

# Occupational Hazards Common to Construction

**Self-inspection Checklist**



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# OSHA

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## Safety and Health Programs

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Does your **safety and health program** contain the following seven key elements:

- Management commitment
- Labor and management accountability
- Employee involvement
- Hazard identification and control
- Incident and accident investigation
- Worker training
- Periodic program evaluation

**Note:** Your safety committee is charged with the responsibility for reviewing your plan and making recommendations for improvement.

- Is complying with safety and health policies and procedures a condition of employment?
- Have you clearly identified the person charged with the authority and responsibility for implementing the plan and informed all your employees?
- Are supervisors knowledgeable about the safety and health hazards to which employees under their immediate direction and control may be exposed?
- Is there a system for ensuring that employees comply with safe and healthful work practices (employee incentives, training and retraining programs, or disciplinary measures)?
- Is there a system for communicating with employees about occupational safety and health matters (meetings, training programs, written communications, and a system for anonymous notification concerning hazards or health and safety committees)?
- Does the communication system encourage employees to inform the employer of hazards at the worksite without fear of reprisal?
- Is there a system for identifying and evaluating workplace hazards when new substances, processes, procedures, or equipment are introduced into the workplace and whenever the employer receives notification of a new or previously unrecognized hazard?
- Were workplace hazards identified when the plan was first established?
- Are periodic inspections for safety and health hazards scheduled?
- Do you keep records of inspections that identified unsafe conditions and work practices, if required?
- Is there a procedure to investigate accidents and near-misses?
- Are unsafe and unhealthful conditions and work practices corrected immediately, with the most hazardous exposures corrected first?
- Are employees protected from serious or imminent hazards until they are corrected?
- Have employees received training about safe and healthful work practices?
- Do employees know the safety and health hazards specific to their job assignments?
- Is training provided to all newly hired employees?
- Is training provided to all employees when they receive new job assignments?
- Are training needs of employees evaluated when new substances, processes, procedures, or equipment are introduced into the workplace and whenever the employer receives notification of a previously unrecognized hazard?
- Are records kept that document safety-and-health training for each employee by name (or other identifier) and include training dates, type of training, and provider?
- Does the employer have a labor/management safety and health committee?

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## General Safety and Health and Environmental Controls

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- Do procedures ensure that frequent and regular inspections are conducted to identify hazards in materials and equipment and on the job site?
- Has the job site been inspected to identify environmental hazards such as asbestos, toxic chemicals, contaminated soil, etc.?
- Has the prime contractor provided essential services required at the job site (e.g., guard-rails, toilets, etc.)?

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## Medical Requirements

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- Is there an emergency medical plan to ensure prompt treatment of an injured worker?
- Are basic first-aid supplies available and readily accessible to all employees?
- Are ambulance and hospital names and phone numbers posted?
- Are all employees aware of the identity of the first-aid-trained person or provider and the elements of the emergency medical plan?

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## Sanitation

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- If your project is bid at a million dollars or more, have you provided flush toilets and warm water washing facilities, as required by OAR 437-003-0020 and ORS 654.150?
- Do you provide chemical, recirculating, or combustion toilets when your project bid is less than a million dollars?
- Do you provide an adequate supply of potable water and disposable cups on your job sites?

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## Safety Training and Education

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- Has each employee been trained to recognize and avoid unsafe conditions?
- Have employees been trained in regulations pertinent to their work environment?

- Has training been provided to employees who use ladders and stairways?
- Has each potentially exposed employee been trained to recognize and minimize fall hazards?
- Has training by a competent person been provided for each employee who might be exposed to fall hazards?
- Have erectors and dismantlers been trained?

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## Employer Posting

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- Is the OR-OSHA “Safety and Health Protection on the Job” poster displayed in a prominent location where all employees are likely to see it?
- Are emergency phone numbers posted where they readily accessible?
- Where employees may be exposed to toxic substances or harmful physical agents, has appropriate information concerning employee access to medical and exposure records and material safety data sheets (MSDSs) been posted or otherwise made available?
- Are the safety committee meeting minutes posted or distributed to all employees?
- Is the OSHA 200 summary posted each February?

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## Record-keeping

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- Are all occupational injuries and illnesses — except minor injuries requiring only first aid — recorded as required on the OR-OSHA Form 200? (Applies to employers with more than 10 employees.)
- Are copies of OR-OSHA Form 200 and the First Report of Injury — Form 801, kept for five years?
- Are employee safety and health training records maintained?
- Are safety committee meeting minutes maintained for three years?
- Are certificates of fall protection training maintained? 29 CFR 1926.503(b)(2)

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## Written Programs

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- Does the company have a **written hazard communication program**? Does it meet the requirements in OAR 437 Division 3 - 1926.59(e) Hazard Communication?
- Does the company have a **written lockout/tagout program**?

Have you identified the following potential energy sources in your lockout/tagout program:

- electrical
- hydraulic
- mechanical
- pneumatic
- springs
- Have you provided employee training and/or orientation?
- Do you have an assured **equipment grounding program or use GFCIs**?
- Is there a written **fall-protection plan** when conventional fall protection is unfeasible or creates a greater hazard?
- Does the company have written and documented procedures for **crane operator training**, and is the crane operations manual available for use by the operators and for crane-operator classes?

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## Machine Guarding, Power-operated Tools and Equipment

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- Are grinders, saws, and similar equipment provided with safety guards?
- Are portable circular saws equipped with working guards above and below the base shoe?
- Are stops set on radial arm saws to prevent the saw blade from passing the front edge of the cutting table?
- Are radial arm saws installed in such a manner that the cutting head returns gently to the starting position when released by the operator?

- Are radial arm saws equipped with lower blade guards?
- Are the saws used for ripping supplied with hood guards, anti-kickback devices, and a spreader?
- Are belts, pulleys, chains, and sprockets on equipment, such as concrete mixers, air compressors, and welders fully enclosed with guards?
- Are foot-actuated pedals guarded against accidental contact?
- Are all moving chains and gears properly guarded?
- Are machine guards secured and arranged so they don't create an additional hazard?
- Are fan blades covered with a guard having openings no larger than 1/2 inch when the fan is operating within seven feet of the floor?
- Are devices installed on hose connections of air compressors to prevent disengagement and whipping?

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## Flammable and Combustible Liquids

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- When handling and using flammable liquids in quantities greater than one gallon, are approved metal or plastic safety cans used exclusively?

