

**PROCEDURE 14 - Walking - Working Surfaces**

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## **Synopsis**

This procedure provides guidelines to reduce potential slips, trips, and falls associated with walking-working surfaces. This procedure applies to all NWS facilities, work locations, and employees.

### **Initial Implementation Requirements:**

- **Analyze Site Operations versus Requirements of the Procedure**
  - Perform Inspection/Tagging of portable ladders. *(14.3.5c, f, Attachment A)*
  - Perform Inspection of fixed ladders. *(14.3.6m)*
- **Develop/Obtain Documentation/Information required for Site**
  - Complete portable ladder Inspection checklist. *(14.3.5c, Attachment A)*
- **Designate Person to Administer Walking-Working Surfaces Procedure Requirements**
- **Inventory Material/Equipment (Procure as required)**
  - Ladder Safety Devices for fixed ladders, cages (if required). *(14.3.6b, c)*

### **Annual Review and Recurring Task Requirements:**

- **Perform Inspections/Assessments/Testing**
  - Conduct Annual Inspection/Tagging of Portable Ladders. *(14.3.5b, c; Attachment A)*
  - Perform Inspection of fixed ladders. *(14.3.6m)*
  - Conduct inspection of floors, passageways, store rooms and workplaces *(14.5.3c, 14.3.2)*
- **Review/Update Documentation/Information required for Site**
  - Maintain Portable Ladders Inspection Checklists. *(14.3.5c, Attachment A)*
- **Inspect/Replace/Maintain Material/Equipment**
  - Damaged Ladders. *(14.3.5e)*

**Walking - Working Surfaces Checklist**

<b>Requirements</b>	<b>Reference</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>Comments</b>
Is initial and annual review of this procedure conducted and documented?	14.4.2				
Are general requirements related to walking-working surfaces followed?	14.3.2				
Are floors and wall openings guarded or covered as required by the procedure?	14.3.3				
Are annual inspections of portable ladders being conducted?	14.3.5b,c Attachment A				
Are ladders with defects withdrawn from service and tagged as “Dangerous, Do Not Use”?	14.3.5d				
Does each portable ladder have a unique identification number posted on a tag?	14.3.5e				
Are safety requirements for the portable ladders followed?	14.3.5				
Are ladders with length of more than 20 feet to a maximum unbroken length of 30 feet equipped with cages or ladder safety devices?	14.3.6b				
Are safety requirements for fixed ladders met?	14.3.6 d-k				
Are fixed ladders maintained and inspected regularly?	14.3.6m				
Are safety requirements for scaffolding followed?	14.3.7				
Are signs, barricades and safety tape materials					

<b>Requirements</b>	<b>Reference</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>Comments</b>
available if needed to warn of dangers associated with walking-working surfaces?	14.3.2				
Are damaged or weakened scaffold repaired immediately?	14.3.7e				
Are portable ladder inspection checklists maintained and filed?	Attachment A				

## 14 WALKING - WORKING SURFACES

### 14.1 Purpose and Scope

As part of its goal to provide a safe and healthful workplace, the National Weather Service (NWS) is promulgating this procedure related to the slips, trips, and falls associated with walking-working surfaces. This procedure applies to all NWS facilities, work locations, and employees.

### 14.2 Definitions

ANSI. American National Standards Institute.

ASTM. American Society for Testing and Materials.

Dockboards. Devices for spanning short distances between railcars or highway vehicles and loading platforms which do not expose employees to falls greater than four (4) feet (1.2 m).

Extension Ladder. A ladder that is adjustable in length, is not self-supporting, and consists of two or more sections.

Field Office. A Field Office may include the following: Weather Forecast Office, River Forecast Center, Weather Service Office, and a Data Collection Office.

Floor Hole. An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall.

Floor Opening. An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard, through which persons may fall.

Handrail. A single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold for use in case of tripping.

NFPA. National Fire Protection Association.

Operating Unit. For the purpose of this procedure, Operating Unit includes the National Centers for Environmental Prediction, National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), Radar Operations Center (ROC), or the Sterling Field Support Center (SFSC).

OSHA. Occupational Safety and Health Administration.

