

STEP UP TO SAFE LADDERS

Telescopic Ladder Surveillance Survey

A market surveillance study from the Ladder Association, in partnership with East of England Trading Standards Association and Suffolk Trading Standards Imports Team, to investigate the safety of telescopic ladders being sold on the UK market.



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01 INTRODUCTION

The Ladder Association is committed to helping make sure that all ladders sold, whether online or in store, are safe to use.

Ongoing research and independent safety testing has highlighted a real and serious issue with the availability and use of substandard ladders on the UK market.

Recent tests carried out by the UK-based test laboratory and certification body, Test & Research Centre, highlighted a significant proportion of ladders that were tested did not conform to product standard EN 131-6 (known in the UK as BS EN 131 Part 6:2019).

These ladders did not meet the minimum safety requirements designed to keep users safe. Worse still, some manufacturers of these unsafe products consciously misled consumers by claiming they did meet the product standard.

The Ladder Association believes that all telescopic ladders in the UK are imported. Importers have a legal responsibility to only place safe products on the market for consumers to use.

Some importers *do* take their responsibility seriously, as products have been found which do conform. However, there were a significant number which did not. In those instances, the importer is misleading consumers and ignoring their legal requirements by showing a complete disregard for product and consumer safety.

Recent research by the Office for Product Safety and Standards (OPSS) into consumer attitudes to product safety found:



only 17% of consumers consider safety when purchasing a product

This reflects the trust which consumers place in manufacturers and suppliers. Conscientious suppliers only supply safe products and consumers trust them to do so.

Unfortunately, this is not always the case, leaving unsuspecting consumers buying and using ladders that are unsafe, non-compliant, and in worst cases, deadly.

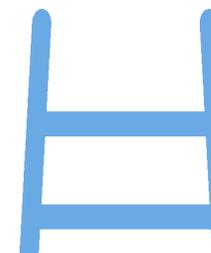
The Ladder Association, in partnership with the East of England Trading Standards Association (EETSA), Suffolk Trading Standards Imports Team and the Test & Research Centre, therefore embarked on a ladder surveillance survey. The survey aim was to investigate the conformity of ladders with EN 131 (starting with telescopic ladders) in the general public supply chain, and address ongoing concerns with the availability and use of substandard ladders on the UK market.

This report only relates to portable ladders that fall within the scope of product standard EN 131-6.

The outcome of the investigation uncovered some very concerning results:



82% of the ladders tested failed the required safety tests, were non-compliant and, in the majority of cases, were unsafe to use



02 ABOUT THE LADDER ASSOCIATION

Founded in 1947, the Ladder Association is the not-for-profit lead industry body dedicated to promoting the safe use of portable ladders.

Members include manufacturers, rental companies, training providers and ladder users. Separately, these businesses innovate and compete. But when it comes to advancing user safety, they all work together.

Membership of the Ladder Association shows clear commitment to adhere to the Ladder Association Code of Practice which puts safety at the heart of everything members do:

- **Ladder Association Manufacturers** only make ladders that comply with EN 131 (or international equivalents) and those products must be certified by a third-party Conformity Assessment Body and be subject to ongoing surveillance;
- **Ladder Association Suppliers** only supply ladders that are certified to EN 131 (or international equivalents);
- **Ladder Association Training Providers** conduct training in approved centres, using Ladder Association trained instructors, and only use equipment that complies to EN 131.

The Ladder Association works closely with a number of organisations to support codes of good practice, minimum standards for equipment, trained and qualified operatives and education in the work at height sector. These include the Health & Safety Executive (HSE), the Office for Product Safety and Standards (OPSS), the British Standards Institution (BSI) and other National Standards Bodies, the Access Industry Forum (AIF) and the Royal Society for the Prevention of Accidents (RoSPA).

The Ladder Association has spearheaded a number of hugely successful ladder safety campaigns, including our award-winning 'Get a Grip' initiative, which promoted a very clear message "If it's right to use a ladder, use the right ladder and get trained to use it safely."

The Ladder Association currently offers five training courses delivered through a network of audited and approved training centres:

- Ladder & Stepladder User;
- Ladder & Stepladder Inspection;
- Ladder & Stepladder Combined Use and Inspection;
- Steps & Step Stools for Users;
- Ladders for Managers.

In addition to administering the LadderCard training scheme, the Ladder Association publishes safety guidance, Code of Practice and technical notes - all free to download from our website <https://ladderassociation.org.uk>

Ladders are an everyday tool in homes and workplaces across the world, allowing millions of people to work at height quickly and easily. They're a versatile and vital piece of equipment, that can be used for a whole range of jobs.

But too many people still fall from ladders. The consequences of these falls can be life-changing, for both the injured party and their families.

The Ladder Association wants everyone who climbs a ladder to come back down safely.

“...too many people still fall from ladders, and the consequences of these falls can be life-changing, for both the injured party and their families.

The Ladder Association wants everyone who climbs a ladder to come back down safely and will continue to root out unsafe ladders, one step at a time.

”

03 THE AIM OF MARKET SURVEILLANCE

Market surveillance is the activity carried out by authorities to ensure that products on the market conform to the applicable laws and regulations, and comply with existing health and safety requirements.

Consumer confidence is built on trust; consumers need to be confident in the products they buy, either through trusting the product brand or the distributor selling the product.

In the UK, product market surveillance is the responsibility of the OPSS, Trading Standards and the HSE.

Here, market surveillance is delivered across the product spectrum by a range of national and local authorities, and through the Market Surveillance Governance Group (MSGG)¹. MSGG was created in 2020 and is led by the OPSS.

In addition, the National Product Safety Group (NPSG), established in 2012, coordinates the regulatory activity specifically on consumer product safety. It brings together local authority market surveillance representatives, relevant Government departments, the OPSS, HSE and the Chartered Trading Standards Institute.

Market surveillance work at points of entry into the UK is one of the regulatory tools used to detect, disrupt and deter unsafe goods from entering the market. The OPSS has responsibility for developing national capacity for product safety in the UK. One of the ways it does this is to enhance capability to understand the data on imports and fund regulatory activity at UK ports and borders.

For a number of years, the Test & Research Centre has been working with Suffolk Trading Standards Imports Team, the local authority responsible for the Port of Felixstowe, the UK's largest container port. So far, Test & Research Centre has helped Trading Standards prevent over 2,800 dangerous substandard ladders from entering the UK market.

Local authorities are responsible for Trading Standards, they are the frontline when it comes to consumer product safety. Since 2010 Local Authority budgets have been cut². In England alone, there has been a real-terms reduction in total spending by Trading Standards of 39%. As expected, this has a knock on effect of reduced intelligence gathering.

Recognising that Trading Standards have reduced capacity and capability, the Ladder Association, as the not-for-profit industry body, considers it should take the lead role to step up and offer valuable support and resource with market surveillance activity. The knowledge and insight provided through our members will help Trading Standards and the OPSS with market intelligence, in instances where substandard products are found.

The Ladder Association understands, from its members and stakeholders like Test & Research Centre, that there are serious concerns regarding substandard telescopic ladders contaminating the UK supply chain.

The main aim of the Ladder Association is to improve the safe use of ladders and help to ensure that only safe, compliant ladders are used at home and at work.

This joint project was established to understand the scale of the issue. Of particular concern is the route to market, with a high volume of products being sold online, and the difficulty faced in policing online platforms.

Intelligence gathered through this joint project is intended to support a wider market surveillance initiative.



¹ Office for Product Safety and Standards – UK Market Surveillance Programme 2021/2022:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1041248/uk-market-surveillance-programme-2021-2022.pdf

² National Audit Office – Protecting consumers from unsafe products (16th June 2021) - <https://www.nao.org.uk/report/protecting-consumers-from-unsafe-products/>

04 DRIVE TO IMPROVE SAFETY AND PRODUCT CONFORMITY

The Ladder Association exists to promote the safe use of ladders and stepladders at home and at work, and to ensure any work at height using ladders, is carried out as safely as possible.

Guidance produced by the Ladder Association helps users to undertake tasks safely, using the right equipment, and with the correct training.

The equipment should be manufactured to the correct product standard to ensure it meets the minimum safety requirement. If products do not meet the requirements of the relevant standard, even if used correctly, user safety is compromised and lives can be put at risk.

With the expansion of online stores and marketplaces, there is no longer any real differentiation between 'Trade' and 'Domestic' users. An item aimed at either market can be purchased by the other.

Recent research by the OPSS into consumer attitudes to product safety¹ found:



Only 17% of consumers consider safety when purchasing a product.