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## Abrasive Wheel Equipment and Grinders

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- Is a work rest used and kept adjusted to within 1/8 inch of the grinding wheel?
- Is the adjustable tongue guard on the top side of the grinder used and kept adjusted to within 1/4 inch of the wheel?
- Do side guards that present no more than a 90-degree opening of the wheel periphery cover the spindle end, nut, and flange?
- Are goggles or face shields (meeting ANSI Z87.1) always worn when grinding? ?
- Is all personal protective equipment clean, sanitized, and properly stored?
- Are right-angle grinders equipped with a guard between the wheel and the operator?

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## Welding and Brazing

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- Have you performed a **hazard assessment** of the work area and the job to identify hazardous conditions such as exposure to welding fumes, lead, or fumes from working on galvanized steel?
- If hazardous exposures to materials have been identified, have engineering controls been initiated to remove the hazard; if the hazard can't be removed, are the welders protected by proper personal protective equipment?
- Are welders who work from unguarded surfaces protected from falls?
- Are only authorized and trained personnel permitted to use welding, cutting, or brazing equipment?
- Are V-belt drives and fans on all welding machines guarded?
- Are compressed gas cylinders regularly examined for signs of defect, deep rusting, or leaking?
- Are cylinders kept away from heat?
- Are back-flow or flashback preventers provided between the torch and hoses?
- Are regulators and gauges in good working condition?
- Are oxygen and fuel gases stored 20 feet away from each other or separated by a five-foot-high fire wall rated at ½ hour ?
- Are cylinders stored with caps on and secured in an upright position?
- Are signs posted at oxygen or fuel gas storage locations warning against smoking or open flames?
- Are suitable fire extinguishing methods available for immediate use?
- Is the grounding of the machine frame and safety ground connections of portable machines checked periodically?
- Are electrodes removed from the holders when not in use?
- Are work and electrode lead cables frequently inspected for wear and damage, and replaced when necessary?
- Are the stingers checked for cracks or breaks and repaired or replaced if necessary?
- When the object to be welded can't be moved and fire hazards can't be removed, are shields used to confine heat, sparks, and slag?
- Are drums, barrels, tanks, and other containers scheduled for cutting and welding cleaned and tested to ensure that there is no hazard of explosion or release of toxic vapors?
- Do face shields, eye protection, and goggles meet appropriate standards?
- Is adequate ventilation provided where welding or cutting is performed? 29 CFR 1910.252(c)(2), 1926.353
- When working in confined spaces, is sampling done for oxygen deficiency and toxic or flammable materials, and are means provided for quick removal of welders in case of an emergency?
- Have you identified explosion or fire hazards from flammable or explosive vapors or combustible materials that may be present or generated by the welding process?
- If there are flammable or explosive vapors or they may reasonably be anticipated, have you used engineering controls, such as testing and ventilation, to eliminate fire or explosion hazards?
- Are all combustible materials at least 35 feet from the welding operation or covered with a heat-resistant cover?

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## Lockout and Tagout Procedures

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- Do you have a written lockout/tagout program that identifies appropriate and safe procedures for de-energizing machines and other energy sources including electrical, mechanical, hydraulic, and pneumatic?
- Are employees adequately trained in the requirements of the lockout/tagout program?

- Has each piece of machinery or equipment been evaluated to see if it should be de-energized and locked out during maintenance and service?
- Are employees prohibited from locking out control switches in lieu of locking out main power disconnects?
- Are all equipment control valve handles provided with a means of lockout?
- Does the lockout/tagout procedure require that stored energy (e.g., mechanical, hydraulic, pneumatic) be released or blocked before equipment is locked out for repairs?
- Have you personally observed lockout procedures to ensure they're being applied properly?
- Does the lockout/tagout procedure work?
- Are employees provided with individually keyed personal safety locks?
- Are employees required to maintain control of their key(s) according to regulations while they have safety locks in use?
- Do you require employees to verify that equipment is fully de-energized?
- Do you require employees personally place and remove their locks?

### **Hazard Communication**

- Have you compiled a list of the hazardous chemicals used at your workplace?
- Is there a written **hazard communication program** dealing with material safety data sheets, labeling, and employee training?
- Has a person been designated to be responsible for MSDSs, container labeling, and employee training?
- Is each container for a hazardous chemical (e.g., vats, bottles, storage tanks) labeled with product identity and a hazard warning communicating the specific health hazard and physical hazards?
- Is there a MSDS readily available for each hazardous chemical used?

- Have you established procedures to inform other employers whose employees share the same work area where hazardous chemicals are used?

Do you have an employee training program for hazardous chemicals that includes the following:

- A description of an MSDS and instructions for obtaining and using one
- An explanation of "the employee's right to know"
- An MSDS for each hazardous chemical or class of substances
- Location of hazardous chemicals in work areas and of the employer's written hazard communication program
- An explanation of the physical and health hazards of chemicals in the work area, how to detect their presence, and specific protective measures to be used
- Hazard communication program details, including labeling system and MSDS use
- How employees will be informed of hazards of non-routine tasks and hazards of unlabeled pipes

### **Housekeeping**

- Are your employees prohibited from dropping waste material more than 20 feet to the ground outside of the building without an enclosed chute?
- Is all scrap lumber, waste material, and rubbish removed from the immediate work area?
- Are barricades set up to keep workers at least six feet from areas under overhead openings through which debris is dropped?
- Are signs posted at each level warning of the hazard of falling materials?
- Are stairways and walkways clear of debris throughout the project?
- Are combustible materials stored properly in appropriate containers?



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## Safety Committees

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Have you established a safety committee?

Committees are required if any of the following are true:

- You have 11 or more employees
- Your lost workday cases incidence rate is in the top 10 percent of all rates for employers in the same industry
- The workers' compensation premium classification assigned by NCCI to the greatest portion of your payroll has a premium rate in the top 25 percent of premium rated for all classes

Does your committee represent the safety and health concerns of all your mobile sites?

Have you developed a written agenda for conducting safety committee meetings?

Are safety committee meetings held at least once a month?

Are the meeting minutes kept and posted or distributed to employees on a monthly basis?

Has the committee established procedures for evaluating your safety and health program, and established procedures for you to respond in writing to recommendations?

Does your safety committee membership meet the following criteria:

- Chairperson elected by the committee
- An equal number of employer and employee representatives
- No fewer than four members for a company with more than 20 employees
- No fewer than two members for a company with 20 or fewer employees

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## Electrical (general)

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Are employees prohibited from bringing any vehicle, crane, tools, or material within 10 feet of high voltage lines (600 volts or higher)?

