

Builders License Training Institute

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MIOSHA Review Study Guide

MIOSHA Help & Information: 517-322-1856

1. Required at the Jobsite:

- a. Written Accident Prevention Plan (Safety Plan)
- b. Written Remote Jobsite / Single Employee Jobsite Medical Attention Plan:
- c. Written Hazard Communication Plan:
 - i. MSDS Sheets for materials used
 - ii. All containers shall be labeled
- d. Written Fall Protection Plan:
 - i. If not using conventional fall protection methods
 - ii. Shall document why all other conventional fall protection methods are technically infeasible or create a greater danger to use.
- e. MIOSHA Posters:
 - i. Michigan Safety and Health Protection on the Job Poster
 - ii. Michigan Whistleblowers Protection Act Poster
 - iii. MSDS Location Poster
 - iv. New or Revised MSDS Location Poster
 - v. Be Prepared!, Emergency Contacts Poster
 - vi. All posting must be large enough print for people to read
- f. 911 Phone Service, Needs to be Verified and Posted
- g. Competent Person:
 - i. Has ability to recognize and remove a hazard
 - ii. Second in charge of administering the Accident Prevention Plan
- h. Qualified Person: (Only during certain activities)
 - i. Responsible for the administering the Accident Prevention Plan
 - ii. Excavation operation need a qualified person
- i. First Aid Trained Person
- j. First Aid Kit
- k. Lighting:
 - i. Shall provide at least 10 foot candle of lighting
- l. Fire Extinguisher
 - i. One 2A for every 3000 SQFT of work area (3A40BC)
- m. OSHA Approved Fuel Cans
- n. Drinking Water:
 - i. Container for water shall provide for individual servings (equipped with a tap & cups)
- o. Toilet:
 - i. 1 to 20 employees, 1 toilet is required
 - ii. If toilet is not connected to a sewer system, a Port-a-Jon is required
 - iii. Shall provide toilet paper
- p. Washing Facilities:
 - i. A sink with water, soap, & towels is best
 - ii. Waterless hand gel & paper towels will comply

2. General Rules:

- a. OSHA, stands for Occupational Safety and Health Administration
- b. MIOSHA rules only cover employees:
 - i. Self-employed people with no employees and do not use sub-contractors on jobsites, do not need to comply with MIOSHA rules.
- c. Employers shall provide a jobsite free from recognized hazards
- d. Employers shall provide employees training on all operations, procedures, hazards, tools, equipment, hazardous materials, and safety equipment
 - i. TRAIN, TRAIN, TRAIN ON EVERYTHING YOUR COMPANY DOES.
- e. Keep employees 10 feet from energized electrical lines and equipment
- f. Keep work areas and aisle ways clean, so as not to create a hazard
- g. Documents needed after an injury or illness, if you have 11 or more employees:
 - i. Form 301, Injury and Illness Incident Report
 - ii. Form 300, Log of Related Injuries and Illnesses
 - iii. Form 300A, Annual Summary
- h. Employers shall report to MIOSHA within 8 hours any accident that results in a:
 - i. Fatality
 - ii. In-patient hospitalization of 3 or more employees

3. Personal Protective Equipment:

- a. Remove the Hazard if Possible:
 - i. First, use Engineering Controls to attempt to remove or enclose hazard
 - ii. Second, use Work Practice Controls to change the way work is done to reduce the hazard
- b. Employers shall provide:
 - i. Hard Hat, Class A rated
 1. When there is a risk of bumping head, falling objects, flying objects
 - ii. Safety Glasses:
 1. Nearly always in construction
 - iii. Life Jackets and Rescue Boat if working near water
- c. Employee shall provide:
 - i. Safety Boots:
 1. When anything that could cause foot injuries are present
 2. If special protective boots are necessary employer shall provide them
 - ii. Gloves:
 1. General purpose work gloves only
 2. If special protective gloves are necessary employer shall provide them