Decisions were instead largely driven by cost and quality;

- The fact that consumers rarely consider the safety of their products reflects an inherent trust in the product safety system to protect them. Across all phases of the research, **consumers were consistently found to trust and believe that an effective system is in place in the UK;**
- This trust in the system was based on several assumptions. There was **a common assumption amongst consumers that manufacturers would not risk reputational damage by making unsafe products, that**

retailers would thoroughly check the manufacturers they purchased from, and that regulations are in place to stop potentially dangerous products from entering the market;

- The research showed that **consumers believed that manufacturers have the greatest responsibility for setting product safety standards**, ensuring they were met and resolving any product safety issues, with the government playing a secondary role;
- Research participants in workshops, who were given a more detailed explanation about how the system currently works in practice, raised some concerns. First and foremost, **consumers were concerned about the extent to which the system appeared to be reliant on consumer awareness** of, and engagement with, safety - particularly around registering appliances and responding to recalls. This was not consistent with their assumption that the system would protect them without their input. Consumers expressed further concern about the distribution of responsibilities across different factors, including different levels of government. Consequently, **consumers sought reassurance that central government are providing an overall leadership role in setting and upholding safety standards;**
- **Overall, consumers expect the government to show strong leadership in setting and upholding legal safety requirements.**

As can be seen from the OPSS research, UK consumers trust the product safety system, as they assume that manufacturers and distributors value their reputation above all else. And for many companies that is true, they value their brand name and will usually go above and beyond to maintain it.

But what happens when a brand is of little or no value? When the manufacturer or supplier changes their company name, product name or business address so frequently to evade the authorities because they simply do not care? Or the product is being sold through an online platform or marketplace, where no distributor checks are being made?

Consumer-to-consumer and business-to-consumer online marketplaces such as Amazon, eBay, Wish and OnBuy to name just a few, provide a platform for individuals and companies to sell products.

05 UK LEGISLATION AND REGULATIONS

In the UK, portable ladders such as telescopic leaning ladders, have no specific legislation or regulations. The sale and use of these products fall under different regulations depending on their use. In either case, conformity to a British (BS) or European (EN) standard would offer a published level of product conformity and safety.

Consumers / Domestic users

For consumers, the safety of portable ladders falls under The General Product Safety Regulations 2005² (GPSR).

This places a duty on producers (manufacturers) to only supply products to the market that are safe:

- A product is defined as “intended for consumers or likely, under reasonably foreseeable conditions, to be used by consumers even if not intended for them and which is supplied or made available”;
- A safe product is defined as “a product which, under normal or reasonably foreseeable conditions of use...does not present any risk or only the minimum risks compatible with the product's use, considered to be acceptable and consistent with a high level of protection for the safety and health of persons.”

Where a product is imported into the UK, the importer takes on the responsibility of the manufacturer to ensure that products are safe.

Too many of these e-commerce corporations take little or no responsibility for the quality or safety of the products sold on their platforms and place the responsibility for safety firmly with the seller.

The Ladder Association believes they appear only to take action when highlighted in the media.¹

One of the key aims of this surveillance survey is to find out if substandard products are being falsely sold and marketed in the UK as being compliant with product standard.

Placing a product on the market which is produced to a voluntary national standard (e.g. EN 131-6) could demonstrate conformity to the general safety requirement;

These regulations are enforced by local authority Trading Standards.

Workplace users

In the workplace, portable ladder use is covered by the following regulations, enforced by the Health and Safety Executive:

- Provision and Use of Work Equipment Regulations 1998³ – which places requirements on employers to provide and maintain suitable work equipment for employees;
- Work at Height Regulations 2005⁴, Schedule 6 - which places requirements on employers to provide safe equipment, and risk assessed safe methods, to their employees for working at height.

¹ Huffington Post – Amazon removes more car seats from sale - https://www.huffingtonpost.co.uk/entry/amazon-child-car-seats-safet_uk_5e4a5a10c5b64ba29751eff7

² Legislation.gov.uk – The General Product Safety Regulations 2005 - <https://www.legislation.gov.uk/ukksi/2005/1803/contents>

³ Legislation.gov.uk – The Provision and Use of Work Equipment Regulations 1998 - <https://www.legislation.gov.uk/ukksi/1998/2306/contents/made>

⁴ Legislation.gov.uk – The Work at Height Regulations 2005 - <https://www.legislation.gov.uk/ukksi/2005/735/contents>

06 CONSUMER SAFETY

As previously mentioned, under GPSR, the general safety requirement is that only “safe products” shall be placed on the market and that the product “means a product which is intended for consumers or likely, under reasonably foreseeable conditions, to be used by consumers even if not intended for them”.

By placing a product on the market, consumers have the right to assume it is safe, whether it is placed there by the manufacturer, through a distributor, or via an online marketplace.

The GPSR regulations explain ways which a supplier can demonstrate a product is safe, in the form of a hierarchy.

At the top of the hierarchy is what is known as a presumption of conformity. Products can be presumed to be safe if they are produced in accordance with legal requirements (e.g. pressure vessels). Next are products produced in accordance with Designated Standards, as published by the UK Government. The government ensures that the standards designated for the GB market meet the required levels of safety, in sectors such as Chemicals and Construction.

For portable ladders, there are no specific regulations or designated standards. This is why it is illegal to place CE marks on portable ladders.

Working down the hierarchy, the conformity of a product to the general safety requirement is assessed against:

- Voluntary national standards (BS, BS EN);
- Product safety codes of good practice in the sector concerned;
- The state of the art and technology, and;
- Reasonable consumer expectations concerning safety.

For portable ladders, such as telescopic ladders, the appropriate voluntary standard is EN 131-6.



As research has shown, consumers generally trust the product safety system (see Section 04) but there is a growing concern about products sold through online marketplaces.

So much so, that in November 2021, the OPSS issued online marketplace product safety advice¹, warning consumers about the risks:

“Many consumers may be unaware that online platforms are not always the seller of the products on their websites, but often act as an intermediary between an independent company and the buyer. And that buying products from businesses based overseas, or who fail to provide an address, increases the risks.”

The COVID-19 pandemic has driven a huge increase in online sales. **In February 2021, the proportion spent online peaked at 36.8% - up from 19.5% in January 2019.²**

In addition, a recent National Audit Office report³ also highlighted the pace of change for consumer online spending, but further noted product safety regulation had not kept pace, as the sector grew.

Selling platforms, including online stores and social media sites, can be used by anyone to sell products, but the selling platforms assume no responsibility for the safety of goods sold by third parties.

They have become increasingly popular with people who sell from home rather than business premises, or from overseas, both of which present challenges for regulators to investigate or take enforcement action.

Buying online can present challenges as users are unable to inspect the product prior to purchase, they cannot review any stated conformity with product standard and they are unable to ‘get a feel’ for the quality of the product.

“A recent study that sampled potentially risky products from online marketplaces found that **66% failed safety tests¹.**”



This project will help to understand if consumers of telescopic ladders are unknowingly putting themselves at risk of buying substandard products.

07 UK LADDER MARKET SNAPSHOT

- The Ladder Association estimates that the UK ladder market is worth in excess of £124 million per annum².

- Based on an average price of £80.00 per ladder, this equates to approximately 1.55 million ladders being sold in the UK each year².

That’s one ladder every 20 seconds!

- It is estimated that over a million UK businesses and 10 million workers are estimated to carry out work involving some form of work at height every year³.



10 million
work at height every year

¹ OPSS – Government issues online marketplace product safety message - <https://www.gov.uk/government/news/government-issues-online-sales-product-safety-message>

² Office for National Statistics – Retail sales, Great Britain: Nov 2021 - <https://www.ons.gov.uk/businessindustryandtrade/retailindustry/bulletins/retailsales/november2021>

³ National Audit Office – Protecting consumers from unsafe products - <https://www.nao.org.uk/wp-content/uploads/2021/02/Protecting-consumers-from-unsafe-products.pdf>

¹ National Audit Office – Protecting consumers from unsafe products - <https://www.nao.org.uk/wp-content/uploads/2021/02/Protecting-consumers-from-unsafe-products.pdf>

² The Ladder Association Member Market Survey November 2020

³ APPG on Working at Height Report ‘Staying Alive: Preventing Serious Injury and Fatalities while Working at Height’: <https://workingatheight.info/wp-content/uploads/2020/03/Staying-alive.pdf>

08 ACCIDENT ESTIMATES

Domestic accidents

Between 1978 and 2002, the Departments of Trade and Industry and Business, Innovation & Skills (predecessors to the Department for Business, Energy and Industrial Strategy) collated accident data via the Home Accident Surveillance System (HASS) and the Leisure Accident Surveillance System (LASS), two linked databases holding details of home and leisure accidents that caused a serious enough injury to warrant a visit to A&E.

