General Ladder - Legislation and Compliance Guide

Executive Summary

Ladders in the UK are regulated primarily by the **Work at Height Regulations 2005**, supplemented by **BS 4211:2005+A1:2008** (UK standard) and **BS EN ISO 14122-4:2016** (European/international standard). They are subject to PUWER 1998 for maintenance and inspection requirements but generally NOT subject to LOLER 1998.

Critical Safety Note: HSE research shows that hoops/cages on fixed ladders do NOT provide complete fall arrest capability and may interfere with personal fall arrest systems.

1. PRIMARY LEGISLATION

Work at Height Regulations 2005 - Schedule 6 (Requirements for Ladders)

Paragraph 1: When Ladders May Be Used

Ladders may only be used for work at height if a risk assessment demonstrates that more suitable work equipment is not justified because of:

- **Low risk** AND either:
  - (a) **Short duration of use**, OR
  - (b) **Existing features on site which cannot be altered**

Paragraph 2: Surface Requirements

The surface on which a ladder rests must be:

- Stable
- Firm
- Of sufficient strength
- Of suitable composition to safely support the ladder and any intended loading
- Such that rungs or steps remain horizontal

Paragraph 3: Positioning

A ladder must be positioned to ensure its stability during use.

Paragraph 4: Suspended Ladders

Suspended ladders must be:

- Attached in a secure manner
- Unable to be displaced (except flexible ladders)
- Prevented from swinging

Paragraph 5: Securing Portable Ladders

Portable ladders must be prevented from slipping by:

- (a) Securing the stiles at or near upper or lower ends, OR
- (b) Using effective anti-slip or other stability device, OR
- (c) Any other arrangement of equivalent effectiveness

Paragraph 6: Access Requirements

Ladders used for access must protrude sufficiently above the landing place, unless other measures ensure a firm handhold.

Paragraph 7: Interlocking/Extension Ladders

No interlocking or extension ladder shall be used unless sections are prevented from moving relative to each other while in use.

Paragraph 8: Mobile Ladders

Mobile ladders must be prevented from moving before being stepped on.

Paragraph 9: CRITICAL HEIGHT REQUIREMENT - Landing Areas/Rest Platforms

Where a ladder rises a vertical distance of 9 metres or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.

Source: Work at Height Regulations 2005 - Schedule 6

PUWER 1998 (Provision and Use of Work Equipment Regulations)

Fixed ladders ARE subject to PUWER, which requires:

- Work equipment must be safe for use
- Must be maintained in a safe condition
- Must be inspected at appropriate intervals
- Users must receive adequate training

Source: HSE PUWER Overview

LOLER 1998 (Lifting Operations and Lifting Equipment Regulations)

Fixed ladders are generally **NOT subject to LOLER** as they are not considered "lifting equipment" (which refers to equipment that lifts people or goods from one level to another in a continuous transport manner).

Source: HSE LOLER Overview

2. KEY HEIGHT THRESHOLDS AND REQUIREMENTS

Height/Measurement	Requirement	Source
9 metres or more vertical rise	Rest platforms or safe landing areas at suitable intervals (where reasonably practicable)	WAHR 2005, Schedule 6, Para 9
Over 2.5 metres height	Safety cages/hoops OR fall arrest systems required	BS 4211 / UK industry practice
2.5 metres or less	No mandatory cage/hoop requirement	BS 4211 / UK industry practice

Rest Platform/Landing Area Requirements

When Required: Ladders with 9+ metres vertical rise

Purpose:

- Provide rest points for users
- Reduce fatigue-related falls
- Break up long vertical climbs

"Suitable intervals" interpretation:

- Not specifically defined in WAHR 2005
- Industry practice and BS standards should be consulted
- Risk assessment should determine appropriate spacing based on:
  - Frequency of use
  - User fitness/capability
  - Environmental conditions
  - Nature of work being performed

Source: Work at Height Regulations 2005, Schedule 6, Paragraph 9

3. DESIGN AND INSTALLATION STANDARDS

BS 4211:2005+A1:2008 - Specification for Permanently Fixed Ladders

Rung Specifications

- **Spacing between rungs:** 225 mm to 300 mm
- **Rung diameter:** 20-35 mm
- **Rung load capacity:** 1.5 kN minimum