Are you aware of financial liabilities in the *Oregon High Voltage Overhead Line Safety Act*, ORS 757.800 and 757.805?

Has the power company been notified if work is to be done in the vicinity of overhead lines?

Are all temporary lights within seven feet of the floor guarded?

Are all plug connections used with the voltage for which they were designed?

Are live parts of electrical circuits de-energized before an employee works on or near them?

Are all exposed energized parts in the temporary power supply protected from possible contact?

Are all power-supply circuit disconnects marked according to their functions?

Is splicing only allowed on extension cords if they are larger than size 12 and the splicing retains insulation protection equal to the original extension cord?

Do you always ensure that flexible cords are not immersed in water or exposed to damage from vehicles?

Are all junction boxes used in a wet environment waterproof?

Are you using a ground fault circuit interrupter **or** have you established an **assured equipment grounding program**?

Have all underground utilities been located prior to any excavation work?

Is all digging within four feet of power lines done by hand?

Are power lines de-energized?

Has the utility company been consulted before digging?

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## Assured Equipment Grounding

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If your company is not using ground fault circuit interrupters for temporary power, has an assured equipment grounding program been implemented that meets the following criteria:

A written description of the program is available at the worksite

A competent person is designated by the employer to implement the program

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Flexible cords and portable tools are inspected at least quarterly and recorded or color coded when inspected

- Cords and tools are checked daily and removed if there are deficiencies

### **Personal Protective Equipment and Clothing (PPE)**

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- Are protective goggles or face shields provided and worn when there is danger from flying particles or corrosive materials?
- Are approved safety glasses required to be worn at all times where there's risk of eye punctures, abrasions, contusions, or burns?
- Are workers who use glasses or contact lenses required to wear approved safety glasses, protective goggles, or other medically approved precautionary procedures in environments with harmful exposures?
- Are protective gloves, aprons, shields, or other protection provided against cuts, corrosive liquids, and chemicals?
- Are hardhats always provided and worn in areas where there is the possibility of falling or flying objects or impact?
- Are highly visible garments worn when there is exposure to highway traffic?
- Are hardhats inspected periodically for damage to the shell and suspension system?
- Is appropriate foot protection required when there is risk of foot injury from heat, corrosion, penetration, poisonous substances, falling objects, or crushing?
- Are approved respirators provided for regular and emergency use?
- Is all protective equipment kept sanitary and ready for use?
- Do you have eyewash facilities and a quick-drench shower at worksites where employees are exposed to caustic or corrosive materials?
- Is special equipment available for electrical workers?
- When workers eat at worksites, do you ensure they eat in areas where there is no exposure to toxic materials or other health hazards?

- Is protection from noise exposure provided when sound levels exceed the OR-OSHA noise and hearing conservation standard levels? OAR 437-003-0027 and Div. 2/G 1910.95

- Are adequate work procedures and equipment and protective clothing provided and used when employees are cleaning up toxic or other hazardous materials spills?

### **Portable Ladders**

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- Does regular ladder maintenance ensure that movable parts operate without binding or undue play and that steps and fittings are attached securely?
- Are non-slip safety feet provided on all ladders?
- When ladders may be accidentally displaced, are they secured or protected?
- Are tops of ladders placed on secure surfaces or restrained from slipping?
- Are ladders installed at an angle so that the feet are one-quarter the height of the ladder away from the base of the structure the ladder leans against?
- Are portable ladders installed so that they extend at least 36 inches above the surface served?
- Are nonconductive ladders used where there is possible contact with exposed energized electrical parts?

### **Fixed Ladders**

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- Are fixed ladders 24 feet or longer provided with cages, wells, ladder safety devices, or self-retracting lifelines regardless of the climbing distance?
- Do fixed ladders extend 42 inches above the surface served?

When the total length of the climb equals or exceeds 24 feet:

- Does the ladder have a safety device or self-retracting lifeline and rest platforms at intervals not exceeding 150 feet, or

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- Does the ladder have a cage or well, sections not exceeding 50 feet, and off-set landing platforms at each 50-foot interval?

### Scaffolds (mobile)

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- Is the scaffold no higher than four times its smallest base dimension?
- Is the scaffold level and plumb?
- Are casters provided with positive locking devices?
- Are the casters locked when the scaffold is in use?
- Is the scaffold fully planked, and are planks secured or overlapped on the supports by 12 inches?
- Are guardrails provided on scaffolds higher than 10 feet?
- Do guardrails meet minimum requirements of 42 inches nominal for the top rail and approximately 21 inches for the midrail?
- Is a ladder provided, and is it tied off to prevent displacement?
- Are employees prohibited from riding on mobile scaffolds on non-level ground or when scaffold height exceeds twice its smallest base dimensions?

### Scaffolds (tubular welded frame)

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- Is the scaffold level and plumb?
- Are adequate sills and footings provided to carry the load without displacement?
- Are base plates provided and used?
- Are all cross braces and diagonal braces in place?
- Is a ladder or equivalent means of safe access available to each working level?
- Are guardrails and end rails provided on scaffolds higher than 10 feet?
- Are all platforms at least 20 inches wide?

- Is the scaffold solidly planked to within three inches of the guardrail?
- Are there tripping hazards or slippery conditions that need to be eliminated?
- Do planks extend over the end bearers at least six inches?
- Where planks overlap, do they overlap a minimum of 12 inches?
- Are planks that are not overlapped secured from movement?
- If a mason's platform is used, is it within 12 inches of the wall?
- Are employees working on the mason's platform protected from falling to the back of the platform?
- Are toeboards at least four inches high provided if there is a hazard to people below?
- Are screens provided between the toeboards and the guardrails if people pass under the scaffold?
- Are tubular welded frame scaffolds over 125 feet high designed by a registered engineer and are the plans available?
- Are scaffolds tied to the structure according to the manufacturer's recommendations?

### Scaffolds (pump jack)

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- Is the plank secured to the bracket?
- Has a ladder been supplied for access?
- Is the footing or foundation of the poles stable and firm?
- Is fall protection provided on scaffolds higher than 10 feet?

### Scaffolds (ladder jack)

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- Is fall protection provided?
- Are the ladder jacks no more 20 feet tall?
- Does the jack have at least 10 inches of bearing on the rungs or is it designed so that it bears on the side rungs?

