



## USER INSTRUCTIONS

# Speleo Flexible Sided Ladders.

# Speleo Ladder Spreaders.

# Speleo Ladder Belays.



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[lyon.co.uk/user-instructions](http://lyon.co.uk/user-instructions)

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information and to  
download a PDF copy  
of these instructions  
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UI\_LADDERS\_SPELEO\_14211

### **Quality assurance**

Quality management system assessed and certified as meeting the requirements of ISO 9001.

### **Maximum rated load**

100 kg (1 person)

### **WARNING**

Practical training in the rigging and climbing of Speleo Flexible Sided Ladders is essential before use. Please contact Lyon Equipment if you require training.

This information must be read and kept in conjunction with the Lyon General User Instructions supplied with this product.

### **Use**

Speleo Flexible Sided Ladders are designed for expert cavers where a ladder with simplified joining is preferred. For group use or heavy-duty use consider Flexible Sided Ladders, Ladder Spreaders and Ladder Belays with eyelet or Maillon Rapide ends.

Speleo Flexible Sided Ladders, Ladder Spreaders and Ladder Belays are not personal protective equipment (PPE).

Speleo Flexible Sided Ladders must always be used with an appropriate fall protection system. On their own they do not offer any protection from a fall from height.

They must NOT be used for emergency escape.

Beware of dynamic loading of the ladder.

Never use Speleo Flexible Sided Ladders near any live electrical conduits / supply, to avoid the possibility of electrical arcing.

Do not use the ladder outside in adverse weather conditions, such as strong winds.

Check the ladder is long enough and suitable for the task.

Wherever possible, install the ladder to hang free without touching the wall. Many users find a Speleo Flexible Sided Ladder which is against a wall difficult to climb.

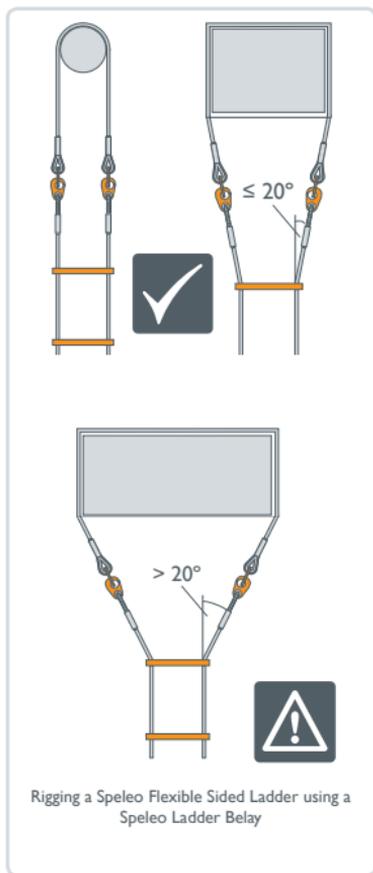
### Rigging a Flexible Sided Ladder

Take suitable precautions while installing a Speleo Flexible Sided Ladder where there is potential of a fall from height.

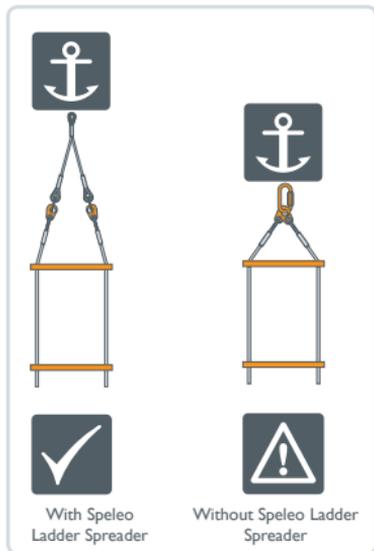
Unroll the ladder by hand and carry out the pre-use check as detailed below.

When suspending the ladder, it is very important to achieve the correct angle where the side wires join the top rung.

A Speleo Ladder Belay may be used to suspend a Speleo Flexible Sided Ladder from a large circumference anchor point. Avoid kinking of the Speleo Ladder Belay by padding any sharp or acute edges. If the Speleo Ladder Belay is too long, causing the top of the ladder to be too low to easily step onto, the Speleo Ladder Belay may be shortened by wrapping it around the anchor point. Take care to maintain angles as shown.



A Speleo Ladder Spreader may be used to achieve the correct angle where a Speleo Flexible Sided Ladder is rigged from a single anchor point. Never join the ends of a Speleo Flexible Sided Ladder together unless the ladder has been made with long 'tail ends'. Use a Speleo Ladder Spreader instead.



