Fixed Ladder Inspection

1. INSPECTION AND MAINTENANCE REQUIREMENTS

Summary of Inspection Requirements

Inspection Type	Frequency	Responsible Person	Recording Required	Legal Basis
Visual Checks	Monthly (recommended)	Competent person or responsible person	Recommended	RRF(SO) 2005 Article 17
Detailed Annual Inspection	Every 12 months	Competent person	**YES - MANDATORY**	PUWER 1998
Structural Engineer Survey	Every 5 years	Qualified structural engineer	**YES - MANDATORY**	BS 8210:2020 (recommended practice)
Post-Event Inspection	After any event liable to jeopardize safety	Competent person	**YES - MANDATORY**	PUWER 1998

A. Monthly Visual Checks (Recommended)

Frequency: Monthly

Legal Basis: RRF(SO) 2005 requires emergency routes to be maintained in working order. Monthly checks demonstrate compliance.

Who: Responsible person, facilities manager, or competent person

Recording: Recommended (provides evidence of compliance)

What to Check:

- ✓ Ladder access is not obstructed (no materials stored near base or platform)
- ✓ Any self-closing gate operates correctly
- ✓ Signage is present and visible
- ✓ Emergency lighting (if present) is functional
- ✓ No obvious structural damage (from visual ground level observation)
- ✓ No corrosion visible from ground level
- ✓ Ladder appears structurally sound

Action if Defects Found:

- Remove obstruction immediately
- If structural concerns, arrange for detailed inspection
- Do not wait until annual inspection if safety is compromised

B. Detailed Annual Inspection

Frequency: Every 12 months

Legal Basis: PUWER 1998 Regulation 6 (requires equipment to be maintained) and Regulation 5 (suitability of equipment maintained)

Who: Competent person (see Section 5 for definition)

Recording: MANDATORY - Inspection records must be maintained

What to Inspect:

Structural Components

- **Stiles (side rails):** Check for twisting, bending, denting, cracking, corrosion
- **Rungs:** Check for cracks, wear, bending, looseness, corrosion
- **Fixings:** Verify all bolts, anchors, and attachment points are secure
- **Welds:** Inspect for cracks, corrosion, damage
- **Rivets:** Check for looseness, missing rivets, damage

Safety Features

- **Safety cages/hoops (if present):** Check for damage, looseness, corrosion, missing sections
- **Self-closing gates:** Test operation, check springs/hinges, verify gate closes and latches properly
- **Rest platforms (if present):** Check structural integrity, guardrails secure, handrails intact
- **Landing platform at top:** Verify secure attachment, adequate size, guardrails present

Accessibility and Safety Systems

- **Access clearances:** Verify 200mm behind rungs, 600mm on user side remain unobstructed
- **Signage:** Check all emergency exit signs present, visible, in good condition
- **Emergency lighting:** Test operation (main power and emergency battery), verify adequate intensity
- **Surface coatings:** Assess protective paint/coating condition, note areas needing treatment

Environmental Factors

- **Corrosion:** Assess extent (surface rust vs. structural corrosion), prioritize areas requiring treatment
- **Biological growth:** Remove algae, moss, or vegetation that could cause slips
- **Weather damage:** Check for impact damage, water ingress, frost damage

Load Testing: Not typically required annually unless concerns identified. Structural engineer survey (5-yearly) includes load assessment.

