

### **Working at Heights Policy**

Prepared in compliance with 29 CFR 1910 Subpart D, Subpart F
29 CFR 1926 Subpart L, Subpart M, Subpart X

pg. 1 (May 2022)

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**Introduction:** OSHA has written several standards that pertain to fall protection. ASRC has addressed the need for fall protection by writing standard operating procedures (SOP), educating and training employees - researchers, actively auditing work practices for compliance and safe work practices.

**Purpose:** To remove the potential for falls while working at heights.

**Scope:** The Advanced Science and Research Center's Fall Protection Policy applies to all ASRC employees who work at heights over 6'. It also includes the use of aerial work platforms, man lifts, or on scaffolding at 10' or more above the floor or ground below. The following standards apply—

#### General Industry (29 CFR 1910)

- f 1910 Subpart D, Walking-working surfaces
- f 1910 Subpart F, Powered platforms, man lifts, and vehicle-mounted work platforms

#### **Construction Industry (29 CFR 1926)**

- f 1926 Subpart L, Scaffolds
- f 1926 Subpart M, Fall protection
- f 1926 Subpart X, Ladders

#### The Seven Key Requirements at ASRC:

- 1. Fall protection required at heights over 6'
- 2. All new buildings must be equipped with fall protection devices
- 3. All Scissor or Aerial lift operators must be trained
- 4. Competent person required on site when working from a scaffold
- 5. Portable ladders must be fiberglass,1A, extra heavy duty/industrial use
- 6. All personnel working at height's must be trained
- 7. All equipment must be inspected and documented prior to use

**Responsibilities:** Departments requiring workers to work at heights above 6' and or work from scaffolding over 10', conduct work utilizing ladders, or from aerial work platforms must inform their employees of the policy and procedures as well as any training requirements.

#### **Department Supervisor**

- Review work requirements, if employee is working at heights over 6', is utilizing lift equipment, or scaffolding ensure employee has had appropriate training.
- Ensure all equipment is in good working order. Inspect all equipment prior to use.
- Determine who "owns" the equipment. Owners bear distinct responsibilities and must be accountable for meeting these responsibilities.
- Other than personal protective equipment, assess the value of leasing equipment as an option to owning the equipment.

#### **Employee**

- Attend training as directed
- Follow all rules and regulations
- Use safe work practices
- Ensure equipment being used is in good working order
- Report any problems with compliance to your supervisor

#### **EHS**

- Coordinate training
- Review policy
- Write operating procedures
- Audit program

#### **Planning Design and Construction**

• Ensure that all new buildings are equipped with the means by which workers will be protected from falls while working at heights over 6'.

\*For example: guard rails, anchor points, hatch covers, guards, etc.

#### **Facilities Operations and Management**

- Routinely inspect fall protection systems and equipment which has been affixed to buildings
- Adequately maintain existing fall protection devices affixed to buildings
- Provide fall protection in areas where it is needed for the maintenance of buildings

**Program Responsibilities:** The effectiveness of the program will be evaluated on a regular basis and as needed by Environmental Health & Occupational Safety Officer.

#### **Definitions:**

- Aerial device-any vehicle-mounted device, telescoping or articulating, or both, which is used to position personnel.
- Competent Person- has been trained and is familiar with all procedures required for the safe use of the lift. The competent person must have the ability to recognize hazards and have the authority to take corrective action immediately.
- Fall Arrest Equipment-components of Fall Arrest Equipment include a full body harness, shock absorbing lanyard or self-retractable lifeline and locking snap hooks, all of which must meet Occupational Safety & Health Administration (OSHA) criteria. Anchor points must be approved for a static load of 5000 pounds or engineered to meet a 2:1 safety factor.
- Fall Prevention-a structural design which limits a fall to the same level (guardrails, aerial lifts with work platforms).
- Fall Protection system-a system designed to protect employees from the risk of a fall when working at heights of 6' or more. Fall protection may include: guardrails, personal fall arrest systems, positioning device systems, safety monitoring systems, safety net systems, warning line systems or covers.
- Genie Lift- a manually propelled elevating aerial platform (Genie brand or other similar type of lift which is manually moved into position).
- Scissor Lift-a type of platform which can usually only move in the vertical plane.

