



IPS **ITCS**
Industrial Performance Services Industrial Tubular Catalyst Services

LADDER SAFETY PROCEDURE

V:2023.1

Ladder Safety Procedure

January 2023

A. Introduction

Stairways and ladders are a major source of injuries and fatalities among construction workers. OSHA estimates that there are 24,882 injuries and as many as 36 fatalities per year due to falls from stairways and ladders used in construction. Nearly half of these injuries are serious enough to require time off the job – 11,570 lost workday injuries and 13,312 non-lost workday injuries occur annually die to falls from stairways and ladders used in construction. As the data demonstrate, work on and/or around ladders and stairways are hazardous.

B. Scope And Application

The OSHA rules apply to all stairways and ladders used in construction, alteration, repair (including painting and decorating), and demolition worksites covered by OSHA's construction safety and health standards. They also specify when stairways and ladders must be provided. They do not apply to ladders that are specifically manufactured for scaffold access and egress but do apply to job-made and manufactured portable ladders intended for general purpose use and which are then used for scaffold access and egress. Rules for ladders used on or with scaffolds are addressed in Subpart L – *Scaffolds* (29 CFR 1926.451).

C. General Requirements

1. A stairway or ladder must be provided at all worker points of access where there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway, embankment, or personnel hoist is provided.
2. When there is only one point of access between levels, it must be kept clear to permit free passage by workers. If free passage becomes restricted, a second point of access must be provided and used.
3. Where there are more than two points of access between levels, at least one point of access must be kept clear.
4. All stairway and ladder fall protection systems required by these rules must be installed and all duties required by the stairway and ladder rules must be performed before employees begin work that requires them to use stairways or ladders and their respective fall protection systems.

The following general requirements apply to all ladders, including job-made ladders:

- a. A double-cleated ladder or two or more ladders must be provided when ladders are the only way to enter or exit a work area having 25 or more employees, or when a ladder serves simultaneous two-way traffic.

- b. Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is in position for use.
- c. Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.
- d. Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm) apart, nor more than 12 inches (31 cm) apart, between center lines of the rungs, cleats, and steps.
- e. Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches (20 cm) nor more than 18 inches (46 cm) apart, between center lines of the rungs, cleats, and steps. The rung spacing on the extension section must not be less than 6 inches (15 cm) nor more than 12 inches (31 cm).
- f. Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- g. A metal spreader or locking device must be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.
- h. When splicing side rails, the resulting side rail must be equivalent in strength to a one-piece side rail made of the same material.
- i. Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
- j. Ladder components must be surfaced to prevent injury from punctures or lacerations and prevent snagging of clothing.
- k. Wood ladders must not be coated with any opaque covering, except for identification or warning labels which may be placed only on one face of a side rail.

D. Portable Ladders

1. Non-self-supporting and self-supporting portable ladders must support at least four times the maximum intended load; extra heavy-duty type 1A metal or plastic ladders must sustain 3.3 times the maximum intended load. The ability of a self-supporting ladder to sustain loads must be determined by applying the load to the ladder in a downward vertical direction. The ability of a non-self-supporting ladder to sustain loads must be determined by applying the load in a downward vertical direction when the ladder is placed at a horizontal angle of 75.5 degrees.
2. The minimum clear distance between side rails for all portable ladders must be 11.5 inches (29 cm).

E. Use Of All Ladders

1. When portable ladders are used for access to an upper landing surface, the side rails must extend at least 3 feet (.9 m) above the upper landing surface. When such an extension is not possible, the ladder must be secured, and a grasping device such as a grab rail must be provided to assist workers in mounting and dismounting the ladder. A ladder extension must not deflect under a load that would cause the ladder to slip off its supports.
2. Ladders must be maintained free of oil, grease, and other slipping hazards.
3. Ladders must not be loaded beyond the maximum intended load for which they were built nor beyond their manufacturer's rated capacity.
4. Ladders must be used only for the purpose for which they were designed.
5. Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder. Wood job-made ladders with spliced side rails must be used at an angle where the horizontal distance is one-eighth the working length of the ladder.
6. Fixed ladders must be used at a pitch no greater than 90 degrees from the horizontal, measured from the back side of the ladder.
7. Ladders must be used only on stable and level surfaces unless secured to prevent accidental movement.
8. Ladders must not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement. Slip-resistant feet must not be used as a substitute for the care in placing, lashing, or holding a ladder upon slippery surfaces.
9. Ladders placed in areas such as passageways, doorways, or driveways, or where they can be displaced by workplace activities or traffic must be secured to prevent accidental movement or a barricade must be used to keep traffic or activities away from the ladder.
10. The area around the top and bottom of the ladders must be kept clear.
11. The top of a non-self-supporting ladder must be placed with two rails supported equally unless it is equipped with a single support attachment.
12. Ladders must not be moved, shifted, or extended while in use.
13. Ladders must have nonconductive side rails if they are used where the worker or the ladder could contact exposed energized electrical equipment.
14. The top or top step of a stepladder must not be used as a step.
15. Cross-bracing on the rear section of stepladder must not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
16. Ladders must be inspected by a competent person for visible defects on a periodic basis and after any incident that could affect their safe use. (See Attachment ***HSE.FOR.Ladder Inspection.2022***)

