

**Forest Service Handbook  
National Headquarters - Washington Office  
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**Forest Service Handbook 6709.11 – Health and Safety Code Handbook  
Chapter 30 - Facilities**

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**Approved by:** Robert Velasco II, Acting Deputy Chief, Business Operations

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**Responsible Staff:**

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**Digest:** Following is an explanation of the changes throughout the directive by section.

**6709.11:** Revised Handbook in its entirety.

**12 - 13:** Removes codes, captions, and direction for Motorized Vehicles and Specialized Equipment and recodes direction with revisions to FSM 7130.

**14:** Removes codes, captions, and direction for Aviation and recodes direction with revisions to the 2016 National Aviation Safety Management System Guide.

**15:** Removes codes, captions, and direction for Watercraft Safety and recodes direction with revisions to FSM 7130.

**22:** Removes codes, captions, and direction for Resource Management.

**22.3:** Removes codes, captions, and direction for Recreation and recodes direction with revisions to FSM 2300.

**22.4:** Removes codes, captions, and direction for Forest Management and recodes directions with revisions to FSM 2000.

**22.5:** Removes codes, captions, and direction for Watershed and Air Management and recodes direction with revisions to FSM 2500.

**22.6:** Removes codes, captions, and direction for Wildlife, Fish, and Sensitive Plant Management and recodes directions with revisions to FSM 2630.

**22.62:** Removes codes, captions, and direction for Diving and recodes directions with revisions to FSH 4209.11.

**22.7:** Removes codes, captions, and direction for Special Uses and recodes directions with revisions to FSM 2700.

**22.8:** Removes codes, captions, and direction for Minerals and Geology and recodes directions with revisions to FSM 2800.

**23:** Removes codes, captions, and direction for State and Private Forestry.

**24:** Removes codes, captions, and direction for Research.

**25.1:** Removes codes, captions, and direction and recodes directions with revisions to Interagency Standards for Fire and Fire Aviation Operations.

**25.2:** Removes codes, captions, and direction on Smokejumping and recodes directions with revisions to Interagency Standards for Fire and Fire Aviation Operations.

**25.3:** Removes codes, captions, and direction on Law Enforcement and recodes directions with revisions to FSH 5309.11.

**26:** Removes codes, captions, and direction on Management Services.

**27:** Removes codes, captions, and direction on Engineering and recodes directions with revisions to FSM 7000 Series Publications.

**36:** Removes codes, captions, and direction for Electrical Standards and recodes direction with revisions to FSM 7600.

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**37:** Removes codes, captions, and direction for Occupational Health and Environmental Controls and recodes directions with revisions to FSM 7400.

**38:** Removes codes, captions, and direction for General Environmental Controls and recodes direction with revisions to FSM 7400.

**44:** Removes codes, captions, and direction for Heavy Equipment and recodes direction with revisions to EM 7130-2.

**45:** Removes codes, captions, and direction for Equipment Development and recodes direction with revisions to FSM 7120.

**70:** Changes chapter caption from “Job Hazard Analysis (Form FS-6700-7) and Personal Protective Equipment” to “Personal Protective Equipment, Glossary, and Index” and revises chapter in its entirety.

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## **31 - Facilities Construction Work**

In this Handbook "construction work" refers to work projects and activities for general construction, maintenance, alteration, and repair.

### **31.01 - Authority**

The authority for personal protective equipment (PPE) is in Title 29, Code of Federal Regulations (29 CFR 1910.132), section 1910.132.

The authority for material handling equipment, excavations, concrete and masonry construction, and rollover protective structures (ROPS) is in 29 CFR 1926.602, 1926.650-1926.652, 1926.700-1926.706, and 1926.1000-1926.1001.

### **31.06 - References**

1. U.S. Department of Agriculture, Forest Service. Guidelines for Forest Signs and Posters. EM-7100-15.
2. U.S. Department of Transportation, Federal Highway Administration. Manual on Uniform Traffic Control Devices.
3. FSH 7309.11, chapter 30, Development

### **31.1 - Qualifications**

Employees shall be provided training in order to be competent in the work they are to perform. The training must provide employees with the skills to recognize and address hazards of their work and work environments before beginning work.

### **31.11 - Procedures**

The first-line Supervisor and employees shall conduct a risk assessment (RA) for all high-risk work projects and activities where the consequences of unintended outcomes could be serious injuries, fatalities, or significant property damage. RAs must be discussed before beginning any construction or maintenance work projects or activities (FSM 6710, Safety and Occupational Health Program Administration).

### **31.12 - Safety Practices**

1. Manufacturer's recommendations, including use of PPE; ventilation; preparation of surfaces and materials; application of materials and components; and use of flammables/combustibles; must be read and followed.
2. Areas must be cleaned up after each work shift.

3. Construction areas must be marked with appropriate signs and barricades for work areas that may be potentially hazardous to the public and employees in the area.
4. Safety data sheets (SDS) for hazardous materials must be obtained and discussed with affected employees. SDS instructions must be followed as required.

## **32 - Walking and Working Surfaces**

### **32.01 - Authority**

The authority for walking and working surfaces is in Title 29, Code of Federal Regulations (29 CFR) sections 1910.21 - 1910.24.

The authority for signs, signals, barricades, and fall protection is in 29 CFR 1926.200 - 1926.203 and 1926.500.

### **32.06 - References**

1. National Fire Protection Association. NFPA 70: National Electrical Code.
2. U.S. Department of Agriculture, Forest Service. Guidelines for Forest Signs and Posters. EM-7100-15.
3. U.S. Department of Transportation, Federal Highway Administration. Manual on Uniform Traffic Control Devices.

### **32.12 - Safety Practices**

1. Supervisors and employees shall be familiar with Federal Occupational Safety and Health Administration (OSHA) requirements specified in 29 CFR 1910 (General Industry) and 1926 (Construction), as appropriate, for work that involves the following:
  - a. Portable ladders, lifts, or scaffolding.
  - b. Electrical circuits, boards, boxes, and equipment.
2. Proper clearances must be maintained in front of electrical service panels and disconnects as required by the National Electrical Code.
3. Equipment manufacturer's recommendations must be followed.
4. Adequate lighting must be provided.
5. Ingress/egress must be available at all times.
6. Work rooms and store rooms must be clean and orderly and free of tripping hazards.