In the event of a fall, employees must have a plan of rescue.

Employees exposed to fall hazards will be included in EHOS organized training programs.

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#### **Portable Ladders (29 CFR 1910.25 and .26)**

#### 1. Ladder Use

- All ladders must be used as intended by the manufacturer.
- Training on ladder safety will be provided to all employees periodically throughout their work history at ASRC and at any time deemed necessary due to the observance of improper use of a ladder.
- In order to ensure the ladder is in good working order each user must inspect the ladder prior to using it and at any time it could have sustained damage. (attachment 1A)
- Set firmly on ground or floor surface.
- Set base of single or multiple section ladders 1' out for every 4' of rise.
- The top of the ladder must be positioned with both rails supported unless outfitted with a single support attachment.

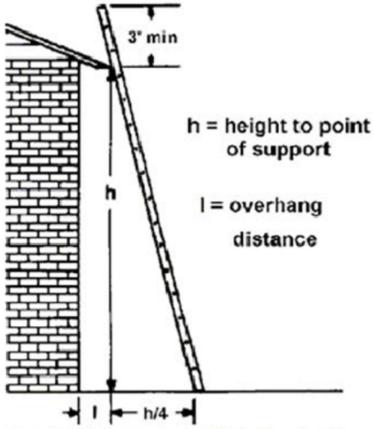


Figure 2. The base of a straight ladder should be one foot out of every four of height to the point of support

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- Observe weight limits posted on ladders.
- Face the ladder when ascending or descending.
- Step ladders must be used on even surfaces, fully opened & locked, and cannot exceed 20'.
- When accessing a roof, the ladder shall extend 3' above the point of contact with the building.
- The length of single ladders or individual sections of extension ladders shall not exceed 30 feet.
- Two-section extension ladders shall not exceed 48 feet in length and over two-section extension ladders shall not exceed 60 feet in length. Each section of an extension ladder shall overlap the adjacent section by at least the number of feet stated in the following:

# Normal length of ladder Overlap Up to and including 36' ------ 3' 3' Over 36, up to and including 48' ----- 4' 5'

- Extension ladders shall not be separated and the sections used independently.
- Manufacturer labels and postings must remain on the ladders. Follow all manufacturer recommendations.
- Review SOP #15 on ladders. (Attachment 1)

#### 2. Ladder Requirements

- Use non-conductive ladders for all electrical work.
- Manufacturer labels and postings must remain on the ladders. Follow all manufacturer recommendations
- Purchase Criteria for new ladders:
  - a. All new ladders will have a duty rating of 1A, extra heavy duty/industrial use for loads up to 300 lbs.
  - b. Ladders will be constructed of fiberglass.

### Fixed Ladders (29 CFR 1910.27 outlines design criteria when building fixed ladders. Appendix B.)

#### **Rung spacing**

- The distance between a fixed ladder and the landing must be between  $2\frac{1}{2}$ " and 12".
- There should be 7" clearance between the center of the ladder rung and the surface behind it. Rungs shall be no more than 12" apart and uniformly spaced. Cages
- Cages or wells shall be provided on ladders of more than 20 feet to a maximum unbroken length of 30 feet.
- The top of the cage must extend 42" above the landing. The bottom of the cage must be between 7' and 8' above the bottom of the ladder.
- Ladder safety devices may be used on tower, water tank, and chimney ladders over 20 feet in unbroken length in lieu of cage protection. (Ski lift towers are covered by appendix A in this policy).

#### **Extensions**

- The side rails of through or side-step ladder extensions shall extend 3 1/2 feet above parapets and landings.
- For through ladder extensions, the rungs shall be omitted from the extension and shall have not less than 18 or more than 24 inches' clearance between rails.
- For side-step or offset fixed ladder sections, at landings, the side rails and rungs shall be carried to the next regular rung beyond or above the 3 1/2 feet minimum.

#### **Inspections**

- All ladders shall be maintained in a safe condition.
- All ladders shall be inspected regularly, with the intervals between inspections being determined by use and exposure.