- Are the ladders equipped with devices or installed in a manner to prevent them from slipping?
- Are ladders heavy-duty?
- Are the planks overlapped on the bearing surface by at least 12 inches?
- If you are using wood planks, is the span eight feet or less?
- Are more than two employees prohibited on any eight-foot span of the scaffold?

### Masonry Block Wall Construction

- Is there a limited-access zone established on the nonscaffolded side of unbraced block walls taller than eight feet?
- Is the limited-access zone at least the height of the wall plus four feet?
- Is the limited-access zone restricted to employees working on the wall?

### Concrete Construction

- Is all protruding rebar capped or guarded by other means to protect employees who could fall onto or into it?
- Do employees who apply concrete through pneumatic hoses wear head and face protection?
- Are employees working more than six feet above ground using fall protection when placing or tying reinforcing steel?
- Are employees prohibited from riding concrete buckets?
- Are employees prohibited from working under buckets when buckets are being lowered or elevated?
- During tensioning operations, do signs and barriers limit access behind jacks to employees essential to the process?
- Do concrete buckets equipped with hydraulic or pneumatic gates have positive safety latches?
- Is the concrete shoring system engineered, and are the plans on site?

Do the engineering plans include:

- Scaffold attachments
- Working decks
- Jack layout
- Formwork
- Is your shoring equipment or system inspected immediately prior to concrete placement, during placement, and immediately after, to ensure that no weakening or damage has occurred?

### Demolition

- Has a competent person done an engineering survey on the structure before demolition to preclude unplanned collapses?
- Is the engineering survey on the job site in written form?
- Are all utilities capped outside of the building or otherwise controlled?
- Have the utility companies been contacted?
- Are essential utilities adequately protected from damage?
- Has a **hazard assessment** of the building been performed to identify chemicals, asbestos, explosives, or substances in tanks or pipes, and have steps been taken to remove hazards?
- Are all wall openings guarded with standard 39 to 45-inch-high guardrails?
- Are floor holes or openings covered to withstand potential loads and covers secured against displacement?
- Are all means of access and egress to the building designated, clear of obstructions, and well-lighted?
- Is there adequate illumination for all work areas?
- Are material disposal chutes provided if material is thrown from a height of more than 20 feet?
- Are all areas to which material is dropped outside the building adequately protected or barricaded?

- If there are chute openings in the building, are employees protected from falling into the chute by 42-inch-high (42 inches  $\pm$  3 inches) guardrails?
- Are stop logs used at floor edges or openings to prevent equipment from running over the edge?

### Fire Protection and Prevention

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- Are portable fire extinguishers conspicuously marked and checked annually?
- Do you inspect your portable extinguishers on a monthly basis to ensure that they are maintained and fully charged?
- Are fire extinguishers provided in the operator's cab of the crane?
- Are fire extinguishers located on each floor of a multistory building?
- Is there at least one fire extinguisher located by the stairway of multistory buildings?
- Are fire extinguishers rated at 10B or higher provided within 50 feet whenever more than five gallons of flammable or combustible liquids or five pounds of flammable gas are stored or used?

### Powder-actuated Tools

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- Are the employees using powder-actuated tools trained to operate those particular tools?
- Are employees prohibited from using powder-actuated tools in an explosive or flammable atmosphere?
- Are powder-actuated tools tested before each use to see that the safety devices are in proper working condition?
- Do you post an operator's sign (8 x 10 inches), "Powder-actuated Tool In Use," in the immediate area prior to use of such tools?
- Do you keep the tool and loads locked in a container and stored in a safe place when they're not in use?
- Are loads of different power levels and types kept in separate compartments or containers?

### Floor Holes and Wall Openings

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- Are all floor holes higher than six feet guarded by standard guardrails or covered with material capable of withstanding at least twice the weight of any equipment, employee, or other weight that may be placed on it?
- Are floor covers secured against displacement?
- Are toeboards installed around the edges of a floor hole in situations where people may pass below the opening?
- Are open-sided floors, ramps, and other passageways provided with standard guardrails 39 to 45 (42 inches  $\pm$  3 inches) inches high when the fall is six feet or more?
- Are cable guardrails checked and maintained to prevent excessive slack?
- Are cable guardrails flagged every six feet?
- Are window openings provided with guardrails where the lower wall is less than 39 inches above the surface and the potential fall is more than six feet?

### Stairs and Stair Railings

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- Are stairs or a ladder provided where there is an elevation break of 19 inches?
- Are standard stair rails and handrails present on all stairways having four or more risers or that rise more than 30 inches?
- Are all stairways at least 22 inches wide?
- Do stairs have at least a 6-foot-6-inch overhead clearance?
- Are stairs with pan-type treads and landings filled to the top edge of the pan with solid material?
- Are stair risers uniform throughout the stair run?
- Are slippery conditions on stairways eliminated?
- Are stair railings 30-37 inches high, measured from the forward edge of the tread?

- Are stair railings provided with a midrail?
- Are toeboards provided when people may pass beneath the open side?
- Are handrails provided on enclosed sides, and, if so, do they have a minimum of 1½ inches clearance to the wall?

### Standard Guardrails

- Is the top rail 39-45 inches high?
- Is the midrail located approximately halfway between the top rail and the floor?
- Are the rails 2-inch by 4-inch guardrail uprights on eight-foot centers?
- Are the top rails capable of withstanding 200 pounds' pressure applied in any direction with minimum of deflection?
- Are toeboards provided, and are they at least four inches high, when people may be passing beneath the open side?
- If vertical members are used in lieu of a midrail, are the gaps less than 19 inches wide?

### Vehicles

- Are motor vehicles with obstructed views to the rear backed only when equipped with a reverse signal alarm or using a signal person?
- Are trucks with dump bodies equipped with a positive means of support permanently attached to the vehicle, and is it used during maintenance or inspection?
- Are all vehicles checked at the beginning of each shift to ensure that all vital equipment is in safe operating condition?
- Are seat belts provided and worn by all operators of passenger and commercial vehicles and all vehicles equipped with roll-over protective structures (ROPS)?
- Are all pieces of material-handling equipment and tractors described in 1926 Subdivision W equipped with ROPS?