Documentation Required:

- Date of inspection
- Name and signature of competent person
- Ladder identification (location, reference number)
- Condition assessment for each component
- Defects identified with severity rating
- Remedial actions required
- Date by which remedial actions must be completed

- Follow-up confirmation when remedial actions completed

Action if Defects Found:

- **Critical defects** (structural damage, missing components, unsafe access): Consider whether ladder remains safe for emergency use - if not, install temporary barriers and warning signs, remedy immediately
- **Non-critical defects** (minor corrosion, worn paint, dirty rungs): Schedule remedial action, re-inspect after completion

C. Five-Yearly Structural Engineer Survey

Frequency: Every 5 years

Legal Basis: BS 8210:2020 Section 17.1.4 (British Standard Guide to Building Maintenance Management) - **Industry best practice recommendation**

Who: Qualified structural engineer

Recording: MANDATORY - Detailed structural report required

Purpose:

- Assess structural integrity comprehensively
- Identify deterioration not visible in annual inspections
- Verify continued safe load-bearing capacity
- Provide professional engineering assessment

What Structural Engineer Assesses:

- Load-bearing capacity of ladder structure
- Condition of structural fixings and anchors
- Foundation/mounting point integrity
- Corrosion extent and impact on structural strength
- Compliance with design standards (BS 4211, BS EN ISO 14122-4)
- Remaining service life estimate
- Recommendations for remedial works or replacement

When to Commission Earlier:

- Suspected structural damage
- After significant building alterations near ladder
- Following severe weather events or impacts
- If annual inspection raises structural concerns
- Before major building works that might affect ladder

Report Should Include:

- Structural calculations (if load capacity in question)
- Photographic evidence
- Severity rating of any defects
- Prioritized recommendations for remedial works
- Timeline for implementing recommendations
- Statement on continued safe use

Source: BS 8210:2020 - Fire Escape Inspections

D. Post-Event Inspections

Frequency: After any event liable to jeopardize safety

Legal Basis: PUWER 1998 Regulation 6(3)

Triggering Events:

- Impact damage (vehicle collision, dropped object)
- Severe weather (high winds, flooding, heavy snow loading)
- Structural alterations to building near ladder
- Fire (even if ladder not directly involved - heat exposure may have affected strength)
- Observed misuse or vandalism
- Any near-miss or incident involving the ladder

Who: Competent person (structural engineer if significant structural concerns)

Recording: MANDATORY

Action: Do not return ladder to service until inspection confirms safety

2. COMPETENT PERSON REQUIREMENTS

Who Can Conduct Annual Inspections?

A **competent person** for emergency escape ladder inspections must have:

1. **Knowledge:** Understanding of ladder types, components, structural integrity, and deterioration mechanisms
2. **Experience:** Practical familiarity with fixed ladders and their inspection
3. **Training:** Appropriate instruction on inspection methods and defect recognition
4. **Ability:** Can systematically inspect, identify defects, assess severity, and make safety decisions
5. **Assignment:** Formally given the responsibility to conduct inspections

Important: HSE does **NOT** require specific qualifications or certifications. Competence is based on knowledge + experience + training.

Can internal employees be competent persons? YES - provided they have appropriate knowledge, experience, and training.

Refer to: `Competent Person Fixed Ladder Inspections.pdf` for detailed guidance on competence requirements.

Who Must Conduct Structural Surveys?

Five-yearly structural surveys MUST be conducted by a qualified structural engineer with:

- Professional engineering qualification (e.g., CEng, IEng, chartered engineer status)
- Experience in structural assessment of metalwork and access structures
- Professional indemnity insurance
- Ability to perform structural calculations and load assessments

Cannot be delegated to internal facilities staff - this requires professional engineering expertise.