#### Scaffolding (OSHA 29 CFR 1926 subpart L)

When scaffolding is being used a competent person must be present at all times. The competent person is anyone who has attended an EHS approved scaffold user's course as well as additional training if scaffold is more than 4 times higher than the minimum base dimension. Fall protection for workers above 10' is required and will be determined by the competent person as well as the feasibility of fall protection for erectors and dismantlers.

- 1. Competent person must inspect and oversee the setup of the scaffolding.
- 2. Employees must have completed EHS approved training.
- 3. Supervisors must ensure employees working on scaffold have been trained.
  - Review the SOP #3 on scaffolding. (attachment 2)

#### **Basic Guidelines**

- Do not alter or move while in use
- Protect workers on scaffolds from overhead hazards
- If higher than 10 ft., use guardrails, mid-rails and toe boards
- Use wire mesh between the toe board and guardrail if people work or pass underneath
- Must be equipped with access ladder or equivalent
- Must be capable of supporting four times the maximum intended load



#### **Genie Lifts**

All lift users must have completed an EHS approved training program.

- Employees must inspect the lift prior to use and report any malfunction or damage. Remove the lift from service until repairs are complete.
- The owner's manual and operating instructions must be located on the lift at all times. Follow ALL operating instructions provided with the lift.
- A person on the ground to act as spotter is required. <sup>3</sup>/<sub>4</sub> The spotter must watch the bubble level, the person in the lift for signs of heat stress, fatigue or dizziness, and for pedestrian or motor traffic in the area of the lift.
- Review SOP #3A on Genie Lifts. (Attachment 3)





### <u>Scissor Lifts, Aerial Lifts & Cherry Picker</u> (29 CFR 1910.66-.68, 29 CFR 1926.450-.454)

Any operator must be trained as a "competent" person by attending an EHS approved training program. A competent person is someone who has been trained and is familiar with all procedures required for the safe use of the scissor lift and must manage the activities involving the lift, while the lift is in use. In addition, Cherry Picker operators are required to have a CDL license.

- Equipment must always be inspected by the user before it is used.
- The manual must be located on the lift and all manufacturer recommendations must be followed.
- Lift use out of doors is prohibited if there are winds or lightning.
- Operators must report any malfunction, defects or damage and the lift must be taken out of service until repairs are complete.
- A minimum of 10' must be maintained between the lift basket and any electrical lines or power conductors.
- A person on the ground to act as spotter is required. <sup>3</sup>/<sub>4</sub> The spotter must watch for pedestrian or motor traffic in the area of the lift and to alert pedestrians or overhead hazards.
- Barricades should be used to prevent pedestrians from walking below the work area.





#### **Skylights** (29 CFR\* 1910.23(a) (4))

Every skylight floor opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides. If a skylight is located 6' or more above the next lower level and the skylight is strong enough to support at least twice the weight of employees, equipment, and materials that may be imposed on it without failing then the skylight itself meets the requirements for a hole cover and would be acceptable by OSHA as protection from a fall. If the strength of the skylight is not known or it does not meet this criterion, then other means of fall protection are required. Guardrails, protective covers or fall arrest systems must be used.

#### **Aerial Rescue**

Aerial Rescue Plans must be developed by departments who have employees working at heights. EHS can assist in developing these plans. (See attachment 8 & 9 for examples). In the event that a worker falls, there must be a plan already in place to quickly get the worker safely lowered to the ground. A rescue plan will cover the following:

- When should a rescue be attempted
- Who should attempt the rescue
- What are the procedures to be used in the rescue using safe practice
- How Training guidelines and rescue drills when & where applicable

Any time a worker falls, 911 must be called. Medical evaluation is essential. Any equipment involved in a fall must be removed from service immediately.

#### **Attachment 1**

#### **FOM/EHS # 15 - Page 1 of 2**

#### **Standard Operating Procedures for Portable Ladders**

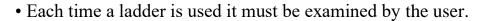
<u>Purpose:</u> To maximize the service-ability and safety of all ladders and to eliminate unnecessary damage, all ladder users must employ safe work practices.