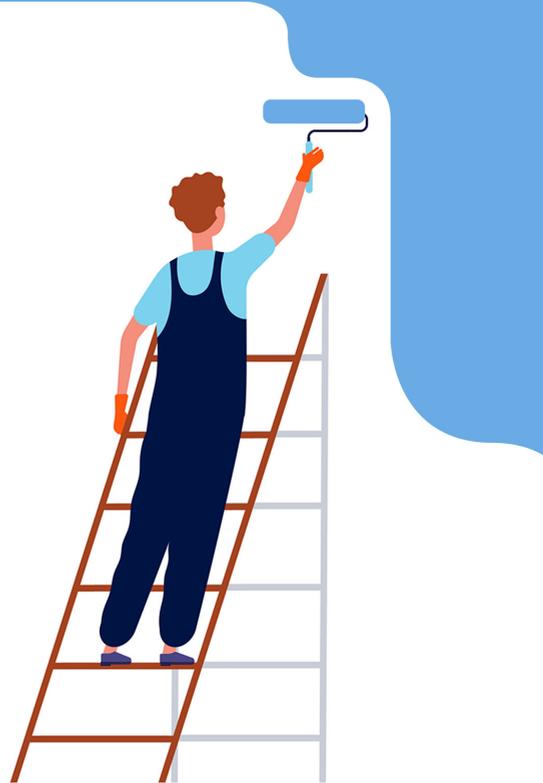
In 2003, the Government announced it would no longer fund the collection and publication of HASS and LASS data.¹

The most recent data (in 2002) showed there were almost 46,000 non-fatal accidents involving ladders in the UK.²

What is known, is that approximately every 11 minutes of every hour, of every day, people are attending A&E after sustaining an injury involving a ladder.

And this doesn't take into account fatalities, those who don't go to the hospital, or those injured at work.

Whilst safe use of ladders is critical to reducing the risk of injury, substandard ladders pose a greater risk – as users may be unaware of the danger beneath their feet.



Workplace accidents

Falls from height remain the leading cause of fatal accidents in UK workplaces.

In 2020/21, 142 workers were killed at work. Of these, 35 were killed as a result of a fall from height, however no data was published to provide insight into what equipment was being used at the time, or what caused the fall.

In addition to fatal accidents, there were over 4,100 reported non-fatal injuries that resulted from a worker falling from height.

Hospital admissions

Detailed hospital data from NHS England¹, NHS Wales² and Public Health Scotland³ includes various categories for hospital admissions. One category is "Falls on or from a ladder" and analysis of this data gives an annual snapshot of ladder fall admissions over time.

This data shows:

- Between 2014/15 and 2019/20 on average 7,674 people find themselves in hospital after falling on or from a ladder each year, with numbers remaining fairly stable year to year;
- 90% of admissions were an emergency;
- The average time spent in hospital is between 3 and 5 days;
- The average age of patients admitted is 58 years old, with little variation over time and with highest number of admissions aged 45 - 74;
- Approximately 80% of admissions are male;
- The total number of bed days due to ladder related incidents in 2019/2020 was 22,019.

7,674
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each year after falling
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90% were
emergencies



average time
in hospital
3-5 days



average patient age is
58 years old
with highest number of
admissions age 45-74



80%
male



total number of
bed days in 2019/20
due to ladder incidents
22,019



Each number above represents a real person who may have suffered life-changing injuries after falling on or from a ladder. It is important to learn from these incidents to prevent the same things happening again in future.

Whilst the exact circumstances around the hospital admissions is unknown, the Ladder Association do know from experience that unsafe equipment is one of a number of key reasons that accidents occur. We must commit to taking steps to ensure that people only ever work at height using ladders that are known and proven to be safe.

¹ APPG on Working at Height Report 'Staying Alive: Preventing Serious Injury and Fatalities while Working at Height': <https://workingatheight.info/wp-content/uploads/2020/03/Staying-alive.pdf>

² RoSPA - Accident statistics - <https://www.rospa.com/resources/statistics#hass>

³ NHS England - Hospital Episode Statistics (HES): <https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics>

² NHS Wales Informatics Service, PEDW Statistics - 2014-2020

³ Public Health Scotland - IR2021-00100: Number of emergency admissions in Scotland due to falls on/from a ladder (January 2011 - June 2021)

9 PRODUCT SELECTION

The focus of this project is telescopic leaning ladders. These have become highly popular in recent years, due to the fact they:

- Require a small storage space compared to other types of ladder;
- Are lightweight and compact;
- Are adjustable in size and working height.

Telescopic leaning ladders should be produced in accordance with EN 131-6, which was last revised in April 2019.

You can learn more about ladder standards on the Ladder Association website:
<https://ladderassociation.org.uk/standards>

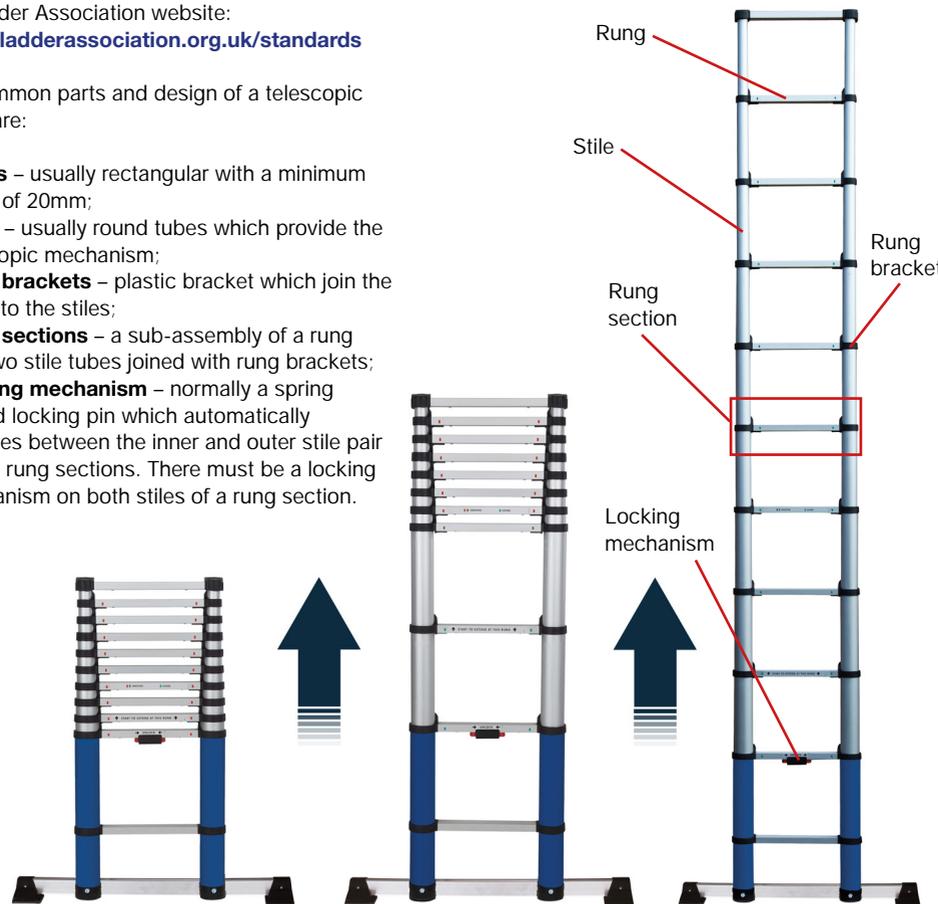
The common parts and design of a telescopic ladder are:

- **Rungs** – usually rectangular with a minimum depth of 20mm;
- **Stiles** – usually round tubes which provide the telescopic mechanism;
- **Rung brackets** – plastic bracket which join the rungs to the stiles;
- **Rung sections** – a sub-assembly of a rung and two stile tubes joined with rung brackets;
- **Locking mechanism** – normally a spring loaded locking pin which automatically engages between the inner and outer stile pair of two rung sections. There must be a locking mechanism on both stiles of a rung section.

The ladder is extended from a closed position by lifting rung sections.

Locking mechanism pins then connect the rung sections, holding the upper rung section in place.

Each section is extended until the desired length is reached.



A total of 17 telescopic leaning ladders were tested as part of this product surveillance survey:

- 8 selected and supplied by East of England Trading Standards Association (EETSA);
- 3 detained at port by Suffolk Trading Standards Imports Team;
- 6 selected and supplied by the Ladder Association.

Almost all of the products stated conformity to EN 131-6 in one form or another, either on the sales information, product literature or as a label on the product itself.

All were obtained anonymously from a range of sources. While a small number were purchased from physical stores, the majority were bought from online stores and online marketplaces, an accurate reflection of how these products reach the market.

Those selected by EETSA were, where possible, selected where the distributor/manufacturer had a presence in their local authority area. This meant that should enforcement action be needed after the tests, it was within their region to do so.

The additional 3 sample ladders (sample references Imports #9, #10, #11) had been detained at the port of Felixstowe by Suffolk Trading Standards Imports Team.

The Ladder Association selected 6 ladders based on feedback from a member survey. Members were asked to provide details of ladders they suspected to be substandard.