3. KEY DIFFERENCES: EMERGENCY ESCAPE vs. WORK ACCESS LADDERS

Comparison Table

Aspect	Ladders for Normal Work Access	Emergency Escape Ladders (Never Used for Work)
Primary Legislation	Work at Height Regulations 2005 + PUWER 1998	Regulatory Reform (Fire Safety) Order 2005 + PUWER 1998
Building Regulations Status	Acceptable for low-risk, short-duration work	**Acceptable for plant rooms/areas not normally occupied** (Approved Document B s.3.28) where conventional stair impractical
Risk Assessment (WAHR Schedule 6)	**Required** - must justify ladder use over safer alternatives	**Not applicable** - emergency use is not "work at height"
Pre-Use Checks	**Daily** - before each use by users	**Not applicable** - ladder not used in normal operations
Detailed Visual Inspections	**6-12 monthly** (based on frequency of use and environment)	**12 monthly** (can be less frequent as no wear from regular use)
Structural Engineer Survey	Not standard requirement (unless specific concerns)	**Recommended every 5 years** (BS 8210:2020 best practice)
Safety Cages/Hoops (>2.5m)	**Legally required** OR fall arrest system	**Recommended but not legally mandated** (practical for emergency use)
Rest Platforms (>9m)	**Legally required** "where reasonably practicable" (WAHR Schedule 6)	**Recommended** (improves accessibility for less mobile persons)
Three Points of Contact Rule	**Applies** during work use	**Does not apply** during emergency escape
User Training	**Mandatory** - all users must be competent or supervised	**Not required** - occupants use in emergency without training
Fall Arrest Equipment	May be required for tall ladders (>6m typical threshold)	**Not practical** - emergency users won't don harnesses during evacuation
Signage	General safety signage	**Mandatory emergency exit signage** (Fire Safety Order)
Emergency Lighting	Not typically required	**Mandatory if natural light inadequate** (Fire Safety Order)
Keeping Clear	Good practice	**Legal requirement** - must be kept clear at all times (Fire Safety Order)
Locking/Securing	May be secured to prevent unauthorized access	**Must not be locked so it cannot be immediately opened** in emergency (Fire Safety Order)

Key Takeaways

Emergency escape ladders are subject to LESS STRINGENT inspection regimes than work access ladders because:

1. No wear and tear from daily use
2. No risk to workers during normal operations
3. Deterioration is slower without regular loading

However, emergency escape ladders have ADDITIONAL fire safety requirements:

1. Must be kept clear and accessible at all times
2. Require emergency exit signage and emergency lighting
3. Must not be locked or secured in ways that prevent immediate opening
4. Subject to fire risk assessment under RRF(SO) 2005

Critical Difference - Structural Surveys:

- Work access ladders: No standard requirement for structural engineer surveys
- Emergency escape ladders: **5-yearly structural surveys recommended** under BS 8210:2020 because structural failure during emergency could be catastrophic

4. PRACTICAL COMPLIANCE FOR OUR SITE

Initial Assessment

Step 1: Confirm Status

- Verify ladder is **genuinely never used for work access**
- If ladder is occasionally used for maintenance/inspection access, it must comply with FULL work ladder requirements (see `General Ladders Compliance.pdf`)
- Document that ladder is designated **"Emergency Escape Only - Not for Work Access"**

Step 2: Building Regulations Check

- Confirm ladder use complies with **Approved Document B section 3.28**:
  - NOT for members of the public
  - Area is not normally occupied (e.g., plant room, roof access, equipment space)
  - Conventional stair would be impractical
- If ladder is for regularly occupied workspace or public areas, it does NOT comply with section 3.28
- If in doubt, consult Building Control or fire risk assessor

Step 3: Fire Risk Assessment

- Include emergency escape ladder in fire risk assessment under RRF(SO) 2005
- Assess adequacy of emergency lighting at ladder location
- Verify signage is compliant with Safety Signs Regulations
- Confirm ladder access is not obstructed and remains clear
- Assess whether less mobile occupants could reasonably use ladder in emergency

Inspection Program Setup

Monthly Checks:

- Assign responsibility (e.g., facilities manager, fire marshal)
- Create simple checklist covering:
  - Access clear and unobstructed
  - Signage visible and intact
  - Emergency lighting functional
  - No obvious damage from ground level observation
- Record checks (logbook or electronic system)

Annual Detailed Inspection:

- Appoint competent person (internal or external)
- Schedule inspection date (recommend fixed date each year, e.g., month before fire risk assessment renewal)
- Create detailed inspection checklist based on Section 4B above
- Ensure inspector has:
  - Safe access to ladder for close inspection (may need MEWP or scaffolding to inspect top sections)
  - Personal protective equipment (harness if climbing ladder to inspect)
  - Camera for photographic evidence
  - Inspection forms and previous inspection records for comparison