### Forklifts (Powered industrial trucks)

- Is the person responsible for training/evaluation knowledgeable about the industrial truck operator training requirements in the code and skilled in lift truck/powered industrial truck operation?
  - Does this individual have the skills needed to train operators?
- Are only certified operators allowed to operate a forklift?
  - Are they trained in truck-related topics?
  - Are they trained in workplace-related topics?
  - Has each operator been trained or evaluated in the last three years?
  - Does each operator have basic knowledge of codes relating to lift truck operations?
- Does the forklift have the rated load capacity and are other important warnings and operating instructions legibly posted in plain view of the operator?
- If forklifts are provided with seat belts, are they worn by the driver at all times? Do you conduct periodic spot checks to ensure compliance?
- Are all forklifts inspected before work shifts for deficiencies?
- Does the forklift have an operable horn that can be heard above the noise in the area?

If the forklift is used for lifting personnel, are the following true:

- The work platform is provided with standard guardrails.
- The platform is secured to the forks of the forklift.
- Guarding is provided between the work platform and the mast.
- The operator attends the vehicle when workers are in the work platform.
- Employees are prohibited from travelling from point to point with the forks elevated more than four feet.

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- When forklifts are left unattended, they are parked with the forks lowered and the brakes set.

### Fall Protection and Body Harnesses

(See *OR-OSHA fall-protection manuals #440-2824A and B for more information*)

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- Is fall protection provided for all employees working over six feet above a lower level by means of personal fall-arrest systems, guardrails, or safety nets?
- Are all fall-protection systems and equipment installed and utilized according to the manufacturer's specifications?
- Are all your employees properly trained to inspect their fall-protection equipment for usability and defects?
- If your crew uses lifelines, are lifelines capable of withstanding at least 5,000 pounds of force?
- Are anchorage points of lifelines capable of withstanding 5,000 pounds of force, or are they part of a fall-arrest system that maintains a safety factor of two, designed by a qualified person?
- Has your fall-protection system been evaluated to ensure 100 percent fall protection while workers move from point to point?
- Are lifelines or lanyards protected if they wrap around sharp objects?
- Is equipment regularly inspected for defects?
- Are fall-arrest safety harnesses worn properly, with D-rings in the back?
- Have you evaluated all tasks to ensure that all workers are protected from fall hazards?

### Blasting and Explosives

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- Do you allow only authorized and qualified persons to handle and use explosives?
- Do you prohibit heat-producing devices near explosive magazines or where explosives are being handled, transported, or used?

- Are stored explosives kept in locked magazines?
- Are original containers or Class II magazines used to transport detonators and other explosives from storage magazines to the blasting area?
- Do signs clearly warn against the use of mobile radio transmitters on all roads within 1,000 feet of the blasting operations?
- Do you burn empty boxes, paper, and fiber packing materials that have contained high explosives only at approved locations?

### Steel Erection — Leading-edge Work (decking, spot, or tack welding)

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- Do you require a positive means of fall protection for your decking processes (interior or exterior) that create open-sided edges higher than 10 feet above a lower level?
- Does a 42-inch-high safety railing extend around the interior and exterior peripheries of temporary planked or metal-decked floors of multi-floored structures during structural steel assembly?

### Steel Erection — Non-connecting (at or above 10 feet)

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Do you require a positive means of fall protection when the following non-connecting processes occur at 10 feet or more above a lower level:

- Bolting crew applications — pneumatic operations at the process points
- Decking crew processes — decking layout, spot or puddle welding, and cutting applications
- Plumbing-up guys and turnbuckle crew processes — installing, adjusting, and tightening process points
- Bridging crew applications — layout, positioning, and tack welding
- Flange bracket applications — bolting process
- Welding over six feet above lower levels

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**Note:** It is important that non-connectors understand the rules that apply to each of the many tasks they do and essential that each craft be given high-quality orientation and training prior to starting the job.

### Excavation (general information)

- Are your employees protected from cave-ins by shoring, sloping, or shield systems that meet 1926 Subdivision P requirements in all excavations five feet or deeper?

**Note:** Excavations less than five feet deep are included in 1926 Subdivision P requirements if a competent person has not evaluated cave-in potential.

- Have you located existing utilities by contacting utility owners prior to digging?
- Is a ladder provided so workers don't travel more than 25 feet in the trench?
- Are spoils set back at least two feet from the edge of the excavation or trench?
- Have undermined sidewalks, pavement, and other structures been braced, shored, or otherwise supported?
- Has underpinning or bracing been provided if the excavation is below the foundation of a structure?
- If there is water in the trench, is it pumped out?
- Are hardhats worn in the trench and around all backhoes and trucks?
- If confined-space or toxic-atmosphere hazards exist at your worksite, have protective measures been implemented?
- If working near a roadway, are employees wearing high-visibility clothing or vests?
- Are all sloping or engineering systems for excavations more than 20 feet deep designed by a professional engineer registered in Oregon?
- Does the tabulated data used for the shoring system correspond to the soil type at the job site?

### Competent Person Requirements

- Do you have a designated competent person on site who has the authority to implement needed action?
- Is the competent person knowledgeable about soil analysis, the use of protective systems, and the excavation standard?
- Has the competent person performed a daily inspection of the excavation, adjacent area, and the protective systems prior to the start of work and during the shift?
- Has the competent person performed manual and visual analyses (at least one of each) to identify soil type each time location or a situation changes?
- Is the chosen shoring or sloping system correct for the soil type?

### Aluminum Hydraulic Shoring

- Are the manufacturer's instructions and shoring installation data on site?
- Does the competent person know how to read and interpret the data?
- Is shoring installed according to the manufacturer's instructions for the soil type?
- Are there at least three shores on each side of the trench wall?
- Is shoring installed in such a manner that employees are not exposed to a cave-in?

### Shields

- Is the engineering or tabulated data on site and available upon request?
- Have all shields that weren't constructed according to an engineer's diagram been evaluated and approved by a registered engineer?
- Does the engineering data state the parameters of use, such as depth and width of trench and soil types that are allowed?
- Does the competent person know how to read and interpret the data?



- Does the shield provide protection from the top to the bottom of the trench?
- Is the shield installed in such a manner that it can't move laterally?
- Can the shield be installed and removed in a manner that doesn't expose employees to a cave-in?
- Have all the connecting pins been installed prior to allowing any exposure within the steel box?

### Sloping

- If sloping protection is used, does it meet the following criteria?

Soil classification	Slope
Stable rock	
A	3/4 :1 (53°)
B	1:1 (45°)
C	1 1/2:1 (34°)

- If the excavation has multiple soil types, does the degree of slope meet the requirements for the most unstable soil?
- Are all slopes over 20 feet deep engineered and are the engineering plans on site?