The feedback suggested that there was more of a concern regarding the online platforms, compared to UK companies with a physical presence. This would balance the Trading Standards products purchased in gauging any potential issues in the market. A steering committee then narrowed down the list to six samples, which were purchased from online shopping platforms and wholesale retailers.

Two of each of these six samples were purchased to allow the testing to be conducted in its entirety, in the event the samples were subject to complete product failure in earlier tests.

See Sections 11 and 12 and note that some samples could not be further tested due to structural failure of the ladder in an earlier test.

Trading Standards have powers to investigate business and business premises, if they have product safety concerns. However, for online marketplaces, sellers do not need to be based in the UK. This makes it extremely difficult for action to be taken, other than notifying the marketplace of the substandard products.

As an example, one ladder purchased on Amazon was sold by a company called Tonix Giant Co Ltd¹. This company is currently listed as 'Dormant' with Companies House. While the company has a UK registered address, the list of persons with significant control are all based in Jiangxi Province, China.

When a product is imported into the UK, the importer is legally required to take on the responsibility of ensuring the product is safe. But if the importer is an entity in name only (e.g. a shell company), who is responsible for ensuring the product is safe? If there is a fault and a recall is required, who will the authorities contact?

A key goal for this project was to investigate if substandard ladders are contaminating the supply chain, with little or no checks being made by the importer.

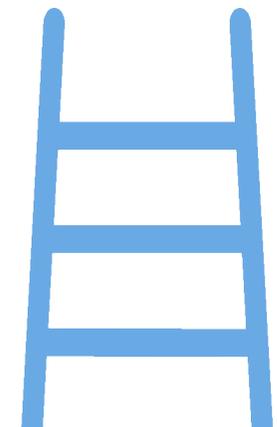


Image © Werner UK Distribution & Sales Ltd. Please note the ladder shown has been manufactured in accordance with EN 131-6 and is used to illustrate a compliant product. It was not part of our testing programme.

¹ Companies House – Company number 13400000 – Tonix Giant Co. Ltd

² Legislation.gov.uk – The General Product Safety Regulations 2005, Regulation 2

³ National Audit Office – Protecting consumers from unsafe products

10 LIMITED SCOPE TESTING

The ladders selected all fall under the product standard EN 131-6.¹

The standard has requirements for:

- Functional and dimensional requirements;
- Strength tests;
- Deflection tests;
- Durability (cyclic) tests;
- Markings and user instructions.

To assess a sample ladder against the full requirements of the standard could take several weeks, as the durability tests take several days each to complete.

Therefore, it was agreed between the stakeholders and leaning on the experience of the Test & Research Centre, that a limited number of tests and dimensional requirements would be carried out for this project.

The limited scope of testing focuses on the key strength tests and dimensional characteristics. These are the most safety critical tests. If a product is found to be substandard based on these tests, it could lead to complete product failure and a user suffering a fall from height.

In addition, by focusing on a limited scope of testing, a greater number of ladders could be examined, making the project more cost-effective for all stakeholders.

This is a common approach which Trading Standards take with sample assessment.

Specific clauses were agreed with the stakeholders which would assess the main strength characteristics of the samples provided.

The tests are performed in a specific sequence, as listed in Annex A of EN 131-6, working through the tests with deflection requirements before moving onto the overload tests.

The limited scope of tests from EN 131-6 agreed for this project were:

- Clause 4 – Functional dimensions
- Clause 5 – Requirements
- Clause 6.2 – Ladder preconditioning
- Clause 6.5 – Lateral deflection
- Clause 6.4 – Bending test of the stiles
- Clause 6.3 – Strength test
- Clause 6.12 – Asymmetrical bending test
- Clause 6.7.2 – Vertical load on rungs
- Clause 6.7.4 – Rung strength test in the unlocked position
- Clause 6.7.6 – Pull out test of rungs

Detailed explanation of all tests can be found in Appendix 1.

Examples of safety critical tests carried out by the Test & Research Centre



11 TEST RESULTS - East of England Trading Standards Association

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10	Sample 11
	EETSA #1	EETSA #2	EETSA #3	EETSA #4	EETSA #5	EETSA #6	EETSA #7	EETSA #8	IMPORTS #9	IMPORTS #10	IMPORTS #11
Local Authority	Hertfordshire	Norfolk	Essex	Suffolk	Central Beds	Luton	Hertfordshire	Cambs & Peterborough	Suffolk	Suffolk	Suffolk
Length	3.11m	5.2m	3.8m	2.6m	3.8m	2.9m	3.0m	3.2m	2.6m	3.2m	3.8m
Shows CE Mark?	No	No	No	No	No	No	No	No	No	No	No
States EN 131?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
EN 131-6 Clauses:											
4 - Functional dimensions	Fail	Fail	Fail	Fail	Fail	Pass	Pass	Pass	Fail	Fail	Fail
5 - Requirements	Pass	Fail	Fail	Fail	Pass	Pass	Pass	Pass	Fail	Fail	Fail
6.2 - Ladder preconditioning	Pass	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail	Fail
6.5 - Lateral deflection	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Fail	Fail
6.4 - Bending test of stiles	Pass	Fail	Pass	Fail	Fail	Pass	Pass	Pass	Fail	Fail	Fail
6.3 - Strength test	Pass	Fail	Fail	Fail	Fail	Pass	Pass	Pass	Fail	Fail	Fail
6.12 - Asymmetrical bending test	Pass	N/T	Fail	Fail	N/T	Pass	Pass	Pass	N/T	N/T	N/T
6.7.2 - Vertical load on rungs	Pass	N/T	Pass	Pass	N/T	Pass	Pass	Pass	N/T	N/T	N/T
6.7.4 - Rungs strength test in the unlocked position	Pass	N/T	Pass	Fail	N/T	Pass	Pass	Pass	N/T	N/T	N/T
6.7.6 - Pull out test of rungs	Pass	Fail	Pass	Fail	N/T	Pass	Pass	Pass	Fail	Fail	Fail
OVERALL RESULT	FAIL	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	FAIL	FAIL	FAIL

Key: Pass = Met requirements, Fail = Did not meet requirements, N/T = Not tested due to structural failure of ladder in earlier test

N.B. Detailed results and photographs of testing can be found in Appendix 2

12 TEST RESULTS - The Ladder Association

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
	LA #1	LA #2	LA #3	LA #4	LA #5	LA #6
Length	4.9m	2.9m	3.8m	3.8m	6.2m	3.27m
Shows CE Mark?	No	Yes	No	Yes	Yes	No
States EN 131?	Yes	Yes	Yes	No	Yes	Yes
EN 131-6 Clauses:						
4 - Functional dimensions	Fail	Fail	Pass	Fail	Fail	Pass
5 - Requirements	Fail	Fail	Fail	Fail	Fail	Pass
6.2 - Ladder preconditioning	Fail	Pass	Fail	Fail	Fail	Pass
6.5 - Lateral deflection	Fail	Fail	Fail	Fail	Fail	Pass
6.4 - Bending test of stiles	Fail	Fail	Fail	Fail	Fail	Pass
6.3 - Strength test	Fail	Fail	Fail	Fail	Fail	Fail
6.12 - Asymmetrical bending test	Fail	Fail	Fail	Fail	N/T	Pass
6.7.2 - Vertical load on rungs	Pass	Pass	Pass	Pass	N/T	Pass
6.7.4 - Rungs strength test in the unlocked position	Fail	Fail	Fail	Fail	N/T	Pass
6.7.6 - Pull out test of rungs	Fail	Fail	Fail	Fail	Fail	Pass
OVERALL RESULT	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL

Key: Pass = Met requirements, Fail = Did not meet requirements, N/T = Not tested due to structural failure of ladder in earlier test

N.B. Detailed results and photographs of testing can be found in Appendix 2

13 SUMMARY OF TESTING FINDINGS

• **Of the 17 ladders tested, 3 fully passed all of the limited scope requirements.**

- **1 ladder (EETSA #1) failed on dimensional requirements only.** This ladder had a date of manufacture one month after EN 131-6 was updated in March 2019, so it is likely to have been produced to the dimensional requirements of the old standard;
- **1 ladder (LA #6) failed only on the strength test,** due to it not having a 10mm clearance beneath the stiles when the test load was applied. However, it did withstand the application of the test load without structural failure.