Ladder Width

- **Minimum width between stringers:** 300 mm
- **Preferred width:** 400 mm

Clearances

- **Behind each rung:** Minimum 200 mm clear space

- **On user side:** Minimum 600 mm clearance

Load Capacity

- **Vertical load per stile:** 3 kN minimum
- **Pull-out load:** 0.5 kN minimum

Safety Features

- All vertical ladders can be constructed with either safety cage OR fall arrest system
- Self-closing gate should be fitted where ladder breaks existing handrail
- Safety cages/hoops are described as providing "passive collective protection"

Source: BS 4211:2005+A1:2008 - BSI

BS EN ISO 14122-4:2016 - Safety of Machinery - Fixed Ladders

Key Requirements

- Used with ISO 14122-1 for complete fixed ladder system requirements
- Covers fixed ladders as part of stationary machines
- **Round rungs are NOT permitted**
- Rungs must have slip-resistant walking surface
- Detailed geometric specifications for rungs, stiles, and safety cages
- Establishes test weights and application points

Source: BS EN ISO 14122-4:2016 - BSI

4. HOOPED/CAGED LADDERS - CRITICAL SAFETY INFORMATION

When Hoops/Cages Are Required

Threshold: Fixed ladders over **2.5 metres** height require either:

- Safety cages/hoops, OR
- Fall arrest systems

Source: BS 4211 / UK industry practice

HSE SAFETY BULLETIN - Hooped Ladders and Fall Arrest Systems

CRITICAL FINDINGS:

1. **No Complete Fall Protection:** "There is NO evidence that hoops (also known as cages) on ladders provide complete fall arrest capability"
2. **Interference with Fall Arrest Equipment:** "If a fall arrest system is used there is a risk that the hoops can compromise its operation or effectiveness in preventing injury"
3. **Specific Risks Identified:**
    - Hoops may interfere with operation of fall arrest equipment (particularly inertia reel devices)
    - Users face injury risk from striking the cage during a fall

- Hoops alone may not effectively arrest a fall without causing injury

HSE Recommendations for Duty Holders

DO:

- ✓ Review risk assessments where hooped ladders are used
- ✓ Consider additional fall protection beyond hoops alone
- ✓ Evaluate alternative means of access where practicable
- ✓ Consult manufacturers about fall arrest equipment performance with hooped ladders
- ✓ Consider providing climbing helmets to reduce cage-strike injury risk

DO NOT:

- ✗ Blanket remove hoops (would probably increase overall risk)
- ✗ Prohibit use of fall arrest systems within hooped ladders
- ✗ Assume hoops provide complete fall protection

HSE Research Reports

- **RR258:** Preliminary investigation into fall-arresting effectiveness of hooped ladders
- **RR657:** Investigation into fall-arresting effectiveness of ladder safety hoops when used with various fall-arrest systems

Conclusion: While hoops offer some benefits for ladder access, they may interfere with fall arrest equipment operation and do not provide complete fall protection.

Sources:

- HSE Safety Bulletin - Hooped Ladders
- HSE Research Report RR657

5. INSPECTION AND MAINTENANCE REQUIREMENTS

Three Types of Inspections Required

A. Pre-Use Checks (Daily)

Frequency: Every working day, before each use

Who: Users themselves

Recording: NOT required (but defects must be reported to management immediately)

Purpose: Identify immediate/serious defects before use

What to Check:

- Damaged or worn feet
- Twisted, bent, or dented side rails (stiles)
- Cracked, worn, bent, or loose steps (rungs)
- Missing or damaged tie rods
- Cracked or damaged welds

- Loose rivets
- Damaged stays
- General visible defects

Action: If defects found, withdraw ladder from service and report immediately

B. Detailed Visual Inspections (Periodic)

Frequency: At regular fixed intervals determined by risk assessment

Typical Intervals:

- Every **6 months** for frequently used ladders in harsh environments
- Every **12 months** for less frequently used ladders in good conditions
- Based on: manufacturer's instructions, industry advice, employer's experience

Who: Competent person (can be a competent employee)

Recording: MUST be recorded - employers must maintain up-to-date inspection records

What to Inspect:

- All items from pre-use checks (more thorough examination)
- Structural integrity
- Fixings and attachment points
- Compliance with manufacturer's maintenance instructions
- General condition and deterioration

Action: Record findings, remedy defects before ladder returned to service

C. Post-Event Inspections (As Required)

Frequency: After every event liable to jeopardize safety

Examples of Triggering Events:

- Impact damage (vehicle strike, dropped object)
- Weather events (high winds, flooding)
- Structural work near ladder
- Observed misuse
- Fall incidents

Who: Competent person

Recording: MUST be recorded

Special Case: Scaffold Ladders

Fixed ladders that are part of scaffold structures must be inspected every **7 days** as part of scaffold inspection requirements.