### Confined Space

- Have all confined-space working conditions been identified?
- Are employees adequately trained in confined-space entry procedures?
- Have the atmospheres in confined spaces such as manholes been tested prior to worker entry for oxygen deficiency, flammability, and toxicity?
- Has adequate ventilation been provided?
- Are employees using supplied air if the atmosphere is oxygen-deficient (less than 19.5 percent oxygen)?

- In spaces immediately dangerous to life, are workers provided with a means of emergency retrieval?
- Is there a safety watch outside the confined space?
- Have all energy sources in the confined space been locked or tagged out?

### Scissor Lifts

- Are the shear points guarded by a curtain, audible signal, or other warning means in the descent mode?
- Is the scissor lift provided with both upper and lower operating controls?
- Do the lower controls override the upper controls in case of an emergency?
- Are the controls protected against accidental activation?
- Are standard guardrails provided on the platform?
- Do employees ensure that chain gates are in position prior to working at elevations?

### Aerial Lifts

- Is personal fall-protection equipment attached to the appropriate anchorage point on a boom or basket when employees are working from an aerial lift?

### Traffic Control

- Are flaggers provided if barricades aren't appropriate?
- Are "CONSTRUCTION AHEAD" warning signs placed when work is performed on or adjacent to roadways?
- Does the layout of signs, flaggers, and channeling barricades meet the requirements of ANSI-D6.1e, *Uniform Traffic Control Manual*?
- Are flaggers trained?
- Does hand signalling comply with the requirements of the *Uniform Traffic Control Manual*?
- Are flaggers wearing reflective warning vests?

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## Cranes

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- When operating cranes and boom trucks with more than a five-ton capacity, do operators keep their operator's cards with them?
- Are all rated capacities posted on the crane and hoisting equipment?
- Are daily crane inspections conducted before each use and is this inspection documented?
- Do you conduct a thorough inspection of all cranes at least once a year?
- Is the inspection documentation available upon request?
- Are "DANGER, STAY CLEAR" signs posted at all pinch-point areas of the crane?
- Do you maintain at least three feet of clearance between the rotating superstructure and any fixed object, and if not, are barricades used to prevent access to the area?
- Is the sign warning that "IT IS UNLAWFUL TO OPERATE CRANES, DERRICKS, AND POWER SHOVELS WITHIN 10 FEET OF HIGH VOLTAGE LINES" posted at the operator's controls?
- Is a fire extinguisher located in the crane within reach of the operator?

## Slings

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Are wire rope slings taken out of service when any of the following conditions exist:

- Ten randomly distributed broken wires in one line lay
- Five broken wires in one strand of one line lay
- Kinks and doglegs
- Signs of excessive wear, corrosion, or defect
- Excessive wire breakage in the eye of the splice
- Knots within the wire rope sling
- Ten percent broken wires in any eight diameters

- Are you protecting wire rope slings from sharp corners by increasing the corner radius with corner irons or blocks?
- Do you use shackles when making choker hitches out of wire rope slings?
- Are chain slings made from alloy steel components?

Are alloy chain slings taken out of service when any of the following exist:

- Nicks, cracks, gouges, and wear on any part of the sling component
- Bent links, lifted weld fins, opened hooks, and stretch
- Rust and corrosion
- Uneven leg lengths when sling is hanging free
- Excessive link wear

Are fiber rope slings taken out of service when any of the following conditions exist:

- Broken or cut strands
- Burns or chemical damage
- Excessive dryness or rot
- Other signs of damage or abuse
- Splices not in accordance with manufacturer's recommendations

Are synthetic web slings removed from service when any of the following conditions exist:

- No sling identification showing type of material, rated capacities, and manufacturer
- Thickness and length of the webbing isn't uniform
- Excessive wear, torn edges, or end-fitting damage
- Snags, punctures, tears, or cuts
- Broken or worn stitches
- Distorted or worn fittings
- Acid and/or caustic burns

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- Melting or charring of any part of the sling surface

Are hooks taken out of service when any of the following conditions exist:

- Bent or sprung
- Point loading or overstress and bends
- Hook is not moused to prevent loads from jumping out under sudden release of tension
- Boom angle indicator isn't operable
- Boom hoist kickout isn't operable
- Positive stops aren't provided for the boom and jib
- Load rating chart isn't in the cab of the crane

### Cranes and Personnel Platforms

**Note:** The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling by conventional means of reaching the worksite — personnel hoists, ladder, stairway, aerial lift, elevating work platform or scaffold — would be more hazardous or isn't possible because of structural design or worksite conditions.

Have you addressed the following requirements:

- Cranes and operational criteria, 29 CFR 1926.550(g)(3)(i)(A)-(F), Div. 3/N
- Instruments and components, 29 CFR 1926.550(g)(3)(ii)(A)-(D), Div. 3/N
- Personnel platforms and design criteria, 29 CFR 1926.550(g)(4)(i)(A)-(C), Div. 3/N
- Personnel platforms and design criteria, 29 CFR 1926.550(g)(4)(ii)(A)-(I), Div. 3/N
- Personnel platform loading, 29 CF 1926.550(g)(4)(iii)(A)-(E), Div. 3/N
- Rigging, 29 CFR 1926.550(g)(4)(iv)(A)-(E), Div. 3/N
- Trial lift, inspection, and proof testing, 29 CFR 1926.550(g)(5)(i)-(vi), Div. 3/N

- Work practices, 29 CFR 1926.550(g)(6)(i)-(viii), Div. 3/N

- Traveling, 29 CFR 1926.550(g)(7), Div. 3/N

- Pre-lift meeting, 29 CFR 1926.550(g)(8)(i)-(ii), Div. 3/N

### Framing of Residential-type Structures

*(See OR-OSHA's fall-protection manual on residential-type construction, #440-2824A, for more information.)*

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#### **Means of fall protection required**

- Are employees without fall protection prohibited from using exterior top plates at 10 feet or higher for layout, positioning, and nailing of rafters or manufactured trusses; snapping lines across rafter tails for plumb cuts; perimeter blocking; and fascia applications?

Options:

- Lifeline with safety harness and lanyard
- Ladder jacks with planks
- Pump jacks with planks
- Catwalks built to the interior stud walls (not to exceed six feet unless standard guardrails are installed at the back and ends of the work platform)

#### **Layout/nailing of floor, roof, and rim joist**

- Are employees without fall protection prohibited from using the top plate area at 10 feet or higher for layout, placement, and nailing of floor, roof, and rim joist?