4. Fall Protection:

- a. IF YOU CAN FALL 6 FEET OR MORE YOU NEED FALL PROTECTION
- b. Employers shall provide all fall protection equipment
- c. Fall Protection is not required when: (only before or after active construction)
 - i. Making an inspection, investigation or an assessment
- d. Working on Scaffolds has its own Fall Protection Requirements
- e. Working on Ladders has its own Fall Protection Requirements
- f. Conventional Fall Protection:
 - i. Guardrails:
 1. May be used anywhere
 2. Top rail 42" ± 3" up from walking surface
 - a. Shall be able to support 200 lbs, down and side to side
 3. Mid rail half way between top rail and walking surface
 - a. Shall be able to support 150 lbs, down and side to side
 4. Toe board at least 3 ½" above walking surface
 5. No opening larger than 19" in railing system
 - ii. Safety Nets:
 1. May be used anywhere
 2. Rarely used, time consuming to set up.
 - iii. Personal Fall Arrest System (PFAS)
 1. May be used anywhere
 2. All components shall be able to support at least 5000 lbs
 - a. Body harness
 - b. Dee-rings
 - c. Snap hooks, (locking hooks only)
 - d. Life Lines or Lanyard
 - e. Anchorage
 - iv. Covers:
 1. All 2" or larger holes in the least dimension in the working / walking surface shall be covered, including skylights and holes for chimneys.
 2. Covers shall be able to support 2 times the expected load
 3. Covers shall be secured to prevent movement
 4. Covers shall be labeled "HOLE" or "COVER"
- g. Unconventional Fall Protection:
 - i. Safety Monitoring System:
 1. Roofing work, on a 4/12 pitch or less:
 - a. Roof 50' or less in width, may use safety monitor only
 - b. Roof more than 50' in width, must use safety monitor and warning line system
 2. Roofing work, on more than 4/12 pitch:
 - a. Shall document why all other fall protection methods are infeasible to use
 - b. Need fall protection plan on jobsite
 3. Only competent people can be a safety monitor
 4. Safety monitor shall be able to orally communicate fall hazards to employees
 5. Safety monitor shall be on same working / walking surface as employees

- ii. Warning Line System:
 - 1. Roofing work, on a 4/12 pitch or less:
 - a. 6 feet back from edge
 - 2. Any other work on a roof, 4/12 pitch or less:
 - a. 15 feet back from edge
 - 3. Cannot use anywhere else, ONLY ON A ROOF
 - 4. Line shall have at least a 500 lbs tensile strength
 - 5. Line shall be between 34" and 39" in height from the walking surface
 - 6. Line shall be flagged at a max. of 6' O.C. spacing
 - 7. Only employees performing roofing work can be between the warning line and the roof edge
- iii. Controlled Access Zone: (CAZ)
 - 1. Shall document why all other fall protection methods are infeasible to use
 - 2. Need fall protection plan on jobsite
 - 3. Only trained employees in CAZ
 - 4. CAZ shall be marked out by ropes, lines on floor, etc.
 - 5. Ropes or marks shall be between 6' and 25' from edge
 - 6. Shall have signs saying it is a CAZ
- iv. Fall Protection Plan:
 - 1. Shall document why all other fall protection methods are infeasible to use and/or create a greater danger when used
 - 2. Need fall protection plan on jobsite
 - 3. See MIOSHA 1926.502(k) for requirements
 - 4. See sample fall protection plan, appendix E "Sample Fall Protection Plan for Residential Construction"