7. Aisles and passage ways must be kept clear of materials.
8. Spills must be wiped up immediately.
  - a. Wet floors must never be unmarked and unattended.
  - b. Drainage must be maintained in areas where wet processes are used. If a dry standing work station cannot be provided, appropriate waterproof footwear must be supplied.

## **32.2 - Guarding Operations**

### **32.01 - Authority**

Authority for guarding openings, railing, and stairs resides in 29 CFR, sections 1910.28 - 1910.29.

### **32.21 - Safety Practices**

1. Every wall and floor opening from which there is a drop of more than four feet (1-1/4 m) must be guarded with standard railing, toeboard, or equivalent barrier.
2. Flights of stairs with four or more risers must be equipped with proper railings. Flights with less than four risers must be considered on a case-by-case basis.
3. Covers and/or guard rails must be provided to protect employees from open pits, tanks, vats, and ditches.
4. When excavations or unguarded openings must be left between work shifts, such areas must be fenced off with standard construction fencing.

## **33 - Fall Protection**

### **33.01 - Authority**

The authority for walking and working surfaces, ladders, and electrical work practices is in 29 CFR sections 1910.21 - 1910.23, 1910.25 - 1910.29, and 1910.333.

The authority for fall protection equipment, rigging equipment for material handling, scaffolding, and ladders is in 29 CFR sections 1926.104 - 1926.107, 1926.251, 1926.451, 1926.500 - 1926.503, and 1926.1053.

The authority for safety requirements for portable wood, metal, and reinforced plastic ladders is the American National Standards Institute (ANSI) Standards A14.1, A14.2, and A14.7.



### **33.06 - Qualifications**

Supervisors shall ensure that employees are trained in hazard recognition and procedures on how to use, inspect, and maintain fall protection equipment, including ladders, scaffolding, fall arrest systems, safety net systems, and guardrail systems. Fall protection training requirements can be found in 29 CFR 1926.503. The following direction applies to all employees.

### **33.1 - Ladders**

Improper use of ladders may result in serious accidents. Accident analysis reveals four principal causes:

1. Ascending or descending improperly.
2. Failing to secure the ladder at the top, bottom, or both.
3. Holding objects while ascending or descending.
4. Structural failing of the ladder.

### **33.11 - Safety Practices**

Ladders are for temporary use only. Ladders must be replaced with stairways, proper guardrails, and landings whenever possible. Ladders that meet applicable OSHA/ANSI standards must be selected.

#### **33.11a - Prior to Use**

Ladders must be inspected for defects before use each day and after any occurrence that could damage the ladder. Any ladder that has been accidentally dropped, exposed to heat, or otherwise damaged must be inspected and tested prior to use.

1. The following are examples of potential problems:
  - a. Evidence of makeshift repairs, such as tape or wire.
  - b. Grease, oil, or welding burns on the rungs and rails.
2. Ladders must never be painted, as painting covers structural defects.
3. Condition of ladder feet and all hardware needed for coupling extensions must be checked. All metal fittings must also be checked.
4. Defective ladders must be removed from service for repair or destruction and marked as "DANGEROUS, DO NOT USE," or reasonable facsimile.
5. Wooden ladders must be free of splinters and must have smooth edges.

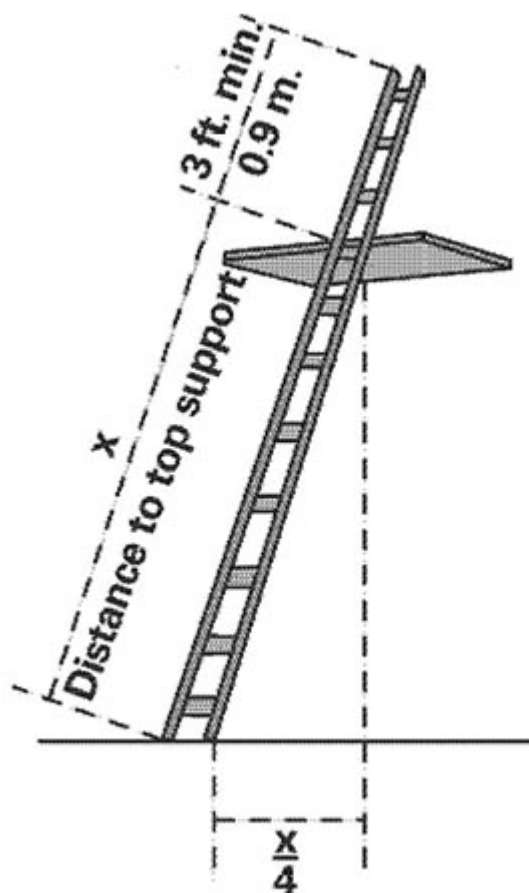
6. Metal ladders are electrical conductors and must not be used around electrical circuits or for electrical arc welding operations.

### **33.11b - Use**

1. Ladders are meant for one person only.
  - a. Ladders must never be overloaded.
  - b. Side loads must not be applied and nothing should be pushed or pulled while on a ladder.
  - c. Dropping or applying an impact load to a ladder must be avoided.
2. Dangerous overreaching must be prevented by moving the ladder to a new location when it is necessary to lean more than one foot (1/3 m) to the side.
3. A ladder must never be "walked" (stilt fashion) when someone is standing on it.
4. A ladder must be set on firm, level ground. Nonskid ladder feet should be used for added safety, especially when working on ice or snow. Proper set-up is as follows:
  - a. Step type.
    - (1) The ladder must be fully opened and locked, with the pail shelf in position.
    - (2) Nuts and bolts must be tight; steps and rungs must be secure and clear of slippery material or loose items; and braces and pail work shelf must be properly locked.
  - b. Extension type. Ladder extension locks must be checked to see that they work as intended. Rope and other accessories must be properly affixed and in good condition.
    - (1) The distance from the ladder base to the vertical support must equal one-quarter of the ladder's working length.
    - (2) The ladder must be erected at about a 75° angle from the ground line, with a minimum of three feet (1 m) extending above the roofline.
    - (3) The ladder should be raised two or three rungs at a time until the proper height is acquired. The ladder length should be adjusted only when it is unoccupied. Temporary supports to increase length or to adjust for uneven surfaces must never be used. Different ladders must not be fastened together to increase length. Overlap rules should be applied as displayed in exhibit 01.