Options:

- Catwalks built to the interior stud walls (not to exceed six feet unless standard guardrails are installed at the back and ends of the work platform)
- Ladder jacks with planks

### Layout, Nailing, Tilting and Bracing of Walls

- Do you prohibit employees not associated with the layout, tilting, and fastening of stud walls from working the edge of a floor 10 feet or more above a lower level without fall protection?

#### Options:

- Crew members building, tilting, and bracing walls are allowed a floor (not to exceed 10 feet) while they work the leading edge. Employees doing other tasks must use fall protection (e.g., safety belts or harnesses, lanyards, static lines, and guardrails) at edges above 10 feet.
- Use wall jacks to prevent sprains and strains when tilting walls.

#### Post and beaming

- Do you prohibit crew members without fall protection from walking the top cord of post and beam applications more than 10 feet above a lower level?

#### Options:

- Incorporate a positive means of fall protection (e.g., harness, lanyard, static lines, and catch platforms, etc.).
- Use extension ladders if fall protection is not feasible.

#### Steep-pitched roofing

- Do you require fall protection for your roofing applications when the eave-to-ground height exceeds 10 feet?

#### Options:

- On roofs with a pitch from 3:12 to 6:12, and a ground-to-eave height greater than 10 feet and not exceeding 25 feet, the following method for all fall protection is acceptable: roofing brackets set on a solid surface and designed to support a 2" x 6" upright member.
- On sloped roofs with pitches greater than 6:12 through 8:22 and a ground-to-eave height greater than 10 feet, but not exceeding 25 feet, the following method of fall protection is acceptable: multiple roofing brackets set at least every 8 feet vertically.
- On sloped roofs with pitches greater than 8:12 or the eave-to-ground height exceeds 25 feet, roofing brackets are not acceptable.

#### Open-sided floors, platforms and stairway landings at six feet

**Note:** If an 18" x 30" opening is within 39 inches of the floor, it **must** be guarded. The standard stud wall layout of 30 inches high or higher and 16 inches on centers only creates a 14.5-inch opening that doesn't need guardrails, according to 29 CFR 1926.501(b)(14).

- Are standard guardrails provided at 42 inches, and midrails at 21 inches, as required by 29 CFR 1926.502(b)(1)?
- Are wall openings guarded where there is a drop of more than 6 feet?
- Do windowsills less than 39 inches above the floor have guardrails at 42 inches?
- Are runways six feet or more above ground level that are used for access and egress guarded by standard guardrails or — if used for special purposes — have railings installed along one side of the runway when conditions require?

#### Stairways

- Do stairways having four or more risers or rising more than 30 inches have at least one handrail and stair rail system along each unprotected side or edge?
- Are stair rails installed after March 15, 1991, at least 36 inches from the top to the tread?
- Are stair rails installed before March 15, 1991, at least 30 inches — but not more than 34 inches — from the top rail to the tread?
- Are handrails at least 30-37 inches high, from the forward edge of the tread?

#### Guarding of floor openings or holes

**Note:** Floor holes are gaps or voids two inches in their least dimension.

- Are openings covered with plywood to withstand twice the weight of any equipment, employee, or other weights that may be placed on them, or do they have standard guardrails around them?

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- Has crew covered or guarded fireplace openings in the floor, HVAC openings, crawlspace openings, and all other openings or holes, as required by 29 CFR 1926.501(b)(4)?

### Roofing Work

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- During roofing operations, is fall protection used when eave-to-ground roof height exceeds six feet?

Select the fall-protection method you're using from the three that follow, and run through its checklist:

#### Personal fall-arrest systems

- Lanyards, guardrails, catch platforms, body harnesses, or other alternative fall protection are provided to protect employees working more than 10 feet above a lower level.
- Personal fall-arrest systems (if used) are installed in a manner that prevents employees from falling off the edge of the roof.

#### Warning-line systems

- Warning-line systems are erected around the entire roof.
- Warning line is set a minimum of six feet from the edge of the roof.
- If mechanical equipment is used, a warning line is erected at least six feet from the edge perpendicular to the direction of equipment operation.
- Warning-line system consists of rope, wire, or chain with a tensile strength of 500 pounds.
- Erected stanchions can withstand a force of 16 pounds without tipping over.
- Warning line attaches to the stanchions in a manner that doesn't allow slack to be pulled from other sections.
- Warning line is flagged six feet on centers.
- Height of the warning line is between 34 inches and 39 inches from the roof.

- All material handling, storage, and access areas are outlined with warning lines.
- Guardrails are provided material handling, bitumen pipe, and hoisting areas at roof edges.
- Material isn't stored within six feet of the roof edge unless guardrails are provided at the edge.
- Roof openings are covered by material capable of withstanding at least two times the maximum potential load from employees, equipment, or other sources.
- Roof opening covers are secured against displacement and provided with a caution sign.

#### Safety-monitor systems

- The roof is less than 50 feet wide.
- No mechanical equipment is used or stored.
- Employees are visible to the monitor.
- The monitor isn't performing other tasks that prevent him or her from performing safety-monitor duties.
- The monitor is well-trained in all practices, safety requirements, and hazards.
- The safety monitor is on the same roof level and in the same area as the workers.
- The monitor has authority to stop the work.

#### Safe Work Distances

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- Is a safe work distance designated to eliminate the potential for a fall or stumble over an unprotected edge?
- Is a warning or barrier line used to designate the safe work area?
- If your work surface has a pitch of 1:12 or less, have you established a safe work distance of at least six feet from the fall hazard? This may need to be increased depending on the hazards.

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- Are interior openings such as skylights or floor holes covered or guarded?

**Note:** A safe work distance cannot be used for steel erection.

## Control of Health Hazards

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### Silica exposure

- Have you identified potential exposure to silica-containing dust caused by sand-blasting, grinding or cutting of concrete, tunneling, or similar operations?
- If the presence of silica-containing dust has been identified, has testing been done to identify exposure levels?
- Are you using product substitution or engineering controls such as wet methods and ventilation to eliminate exposure potentials?

**Note:** Personal protective equipment is a last resort for protecting worker health and safety. All feasible engineering controls and work practices must be used before you rely on personal protective equipment to reduce employee exposure.

### Asbestos

- Prior to starting work, have you made reasonable efforts to determine if materials to be worked on or removed contain asbestos?