Platform. A working surface for persons, elevated above the surrounding floor or ground, such as a balcony or platform for the operation of machinery or equipment.

Rolling Ladder and Stairway. Any manually propelled mobile ladder or stairway having wheels or caster that complies with the requirements specified in 29 CFR 1910.29, "Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)."

Runway. A passageway for persons, elevated above the surrounding floor or ground level, such as a foot walk along shafting or a walkway between buildings.

Single Ladder. A ladder that is non-adjustable in length, non-self supporting, and consists of one section.

Stair Railing. A vertical barrier erected along exposed sides of a stairway to prevent a person from falling.

Standard Handrail. A standard handrail consists of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail in order to keep a smooth, unobstructed surface along the top and both sides of the handrail. The brackets shall hold the rail 3 inches from the wall and be no more than 8 feet apart.

Standard Railing. A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons. A standard railing consists of top rail, mid rail, and posts, shall have a vertical height of 42 inches nominal from the upper surface of top rail to floor, platform, runway, or ramp level. Nominal height of mid rail is 21 inches.

Standard Stair Railing. A standard stair railing (stair rail) shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches nor less than 30 inches from the upper surface of the top rail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Standard Toeboard. Four inches nominal in vertical height, with not more than one-fourth inch clearance above floor level.

Station Manager. For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center), NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8; Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

Step Ladder. A self-supporting portable ladder, non-adjustable in length, having flat steps and a hinged back.

Toeboard. A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent materials from falling.

Wall Hole. An opening less than 30 inches, but more than one inch high, of unrestricted width, in any wall or platform.

Wall Opening. An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which a person may fall.

### **14.3 Procedure**

14.3.1 It is the policy of the NWS to adhere to the provisions of 29 CFR 1910, Subpart D, "Walking-Working Surfaces."

14.3.2 General Requirements

- a. All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.
- b. Every workroom floor shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained and gratings, mats, and/or raised platforms shall be provided.
- c. Every floor, working place and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.
- d. Aisles and passageways shall be kept clear and in good repair with no obstruction across passageways or in aisles that could create a hazard.
- e. Permanent aisles and passageways shall be appropriately marked.
- f. Aisles shall be sufficiently wide where mechanical handling equipment is used.
- g. Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, and the like.
- h. Floor load rating limits shall be marked on plates and conspicuously posted.

**NOTE:** Posting of floor load ratings for floors that are slab on grade is not required by the NWS.

- i. No load shall be placed on any floor or roof of a building or other structure that is greater than its load rating limit.
- j. In addition, all buildings equipped for artificial illumination shall be provided with adequate and reliable lighting, including emergency lighting where necessary, for all exit routes.

**NOTE:** Signs, barricades and safety tape materials should be available, if needed, to warn of dangers associated with walking-working surfaces.

14.3.3 Guarding Floor and Wall Openings and Holes

- a. Standard railing shall be provided on all exposed sides of a stairway opening, except at the stairway entrance.
- b. Floor openings may be covered rather than guarded with rails. When the floor opening cover is removed, a temporary guardrail shall be in place, or an attendant shall be stationed at the opening to warn personnel.

**NOTE:** Concerning access panels on raised computer room floors, as long as an access panel is only removed temporarily and does not remain off on a permanent basis, signs, barrier tape, and/or safety cones are acceptable.

- c. Every floor hole into which a person can accidentally walk shall be guarded by either a standard railing with toe board, or a floor hole cover of standard strength and construction.

- d. While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard railing.
- e. Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toe board wherever, beneath the open sides, persons can pass or there is moving machinery or there is equipment which could create a hazard if material were to fall.
- f. Every runway shall be guarded by a standard railing, or the equivalent, on all sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.
- g. Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards shall be guarded with a standard railing and toe board.
- h. Every flight of stairs with four or more risers shall have standard stair railings or standard handrails as specified in 1910.23(d).

#### 14.3.4 Fixed Industrial Stairs

- a. OSHA 29 CFR 1910.24, "Fixed Industrial Stairs," contains specifications for the safe design and construction of fixed general industrial stairs including interior and exterior stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms or pits.
- b. Fixed industrial stairs shall be provided for access to and from places of work where operations necessitate regular travel between levels.