Source: HSE Inspection of Work Equipment

Competent Person Requirements

Definition: A competent person for ladder inspections must have:

- Sufficient knowledge and experience
- Necessary level of competence for the equipment type
- Information and knowledge of what to look for
- Ability to recognize what is acceptable
- Been assigned the task of carrying out ladder inspection

Key Points:

- Can be a competent employee on-site (does not require external inspector)
- Level of competence varies according to equipment type and use
- Training, knowledge, experience, and skill all contribute to competence
- No specific prescribed qualifications required by HSE

Training Should Cover:

- Types of defects to look for
- Assessment of defect severity
- Recording requirements
- When to withdraw equipment from service
- Manufacturer's instructions and specifications

Sources:

- HSE Web Communities - Competent to Inspect Ladders
- HSE Training and Competence

Maintenance Requirements

Legal Basis: PUWER requires work equipment to be maintained in a safe condition

Maintenance Must:

- Follow manufacturer's instructions
- Detect deterioration before it creates health and safety risk
- Remedy defects promptly
- Be carried out by competent persons

Maintenance Activities Include:

- Cleaning (remove dirt, grease, debris)
- Tightening loose fixings
- Replacing worn/damaged components
- Treating corrosion
- Repainting/protective coating maintenance
- Ensuring structural integrity

Defect Management:

- Defective ladders must be withdrawn from service immediately
- Repairs must restore ladder to safe condition
- If repair not possible/economical, ladder must be permanently removed

Record Keeping Requirements

What Must Be Recorded:

- Detailed visual inspection reports
- Date of inspection
- Name of competent person conducting inspection
- Defects identified
- Remedial actions taken
- Date of remedial actions

What Need NOT Be Recorded:

- Daily pre-use checks (though defects must be reported)

Retention Period:

- Records should be retained to provide "a snapshot of the state of the ladders over time"
- Recommended: Until next inspection, minimum 12 months

Format:

- No prescribed format
- Can be paper or electronic
- Must be readily accessible

Source: HSE Safe Use of Ladders - Inspecting Condition

6. SAFE USE REQUIREMENTS

Three Points of Contact

Principle: Maintain three points of contact when climbing and wherever possible at working position:

- Two feet and one hand, OR
- Two feet and body supported by ladder (knees/chest when both hands needed briefly)

Important Note: The "three points of contact" rule is NOT in the Regulations but is HSE guidance and recommended good practice.

When Both Hands Needed:

- Acceptable for brief periods (e.g., holding nail while hammering, starting a screw)
- Where handhold cannot be maintained other than briefly, additional measures needed to prevent falls or mitigate consequences

Source: HSE Types of Ladder Guidance

Carrying Materials and Tools

General Restrictions:

- Three points of contact must be maintained
- Carrying materials/tools that prevent maintaining handhold creates additional risk
- Heavy or bulky items should NOT be carried while climbing

Alternatives:

- Use tool belts for small tools
- Haul materials up with rope after reaching work position
- Use mechanical lifting equipment
- Consider alternative access methods (MEWPs, scaffolds) for material-intensive work

Fall Protection Equipment for Fixed Ladders

When Fall Protection Required

For fixed ladders over **2.5m** height, provide either:

- Safety cages/hoops, OR
- Fall arrest systems (harness and lanyard with shock absorption)

Fall Arrest System Components

Typical System:

- Full body harness
- Lanyard with inline shock absorption
- Attachment point (running line, fixed anchor, or inertia reel system)

Critical Compatibility Issue:

- HSE research shows hoops may interfere with fall arrest equipment
- Particular concern with inertia reel devices
- Manufacturers must be consulted about equipment performance with hooped ladders

Additional Protection:

- Climbing helmets recommended to reduce cage-strike injuries during falls
- Regular inspection of fall arrest equipment
- Testing and certification of personal protective equipment