- 13 ladders failed the strength test, with 11 samples buckling under load;
- 12 ladders failed to have the required 35mm top rung clearance;
- 11 ladders failed the bending test of the stiles. In the worst case (LA #5), the ladder completely buckled under load before the full test load could be applied;
- 10 ladders failed the pull out test of rungs, with either complete separation of the rung bracket from the rung, fixing rivets shearing or brackets rupturing¹;
- 10 ladders failed the preconditioning test, with damage seen in the locking mechanism, locking indicators, stiles and rung brackets;
- 9 ladders were incorrectly constructed, such that the rung sections could be stored in any position;
- 9 ladders failed the lateral deflection test with deformation under load in excess of the calculated limit. In the worst case (LA #5) deformation was 251% over the limit;
- 9 ladders were incorrectly marked or marketed as being in conformity with EN 131;
- 8 ladders had an insufficient base width, with the worst case being 610mm too short;
- 8 ladders did not have a safe unlocking/closing mechanism;
- 7 ladders had a greater rung pitch than the 300mm maximum or had inconsistent rung spacing outside of the limit of +/- 2mm;
- 6 ladders failed the asymmetrical bending test, with one ladder (LA #1) failing by 296% over the calculated limit¹;
- 5 ladders failed the rung strength test in the unlocked position, with the samples either collapsing before the load could be applied or damage which made the ladder unfit for safe use²;
- 3 ladders displayed CE markings on their markings or packaging. Although markings (labels) were not part of the assessment, it is important to note that ladders cannot be CE marked. There are no EU directives or regulations for any type of ladder, and so any claim is false and potentially illegal.

14 CONCLUSION

With 3 of the 17 telescopic ladders tested passing the limited scope requirements, there are clearly products on the market which have been designed and conform to EN 131-6.

In contrast, and far more worrying, is the significant number of ladders tested that have inherent design features which make the product incompatible with the requirements of the standard. A rung pitch of almost 400mm for example, as found in sample LA #5, increases the risk of a fall from height due to the excessive distance between the rungs.

Some ladders produced with the rung locking mechanism on the face of the rung, allow the product to be set up with inconsistent rung spacing. Similar to rung pitch, this increases the risk of fall from height, as a user may position the rungs incorrectly and lose their footing during use.

The base width of leaning ladders over 3 metres in length was increased some years ago as part of the revision to EN 131-1 to improve leaning ladder safety and make ladders more stable. Ladders sampled here were clearly designed without this requirement being implemented, compromising stability and user safety.

It is clear by simply looking at the design of the 12 ladders that failed some or all of the dimensional and design requirements (excluding EETSA #1), that the manufacturer has made no effort to conform to EN 131.

The physical tests highlight more concerning findings. 11 ladders failed the strength test before the test load could be applied. This is extremely concerning as when in use, the ladder could buckle beneath the user, causing a fall from height.

The failures of samples against the unlocked rung strength test is equally concerning. Telescopic ladders rely on the locking catches to hold the users' weight. It is entirely foreseeable that a locking mechanism could be overlooked, hence why this test is included in the standard. Of the 11 ladders which survived long enough to undertake this test, 5 failed. This could easily lead to a fall from height for a user with potentially serious consequences and risk of injury.

The Ladder Association's limited scope testing clearly supports the concerns that there is a real and serious issue with the availability and use of substandard ladders on the UK market.

Worse still, these ladders are being knowingly and fraudulently marked and sold as 'EN 131 compliant' in a deliberate attempt to mislead consumers.

¹ 6 samples could not be tested against this requirement due to the sample suffering structural failure earlier in the test sequence.

² 5 samples could not be tested against this requirement due to the sample suffering structural failure earlier in the test sequence.

15 CALL FOR ACTION

Following the results of the surveillance activity, the Ladder Association calls for action to be taken in the following areas with regards to substandard Telescopic Ladders:

1) Increase awareness of the issues with enforcement agencies

- For the subject of substandard telescopic ladders to be raised nationally with Trading Standards, through the National Product Safety Group, the Market Surveillance Governance Group, Chartered Trading Standards Institute and the Office for Product Safety and Standards;
- Through raising awareness, a greater body of evidence can be collated, and further intelligence can be obtained.

2) Increase intelligence of UK telescopic ladders market

- The Ladder Association will investigate what additional intelligence can be gathered on telescopic ladders in the UK market;
- Provide good quality data to Trading Standards and OPSS will help them to understand routes to market and where best to focus their efforts.

3) Increase awareness with online retailers, marketplaces and social media selling platforms

- Currently, the responsibility lies with the individual or company selling the products via the online marketplaces. As they may be based outside the UK, more needs to be done to raise awareness of the issues with the marketplaces themselves, so they can take action.

4) Raise awareness of substandard ladders in the media

- Deliver a campaign to engage with consumers, partnering with other safety bodies and groups, to help consumers stay safe when buying telescopic ladders online;
- Aim to have this project covered by mainstream media. It has already been picked up in several tabloids, with an appetite to explore this subject in more detail.

5) Undertake further surveillance projects at regular intervals

- This project has been just a snapshot of the products on the market at the time. Market surveillance is a regular, ongoing process and should be increased or reduced based on risk;
- Based on the findings so far, it would seem appropriate to undertake this project again in the next 12 months.

6) Work with the OPSS and All-Party Parliamentary Groups (APPGs) to lobby for changes to product safety regulations

- Evidence shows that several of the ladders sold through the online platforms have limited or no actual presence in the UK. This makes enforcement action almost impossible;
- The regulations in the UK have not kept pace with trends in online commerce, as highlighted in the recent NAO report¹;
- The findings of this market surveillance report serve as further evidence that changes need to be made. Working with other interested parties, the evidence here should aid in further efforts to lobby the government to improve the regulations.

7) Add EN 131-6 to the list of designated standards on GOV.UK

- From 1 January 2021, the GB regulatory framework enables the relevant Secretary of State to 'designate' standards for regulatory conformity purposes. The government ensures that the standards designated for the GB market meet the required levels;
- Designated standards can help manufacturers demonstrate their products, services or processes comply with GB law. By following designated standards, manufacturers can claim, 'presumption of conformity' with the corresponding essential requirements or essential characteristics;
- Based on the findings in this report, the Ladder Association request that the OPSS investigate adding the telescopic ladder standard to the list of published Designated Standards.

16 GUIDANCE FOR CONSUMERS

Guidance from the Ladder Association on buying ladders online or in store:

- **Take some time to research before you buy.** You can carry out a quick online check of the company or brand to check their business location and visibility in the market. If they don't have a UK/EU address then it can make it much more difficult to contact them if you have an issue after you buy;
- **Check product reviews.** These are a great way of hearing first-hand from other consumers and often give valuable insight in the product quality, mainly if it falls below standard. But beware, some companies and brands post fake positive reviews, so read them carefully, note where the reviewer is based or how many reviews they have previously posted;
- **Don't make decisions solely on price.** But, if something is very cheap, you should question why. That's not to say it's poor quality, but it's certainly a prompt to make you do a bit more homework. Genuine quality products can cost more to manufacture due to the enhanced testing and cost of materials, but equally, a higher price doesn't necessarily mean quality;
- **Remember, online platforms take little or no responsibility for the quality or safety of the products sold on their platforms** and place the responsibility for safety firmly with the seller. Don't assume product safety and compliance checks have been carried out by them before they placed them online for sale;
- **Don't assume physical stores sell only safe products.** They could knowingly - or unknowingly - be stocking products that don't meet product standard EN 131-6. Check the labelling for print quality or spelling errors, check the product quality as best you can, and speak to the retailer themselves if you have any questions;
- **Avoid ladders that are CE Marked.** Despite what you might think, ladders cannot be CE marked, so avoid any that bear that marking;
- **Buy from a Ladder Association member.** Members are committed to high standards of safety, and by joining the Association, they pledge to only make or sell ladders that comply with EN 131 (or international equivalents) and are certified by a third-party Conformity Assessment Body. A full list of members can be found on the Ladder Association website: <https://ladderassociation.org.uk>
- **When you receive your ladder, check it.** Check the product, the instruction manual (every ladder should come with one) and the labelling on the ladder itself;
- **If you think the ladder is unsafe, dangerous or not made to standard, don't use it!** You should then contact your local Trading Standards team or report via our website: <https://ladderassociation.org.uk/step-up>

¹ National Audit Office - <https://www.nao.org.uk/report/protecting-consumers-from-unsafe-products/>

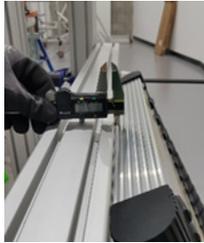
APPENDIX 1

DETAILED EXPLANATION OF TESTS

Each test selected in the limited scope assesses a different aspect of the ladders design and performance.

Clause 4 – Functional dimensions

This clause has requirements for specific dimensions and the minimum clearance provided at the top rung with the vertical surface / wall.



It also cross references to EN 131-1¹ for dimensional requirements of leaning rung ladders. This ensures that all leaning rung ladders have common minimum and maximum dimensions for features such as rung pitch and inner width.

Clause 5 – Requirements

Clause 5 includes design requirements for telescopic ladders, such as having a two-point contact with the vertical surface/wall. It has design requirements for features of the ladders, such as a safe closing mechanism, to prevent finger crushing or entrapment.

The clause also has a dimensional requirement for a wider base width (where the ladder contacts the ground) for ladders over 3 metres in extended length. This follows the approach in the other EN 131 family of standards.