#### 14.3.5 Portable Ladders

- a. All ladders purchased by the NWS shall comply with the requirements specified in OSHA 29 CFR 1910.25, "Portable Wooden Ladders," OSHA 1910.26, "Portable Metal Ladders," ANSI A14.1 "Ladders - Portable Wood - Safety Requirements," or ANSI A14.2, "Ladders-Fixed -Safety Requirements."
- b. Each ladder shall be inspected initially upon being received at the station and annually, thereafter, by the Safety or Environmental/Safety Focal Point.
- c. All ladders shall be inspected in accordance with the guidelines specified in Attachment A, "Portable Ladder Inspection Checklist." Inspection checklists should be completed and maintained.
- d. Ladders which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous - Do Not Use."
- e. Each ladder shall be tagged with its own unique identification number.

<p><b>NOTE:</b> In facilities which have more than one ladder of the same type/manufacturer, tagging allows each ladder to be easily identified.</p>
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- f. Portable stepladders longer than 20 feet shall not be used.
- g. Single ladders longer than 30 feet shall not be used.
- h. Extension ladders longer than 60 feet shall not be used.
- i. Ladders used to gain access to a roof or other area shall extend at least 3 feet above the point of support.
- j. Short ladders shall not be spliced together to make long ladders.
- k. Ladders shall never be used in the horizontal position as scaffolds or work platforms.
- l. Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open position.
- m. Ladder racks shall be established for the storage of all portable ladders in their general use areas.
- n. Ladders shall be maintained in good condition at all times and shall be free of grease and oil.
- o. Ladders shall be placed with a secure footing, or shall be lashed, or held in position.
- p. When using a single or extension ladder, the base of the ladder shall rest securely on a flat surface and the top of the ladder shall be tied off to a secure point.
- q. The foot of a single or extension ladder shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the support).
- r. The worker shall always face the ladder when climbing up or down.
- s. No person shall walk beneath a ladder when another person is on the ladder.
- t. Any person helping to stabilize a ladder shall wear an approved hard hat.
- u. A person working on a ladder shall not lean over to either side or backward away from the ladder to perform work.
- v. No more than one person shall work on or climb the same ladder at a time.
- w. Any person climbing up or down the portable ladder shall maintain three points of contact with the ladder at all times (e.g., two feet and one hand or two hands and one foot). A person shall not carry any object or load that could cause the person to lose balance and fall.
- x. Fall protection is not required while working from portable ladders (e.g. painting, changing light bulb, etc.). However, OSHA advises and encourages the use of fall protection when an employee must work with both hands and fall protection is feasible.

- y. For any maintenance work performed from NEXRAD portable ladders when three points of contact with the ladder cannot be maintained at all times, the use of appropriate fall protection equipment is mandatory, if feasible (e.g., anchor points for the use of self-retracting lanyards (SRL) and/or work positioning are available and use of fall protection equipment does not interfere with a person's ability to perform the maintenance action).
- z. The top of a stepladder shall not be used as a step.
- aa. No employee shall stand on or be supported by the top two steps of a portable ladder.
- bb. Only fiberglass ladders shall be used in locations around electrical equipment. Metal ladders shall never be used near electrical equipment.
- cc. Employees shall contact the Safety or Environmental/Safety Focal Point if any ladder or ladder component is believed to be unsafe or defective. The Safety or Environmental/Safety Focal Point shall immediately remove any unsafe ladder from service.

#### 14.3.6 Fixed Ladders

- a. A fixed ladder is a ladder permanently attached to a structure, building or equipment.
- b. Fixed ladders, with a length of more than 20 feet to a maximum unbroken length of 30 feet shall be equipped with cages or a ladder safety device.
- c. A "cage" is a guard that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.
- d. Cages shall extend a minimum of 42 inches above the top of a landing, unless other acceptable protection is provided.
- e. Cages shall extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder.
- f. A ladder safety device is any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls and may incorporate such features as life belts, friction brakes, and sliding attachments.
- g. Another feature of fixed ladders is the landing platform, which provides a means of interrupting a free fall and serves as a resting place during long climbs.
- h. When fixed ladders are used to ascend to heights exceeding 20 feet (except on chimneys), landing platforms shall be provided for each 30 feet of height or fraction thereof, when cages are used, except that, where no cage, well, or ladder safety device is provided, landing platforms shall be provided for each 20 feet of height or fraction thereof.