Training Required:

- Proper fitting of harness
- Correct wearing and adjustment
- Attachment procedures
- Inspection of equipment before use
- What to do in event of fall/suspension

Sources:

- HSE Safety Bulletin - Hooped Ladders
- HSE Work at Height FAQs

Training Requirements for Users

Legal Requirement (PUWER):

- To use a ladder, you must be **competent** OR working under supervision of competent person if in training
- Employers must ensure all users receive adequate training for health and safety

Training Must Cover:

- Methods for using equipment safely
- Risks from use
- Precautions to be taken
- Three points of contact technique
- Inspection requirements (pre-use checks)
- Emergency procedures

Competence Components:

- Combination of training
- Practical and theoretical knowledge
- Experience
- For low-risk, short duration ladder tasks: may only require instruction on safe equipment use

Training for Supervisory/Managerial Staff:

- Similar duty applies to supervisors and managers
- Must understand risks and control measures
- Must be able to recognize unsafe practices

Sources:

- HSE When/How to Use Ladders Safely
- HSE Training and Competence

7. COMPLIANCE IMPLEMENTATION CHECKLIST

Initial Risk Assessment

- [ ] Assess whether fixed ladder is appropriate or if more suitable equipment should be used
- [ ] Confirm task is low risk AND either short duration OR existing unalterable features
- [ ] Document risk assessment findings

Design and Installation Compliance

- [ ] Verify ladder complies with BS 4211:2005+A1:2008 or BS EN ISO 14122-4:2016
- [ ] Confirm rung spacing is 225-300 mm
- [ ] Verify minimum width of 300 mm between stringers

- [ ] Check clearances: 200 mm behind rungs, 600 mm on user side
- [ ] Verify load capacities meet requirements (3 kN per stile, 1.5 kN per rung)
- [ ] For ladders over 2.5m: Install safety cages/hoops OR provide fall arrest system
- [ ] For ladders over 9m: Install rest platforms at suitable intervals (where reasonably practicable)

Hooped Ladder Safety Review

- [ ] Review risk assessments for all hooped ladders
- [ ] Acknowledge that hoops do NOT provide complete fall arrest capability
- [ ] Evaluate whether additional fall protection needed
- [ ] Consider alternative access methods where practicable
- [ ] If fall arrest systems used with hoops: consult manufacturers about compatibility
- [ ] Consider providing climbing helmets
- [ ] Do NOT remove hoops without full risk assessment
- [ ] Do NOT prohibit fall arrest systems

Inspection Program Setup

- [ ] Establish daily pre-use check system for users
- [ ] Train users on pre-use check procedures
- [ ] Establish defect reporting procedure
- [ ] Determine detailed inspection frequency based on risk assessment (typically 6-12 months)
- [ ] Appoint competent person(s) to conduct detailed inspections
- [ ] Provide training for competent persons
- [ ] Create inspection record forms/system
- [ ] Establish post-event inspection trigger procedures
- [ ] Set up record retention system

Maintenance Program

- [ ] Obtain and review manufacturer's maintenance instructions
- [ ] Establish maintenance schedule
- [ ] Appoint competent persons for maintenance
- [ ] Create defect management procedure
- [ ] Establish criteria for withdrawing ladders from service
- [ ] Set up repair/replacement authorization process
- [ ] Create system for tracking maintenance actions

User Training Program

- [ ] Identify all users requiring training
- [ ] Develop training content covering: safe use methods, risks, precautions, three points of contact
- [ ] Provide fall arrest equipment training (if applicable): harness fitting, wearing, attachment
- [ ] Train on pre-use checks and defect reporting
- [ ] Train supervisors and managers
- [ ] Document training provided
- [ ] Establish refresher training schedule
- [ ] Establish competency assessment process

Fall Protection Equipment (if applicable)

- [ ] Select appropriate fall arrest equipment
- [ ] Verify compatibility with hooped ladders (if applicable)
- [ ] Establish inspection regime for fall arrest equipment
- [ ] Provide storage facilities for equipment
- [ ] Train users on proper use
- [ ] Consider provision of climbing helmets

Record Keeping

- [ ] Set up inspection record system
- [ ] Set up training record system
- [ ] Set up maintenance record system
- [ ] Establish record retention periods
- [ ] Assign responsibility for record maintenance
- [ ] Ensure records are readily accessible