Specific requirements that must be taken into consideration when using a ladder are clearly defined in 29 CFR 1910.25, 29 CFR 1910.26, 29 CFR 1910.27 and 29 CFR 1926.1053.

**Scope:** This procedure applies to all employees using a ladder.

<u>Responsibilities:</u> Supervisors must inform employees of procedures for safe use of ladders and take action when they are not being followed. Supervisors must also replace or repair damaged ladders prior to instructing an employee to use it. The employee is responsible for following these procedures when using a ladder.

#### **Procedure:**



 $\sqrt{\text{All manufacturers'}}$  labels must remain on the ladder.

 $\sqrt{\text{Rungs must be in good condition.}}$ 

 $\sqrt{\text{Ladders}}$  equipped with non-slip pads must have all pads in place.

 $\sqrt{\text{Uprights}}$  and extensions must not be twisted or split.

 $\sqrt{\text{Oil}}$  and grease must be cleaned off any component of a ladder.

√ Ladders found to be in need of repair will be brought back to the employee's shop and replaced immediately with a new fiberglass ladder with a 1A rating. If this is not feasible the ladder must be tagged "Dangerous, DO NOT USE" along with the name and date of the employee and the supervisor it was reported to and replaced as soon as possible. (see SOP 15A − inspection sheet)

• Select the proper ladder for the job.

#### Page 2 of 2

#### Non-conductive ladders must be used for all electrical work.

Step type ladders must be used on even surfaces, fully opened & locked.

Never use closed.

Extension ladders must not be separated and the sections used independently.

Make certain that worker and tools do not exceed the weight limit established by the manufacturer for that ladder.

- Ladders must be erected such that the base of the ladder is one quarter the length of the ladder away from the wall or upward support and placed to prevent slipping.
- Ladders used to gain access to a roof should extend 3' above the point of contact with the building.

#### **Standard Operating Procedures for Ladder Inspection:**

- The top of the ladder must be positioned with both rails supported.
- The climber must face the ladder when ascending or descending.
- Ladders must only be used as the manufacturer intended them to be used.
- Portable ladders must be capable of supporting at least 4 times the maximum intended load. Never exceed the load rating on the ladder.
- Ladders must not be tied or fastened together to create longer sections.
- If the ladder tips over during use then a re-inspection is necessary. Be sure to inspect for dents, sheared rivets, loosened hardware, rung to side rail connections and bending.

#### **Purchase Criteria for new ladders:**

All new ladders will have a duty rating of 1A extra heavy duty/industrial use for

loads up to 300 lbs.	171, Oxtia nouvy	daty/madstrar	use
Ladders will be constructed of fiberglass.			
	_ Thomas Dicks	on, EHOS Direc	ctor

#### Attachment 1A

#### ORL/EHS SOP #15A Page 1 of 2

#### **Standard Operating Procedures for Ladder Inspection**

**Purpose:** To maximize the service-ability and safety of all ladders and to eliminate unnecessary damage, good safe practices must be employed by all ladder users.

Specific requirements that must be taken into consideration when using a ladder are clearly defined in 29 CFR 1910.25, 29 CFR 1910.26 and 29 CFR 1910.27.

**Scope:** This procedure applies to all employees using a ladder.

**Responsibilities:** Supervisors must inform employees of procedures for safe use of ladders and take action when they are not being followed. Supervisors must also replace or repair a damaged ladder prior to instructing an employee to use it. The employee is responsible for following these procedures when using a ladder.

#### **Procedure:**

- Each time a ladder is used it must be examined by the user.
- $\sqrt{\text{All manufacturers labels must remain on the ladder.}}$
- $\sqrt{\text{Rungs must be in good condition.}}$
- $\sqrt{\text{Ladders equipped with non slip pads must have both pads in place}}$ .
- $\sqrt{\text{Uprights}}$  and extensions must not be twisted or split.
- $\sqrt{\text{Oil}}$  and grease must be cleaned off any component of a ladder.
- $\sqrt{}$  If there is any damage to the ladder the ladder must be tagged "Dangerous, DO NOT USE" along with the name and date of the employee and the supervisor it was reported to until it can be repaired or destroyed.
- $\sqrt{}$  If there is any question as to the condition or safety of a ladder a "Do Not Use Ladder" tag is to be put on ladder and a supervisor called to check it out.
- $\sqrt{\text{Residential Life supervisors are required to inspect each ladder every six months}$  and write down date of inspection and initials on inspection tag attached to the ladder.