Clause 6.2 – Ladder preconditioning

Ladder preconditioning, in this case a drop test, requires the sample ladder to be fully extended vertically and then allowed to fall under its own weight.

The ladder is then inspected for damage, including any damage to the locking mechanisms and any deformation in the ladder which prevents it from operating normally. The brackets between the rungs and stiles must not have any relative movement following the drop test.

The test and inspection is then repeated with the ladder falling on the opposite face to the first test.



Clause 6.5 – Lateral deflection

This test is cross referenced to clause 5.4 in BS EN 131-2:2010+A2:2017 – Ladders Part 2: Requirements, Testing, Marking.²

With the ladder placed horizontally on its side and supported by rollers at both ends, a preload (100N / 10.2kg) and then a test load (250N / 25.5kg) is applied to the centre of the ladder on the lower stile. The deflection measured under load must be less than a limit calculated based on the length of the ladder.



Clause 6.4 – Bending test of the stiles

This test is cross referenced to clause 5.3 in BS EN 131-2:2010+A2:2017 – Ladders Part 2: Requirements, testing, marking.

With the ladder placed horizontally and supported by rollers at both ends, a preload (100N / 10.2kg) and then a test load (750N / 76.4kg) is applied at the centre of the ladder across both stiles. The deflection measured under load must be less than a limit calculated based on the length of the ladder.



¹British Standards Institute – BS EN 131-1:2015+A1:2019 – Ladders – Terps, types, functional sizes

²British Standards Institute – BS EN 131-2:2010+A2:2017 – Ladders – Requirements, testing, marking

Clause 6.3 – Strength test

With the ladder placed in the position of use, against a wall at 65 degrees, a test load is applied to the rung nearest the centre of the ladder adjacent to one stile.

The test load is based on the ladder class as stated in the user instructions or markings.

For a Non-Professional class ladder the test load is 2250N (229kg) and for Professional class it is 2700N (275kg).

The ladder must withstand the test load without rupture of parts, locking mechanisms and indicators must be operational, and no relative movement between brackets and rungs/stiles.

Permanent deformation is acceptable provided that the ladder remains fully functional and does not impair the fitness for use or safety of the ladder.



Clause 6.12 – Asymmetrical bending test

This test is cross referenced to clause 5.21 in BS EN 131-2:2010+A2:2017 – Ladders Part 2: Requirements, testing, marking.

With the ladder placed horizontally and supported by rollers at both ends, a preload (491N / 50kg) is applied across both stiles at the centre of the ladder. Then a test load (750N / 65kg) is applied at the centre of the ladder on one stile.

Under the test load, the difference between the deflection in the stiles (twist) must be less than a limit which is calculated based on the ladders length.



Clause 6.7.2 – Vertical load on rungs

With the ladder in the position of use, a preload (200N / 20.3kg) and then a test load (2600N / 265kg) is applied to the centre of the weakest rung design.

The permanent deformation after removal of the test load must be less than 0.5% of the inner width of the longest rung.



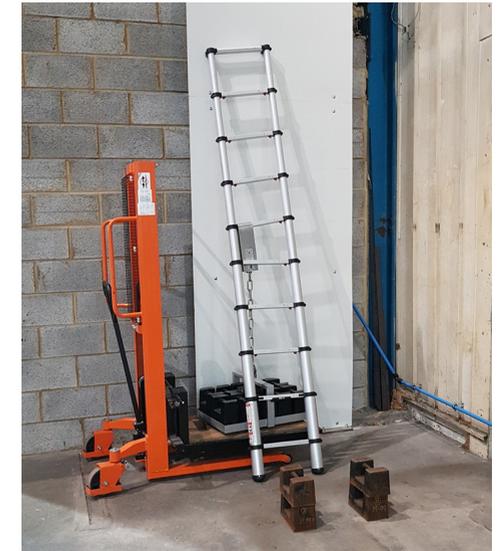
Clause 6.7.4 - Rung strength test in the unlocked position

With the ladder in the position of use, leaning against a wall at 75 degrees, a test load of 2600N (265kg) is applied to the highest rung permitted for the user to stand on.

Prior to the load being applied, the lock mechanism must be disengaged at the rung where the load is applied.

The ladder must withstand the test load without rupture of parts, locking mechanisms and indicators operational, and no relative movement between brackets and rungs/stiles.

Permanent deformation is acceptable provided that the ladder remains fully functional and does not impair the fitness for use or safety of the ladder.



Clause 6.7.6 – Pull out test of rungs

With the ladder placed horizontally on its side, the upper stile of the ladder is suspended with blocks adjacent to a rung bracket. On the lower stile, and on the same rung, blocks are placed adjacent to the rung bracket and a test load (2600N / 265kg) is applied.

After the test, the telescopic ladder and the locking mechanisms shall function in all sections normally and in accordance with the manufacturer’s instructions.



APPENDIX 2 DETAILED RESULTS AND PHOTOGRAPHS OF TESTING

EETSA #1 - 3.11m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Rung spacing outside +/- 2mm Top rung clearance below minimum of 35mm. Ladder failed on dimensional requirements, but was produced 1 month after EN 131-6 was updated in April 2019, with new dimensional requirements.
5 - Requirements	Pass	
6.2 - Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Pass	
6.3 - Strength test	Pass	
6.12 - Asymmetrical bending test	Pass	
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Pass	
6.7.6 - Pull out test of rungs	Pass	



EETSA #2 – 5.2m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Top rung clearance below minimum of 35mm. Base width: minimum = 994.85mm / Actual = 666.46mm. Rung pitch: maximum = 300.00mm / Actual = 349.58mm. Rung pitch not equally spaced +/-2mm.
5 - Requirements	Pass	
6.2 - Ladder Preconditioning	Fail	Rung catches and lock function damaged.
6.5 - Lateral deflection	Fail	Failed by 201% over max deflection.
6.4 - Bending test of stiles	Fail	Failed by 206% over max deflection.
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	N/T	Not completed due to earlier failure.
6.7.2 - Vertical load on rungs	N/T	
6.7.4 - Rung strength test in the unlocked position	N/T	Not completed due to earlier failure.
6.7.6 - Pull out test of rungs	Fail	1 st test on 2 nd rung separated rungs 1 to 4 before full load applied.



EETSA #3 – 3.8m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Rung spacing outside +/- 2mm.
5 - Requirements	Fail	Top rung clearance below minimum of 35mm.
6.2 - Ladder Preconditioning	Fail	Visibility of locking mechanism not clear.
6.5 - Lateral deflection	Pass	After test, top rung section would not close.
6.4 - Bending test of stiles	Pass	
6.3 - Strength test	Fail	10mm clearance beneath stiles was not present during load application.
6.12 - Asymmetrical bending test	Fail	Failed by 0.7% over max deflection.
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Pass	
6.7.6 - Pull out test of rungs	Pass	



EETSA #4 – 2.6m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Base width: minimum = 849.47mm / Actual = 472.67mm Top rung clearance below minimum of 35mm.
5 - Requirements	Fail	Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 - Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Fail	Failed by 2% over max deflection.
6.4 - Bending test of stiles	Fail	Failed by 59% over max deflection.
6.3 - Strength test	Fail	Permanent deformation in stiles preventing ladder being closed.
6.12 - Asymmetrical bending test	Fail	Failed by 7% over max deflection
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Fail	Ladder did not support full test load, test stopped prior to collapse.
6.7.6 - Pull out test of rungs	Fail	1st test on 2nd rung separated rungs 2 to 8 before full load applied.



EETSA #5 – 3.8m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	First rung to the ground dimensions too large by approximately 3mm. Spacing of rungs inconsistent – not within +/- 2mm. Top rung clearance below minimum of 35mm. Marking incorrectly state ladder can be used at 60-75 degrees – range is 65-75 degrees.
5 - Requirements	Pass	
6.2 - Ladder Preconditioning	Fail	Top two sections would not close after test
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Fail	Failed by 28% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	N/T	Could not be tested due to earlier failure.
6.7.2 - Vertical load on rungs	N/T	Could not be tested due to earlier failure.
6.7.4 - Rung strength test in the unlocked position	N/T	Could not be tested due to earlier failure.
6.7.6 - Pull out test of rungs	N/T	Could not be tested due to earlier failure.



