizontal force of 300 N shall be attached alternatively to the middle of each side of the decking component. Movement of the decking component shall not exceed 5mm in the lateral direction. The decking component may move slightly bu the stop positions shall conform to the limits of l10 in the lengthwise direction and the overhang in the lateral direction shall not be more than 25mm on each side in accordance with 4.3.		Pass
6.3	**Test method for ladders hinged in the lateral direction**		--
6.3.1	**Principle** Ladders conforming to 3.2shall comply with the testing requirements of EN 131-2. For these tests, the ladder shall be in the working position. A cyclic test of the hinge joints shall be conducted. A test of the capacity to go from storage positions to working position shall then be carried out.		N/A
6.3.2	**Cyclic test of hinge joints** The complete ladder shall be subjected to a series of folding and unfolding operations allowing the resistance of the hinge joints to be tested. A series of 4000 cycles from working positions to storage position shall be carried out at the normal utilisation speed. No oil shall be added during the tests. **Requirement:** no rupturing of parts shall be observed. If the ladder is equipped with an automatic locking system, it shall be locked and unlocked in each of its extreme positions during the course of each cycle. In this case, the automatic		N/A

EN 131-4:2020			
Clause	**Test Description**	**Remark**	**Result**
	locking function shall operate at the end of the test .		
6.3.3	**Capacity to pass from storage position to working position** Place the ladder in the working position, then reverse the direction of ladder use: the upper end on the ground, resting on a hard horizontal surface. Apply a max load of 100 N over a length of 100 mm of the rung nearest to the ground. The load applied shall not maintain the ladder in the working position, so as to prevent its use in the inverted position. Where there is no unlocking on this type of ladder, it shall comply with the test requirement for vertical load on rungs and steps according to EN 131-2 in the inverted position.		N/A
7	**Marking** Ladders shall meet the marking requirements of EN 131-2 with the following additional text: Prohibited positions shall be shown with a visually attached pictogram or text. Marking shall indicate the posible level adjust position(s). Maximum platform weight to be specified.	see appendix 2	Pass
8	**User instructions** User instructions in accordance with EN 131-3 shall be provided.	See EN 131-3	Pass

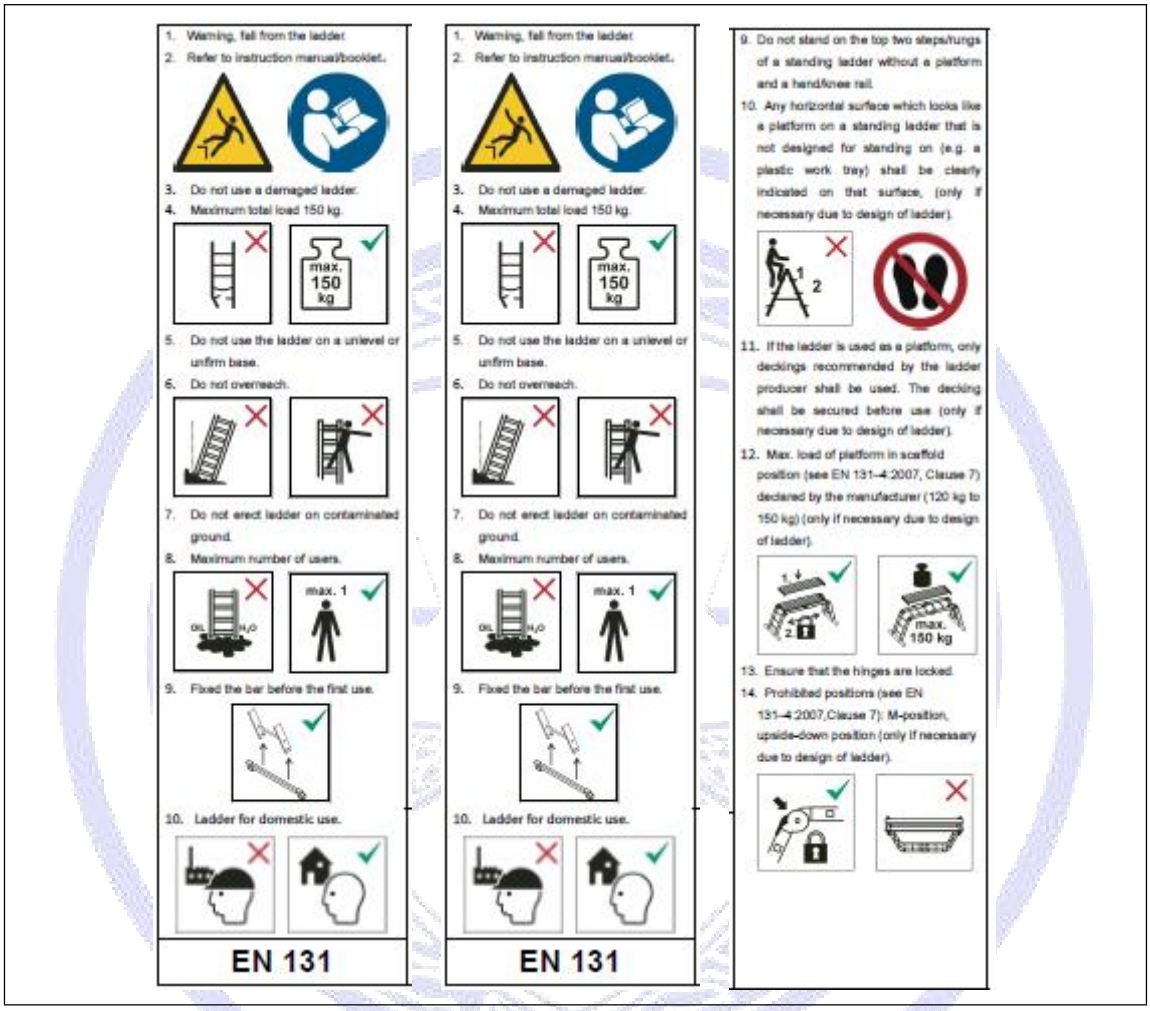
Appendix 1

Product photo

Appendix 2

The Label views of Multi-Purpose Ladder

Model: AY-FL403



--- End of report---