If asbestos is present, have you done initial monitoring to ensure that exposure limits are as follows:

- Below a time-weighted average of 0.2 fibers per cubic centimeter (f/cc) averaged over an 8-hour period
- Below an excursion limit of 1.0 f/cc averaged over a 30-minute time period
- Below the action level of 0.1 f/cc averaged over an 8-hour period
- If the action level has been reached, are the requirements for employee training and medical surveillance being followed?

- If monitoring levels are below the established limits, is additional monitoring done each time the process changes in a manner that could affect exposure levels?

- Has a regulated area been established if the exposure limits are exceeded or if you could reasonably expect that the allowed exposure limits will be exceeded?

### Regulated areas

- Is the regulated area separated in a manner that minimizes the number of people in the area?
- Is access to the regulated zone limited to authorized persons?
- Are all those in the regulated area wearing proper personal protective clothing and respirators?

Have the following been completed by the competent person before work begins:

- Enclosure set up and its integrity ensured
- Enclosure entry and exit controlled
- Employee monitoring supervised
- Employees are wearing protective clothing and respirators
- Only trained employees are in the enclosure

# Definitions of Terms Used in This Checklist

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## **Anchorage**

A secure point of attachment for lifelines, lanyards, or deceleration devices.

## **Body belt (safety belt)**

A strap that can be secured about the waist and attached to a lanyard, lifeline, or deceleration device.

## **Body harness**

Straps that may be secured about the employee in a manner that will distribute fall-arrest forces over the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a personal fall-arrest system.

## **Buckle**

Any device for holding the body belt or body harness closed around the employee's body.

## **Competent person**

A person capable of identifying existing and predictable hazards in the surroundings or working conditions who has authorization to take prompt corrective measures to eliminate them to prevent harm to employees or others.

## **Connector**

A device used to connect parts of the personal fall-arrest system and positioning-device systems. It may be an independent component of the system, such as a carabiner, or it may be an integral component of the system, such as a buckle or D-ring sewn into a body belt or body harness, or a snap hook spliced or sewn to a lanyard or self-retracting lanyard.

## **Controlled-access zone (CAZ)**

An area of limited access at a job site, in which certain work (e.g., overhand bricklaying) is permitted without guardrail systems, personal fall-arrest systems, or safety-net systems.

## **Dangerous equipment**

Equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

## **Deceleration device**

Any mechanism (such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyard, automatic self-retracting lifeline or lanyard, etc.) that serves to dissipate a substantial amount of energy during a fall arrest or otherwise limit the energy imposed on an employee during fall arrest.

## **Deceleration distance**

The additional vertical distance a falling employee travels, excluding lifeline elongation and free-fall distance, before stopping, from the point at which the deceleration device begins to operate. It's the distance between the body belt- or body harness-attachment point at the moment of activation of the deceleration device (at the onset of fall-arrest forces) and that attachment point after the employee comes to a full stop.

## **Equivalent**

Alternative designs, materials, or methods of hazard protection the employer can demonstrate will provide an equal or greater degree of safety than the methods, materials, or designs specified in the standard for the protection of employees.

## **Failure**

Load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

## **Free fall**

The portion of a fall before a personal fall-arrest system begins to apply force to arrest the fall.

## **Free-fall distance**

The vertical displacement of the attachment point of the employee's body belt or body harness between onset of a fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline or lanyard elongation, but includes deceleration-device slide distances or self-retracting lifeline or lanyard extensions before fall-arrest forces occur.

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**Guardrail system**

A barrier erected to prevent employees from falling to lower levels.

**Hole**

A gap or void of at least two inches (5.1 cm) in a floor, roof, or other walking or working surface.

**Infeasible**

Conventional fall-protection methods that make it impossible to perform construction work or that are technologically impossible to use in a particular situation.

**Lanyard**

A flexible rope or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

**Leading edge**

The edge of a floor, roof, or formwork for a floor or other walking or working surface that changes location as additional sections of floor, roof, decking, or formwork are placed, formed, or constructed. A leading edge is considered to be an “unprotected side and edge” during periods when it’s not actively and continuously under construction.

**Lifeline**

A component consisting of a flexible line for connection to an anchorage at one end (vertical lifeline) or for connection to anchorages at both ends (horizontal lifeline) that serves as a means for connecting other components of a personal fall-arrest system to the anchorage.

**Low-slope roof**

A roof having a slope less than or equal to 4:12 (vertical to horizontal).

**Lower levels**

Those areas or surfaces to which an employee can fall. Such areas or surfaces include ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

**Mechanical equipment**

All motor- or human-propelled wheeled equipment used for roofing work, except wheelbarrows and mop carts.

**Opening**

A gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide in a wall or partition through which employees can fall to a lower level.

**Overhand bricklaying and related work**

The process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes electrical installation incorporated into the brick wall during the overhand bricklaying process and mason tending.

**Personal fall-arrest system**

A system that arrests an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

**Positioning-device system**

A body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

**Qualified person**

A person who, by possession of a recognized degree, certificate, or professional standing or who, by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project. *29 CFR 1926.32.*

**Rope grab**

A deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam-level locking, or both.

**Roof**

The exterior surface on the top of a building, *not including* floors or formwork that temporarily become the top surface of a building because a building is not completed.



**Roofing work**

The hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

**Safety-monitoring system**

A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

**Self-retracting lifeline/lanyard**

A deceleration device consisting of a drum-wound line that allows employees normal movement by winding onto or releasing from the drum under slight tension, and which, during a fall, locks automatically to arrest the fall.

**Snap hook**

A hook-shaped connector with a closed keeper that opens to permit the hook to receive an object, then automatically closes to retain the object.

There are two common types of snap hooks:

- Locking snap hooks — have self-closing, self-locking keepers that remain closed and locked until unlocked and pressed open for connection or disconnection
- Non-locking snap hooks — have self-closing keepers that remain closed until pressed open for connection or disconnection. As of January 1, 1998, using non-locking snap hooks in personal fall-arrest systems and positioning-device systems is prohibited.

**Steep roof**

A roof having a slope greater than 4 in 12 (vertical to horizontal).

**Toeboard**

A low barrier that prevents materials and equipment falling to lower levels.

**Unprotected sides and edges**

Any side or edge (except at entrances to points of access) of a walking or working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.

**Walking/working surface**

Any horizontal or vertical surface, on which an employee walks or works. Includes floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel, but *does not include* ladders, vehicles, or trailers from which employees perform job duties.

**Warning-line system**

A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge. Designates an area in which roofing work may take place without the use of guardrail, body belt, or safety-net systems.

**Work area**

That portion of a walking or working surface in which job duties are being performed.