#### Page 2 of 2

#### **Standard Operating Procedures for Ladder Inspection**

• Select the proper ladder for the job.

#### Non-conductive ladders must be used.

Step type ladders must be used on an even surface, fully opened locked - - never use closed.

Extension ladders must not be separated and the sections used independently.

- Ladders must be erected such that the base of the ladder is one quarter the length of the ladder away from the wall or upward support and placed to prevent slipping.
- Ladders used to gain access to a roof should extend 3' above the point of contact with the building.
- The top of the ladder must be positioned with both rails supported.
- The climber must face the ladder when ascending or descending.
- Ladders must only be used as the manufacturer intended them to be used.
- Portable ladders are designed as a one-man working ladder based on a 200 lb. load.
- Ladders must not be tied or fastened together to create longer sections.
- If the ladder tips over during use then a re-inspection is necessary. Be sure to inspect for dents, sheared rivets, loosened hardware, rung to side rail connections and bending.

#### **Purchase Criteria for new ladders:**

Ladders will be constructed of fiberglass

All new ladders will have a duty rating of 1A, extra heavy duty/industrial use for loads up to 300 lbs.

<b>5-4</b> 000
Thomas Dickson, EHOS Director

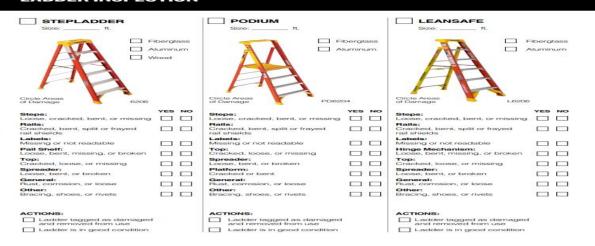
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#### **LADDER INSPECTION**



Circle Areas of Damage

LEANSAFE X3

Top: Cracked, loose, or missing

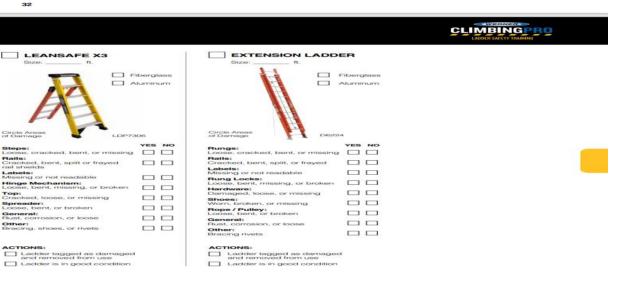
Other: Bracing, shoes, or rivets

ent, or broken General: Rust, corrosion, or loose

ACTIONS:

Ladder tagged as damaged and removed from use

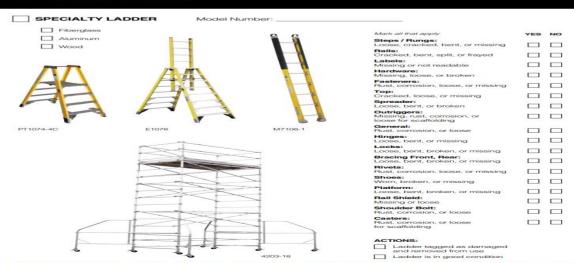
Ladder is in good condition



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#### **LADDER INSPECTION**

Fiberglass
Aluminum



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#### Ladder Inspection For Company Name: Ladder Reference Number: Dept. Inspector Date. Stepladder No ☐ Fiberglass □ Aluminum Steps: Loose, Cracked, Bent or Missing Rails: Cracked, Bent, Split or Frayed Rail Shields Labels: Missing or Not Readable Pail Shelf: Loose, Bent, Missing or Broken Top: Cracked, Loose or Missing Spreader: Loose, Bent or Broken General: Rust, Corrosion or Loose Other: Bracing, Shoes, Rivets Circle Areas of Damage Actions: Ladder tagged as damaged & removed from use Ladder is in good condition **Extension Ladder** Size ft. Fiberglass □ Aluminum No Rungs: Loose, Cracked, Bent or Missing Rails: Cracked, Bent, Split or Frayed Labels: Missing or Not Readable Rung Locks: Loose, Bent, Missing or Broken Hardware: Missing, Loose or Broken Shoes: Worn, Broken or Missing Rope/Pulley: Loose, Bent or Broken Other: **Bracing Rivets** General: Rust, Corrosion or Loose Circle Areas Actions: Ladder tagged as damaged & removed from use Ladder is in good condition

### **Harness Inspection Checklist – Fall Protection**

Description: Serial#			Model#		
			Manufacture Date:		
Inspector:		Inspection Date:			
Inspector (Print)			Signature:		
□ X Fail: ]	Initial	•		□ <b>I</b> Pass: Initial	
REMOVE FRO	M SERVICE	RETUR		RETURN TO SERVICE	
ITEM#	DESCRIPTION	FAIL X	4	PASS	COMMENTS

#### References

29 CFR 1910 Subpart D – Walking and Working Surfaces 29 CFR 1910 Subpart F – Powered Platforms, Manlifts, and Vehicle-Mounted Platforms 29 CFR 1910 Subpart L – Scaffolds

#### **Accident Prevention Tag**

OSHA 1910.145 Specifications for accident prevention signs and tags. *General Environmental Controls*.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=standards&p\_id=9794

#### **Aerial Lifts**

ANSI 92.2-2009 Vehicle-Mounting Elevating and Rotating Aerial Devices

OSHA 1910.66 Powered Platforms for Building Maintenance. *Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms*.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=972\_7

OSHA 1910.66 App C Personal Fall Arrest System (Section I-Mandatory; Sections II and III-Non-Mandatory). *Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms*. <a href="https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=973">https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=973</a>

Grainger Fall Protection for Aerial Work Platforms <a href="https://safety.grainger.com/people/aerial-work-fall-protection">https://safety.grainger.com/people/aerial-work-fall-protection</a>

International Powered Access Federation (IPAF) Statement of Best Practices of Personal Fall Protection Systems for Aerial Work Platform Equipment

 $\frac{https://www.ipaf.org/sites/default/files/2018-02/Best\%20Practices\%20-}{\%20Training\%20and\%20Familiarization\%20\%2802-10-AWP-SBP001\%29\%20EN-US.pdf}$ 

OSHA 1910.67 Vehicle-mounted Elevating and Rotating Work Platforms. *Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms.* 

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_id=9732&p\_table=STANDARD

OSHA 1910.68 Manlifts. *Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms*. https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=standards&p\_id=9733

<u>1998 Interpretation Letter Aerial lift regulations</u>; Fall Protection for Scissor Lifts. https://www.osha.gov/laws- regs/standardinterpretations/1998-07-21

#### Ladder

OSHA 1910.25 Portable wood ladders. Walking-Working Surfaces.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=971\_7

OSHA 1910.26 Portable metal ladders. Walking-Working Surfaces.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=971\_8

OSHA 1910.27 Fixed Ladders. Walking-Working Surfaces.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_id=9719&p\_table=STANDARDS

#### Scaffolds

ANSI/ASSE A10.8-2001, Scaffolding Safety Requirements

OSHA 1910.28 Safety Requirements for scaffolding. Walking-Working Surfaces.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_id=9720&p\_table=STANDARD <u>S</u>

OSHA 1910.29 Manually Propelled Mobile Ladder Stands and Scaffolds (Towers). *Walking-Working Surfaces*.

https://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=972\_1

Department of Buildings NYC Local Law 24 of 2008

http://www.nyc.gov/html/dob/downloads/pdf/ll24of2008.pdf

2014 NYC Building Code 3314.4.5.2

https://www1.nyc.gov/assets/buildings/building\_code/2014\_code\_changes\_chapter\_33.pdf