Five-Yearly Structural Survey:

- Engage qualified structural engineer with relevant experience
- Provide engineer with:
  - Previous inspection records
  - Original design specifications (if available)
  - Any known incidents or alterations
- Schedule survey to allow time for remedial works if required
- Budget for potential remedial works identified in survey

Post-Event Inspection:

- Establish clear procedure: "If X occurs, ladder must be inspected before being considered safe"
- Examples of X: severe weather warning issued, nearby construction work, any impact damage to building
- Nominate person responsible for triggering inspection
- Have contact details for competent person/engineer readily available

Maintenance Program

Reactive Maintenance:

- Defects identified in inspections must be remedied **without delay** (RRF(SO) requirement)
- Prioritize based on severity:
  - **Critical:** Structural damage, missing components, unsafe access - immediate action
  - **High:** Significant corrosion, worn fixings, malfunctioning gates - remedy within 1 month
  - **Medium:** Minor corrosion, paint deterioration - remedy within 3 months
  - **Low:** Cosmetic issues - remedy within 6 months

- Record completion of remedial works and link to original inspection report

Preventive Maintenance:

- **Annual repainting/protective coating:** Recommended for external ladders in harsh environments (coastal, industrial areas)
- **Cleaning:** Remove algae, moss, debris at least annually (improves slip resistance and prevents accelerated corrosion)
- **Lubrication:** Self-closing gate hinges and springs (annually)
- **Vegetation control:** Keep area around ladder base clear of vegetation

Component Replacement:

- Worn or damaged components should be replaced with parts meeting original design specification
- Major structural repairs may require structural engineer design/supervision
- After significant repairs, commission structural engineer to verify structural integrity

Signage and Emergency Lighting

Signage Requirements:

Must comply with **Health and Safety (Safety Signs and Signals) Regulations 1996**:

- **At ladder base:** Green and white "Emergency Exit" sign with directional arrow
- **At top platform/landing:** "Emergency Exit" sign indicating escape route
- **On building exterior:** If ladder leads to ground, sign indicating "Fire Escape" visible from outside
- Signs must be:
  - Illuminated (either by emergency lighting or photoluminescent)
  - Visible in darkness
  - Unobstructed by equipment or materials

Emergency Lighting Requirements:

Under RRF(SO) 2005, emergency lighting required if natural light is inadequate:

- **At ladder base:** Adequate illumination to locate ladder and assess first rungs
- **Along ladder route:** Sufficient lighting to see rungs during climbing (can be spaced if ladder has cage)
- **At top platform:** Illumination of landing area and onward escape route
- Emergency lights must:
  - Operate automatically on mains failure
  - Provide adequate intensity for safe movement
  - Have sufficient battery duration (typically minimum 3 hours)
  - Be tested monthly (lamp function test)
  - Have full discharge test annually

Responsibility: Ensure emergency lighting is included in building's overall emergency lighting maintenance regime.

Record Keeping

Fire Safety Records (RRF(SO) 2005):

- Fire risk assessment including emergency escape ladder
- Monthly check records (access clear, signage, emergency lighting)
- Emergency lighting test records
- Any incidents or near-misses involving escape routes

Equipment Maintenance Records (PUWER 1998):

- Annual detailed inspection reports
- Five-yearly structural engineer reports
- Post-event inspection reports
- Records of all remedial works
- Component replacement records

Retention Period:

- Current + previous inspection report minimum (i.e., retain until replaced by next inspection)
- Recommended: Retain all inspection records for life of equipment (provides deterioration trend evidence)
- Structural engineer reports: Retain until next survey completed

Format:

- Can be paper or electronic
- Must be readily accessible for inspection by fire authority or HSE
- Should be referenced in fire risk assessment