- (4) The top of the ladder must be secured to a support point with rope, chain, or angle brace if repeated climbing or long use is planned or if the ladder is leaned against a pole, post, or tree trunk.
5. Employees shall never use a ladder in a manner described below:
- a. Step, stand, or sit on the ladder top, braces, or back section.
  - b. Straddle the top or stand on the top two steps of ladders.
  - c. Use a ladder where strenuous action by the worker is required.
  - d. Use a ladder as a hoist, plank, platform, or scaffold.
  - e. Use a ladder on a scaffold or during high winds.
  - f. Place a ladder in front of door openings.
6. Ladder rungs must be kept free of grease, oil, and other materials that might destroy nonslip surfaces.
7. Use of makeshift ladders must be discouraged unless such ladders clearly meet the requirements of 29 CFR 1926.450.

33.11b - Exhibit 01



### **33.11c - Climbing**

1. Ladder locks must be securely engaged with braces spread before climbing.
2. Ladder feet must be firmly supported. A person on the ground shall firmly hold the ladder to prevent slipping, or a board must be secured to the floor against which the foot of the ladder can rest.
3. Employees shall always face the ladder when ascending or descending and use both hands.
4. Employees shall not step from one ladder to another.
5. Employees must not climb above the third rung from the top of an extension ladder or above the upper support point.

### **33.11d - Storage**

1. Ladders must be protected from inclement weather; they should be stored in a dry location, away from excessive heat and possible physical damage.
2. Ladders should be stored vertically. If a wooden ladder cannot be stored vertically, it should be supported at both ends and in the middle of its horizontal position to prevent sagging. Sagging tends to loosen the rungs and warp rails.
3. Materials must never be stored on ladders.
4. Ladders must be properly secured while in transit.
5. For information related to fixed ladders, employees should refer to 29 CFR 1910.27, which includes clearance, design requirements, maintenance, pitch, specific features, and special requirements.

### **33.2 - Scaffolding**

Scaffold systems can be very complex and expose employees to potential serious injuries. Employees should refer to Federal OSHA Standard 29 CFR 1910.27 for General Industry Scaffold systems and 1926 Subpart L for Construction Scaffold systems.

## **34 - Means of Egress and Fire Prevention**

### **34.01 - Authority**

The authority for means of egress is in 29 CFR sections 1910.35 - 1910.37 and National Fire Protection Association (NFPA) 101: Life Safety Code.

### **34.1 - Fire Prevention and Emergency Evacuation Planning**

#### **34.11 - Procedures**

First-line Supervisors shall prepare fire prevention/evacuation plans for all buildings and administrative sites as part of an Emergency Action Plan. A floor plan of the buildings or administrative sites must be posted in conspicuous location(s) in the facility.

1. Building plans must be correctly oriented and identified by the following:
  - a. Fire safety features at a glance, such as building exits, hydrants, extinguishers, and other fire equipment. Plans must also include, electrical power shutoff switches and escape routes.
  - b. Safety areas for evacuation. Such areas may include parking lots, open fields, or streets that are located away from the emergency. Employees should be instructed to avoid congregating close to the building where they may hamper emergency operations.
2. All personnel, including families in Government-furnished quarters, shall be familiar with the plan and participate in fire drills at least once a year.
3. Every Forest Service facility must have a "system" in its fire prevention/evacuation plan to accommodate physically disabled persons.
4. Fire alarms must be audible and/or visible in dead-end rooms.
5. At least two identified emergency escape routes must be identified for all basements, crew quarters, dwellings, and offices.
6. Exits must be clearly marked so that they are conspicuous from all directions.
  - a. Doors, stairways, or any passageway that could be confused as an exit must be posted with "Not an Exit" or similar designation indicating its actual character, such as "To Basement" or "Storeroom."
  - b. Exits other than in residences must not be through rooms subject to locking. All identified and required exits must be able to be opened from the inside.
  - c. Snow and ice must be removed regularly so that exits are always clear.
  - d. Where a fire exit is through double-leaf doors, each leaf must be equipped with a panic bar lever that is kept unlocked and operable when the building is occupied.

## 34.2 - Fire Prevention

Safe work habits and compliance with safety procedures are critical in preventing fires. Employees should be especially careful around heat sources, such as appliances, chimneys, portable space heaters, and stoves.

### 1. Fire/smoke detection equipment.

a. In every building or structure of such arrangement, occupancy, or size that a fire may go undetected, fire alarms and/or smoke detectors must be provided. Smoking restrictions must be posted and enforced. The following must be ensured:

(1) Electrical smoke detection systems are backed up with a battery-operated detection system.

(2) Smoke detector batteries are replaced at least annually (if battery type).

(3) Detection equipment is tested at least monthly, is clean and serviceable, and is maintained to operate reliably.

### 2. Electrical systems.

a. All electrical systems must comply with local, State, and National electrical codes.

b. Circuits must not be overloaded. Circuits must be maintained in good repair and protected from damage. Overheating before circuit breakers trip off causes conductor insulation to deteriorate.

c. Checks should be made for damaged plugs and frayed wires. Extension cords should not be used as substitutes for permanent wiring circuits.

d. Extension cords or surge protectors should not be plugged into other extension cords or surge protectors, a practice referred to as “piggy-backing;” such practices can result in electrical fires.

e. All "hot" smells and odors from fluorescent ballasts and oversized light bulbs must be investigated. Heated metal and heated paint surfaces can be sources of possible trouble. When disposing of fluorescent tubes, extra precaution must be taken to prevent accidental breakage. Eye protection and gloves must be worn with an awareness that tubes may contain toxic substances.