EETSA #6 - 2.9m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Pass	
5 - Requirements	Pass	
6.2 - Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Pass	
6.3 - Strength test	Pass	
6.12 - Asymmetrical bending test	Pass	
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Pass	
6.7.6 - Pull out test of rungs	Pass	



EETSA #7 - 3.0m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Pass	
5 - Requirements	Pass	
6.2 - Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Pass	
6.3 - Strength test	Pass	
6.12 - Asymmetrical bending test	Pass	
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Pass	
6.7.6 - Pull out test of rungs	Pass	



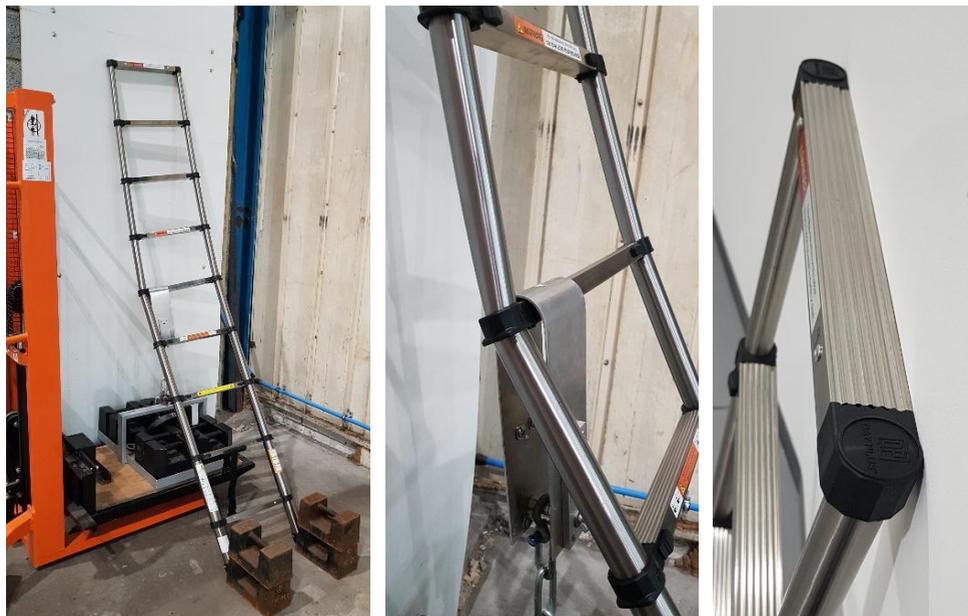
EETSA #8 – 3.2m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Pass	
5 - Requirements	Pass	
6.2 - Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Pass	
6.3 - Strength test	Pass	
6.12 - Asymmetrical bending test	Pass	
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Pass	
6.7.6 - Pull out test of rungs	Pass	



IMPORTS #9 - 2.6m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Top rung clearance below minimum of 35mm.
5 - Requirements	Fail	Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 - Ladder Preconditioning	Fail	Movement between rungs and stile brackets after drop test, which is not permitted.
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Fail	Failed by 57% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	N/T	Not tested due to earlier failure
6.7.2 - Vertical load on rungs	N/T	Not tested due to earlier failure
6.7.4 - Rung strength test in the unlocked position	N/T	Not tested due to earlier failure
6.7.6 - Pull out test of rungs	Fail	1st test on 7th rung separated rungs 5 to 8 before full load applied, bracket of 8th rung snapped and rivets sheared on 6th and 7th rung.



IMPORTS #10 - 3.2m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Top rung clearance below minimum of 35mm.
5 - Requirements	Fail	Base width: minimum = 777.07mm / Actual = 468.96mm Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 - Ladder Preconditioning	Fail	Movement between rungs and stile brackets after drop test, which is not permitted.
6.5 - Lateral deflection	Fail	Failed by 4% over max deflection
6.4 - Bending test of stiles	Fail	Failed by 60% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	N/T	Not tested due to earlier failure
6.7.2 - Vertical load on rungs	N/T	Not tested due to earlier failure
6.7.4 - Rung strength test in the unlocked position	N/T	Not tested due to earlier failure
6.7.6 - Pull out test of rungs	Fail	1st test on 9th rung separated rungs 8 to 10 before full load applied, brackets of 9th & 10th rung snapped and rivets sheared on 8th and 9th rung.



IMPORTS #11 - 3.8m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Top rung clearance below minimum of 35mm.
5 - Requirements	Fail	Base width: Minimum = 842.35mm / Actual = 473.20mm. Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 - Ladder Preconditioning	Fail	Movement between rungs and stile brackets after drop test, which is not permitted.
6.5 - Lateral deflection	Fail	Failed by 12% over max deflection.
6.4 - Bending test of stiles	Fail	Failed by 62% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	N/T	Not tested due to earlier failure
6.7.2 - Vertical load on rungs	N/T	Not tested due to earlier failure
6.7.4 - Rung strength test in the unlocked position	N/T	Not tested due to earlier failure
6.7.6 - Pull out test of rungs	Fail	1st test on 11th rung separated rungs 9 to 12 before full load applied, brackets of 8th & 12th rung snapped and rivets sheared on 10th, 11th and 12th rung.



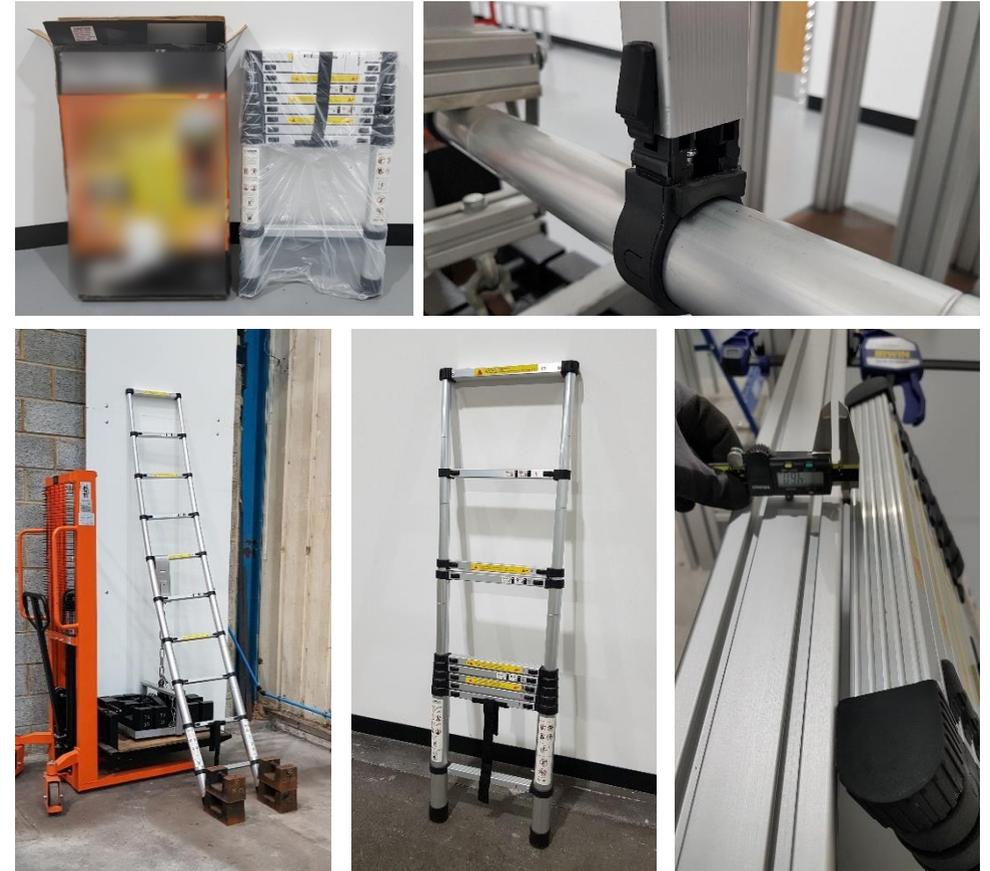
LA #1 – 4.9m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Rung pitch: Maximum = 300.00mm / Actual = 361.05mm Base width: Minimum = 968.08mm / Actual = 479.39mm Top rung clearance below minimum of 35mm.
5 - Requirements	Fail	Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 – Ladder Preconditioning	Fail	Significant damage to rung lock catches and movement between rungs and stiles.
6.5 - Lateral deflection	Fail	Failed by 62% over max deflection
6.4 - Bending test of stiles	Fail	Failed by 65% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	Fail	Failed by 296% over max deflection
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Fail	Excessive movement between brackets and rungs with visible permanent deformation between rungs and stiles.
6.7.6 - Pull out test of rungs	Fail	1st test on 12th rung separated rungs 9 to 13 before full load applied.