Ensure that the anchor point is unquestionably reliable, of sufficient strength (minimum 15 kN recommended) and suitably positioned before connecting a Speleo Flexible Sided Ladder from it. Ideally it should be high enough to allow the user to climb onto the ladder before descending, and should allow the ladder to hang away from walls and obstructions.

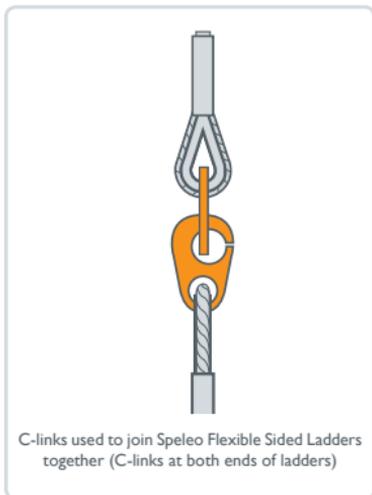
Make sure the Speleo Flexible Sided Ladder is securely anchored to the anchor point before the end of the ladder is lowered into place. When deploying, take care that the ladder does not loop through itself, and ensure that the rungs of the ladder are not caught on projections, which could overload individual rungs.

Arrange appropriate security. In most cases this should be an independently anchored system incorporating a harness, a belay device and rope, or a fall arrest system.

When the Speleo Flexible Sided Ladder is in position, hook up any excess length at the bottom so that it does not get damaged or constitute a trip hazard.

If the Speleo Flexible Sided Ladder is not long enough, ladders may be joined together before deployment.

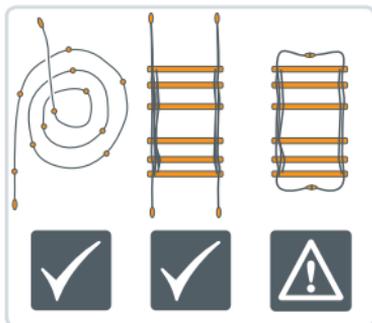
## Joining Flexible Sided Ladders to each other and to Ladder Spreaders and Ladder Belays



Make sure that all connections are secure, and C-links are correctly orientated and fully engaged and not in contact with an edge or surface that could cause mis-alignment.

Speleo Ladder Spreaders and Speleo Ladder Belays are only available with C-link ends.

## How to coil a Flexible Sided Ladder



When securing a rolled up Speleo Flexible Sided Ladder, do not distort the ends of the side wires.

## Using a Speleo Flexible Sided Ladder

Always obtain practical training from a Competent Person before using a Speleo Flexible Sided Ladder. Check that you have the strength and technique required to climb and descend Speleo Flexible Sided Ladders.

Do not attach any type of connector e.g. karabiner or fifi hook to the rungs of this ladder. The rung may break.

Do not wear boots with hooks for laces while climbing the ladder; they may catch on the side wires.

Do not carry equipment while using the ladder – use a separate line to lift the equipment.

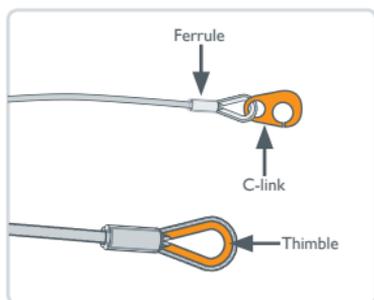
## Maintenance and storage

Refer to Lyon General User Instructions supplied with this ladder for additional information.

It is particularly important to thoroughly clean Speleo Flexible Sided Ladders, Speleo Ladder Spreaders and Speleo Ladder Belays if they are used in a salt water environment.

Corrosion of Speleo Flexible Sided Ladders will occur, but may be slowed by careful maintenance and storage.

## Inspection



Speleo Flexible Sided Ladders, Speleo Ladder Spreader and Speleo Ladder Belays should be subject to:

- Pre-use checks
- Thorough inspections every 6 months
- Interim inspections (as appropriate)

## General checks

Pay particular attention to the area around the first and last rungs of the ladder. Wire deterioration is most likely here.

Any of the defects below may affect the performance of the ladder or accessory.

If in any doubt as to the condition of the product, it should be withdrawn from use immediately and not used again unless confirmed by a competent person that it is acceptable to do so.

The checks should be undertaken in good light. Any item showing any defect should be withdrawn from service immediately.

## Specific checks for Speleo Flexible Sided Ladders, Speleo Ladder Belays and Speleo Ladder Spreaders

Unroll the ladder and check for:

- Broken strands of wire rope.
- Defective or deformed eyelets or C-links.
- Cracked or deformed swages (ferrules).
- Slippage of swages (ferrules) or rung fixings.
- Deformed or cracked rungs.
- Sharp exposed edges on rungs.
- Any signs of corrosion, particularly if it has been used in or near salt water.