### 3. Appliances.

a. Appliances must not be located where heat buildup may occur. Annual preventive maintenance for all electrical equipment and fuel-fired appliances must be provided.

Appliance cords and plugs must be inspected periodically for defects that may cause electrical shock and/or fire.

- b. Coffee pots and other electrical appliances must not be enclosed in cabinets.
  - c. Portable appliances such as mini-refrigerators, microwaves, coffee pots, or space heaters must be plugged directly into an electrical outlet and not into extension cords or surge protectors.
  - d. Adequate air circulation must be provided around electrical appliances.
  - e. Portable electric heaters must be grounded and provided with automatic tip-over shut-off safety devices as well as maintaining 18 inches of separation from other combustible materials.
4. Flammables/combustibles. Such materials must be used as outlined in the safety data sheet (SDS). Fires should never be started with flammable liquids. Flammables and combustibles must only be stored in buildings, cabinets, and containers specifically approved for this purpose.
5. Storage. Materials that create explosion and fire hazards must not accumulate in storage areas.

## **35 - Fire Protection**

### **35.01 - Authority**

The authority for portable fire extinguishers is in Title 29, Code of Federal Regulations (29 CFR 1910.157), section 1910.157.

### **35.06 - Reference**

National Fire Protection Association. NFPA 10: Standard for Portable Fire Extinguishers.

### **35.1 - Structural Fire Suppression**

At Forest Service administrative sites outside the jurisdiction of State and local fire departments, fire protection measures must include the following:

- 1. Prevention.
- 2. Use of fire extinguishers on incipient stage fires.
- 3. Safe evacuation of personnel.
- 4. Containment by exterior attack.



5. Protection of exposed improvements.

### **35.11 - Safety Practices**

Basic safety and health practices to follow in case of fire are as follows:

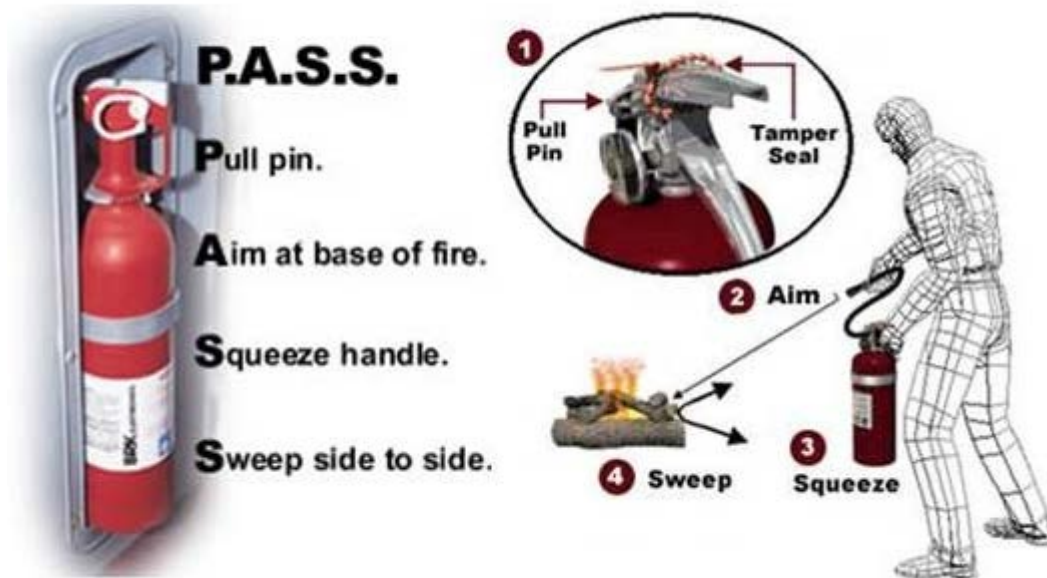
1. In event of a fire immediately call 911. Persons designated by the fire prevention/evacuation plan shall check the building and account for all occupants. Rescue procedures must be conducted and first aid provided.
2. Electricity and gas must be shut off.
3. The fire extinguisher closest to the fire's location should be used.
4. Building occupants shall not delay. If the fire cannot be controlled, people should get out of the building immediately and go to a predetermined assembly/rally area.
5. If the fire is controlled, responders must make certain it is completely extinguished.

#### **35.11a - Fire Extinguishers**

Fire extinguishers are designed for use in emergencies; therefore, it is vital that they operate effectively. Forest Service employees shall be familiar with different types of fire extinguishers and trained to use them based on the Emergency Action Plan (35.11a, exhibits 01-02).

Fire extinguishers are rated for the class or classes of fires on which they can be used and the amount of fire that they can be expected to control. Selecting the proper extinguisher for the anticipated fire is of primary importance. No single extinguisher is equally suitable and desirable for all classes of fire (35.11a, exhibit 03).

35.11a - Exhibit 01



35.11a - Exhibit 02



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35.11a - Exhibit 03

 <b>FIRE CLASSIFICATION</b>		
Letter Symbol	Picture Symbol	Description
		<b>Type A Ordinary Combustibles:</b> wood, cloth, paper, rubber, many plastics and other common materials that burn easily.
		<b>Type B Flammable Liquids:</b> gasoline and other flammable liquids, oil, grease, tar, oil-based paint, lacquer and flammable gas.
		<b>Type C Electrical Equipment:</b> energized electrical equipment, including wiring fuse boxes, circuit breakers, machinery and appliances.
		<b>Type D Combustible Metals</b>

### **36 - Confined Spaces**

Refer to Federal OSHA Standard 29 CFR 1910.146 for guidance and program requirements.

### **37 - Control of Hazardous Energy (Lockout/Tagout)**

Refer to Federal OSHA Standard 29 CFR 1910.147 for guidance and program requirements.