- i. Ladder safety devices may be used on tower, water tank, and chimney ladders over 20 feet in unbroken length in lieu of cage protection. No landing platform is required in these cases.
- j. The preferred pitch of fixed ladders shall be considered to come in the range of 75 degrees and 90 degrees with the horizontal. Fixed ladders shall be considered to be substandard if they are installed within the pitch range of 60 and 75 degrees with the horizontal. Substandard fixed ladders are permitted only where it is found necessary to meet conditions of installation. This substandard pitch range is a critical range to be avoided.
- k. Ladders having a pitch in excess of 90 degrees with the horizontal are prohibited.
- l. Any person climbing up or down the ladder shall maintain three points of contact with the ladder at all times (e.g., two feet and one hand or two hands and one foot). A person shall not carry any object or load that could cause the person to lose balance and fall. If the worker cannot perform the work on the ladder with both feet and one hand on the ladder, the employee will have to be protected by appropriate fall protection method.
- m. Fixed ladders shall be maintained in a safe condition and inspected regularly.

#### 14.3.7 Safety Requirements for Scaffolding

- a. OSHA's "Safety Requirements for Scaffolding" standard establishes safety requirements for the construction, operation, maintenance, and use of scaffolds used in the maintenance of buildings and structures.
- b. The footing or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement. Unstable objects, such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.
- c. Scaffolds and their components shall be capable of supporting at least four times the maximum intended load.
- d. Scaffolds shall be maintained in a safe condition and shall not be altered or moved horizontally while they are in use or occupied.
- e. Damaged or weakened scaffolds shall be immediately repaired and shall not be used until repairs have been completed.
- f. A safe means must be provided to gain access to the working platform level through the use of a ladder, ramp, etc.
- g. Overhead protection must be provided for personnel on a scaffold exposed to overhead hazards.
- h. Guardrails, mid rails, and toe boards must be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Wire mesh must be installed between the toe board and the guardrail along the entire opening, where persons are required to work or pass under the scaffolds.

- i. Employees shall not work on scaffolds during storms or when scaffolds are covered with ice or snow.
- j. Scissors lifts are considered by OSHA definition scaffolds when employees are raised to over 10 foot (scaffolding rule). They must be protected from falling by restraint system, fall arrest or guard rails.

14.3.8 Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)

- a. OSHA's "Manually Propelled Mobile Ladder Stands and Scaffolds" standard contains requirements for the design, construction, and use of mobile work platforms (including ladder stands but not including aerial ladders) and rolling (mobile) scaffolds (towers).
- b. All exposed surfaces of mobile ladder stands and scaffolds shall be free from sharp edges, burrs, or other safety hazards.
- c. The maximum work height shall not exceed four times the minimum base dimension unless outriggers, guys or braces are added to provide stability.
- d. Guardrails and toe boards are required for work levels 10 feet or more above the ground or floor.
- e. Employees must be tied off (fall arrest) when working in an aerial lift to reduce potential for or protect employee from being bounced out/off of the basket/work platform.

14.3.9 Other Working Surfaces

- a. Portable dock boards (bridge plates) shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping.
- b. Handholds shall be provided on portable dock boards to permit safe handling when the dock board must be repositioned or relocated.

**14.4 Responsibilities**

14.4.1 Regional or Operating Unit Environmental/Safety Coordinators

- a. Will monitor and promote compliance with the requirements of this procedure at field offices or Operating Unit facilities.
- b. Will ensure that applicable procedures are implemented at regional headquarters or Operating Unit facilities.

14.4.2 Station Manager

- a. Will have oversight over the implementation of this procedure, and ensure that the requirements of this procedure are followed by individuals at the NWS facility.
- b. Will ensure that initial and periodic inventory of ladders, ladder safety devices and other safety equipment is accomplished and adequate stock is maintained.
- c. Will review or delegate review, of this procedure on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall

be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

14.4.3 NWS Headquarters (NWSH)

- a. The NWS Safety Office will provide assistance to Regional Headquarters, Operating Units, and field personnel to ensure that NWS facilities comply with requirements of this procedure.
- b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this procedure.