## **Chemicals**

Avoid all contact with chemical reagents that could affect the performance of the product, e.g. acids, caustic substances and oxidising agents. Discard this product immediately if contamination is even suspected to have occurred.

## **Materials**

Galvanised steel wire with aluminium swages (ferrules) on Speleo Ladders, Speleo Belays and Speleo Spreaders.

Aluminium alloy rungs on Speleo Ladders.

Stainless steel thimbles and C-links on Speleo Ladders, Speleo Belays and Speleo Spreaders.

## **Obsolescence**

The lifetime of Speleo Flexible Sided Ladders, Speleo Ladder Spreaders and Speleo Ladder Belays is potentially indefinite, subject to inspection.

Beware that corrosion may be hidden. If in doubt do not hesitate to withdraw from service.

However, please note that the lifetime will depend on the intensity and frequency of use, and the environment where the product is used.

## **Markings**

Each Speleo Flexible Sided Ladder, Speleo Ladder Spreader or Speleo Ladder Belay is marked with a serial number, date of manufacture and Lyon website address.

## **Customer's own marking/ serialisation**

Marking, if required, can be made by attaching a tag to the Speleo Flexible Sided Ladder, Speleo Ladder Spreader or Speleo Ladder Belay. Ensure that any tags do not interfere with the function or performance of the ladder, its attachment, or affect the user's ability to climb safely.

If you would like training in the use of Speleo Flexible Sided Ladders or have any queries about their use, please contact Lyon Equipment.

For further information about our ladders, accessories and training, please see [lyon.co.uk](http://lyon.co.uk)

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# General user instructions

Lyon Equipment Limited  
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For more detailed user  
information and to  
download a PDF copy of  
these instructions and a  
Declaration of Conformity  
follow the link above or  
scan the QR code with  
your smart phone



### **Notified body controlling manufacture (where applicable)**

Where items of Personal Protective Equipment require an EU type examination in accordance with Personal Protective Equipment (EU) Regulation 2016/425, the body controlling the manufacture is: Notified body No. 0598 SGS Fimko Oy, P.O. Box 30 (Särkiniementie 3), 00211 HELSINKI, Finland.

### **WARNING**

Make sure that you have read and understood these instructions before using this equipment. These user instructions are to be read and kept along with any other user information provided.

Activities at height are hazardous and may lead to injury or death. It is the user's responsibility, at all times, to ensure that they understand the correct use of any equipment supplied by or through Lyon Equipment, use it only for the purposes for which it is designed, and practice proper safety procedures including having a rescue plan in case of emergency.

This product must not be used outside its limitations, or for any purpose other than those described in the user instructions. Misuses forbidden in these instructions are examples only; many other misuses may exist which could lead to injury or death.

Do not use combinations of items of equipment in which the safe function of any one item is affected or interferes with the safe function of another.

Please note, the information in these user instructions is not exhaustive, and is not a substitute for comprehensive instruction and training by a competent person.

Lyon Equipment is not responsible for any consequences, whether direct, indirect or accidental, resulting from the use of its products. If you are unsure about the correct use of this product, please contact us.

### **Who can use this equipment**

This equipment should only be used by trained, competent and responsible persons, or the user should be under the direct supervision of a trained, competent and responsible person.

Activities at height should not be undertaken by persons affected by alcohol or drug dependence, diabetes, epilepsy, fits, blackouts, fear of heights, vertigo / dizziness / difficulty with balance, heart disease / chest pain, high or low blood pressure, impaired limb function, obesity, psychiatric illness, musculoskeletal issues, e.g. a bad back.

## General instructions for use

Equipment must be checked before each use, to ensure it is serviceable and operates correctly. Checks should also be carried out during use. In addition, a thorough inspection by a competent inspector should be carried out in strict accordance with these user instructions, and a record kept of these inspections.

This product may be used with any compatible item of equipment, keeping in mind the limitations of each item in the safety chain. It should be noted that a full body harness is the only type of harness which may be used in a fall arrest system.

The anchor device or anchor point is of primary importance and should be unquestionably reliable. It should be strong enough to withstand the foreseeable maximum load that could be applied e.g. in the event of a fall.

When selecting an anchor, the anticipated directions of loading and potential loads should be taken into account.

Anchors should be selected and positioned to allow work to be carried out in such a way as to minimise the potential for a fall and potential fall distance, for example by keeping the anchor point / device above the user.