### **38 - Facilities**

In this Handbook, "facilities" refers to the operation and maintenance of buildings and their associated grounds. As such, this chapter provides direction on a variety of specific practices and potential hazards concerning structures. See FSH 7309.11, chapter 40, section 44 for Health and Safety Inspection Requirements.

#### **38.01 - Authority**

The authority for walking and working surfaces, means of egress, emergency and fire prevention plans, flammable/combustible liquids, blasting, storage and handling of liquefied petroleum gases (LPG), PPE, sanitation, temporary labor camps, safety color coding, fire protection, handling materials, hoists, machine guarding, hand tools, guarding of portable powered tools, electrical requirements, and asbestos is in Title 29, Code of Federal Regulations (29 CFR), sections 1910.21 - 1910.27, 1910.35 - 1910.38, 1910.106, 1910.109 and 1910.110, 1910.132, 1910.134, 1910.141 and 1910.142, 1910.144, 1910.151, 1910.155, 1910.157, 1910.164 and 1910.165, 1910.176 and 1910.177, 1910.179, 1910.212, 1910.242 and 1910.243, 1910.301 - 1910.303, and 1910.1001. FSM 7300, Buildings and Other Structures.

#### **38.1 - Qualifications**

Employees shall be provided training sufficient to safely and efficiently perform specific work projects or activities.

#### **38.12 - Procedures**

Supervisors and employee(s) shall discuss hazardous activities before beginning any work project or activity.

1. Occupant emergency plans. These plans must be developed for Forest Service work facilities. Plans must meet the requirements set forth in 29 CFR 1910.38.
2. Availability of first-aid supplies.
  - a. In the absence of a clinic, hospital, or infirmary in near proximity to the workplace, a person or persons shall be trained to render first aid, including CPR.

- b. A competent person shall check first-aid supplies and equipment at regular intervals and restock as needed, paying particular attention to those items with expiration dates.
- c. The remoteness from medical facilities and chances of severe injury must dictate the type and quantity of first-aid supplies available at the worksite.
- d. Where employees may be exposed to injurious corrosive materials, facilities for quick drenching or flushing of the eyes must be provided.

### **38.13 - Safety Practices**

The Occupational Safety and Health Act of 1970 requires employers to provide safe and healthful working conditions. The basic practices for maintaining safe and healthful facilities below must be followed.

1. Smoking. Tobacco smoke, also termed second-hand smoke, is classified as a known human carcinogen by the Environmental Protection Agency. To protect employees, contractors, and visitors, smoking is prohibited inside all USDA facilities and motor vehicles.
2. Walking and working surfaces.
  - a. Walking and working surfaces must be kept free of obstacles that create tripping and slipping hazards.
  - b. Damaged floor surfaces, such as splintered wood, broken tile, or pitted concrete, must be repaired or replaced as quickly as possible. Hazards that are not readily repairable must be marked.
  - c. Floors must be maintained in a clean, well-lit, and as far as possible, dry condition. Rubber nonskid mats must be provided at entrances to buildings, especially during winter months. Cones or other warning devices must be used if repairs are delayed or cleaning is in progress (38.13, exhibit 01).
  - d. Highly polished surfaces, such as linoleum or tile, must be coated with a slip-resistant finish.
  - e. Floor coverings, such as carpets and rugs, must be examined periodically for loose cords and other surface irregularities. Damaged floor coverings must be repaired or replaced promptly.
3. Aisles, Passageways, and Storerooms. Work areas, living space, storerooms, and other buildings must be kept clean and neat, with all materials properly stored.
  - a. Permanent aisles and passageways must be appropriately marked.

- b. Aisles and passageways between cabinets, desks, and work benches must be kept free of obstructions that could create a hazard.
  - c. Passageways to electrical service equipment, switches, fire extinguishers, fire hydrants, stairways, and exits must be kept clear of obstructions.
  - d. Convex mirrors must be installed in blind spot areas to avoid collisions.
4. Movable equipment and materials. Movable equipment must be stored and secured in an assigned location when not in use.
- a. Correct lifting and carrying techniques should be used to prevent back injury. One person should not move big, bulky, or heavy loads alone but should ask for help or use mechanical aids.
  - b. Debris from service/equipment repair areas must be removed before beginning a work project or activity. Work areas must be cleaned up when the job is finished.
5. Floor elevation. Where possible, abrupt changes in floor elevation should be eliminated. Abrupt changes in floor elevation must be identified by marking, blocking, or barriers.
6. Openings. Openings in floors, porches, and abrupt edges of loading docks where a fall hazard of four feet or greater exists must be guarded with guardrails, mid-rails, and toeboards.
7. Stairways.
- a. Nonskid treads must be installed on stairs.
  - b. Stairways must be kept free of defects, rubbish, slippery substances, loose materials, or obstructions that may cause slips, trips, or falls.
  - c. Stairways having four or more risers must be equipped with standard stair railings or handrails (See 29 CFR 1910.28 for specific requirements).
  - d. Stair risers must be uniform and well lit. Adequate lighting must be provided in and around work areas, passageways, ladders, stairways, and other areas employees use.

38.13 - Exhibit 01



## **38.2 - Living Quarters**

Employees are required to keep Government-provided quarters clean, sanitary, and free of hazards.

### **38.21 - Procedures**

1. Unit Managers shall review occupancy rules and the operation of all heating and cooling appliances with new occupants.
2. All Government-owned or -leased quarters must be inspected annually to ensure occupant health and safety. Forest Service-quarter occupants should report any hazardous, unsafe, and unsanitary conditions to the appropriate Line Officer. Immediate action must be taken to correct any such condition. The sample Facilities Safety Inspection Checklist form can be used to document unsafe facility conditions and corrective actions.
3. No structural modifications, plumbing, or electrical alterations (or additions) to Government facilities are to be authorized, except as approved through the administrative process. Only qualified persons are allowed to perform these modifications.
4. All facilities serving as quarters, such as family residences, trailers, sleeping areas (including hallways), crew quarters, and other dwellings, must be equipped with smoke detectors/alarms.
  - a. Fire extinguishers must be provided and located in conspicuous areas where they are readily accessible. Extinguishers must receive monthly visual inspections and annual maintenance inspections.
  - b. A fire prevention/evacuation plan must be provided. Unit Managers shall ensure occupants understand the plan.
  - c. Fire drills must be conducted at least annually and more often if the local Line Officer or other competent person(s) deems it necessary.