5. Ladders:

- a. Need a ladder at all changes in elevation of 19" or more, if there is not a ramp, or stairway
- b. Shall be able to support 4 times rated working load
- c. Ladders shall not be placed in passageway, doorway, hallway, driveway, unless protected by barricades to prevent displacement
- d. Shall place ladder on stable base
- e. When going up or down a ladder an employee shall face the ladder and shall grasp the ladder with at least one hand
- f. No employee shall carry a load on a ladder that could cause them to lose their balance
- g. No employee shall over reach while on a ladder. If both shoulders are outside of the ladder rails the employee is over reaching
- h. A ladder shall not be moved while an employee is on it
- i. A ladder shall be used at a 1 in 4 ratio. If the supporting height of the ladder is 24' then the base needs to be 6' away from the supporting wall. $24'/4=6'$
- j. At a 1 in 5 ratio the ladder shall be tied off at the top
- k. When using a ladder to access an upper landing surface, the ladder shall extend at least 3' above the landing surface.
- l. Metal ladders shall not be used within 20' of electrical equipment or lines
- m. Fiberglass and wood ladders shall not be used within 10' of electrical equipment or lines
- n. Maximum length of an extension ladder is 60'
- o. An employee shall not stand on the top 2 rungs or within 3' of the top of the ladder
- p. Stepladders shall not be used as a straight ladder by leaning them against a wall or support
- q. When on a portable ladder no other form of fall protection is required

6. Stairs:

- a. Need a stairway at all changes in elevation of 19" or more, if there is not a ramp, or ladder
- b. Stairway landing shall be at least 30" in the direction of travel and 22" in width, and at least every 12' of vertical rise.
- c. Riser height and Tread depth shall be uniform and within ¼" variation of one another
- d. Stairways shall have at least 7' of vertical clearance above the line of the tread nosing
- e. Stairways with 4 or more risers or rises more than 30" shall be provided with at least one stair rail system on the unprotected edges or a hand rail on protected edges
- f. The railing shall not be less than 36" or more than 37" above the line of the tread nosing
- g. No opening shall be larger than 19" in railing system
- h. The railing shall be capable of supporting 200 lbs

7. Scaffolds:

- a. WHEN ON A SCAFFOLD, IF YOU CAN FALL 10 FEET OR MORE YOU NEED FALL PROTECTION
- b. Guardrails:
 - i. Top rail 39"± 3" up from walking surface
 - ii. Mid rail half way between top rail and walking surface
 - iii. Toe board at least 3 ½" above walking surface
- c. Personal Fall Arrest System (PFAS)
 - i. Same requirements as the Fall Protection section
- d. Scaffolds shall be erected, moved, and dismantled or altered under the supervision of a competent person
- e. Scaffolds shall be able to support 4 times rated working load
- f. Poles / Legs / Frames of scaffolds shall be plumb and shall be braced to prevent swaying
- g. Scaffolds shall not be used within 10' of electrical equipment or lines
- h. Buckets, barrels, boxes, bricks and blocks shall not be used as a scaffold (that means standing on them is NOT O.K.)
- i. Buckets, barrels, boxes, bricks and blocks shall not be used to support scaffolds
- j. Scaffolds poles / legs / frames shall bear on base plates and mudsills
- k. Buckets, barrels, boxes, bricks and blocks shall not be used on scaffolds to increase the height
- l. Shore and Lean-to scaffolds are prohibited
- m. Ladders shall not be used on scaffolds to increase the working height
- n. Access to scaffolds shall be by ladders and some end frames
- o. Access path cannot cross a gap of 14" or more, and cannot be more than 24" above or below the scaffold level attempting to access
- p. Platforms shall be fully planked, except for need access point
- q. Planking:
 - i. Wood planks shall be scaffold grade planks
 - ii. Minimum wood plank size shall be 2" x 10"
 - iii. Platform shall be at least 2 planks wide, never less than 18"
 - iv. Platform shall not be more than 14" from the work surface
 - v. Planks shall extend at least 6" over the support, and not more than 12" over the support
 - vi. Cleats maybe used to reduce overhang requirements
 - vii. Lapped planks shall extend at least 6" over the support, with a 12" minimum overlap
 - viii. Maximum allowable deflection of a plank shall be 1/60th of the span
- r. Picks:
 - i. Shall be marked by the manufacturer for load and span capacities
 - ii. Minimum width shall be 14", except minimum width on ladder jacks shall be 12"