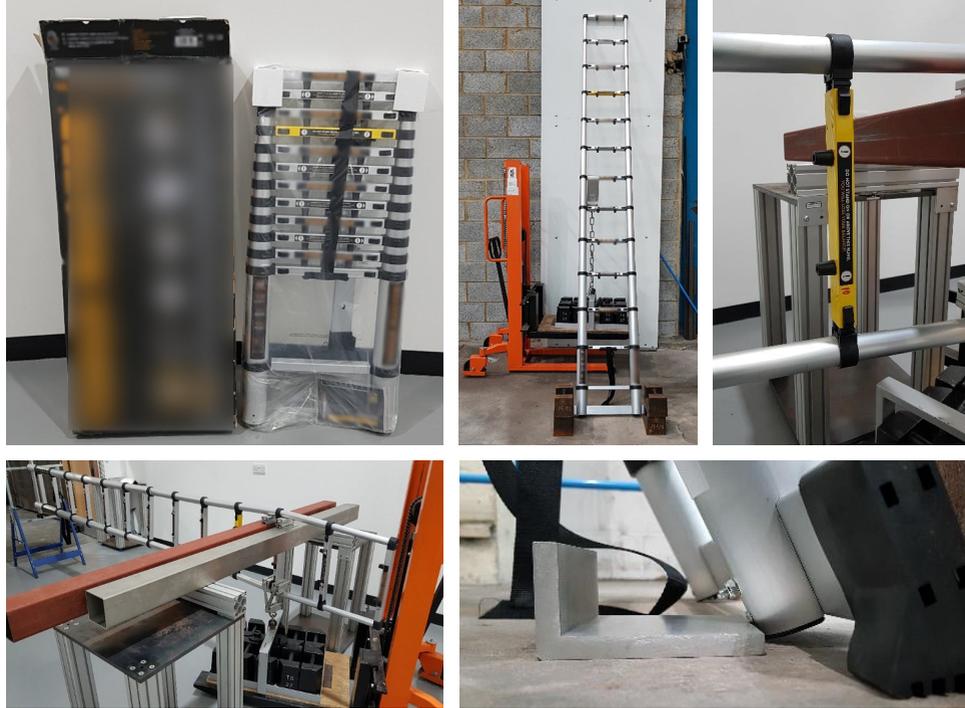
LA #2 – 2.9m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Rung spacing not consistent – greater than +/- 2mm. Top rung clearance below minimum of 35mm.
5 - Requirements	Fail	Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 – Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Fail	Failed by 2% over max deflection
6.4 - Bending test of stiles	Fail	Failed by 62% over max deflection
6.3 - Strength test	Fail	After loading, permanent deformation in 8th rung section and ladder would no longer open.
6.12 - Asymmetrical bending test	Fail	Failed by 45% over max deflection
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Fail	Ladder collapsed to one side before full test load could be applied.
6.7.6 - Pull out test of rungs	Fail	1st test on 8th rung separated rungs 3 to 9 before full load applied.



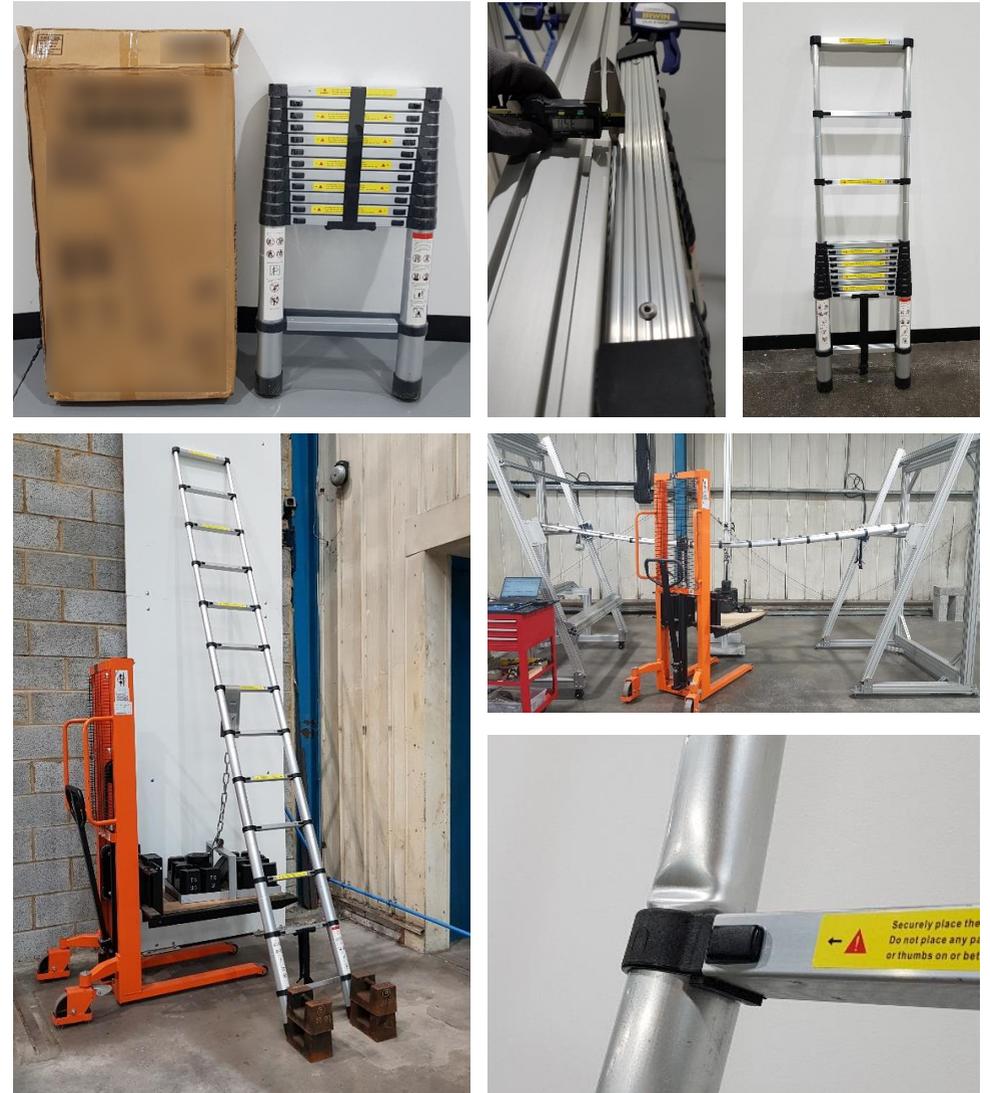
LA #3 – 3.8m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Pass	
5 - Requirements	Fail	Base width – min 854,14mm – Actual 672.22mm. Rung sections can be stored in any position.
6.2 – Ladder Preconditioning	Fail	Movement between rungs and stiles (9th-11th).
6.5 - Lateral deflection	Fail	Failed by 22% over max deflection
6.4 - Bending test of stiles	Fail	Failed by 48% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	Fail	Failed by 18% over max deflection
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Fail	Significant movement between rung brackets and rungs/stiles.
6.7.6 - Pull out test of rungs	Fail	1st test on 11th rung separated rungs 9 to 12 before full load applied.



LA #4 – 3.8m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Top rung clearance below minimum of 35mm. Base width: Minimum = 849.47mm / Actual = 472.67mm
5 - Requirements	Fail	Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 – Ladder Preconditioning	Fail	Significant damage to locking catches and movement between rungs and stile brackets.
6.5 - Lateral deflection	Fail	Failed by 52% over max deflection.
6.4 - Bending test of stiles	Fail	Failed by 93% over max deflection
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	Fail	Failed by 237% over max deflection
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Fail	Significant movement/separation between rung brackets and rungs/stiles.
6.7.6 - Pull out test of rungs	Fail	1st test on 11th rung separated rungs 9 to 12 before full load applied.



LA #5 – 6.2m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Fail	Top rung clearance below minimum of 35mm. Base width: Minimum = 1095.49mm / Actual = 485.58mm Rung pitch: Maximum = 300.00mm / Actual = 392.87mm
5 - Requirements	Fail	Rung sections can be stored in any position. Unlocking and sliding is not in a safe way. No protection against squeezing or distance devices.
6.2 – Ladder Preconditioning	Fail	Significant damage to locking catches and movement between rungs and stile brackets.
6.5 - Lateral deflection	Fail	Failed by 251% over max deflection.
6.4 - Bending test of stiles	Fail	Ladder collapsed before full test load could be applied.
6.3 - Strength test	Fail	Left hand stile buckled before Non-professional test load could be applied.
6.12 - Asymmetrical bending test	N/T	Not tested due to earlier failure.
6.7.2 - Vertical load on rungs	N/T	Not tested due to earlier failure.
6.7.4 - Rung strength test in the unlocked position	N/T	Not tested due to earlier failure.
6.7.6 - Pull out test of rungs	Fail	1st test on 11th rung separated rungs 9 to 12 before full load applied.



LA #6 – 3.27m

EN 131-6 Clauses	Result	Comment
4 - Functional dimensions	Pass	
5 - Requirements	Pass	
6.2 – Ladder Preconditioning	Pass	
6.5 - Lateral deflection	Pass	
6.4 - Bending test of stiles	Pass	
6.3 - Strength test	Fail	10mm clearance beneath stiles was not present during load application.
6.12 - Asymmetrical bending test	Pass	
6.7.2 - Vertical load on rungs	Pass	
6.7.4 - Rung strength test in the unlocked position	Pass	
6.7.6 - Pull out test of rungs	Pass	





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