### **38.22 - Safety Practices**

#### **38.22a - Permanent Crew Quarters**

Employees are responsible for keeping their living areas clean and sanitary. Floors are to be swept, beds made, and personal articles organized or stored in an orderly manner.

1. Employees must be informed that bunkhouse quarters are subject to inspections by appropriate Forest Service officers. Employees' privacy must be honored.



2. Washroom and shower areas must be clean and sanitized, as should refrigeration units, cook stoves, and other appliances when provided.
3. Unless specially provided for, perishable food should not be kept in living quarters. Cooking is not permitted unless proper equipment is provided.

### **38.22b - Residences**

Residents of Government-owned or -leased housing are responsible for minor maintenance of quarters and grounds.

1. Safety and health surveys must be conducted at least annually to identify potential hazards or safety concerns. Basic surveys should include but are not limited to the following:
  - a. Stoves, furnaces, and fireplaces, to detect obstructed stovepipes and chimneys and improperly functioning heating systems. If malfunctioning equipment is suspected, a qualified person should examine the suspected problem area and make the necessary repairs.
  - b. Electrical wiring. If outlets require multiple plug-in adapters to provide enough receptacles, the residence must be assessed for wiring inadequacy. Fuses blowing frequently or circuit breakers being thrown are indicators of electrical deficiencies.
  - c. Appliances. All appliances must be vented to prevent overheating and fire. The manufacturers' recommended venting procedures must be followed.
  - d. Incidental storage of flammable/combustible materials. Paints and petroleum products must be kept in closed, approved containers with their contents properly labeled. After use, cleaning rags should be discarded in approved waste cans.
2. Walkways and roof areas over entries must be kept free from accumulation of ice, snow, and leaves.
3. Steps to prevent carbon monoxide buildup must be taken. Carbon monoxide is a poisonous gas that is odorless, tasteless, textureless, and undetectable by human senses. Carbon monoxide results from incomplete combustion and can be produced by any flame-fueled device, including gas ranges; ovens with pilot lights; clothes dryers; gas or oil furnaces; fireplaces; coal stoves; wood-burning stoves; charcoal grills; hot water heaters; and space heaters fueled by propane, natural gas, or oil. Carbon monoxide can also be produced by all gasoline-powered equipment, such as generators, engines, chain saws, power boats, cars, and trucks. Carbon monoxide is also emitted from combustion of forest and range fuels.

a. To prevent carbon monoxide poisoning, employees should carry out the following:

(1) Carbon monoxide detectors must be installed near the residence door leading to the garage and in the workplace, lookouts, mobile homes, house/office trailers, and especially sleeping areas, such as the sleeping cabin of boats.

(2) Gasoline or propane engines must not be run inside closed garages.

(3) Charcoal grills must be operated outdoors only.

(4) Stoves and furnaces must be kept properly adjusted.

(5) Space heaters must not be used without proper venting.

b. Carbon monoxide poisoning symptoms include the following:

(1) Initially, the symptoms are flu-like: headache, fatigue, nausea, dizzy spells, and irritability.

(2) As carbon monoxide blood-levels rise, symptoms such as confusion occur, followed by unconsciousness, brain damage, and ultimately death.

### **38.3 - Storage and Warehousing**

#### **38.31 - Personal Protective Equipment**

The variety of materials associated with storage and warehousing activities are too detailed to address individually. Supervisors shall ensure that risk assessments (RA) and personal protective equipment (PPE) assessments are conducted and identified for site-specific storage and/or warehousing activities.

#### **38.32 - Procedures**

1. Workers should understand and use proper lifting techniques.
2. Mechanical assist devices, such as handtrucks, should be used for moving equipment and supplies.

#### **38.33 - Safety Practices**

Basic safety and health practices for storage and warehousing activities include the following:

1. Housekeeping.
2. Lifting techniques.
  - a. Bend and gently stretch to warm muscles.

- b. Check the intended route and placement point before moving a load.
- c. Ask for help if the load is heavy. Do not try to lift or otherwise move material beyond your ability.
- d. If the load blocks your vision, get help.
- e. Evaluate the load. Before lifting, check for nails, rough strapping, sharp edges, and splinters. Test the load weight by tipping it to one side. Use a handtruck or other mechanical aid whenever possible.
- f. Stand close to the load with feet apart to lift.
- g. To improve balance, keep your heels down and turn your feet slightly out.
- h. Bend your knees, keeping your back as straight as possible.
- i. Center your body over your feet; get a firm grip under the load; and pull it close to you. Test the load.
- j. Lift gradually and smoothly. Lift with legs, arms, and shoulders. Keep the load close to your body. Rise slowly, straighten knees, and stand.
- k. Avoid jerky, quick, or twisting motions. Do not change the position of your feet before the load is fully raised.
- l. Face the spot where the load is to be placed. Point your feet in the direction of the move or turn; don't twist.
- m. Bend your knees; keep the load close to your body; and slowly lower the load to waist level. Keep your back straight. Support the load with your legs, arms, and shoulders (38.33, exhibit 01).
- n. Protect your fingers and hands from pinching and scraping.
- o. In tight places, set the load down close to the final location and slide it into place.
- p. When lifting a load from a table, shelf, or similar elevated surface, slide the load toward the edge. Support the load with the edge of the elevated surface and lift it as previously described. In placing the load on a raised surface, reverse this procedure.
- q. Avoid lifting above shoulder height.

3. General storage practices. The maximum allowable load limits must be calculated for racks, and shelves for storage within buildings. Limits must be conspicuously posted.

a. Materials must not be stored on supports not designed for such loading. This applies especially to the bottom boards of light-framed trusses.

b. Materials or tools must always be stored away from the following:

(1) Unguarded windows or scaffolds.