14.4.4 Safety or Environmental/Safety Focal Point

- a. Will ensure that any responsibilities delegated to them by the Station Manager are implemented in accordance with the requirements of this procedure.
- b. Will inspect ladders as specified in this procedure.
- c. Will provide initial and periodic inspections of floors, passageways, store rooms and workplaces as specified in 14.3.2.

14.4.5 Employees

Individual employees affected by this procedure are required to read, understand and comply with the requirements of this procedure and report unsafe or unhealthful conditions and practices to their supervisor or safety focal point.

<p><b>NOTE:</b> Reference NWSM 50-11 for complete list of responsibilities <a href="http://www.nws.noaa.gov/directives/050/pd05011a.pdf">http://www.nws.noaa.gov/directives/050/pd05011a.pdf</a></p>
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**14.5 References**

Incorporated References. The following list of references was incorporated as a whole or in part into this procedure. These references can provide additional explanations or guidance for the implementation of this procedure.

- 14.5.1 American National Standards Institute, ANSI A1264.1 “Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace, Floor, Wall and Roof Openings; Stairs and Guardrails Systems.”
- 14.5.2 American National Standards Institute, ANSI A14.2 “Ladders - Portable Metal - Safety Requirements.”
- 14.5.3 American National Standards Institute, ANSI 14.3 “Ladders Fixed - Safety Requirements.”
- 14.5.4 American National Standards Institute, ANSI A14.1 “Ladders - Portable Wood - Safety Requirements.”
- 14.5.5 American Society for Testing and Materials, ASTM A36/A36M, “Standard Specification for Carbon Structural Steel.”
- 14.5.6 National Fire Protection Association, NFPA 101, “Life Safety Code.”

- 14.5.7 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910, Subpart D, “Walking-Working Surfaces.”
- 14.5.8 NWS Occupational Safety and Health Procedure #1, “Fall Protection.”
- 14.5.9 American National Standard Institute , ANSI A92.2 “Vehicle-Mounted Elevating and Rotating Aerial Devices”
- 14.5.10 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.67, “Aerial Lifts”
- 14.5.11 U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1926.45, “Work Platforms”

**14.6 Attachments**

Attachment A. Portable Ladder Inspection Checklist

**ATTACHMENT A**  
**Portable Ladder Inspection Checklist**

Ladder Location: \_\_\_\_\_ Ladder Weight Rating: \_\_\_\_\_

- \_\_\_ All movable parts are operating correctly.
- \_\_\_ The ladder is free of any structural damage.
- \_\_\_ Bolts and rivets are in place, secured and free from excessive wear.
- \_\_\_ Steps and rungs are secure and without any looseness or wobble.
- \_\_\_ Ropes and pulleys on extension ladders are operational and free from defects.
- \_\_\_ Ladders are not twisted, distorted or warped.
- \_\_\_ Ladders are free from corrosion, rust, rot or other degenerative process.
- \_\_\_ Ladders exposed to excessive heat are removed from service, pending an inspection by the Safety or Environmental/Safety Focal Point.
- \_\_\_ Ladders are not painted except with clear paint, varnish, or for limited identification labeling.
- \_\_\_ Ladders are stored in such a way that the ladder supports no more than its own weight and is in an area free from excessive heat and moisture.
- \_\_\_ Wooden ladders used around toxins, carcinogens or potential carcinogens are sealed with varnish, polyurethane or comparable clear paint.
- \_\_\_ The ladder's weight rating is clearly visible on the ladder.

**Note:** Ladder repairs must restore the ladder to a condition meeting its original design criteria before the ladder can be returned to use. If the ladder cannot be restored to its original design criteria it shall be taken from use permanently. The ladder shall then be destroyed and disposed of to prevent accidental use.

\_\_\_\_\_  
Inspector

\_\_\_\_/\_\_\_\_/\_\_\_\_  
Date