17. Single-rail ladders must not be used.
18. When ascending or descending a ladder, the worker must face the ladder.
19. Each worker must use at least one hand to grasp the ladder when climbing.
20. A worker on a ladder must not carry any object or load that could cause him/her to lose balance and fall.

F. Structural Defects

1. Portable ladders with structural defects – such as broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components – must immediately be marked defective, or tagged with “Do Not Use” or similar language and withdrawn from service until repaired.
2. Fixed ladders with structural defects – such as broken or missing rungs, cleats, or steps, broken or split rails, or corroded components – must be withdrawn from service until repaired.
3. Defective fixed ladders are considered withdrawn from use when they are (a) immediately tagged with “Do Not Use” or similar language; (b) marked in a manner that identifies them as defective; or (c) blocked – such as with a plywood attachment that spans several rungs.
4. Ladder repairs must restore the ladder to a condition meeting its original design criteria before the ladder is returned to use.

G. Training Requirements

Under the provisions of the standard, employers must provide a training program for each employee using ladders and stairways. The program must enable each employee to recognize hazards related to ladders and stairways and to use proper procedures to minimize these hazards. For example, employers must ensure that each employee is trained by a competent person in the following areas, as applicable:

1. The nature of fall hazards in the work area.
2. The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
3. The proper construction, use, placement, and care in handling of all stairways and ladders; and
4. The maximum intended load-carrying capacities of ladders used.

In addition, employers must retrain each employee as necessary to maintain the understanding and knowledge acquired through compliance with the standard.

H. Glossary

Cleat – A ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.

Double-Cleat Ladder – A ladder with a center rail to allow simultaneous two-way traffic for employees ascending or descending.

Failure – Load refusal, breakage, or separation.

Fixed Ladder – A ladder that cannot be readily moved or carried because it is an integral part of a building or structure.

Handrail – A rail used to provide employees with a handhold for support.

Job-Made Ladder – A ladder that is fabricated by employees, typically at the construction site; not commercially manufactured.

Load Refusal – The point where the structural members lose their ability to carry the load.

Point of Access – All areas used by employees for work-related passage from one area or level to another.

Portable Ladder – A ladder that can be readily moved or carried.

Riser Height – The vertical distance from the top of a tread or platform/landing to the top of the next higher tread or platform/landing.

Side-Step Fixed Ladder – A ladder consisting of a pair of side rails connected by cleats, rungs, or steps.

Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.

*

* *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By Employee: _____ Date: _____

Trainer: _____ Date: _____

Assessor: _____ Date: _____

Regional Manager: _____ Date: _____

Environmental Aspects and Impacts

Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
Purchasing & Administrative Work	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
Climate Control	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
Cleaning of – offices / vehicles	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
Transport (Fleet vehicles / staff travel)	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
Operations		

Sample only.
To be filled in

Risk Assessment

Risk Assessment // insert name here					
Step No: Logical sequence	Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps. Each step should be logical and accomplish a major task.	Potential Safety & Environmental Hazards/Impacts at the site of the Job Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.	Risk Rating Refer to the risk matrix or HSEQT.PRO. Risk Mgt	Recommended Corrective Action or Procedure <i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be reduced or controlled to ALARP before work commences.</i> Document who is responsible for implementing the controls to manage each hazard identified.	Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt
1.					
2.					
3.					
4.					
5.					

Audit



Process: insert// Procedure: Insert //		Date:		Audited by:	
		Location of Audit:		Area Mgr/Supervisor:	
Item	Question	Evidence Sited	Comments		Conformance Score 0,3,5
1.					
2.					
3.					
4.					
5.					
6.					
7.					
AUDITOR'S SIGNATURE:		CONFORMANCE SCORE: / 25		0 – Non-Conformance	
SAFETY REP'S SIGNATURE:		CONFORMANCE %:		3 – Continuous Improvement Opportunity	
				5 – Total Conformance	