(2) Heat sources, if flammable.

(3) Aisles, fire exits, floor openings, hoistways, and stairways; fire equipment; and electric switches and panels.

c. When differences in road or working levels exist, blocking, grading, or ramps must be used to ensure safe movement of vehicles between the two levels. Other changes in level must be guarded by barriers, painted markings, or railings.

d. Materials in compounds or storage areas must be secured and display proper signage. These areas must be adequately lit.

e. Materials must be segregated by kind, length, and size and neatly stacked.

f. All materials stored in tiers must be secured by blocking, cross-piling, cross-tying, interlocking, or stacking.

(1) The height of the tiers must be limited so that they are stable and secure against collapse or sliding.

(2) Bagged materials must be stacked by stepping back the layers and cross-keying the bags at least every 10 layers.

g. The outside of buildings must be posted to warn fire personnel of blocked doorways, drying towers, lofts, open shafts, windows, and hazardous materials.

4. Specific storage practices. Baled excelsior, grass, hay, seed, and straw must be stored in separate buildings that are well-ventilated.

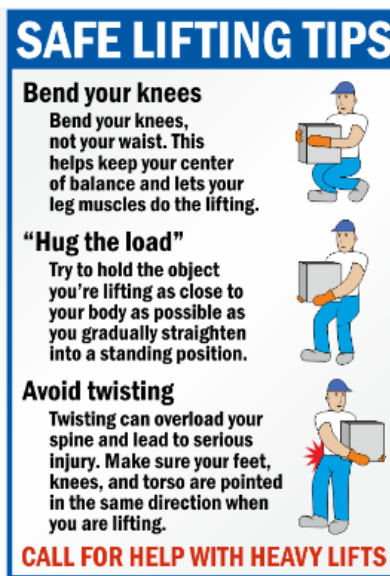
5. General practices for handling materials.

a. Appropriate PPE must be used when handling heavy or sharp-edged objects and rough lumber.

- b. When unpacking materials, protruding nails and staples in boards and boxes must be immediately removed or clinched. Nails and staples must be removed from containers used for storage or material carrying.
  - c. Contents and special handling requirements must be clearly labeled on containers as appropriate.
  - d. To avoid injury while stacking materials, mechanical or ergonomically designed devices must be used, such as handtrucks, hoists, lift trucks, rollers, skids, and wheelbarrows; and cant hooks, hand spikes, haypoles, peaveys, and tongs.
  - e. Only trained (certified where applicable) and authorized employees shall operate lift trucks and other mechanical lifting devices.
6. Specific practices for handling materials.
- a. Steel products. Bar stock, culverts and other cylindrical materials, pipes, poles, and structural steel must be stacked and blocked unless they are banded or racked.
  - b. Bricks. Bricks should never be stacked more than seven feet (2 m) high. Stacks should be tapered back two inches (51 mm) for every one foot of height above the four-foot (1-1/4-m) level.
  - c. Masonry blocks. Masonry blocks should never be stacked higher than six feet (1-4/5 m); back one-half block per tier above the six-foot level.
  - d. Short tiles. Short tiles must be stacked in a vertical position to keep tiles dry for ease of handling.
  - e. Lumber.
    - (1) Nails should be removed from used lumber before stacking.
    - (2) Lumber must be stacked on level and solid supports. Cross strips or piling should be used where the pile is more than four feet (1-1/4 m) high.
    - (3) Stacks must be stable and self-supporting.
    - (4) The top of lumber stacks should be kept as level as possible when lumber is removed.
  - f. Glass.
    - (1) Glass must be carried on the outside of the arm, with the palm of the hand facing outward and the other hand reaching across the body and grasping the glass top.

- (2) Shirt sleeves must be buttoned around wrists when hand-carrying glass.
- (3) Wrists must be protected by gloves with gauntlets when hand-carrying glass.
- (4) Eye protection must be worn when working with glass.
- (5) Large glass panes must be handled one at a time.
- (6) Glass must be stored on edge in protected areas.
- (7) Cross tape must be placed on the surface to make the glass pane visible. The word "Glass" should be written with felt pen on the main surface of the glass.

### 38.33 - Exhibit 01



## **38.4 - Shops**

### **38.41 - Qualifications**

Employees shall receive training in the use of machines, power tools, welders, and other hazardous equipment before operating them.

### **38.42 - Personal Protective Equipment**

Personal protective equipment (PPE) that is appropriate for the specific work project or activity must be worn. Protective equipment must be provided, used, and maintained in a sanitary and reliable condition (including PPE for eyes, face, head, and extremities; protective clothing; respiratory devices; and protective shields and barriers).

### **38.43 - Procedures**

1. A risk assessment (RA) must be prepared and discussed with employees involved in work projects or activities where serious injuries or significant property damage might result.
2. Power tools and machines must be operated according to the manufacturer's instructions. Instructions must be kept in an area readily available to the operator.
3. An inoperative tool or machine must be tagged or posted with an "Out of Order" warning sign identifying when the tool or machine became inoperative until repairs are completed.

### **38.44 - Safety Practices**

1. Designated PPE must be available, in good condition, and in use before starting any power-driven machines.
2. Tools must be inspected before each use to assure optimum working condition or proper adjustment.
3. Electrical cords must be inspected regularly for damage; damaged cords must be removed from service when appropriate.
4. Machines must be anchored securely to the floor or other appropriate surface such as a workbench or table if they are not designated as portable.
5. Working surfaces should be clear of obstructions or unnecessary articles to allow for safe operations.
6. Guards and safety devices must be functional, adjusted, and in place.

7. All parts, such as centers, chucks, clamps, cutting tools, guides, and tool holders, must be firmly adjusted for the work and set to clear all moving parts.
8. A machine must always be stopped before adjusting, oiling, repairing, or servicing. Adjustment tools and chuck wrenches must be immediately removed from machines.
9. Particular care must be taken to ensure that shop ventilation is adequate when running engines, welding, or working with chemicals.