Anchors should not have sharp or rough edges which could damage equipment (use edge protection if necessary).

On each occasion of use, verify the free space required beneath the user in order to avoid an impact. Always try to place protection so that any fall will be stopped before the user hits the ground or any other obstruction. Remember to allow for rope stretch and slippage in the belay device or rope ascender / descender. In a fall arrest situation, the user must be protected from dynamic forces of greater than 6 kN in the event of a fall, e.g. by use of a fall arrest system incorporating an EN 355 energy absorber.

## Maintaining your equipment

Wash in clean water not exceeding 30°C with pure soap and rinse in clean cold water. Do not use chemical products, solvents or detergents – these should be regarded as harmful.

Due to the difficulties in effectively disinfecting equipment, we recommend that any contaminated equipment should be withdrawn from use and disposed of in a suitable manner.

Equipment must be clean and dry before storing. Always allow to dry naturally, away from direct heat. Equipment should be stored in a cool, dry, well-ventilated area, away from excessive heat, high humidity, sharp edges, corrosives, sunlight or other sources of ultraviolet light (UV) and other possible causes of damage.

During transport, this product should be protected from abrasion, mechanical damage, chemical contamination, UV and heat.

## Textiles

Always keep textile items at temperatures between -30°C and +50°C.

## Metal items

Always keep metal items at temperatures between -20°C and +60°C.

No alterations, additions or repairs may be made to this product without the manufacturer's prior written consent; if done, the repair must be carried out by a competent person for repair authorised by Lyon Equipment to make the repair; and in accordance with specified procedures.

These instructions must be strictly adhered to.

## Inspection

A thorough inspection should be carried out at least every 6 months by a competent inspector in accordance with these user instructions. A record of these checks should be kept with the product along with these user instructions. In addition, interim inspections should be carried out where products are used intensively, or in particularly harsh environments where damage is more likely to occur, or where legislation or the type of equipment make it necessary.

Pre-use and thorough inspections are essential because the user's level of protection depends on the continuing correct performance of this product.

PPE (Personal Protective Equipment) inspection training is available from Lyon Equipment.

## Lifetime, and when to withdraw your equipment from use

Withdraw your equipment from use if any one of the following applies:

- It shows sign of wear and tear / damage that may affect performance
- Markings on the product are no longer legible
- You suspect it may have been exposed to chemical contamination or extreme temperatures
- It fails a periodic examination
- It has been used to arrest a fall or has been excessively loaded
- It is more than 10 years after the date of manufacture (textile items or items with textile components). Metal items have a potentially indefinite lifespan if stored correctly.
- If you have any reason to doubt that it is safe to use.

It is the responsibility of the competent inspector to decide whether the equipment should be put back into use, or permanently withdrawn from use. Equipment permanently withdrawn from use must be destroyed, and should be recycled where facilities exist.

Certain environmental elements will considerably accelerate wear: salt, sand, dust, snow, ice, moisture, chemicals, sunlight (UV radiation) – list not exhaustive.

Warning: the safe working life of this product may be as short as its first use in extreme circumstances.

If in doubt, do not hesitate to scrap this product.

### **Guarantee**

In the event of any defect in materials or workmanship please return the product to the dealer, distributor or manufacturer within 3 years of purchase for inspection. We will replace or repair as required. This guarantee does not cover normal wear and tear or accidental damage.

### **Note to resellers**

If the product is re-sold outside the UK and Eire, but within the EU, the reseller is responsible for providing instructions for use, maintenance, periodic examination and for repair in the language of the country in which the product is to be used.

If you require the Intrastat commodity code / customs tariff code or NATO stock number (where applicable) for this product, please contact us via [lyon.co.uk](http://lyon.co.uk)

### **Inspection records**

A record must be kept for each component, subsystem and system, including name and contact details of the manufacturer or supplier, product description, serial number, year of manufacture, date of purchase, date of first use, any other relevant information, and history of periodic examinations and repairs, the name and signature of

the competent inspector and the next due date for inspection. An example of a suitable equipment record is shown on this user instruction and can also be downloaded at [lyon.co.uk](http://lyon.co.uk)

Local jurisdiction may dictate that extra information be recorded in the inspection record – check your country's legal requirements. Some products may have features which need special monitoring during periodic inspections, e.g. wear indicators, in which case this information should also be recorded on the inspection record.

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## Explanation of symbols

	Refer to user instructions
	Permitted use
	Caution
	Danger of death
	Telephone number
	Anchor point
	Rope diameter
	Cable
	<b>SWL</b> (Safe Working Load)