Ongoing Review

- [ ] Schedule periodic reviews of risk assessments
- [ ] Monitor incident/near-miss reports involving fixed ladders
- [ ] Review effectiveness of control measures
- [ ] Update procedures based on new guidance or incidents
- [ ] Consider whether alternative access methods now reasonably practicable

8. QUICK REFERENCE - KEY COMPLIANCE POINTS

Height Thresholds

Height	Requirement
Over 2.5m	Safety cages/hoops OR fall arrest system
Over 9m	Rest platforms at suitable intervals

Inspection Frequencies

Inspection Type	Frequency
Pre-use checks	Daily/before each use
Detailed visual inspection	Risk assessment based (typically 6-12 months)
Scaffold ladders	Every 7 days
Post-event	After any event liable to jeopardize safety

Design Specifications (BS 4211)

Element	Specification
Rung spacing	225-300 mm
Rung diameter	20-35 mm
Rung load capacity	1.5 kN minimum
Width between stringers	300 mm minimum (400 mm preferred)
Clearance behind rungs	200 mm minimum
Clearance on user side	600 mm minimum
Load per stile	3 kN vertical, 0.5 kN pull-out

Documentation Required

- ✓ Risk assessments
- ✓ Detailed inspection records
- ✓ Training records
- ✓ Maintenance records
- ✓ Defect reports and remedial actions

Critical Safety Points

- ⚠️ Hoops do NOT provide complete fall protection
- ⚠️ Hoops may interfere with fall arrest systems
- ⚠️ Three points of contact must be maintained
- ⚠️ Only use for low risk + (short duration OR unalterable features)
- ⚠️ Competent persons required for inspections
- ⚠️ Defective ladders must be withdrawn immediately

9. COMMON NON-COMPLIANCES

Design/Installation Issues

- No rest platforms on ladders over 9m
- No safety cages or fall arrest systems on ladders over 2.5m
- Inadequate clearances (less than 200mm behind rungs, less than 600mm on user side)
- Rung spacing outside 225-300mm range
- Inadequate fixing to structure

Inspection Issues

- No documented inspection program
- Inspections not carried out at appropriate intervals
- Records not maintained
- Inspections by non-competent persons
- No pre-use check system for users

Maintenance Issues

- Defective ladders not withdrawn from service
- Deterioration not remedied promptly
- No maintenance schedule based on manufacturer's instructions
- Repairs by non-competent persons

Use Issues

- Use for tasks exceeding "short duration" without justification
- Not maintaining three points of contact
- Carrying excessive materials/tools while climbing
- Use by untrained persons
- Fall arrest equipment not used on tall ladders
- Incompatible fall arrest equipment used with hooped ladders

Training Issues

- Users not trained or assessed for competence
- No training records
- Training doesn't cover pre-use checks
- Fall arrest equipment users not trained on proper use

Documentation Issues

- No risk assessment justifying ladder use
- No inspection records
- No training records
- No defect reporting system

10. SOURCES AND REFERENCES

UK Legislation

- The Work at Height Regulations 2005 (SI 2005/735)
- Schedule 6 - Requirements for Ladders
- PUWER 1998

HSE Guidance

- Safe use of ladders and stepladders - Main Hub
- Inspecting Condition of Ladders
- When/How to Use Ladders Safely
- Types of Ladder
- Hooped Ladders Safety Bulletin
- Work at Height FAQs
- Inspection of Work Equipment
- PUWER Overview

- Training and Competence

HSE Research

- RR657: Effectiveness of Ladder Hoops with Fall-Arrest Systems

British Standards

- BS 4211:2005+A1:2008 - Specification for permanently fixed ladders
- BS EN ISO 14122-4:2016 - Safety of machinery - Permanent means of access to machinery - Part 4: Fixed ladders

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IMPORTANT DISCLAIMER

This document provides guidance based on current UK HSE legislation and guidance. It does not constitute legal advice. Duty holders should:

- Conduct site-specific risk assessments
- Consult current versions of regulations and standards
- Seek professional advice for complex installations or unusual circumstances
- Monitor HSE website for guidance updates
- Consider engaging competent health and safety professionals for implementation

Compliance with this guidance does not guarantee legal compliance in all circumstances. Each installation must be assessed individually based on its specific context and risks.