### **38.44a - Automotive and Equipment Repair**

Carbon monoxide detector(s) must be installed in garage areas where internal combustion engines are repaired.

1. Ventilation systems must be specifically designed for the purpose.
  - a. Engine exhaust must be vented to the outside.
  - b. Battery charging areas must be constructed so fumes are vented to the outside. Exhaust fans, lights, and wiring switches must be explosion-proof.
  - c. When applying body putty, sanding, and finishing, the work area must be well ventilated. Some operations may require explosion-proof wiring.
2. A creeper is a flat device with wheels on four corners that is utilized to lie on and slide under a vehicle. Creepers must not be left on the walking or working surface when not in use. They should be stored on end or hung on a wall.
3. The manufacturer's rated load capacity must be legibly marked on jacks and support stands; load capacities should never be exceeded. Employees shall never work on or under a raised vehicle unless it is properly supported.
  - a. When using jacks, the vehicle must be blocked and secured from movement.
  - b. Bumper jacks must be used with extreme caution.
  - c. Cement bricks or blocks must never be used as blocking material.
  - d. The area under hoists, jacks, and support stands must be kept clean and free of oil and grease.
4. Gasoline must never be used for cleaning. Cleaning solvents must have a flashpoint of 140 °F (60 °C) or higher. When possible, organic nontoxic cleaning solvents should be substituted.



5. Vehicles containing dangerous or flammable materials must never be parked in repair shops. Maintenance work should never be performed while a vehicle is loaded.

### **38.44b - Woodworking**

Woodworking shops must be inspected regularly to ensure the following:

1. Workers are not exposed to excessive amounts of dust.
2. PPE is available and is being used.
3. Guards and safety devices are adjusted and in place.
4. Employees are trained and understand the hazards associated with different pieces of machinery and are familiar with proper operating procedures.
5. The work area is clean and free of debris or of any materials that could prove to be hazardous to those working there.

### **38.44c - Metal Working**

Supervisors and Managers shall regularly inspect metal shops to ensure that appropriate personal protective equipment (PPE) (including goggles or safety glasses; leather aprons and gloves; safety-toed boots; and specialized equipment associated with welding) is provided and used. Risk or PPE assessments must identify the required PPE for the specific work project or activity.

Before starting any power-driven machine, users shall check for the following:

1. The working surface is clear.
2. Guards and safety devices are in place and correctly adjusted.
3. The machine or tool is in safe operating condition, with all parts operating freely.

### **38.5 - Grounds Maintenance**

Work duties include activities such as collecting trash; installing and maintaining traffic control devices; lawn mowing; pruning, removing snow; and weed/grass trimming.

#### **38.52 - Personal Protective Equipment (PPE)**

The following PPE is recommended for grounds maintenance:

1. Eye protection.
2. Hearing protection (85 dB and above).

3. Appropriate footwear.
4. Gloves.
5. N95 particulate respirator (when applicable).
6. Other PPE as identified in local RAs or as stipulated in a safety data sheet (SDS).

### **38.54 - Safety Practices**

Basic safety and health practices for grounds maintenance include the following:

1. After a site review and/or engineering study to determine needs, the following situations must be identified through signage or other appropriate means:
  - a. Children playing, crosswalks, firewalks, and legal and off-limits parking. Arrows, central refuse bins, cones, gates, parking space delineators, physical barriers, stanchions, or striping must be provided.
  - b. Non-potable water.
  - c. One-way roads; road restrictions.
  - d. Public and employee hazard areas.
  - e. Speed limits.
  - f. Work zone (workers).
2. These suggested safety steps should be followed for mowing, pruning, and snow removal:
  - a. Brush and trees should be pruned for best visibility near access roads, buildings, and intersections.
  - b. The power company should handle all tree pruning for powerline clearances. Inspection of landscaping and trees is generally a Forest Service responsibility.
  - c. Areas around markers, monuments, and pipes should be trimmed.
  - d. Lawn tools and work materials should be stored in their proper location and not left lying about.
  - e. Liquid Propane (LP) gas bottles or tanks and connecting pipes must be kept free of grass or other vegetation and guarded to prevent physical damage.

- f.. The manufacturer's safety recommendations must be followed for the operation of rotary mowers/tractors and snow blowers. Parking areas, roads, and walkways must be kept free of ice/snow buildup.
- (1) Work areas must be inspected before beginning a work project or activity. Objects that may be run over; thrown by; or cause damage or injury to people, equipment, or property must be removed.
  - (2) Ice/snow must be removed as it accumulates on eaves and roofs.
  - (3) Equipment must be maintained in top mechanical condition. Equipment must be inspected before and after use to ensure safe operating conditions.
  - (4) Mowers/tractors and other fuel-burning engines should be started and refueled outdoors. Engines should be cooled for five minutes before refueling. The equipment should be moved at least ten feet (3 m) from the fueling point before restarting.
  - (5) Vehicles should be restricted from parking in the work area. The area must be clear of all people and pets for 100 feet (30-1/2 m). Work should stop while people are passing and begin again only after people are out of the hazard zone.
  - (6) The center of gravity for equipment varies greatly. Workers shall be familiar with the machine's capabilities and limitations and follow the manufacturer's recommendations.
  - (7) Motors should be turned off when making adjustments or repairs.
3. The following methods should be followed when collecting garbage and debris:
- a. Appropriate PPE, such as a litter/sanitation picker and gloves, should be used when picking up trash.
    - (1) Disposable gloves for protection should be worn, even under leather gloves.
    - (2) Universal precautions should be practiced when encountering suspected infectious or hazardous waste.
    - (3) Workers shall be familiar with established unit procedures for handling and disposing of known or suspected infectious or hazardous waste.
  - b. Garbage must be stored in tight containers and secured against upset or access by animals/insects.
  - c. Caution should be used when disposing of broken glass, razor blades, and other sharp objects.

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**Chapter 30 - Facilities**

**Amendment:** 6709.11-2018-1

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- d. Central refuse bins must be placed on a hard surface. Refuse bins should be stable and secure.