- s. Tubular Metal Frame Scaffolds:
 - i. Maximum walking surface height shall not be more than 4 times the smallest base dimension, (5' width x 8' long, 5' is the minimum base dimension, $5' \times 4 = 20' = \text{Max. Ht.}$)
 - ii. Maximum total heights, spacing, spans, and loads are per manufacture's instruction, if manufacture's instruction are not available the chart in MIOSHA Part 12 Scaffolds and Scaffold Platforms shall be followed
 - iii. Guys, Ties, and Braces shall be installed per manufacturer's instructions or at the closest horizontal member to the 4 in 1 height to base ratio.
 - iv. Maximum walking surface height shall not be more than 4 times the smallest base dimension above the highest point of guys, ties, and braces
 - v. Outrigger may be used to increase the base dimensions
- t. Mobile Scaffolds:
 - i. Maximum walking surface height shall be no more than 4 times the smallest base dimension, (4' width x 6' long, 4' is the minimum base dimension, $4' \times 4 = 16' = \text{Max. Ht.}$)
 - ii. Outrigger may be used to increase the base dimensions
 - iii. Employees shall not ride a mobile scaffold unless all of the following are met:
 - 1. Floor surface is free from holes and obstructions
 - 2. Maximum walking surface height shall be no more than 2 times the smallest base dimension, (4' width x 6' long, 4' is the min. base dimension, $4' \times 2 = 8' = \text{Max. Ht.}$)
 - 3. Scaffold has rubber tires
 - 4. Scaffold has a guardrail installed
 - 5. Other employees in the area are notified of the move
 - iv. Only manual force shall be used to move the scaffold
- u. Pump Jack Scaffolds:
 - i. Spacing of poles is dependent of span of planks or pick
 - ii. Maximum pole height shall be 30'
 - iii. The number of poles and the number of people on the platform shall be the same
- v. Ladder Jack Scaffolds:
 - i. Shall only be used on type 1 manufactured ladders
 - ii. Maximum platform (pick) walking surface height shall be 20'
 - iii. Maximum span of a pick shall be 24'
 - iv. The number of ladder and the number of people on the platform shall be the same
- w. Step, Platform and Trestle Ladder Scaffolds:
 - i. Platforms shall not be placed higher than the second highest rung or step
 - ii. Ladders used shall comply with the MIOSHA Part 11 Ladders
 - iii. The platform shall be secured
- x. Roof Brackets: (Roof Jacks)
 - i. Shall be installed to maintain a level working surface
 - ii. Maximum bracket spacing shall be 8' O.C. across the roof
 - iii. Working plank shall not be less than 2" x 6"
 - iv. Brackets shall be nailed to roof deck
- y. Stilts:
 - i. Maximum height of foot support is 20", MIOSHA will fine at 24"
- z. Horse Scaffolds:
 - i. Saw horses shall be made from straight grain lumber
 - ii. Maximum height shall be 4'
 - iii. Horses shall not be tiered

- aa. Carpenter's Brackets:
 - i. Brackets shall be made of metal
 - ii. Maximum bracket spacing shall be 8' O.C.
 - iii. Brackets shall be fastened to structure by one of the following:
 - 1. 3/8th inch bolts through studs with washers and nuts
 - 2. Hooked over a secure member of the structure

8. Excavation:

- a. 2': The closest the spoils (dug out dirt) pile can be to the excavation
- b. 3': Distance the ladder shall extend above the top of the excavation and Minimum height of excavation barricades
- c. 4': Test the excavation for a hazardous atmosphere and Provide a means of egress:
 - 1. Ladder
 - 2. Ramp
- d. 5': Deepest an excavation can be without sloping or benching and Maximum bench height
- e. 6': Depth of an excavation where fall protection shall be used (i.e. guard rails)
- f. 25': Maximum distance an employee can be from a means of egress

9. Electrical:

- a. Keep employees 10 feet from energized electrical lines and equipment
- b. All circuits shall be provided with over current protection (i.e. circuit breaker)
- c. Employees working on electrical lines and equipment shall be:
 - i. Licensed Electrician
 - ii. An employee working under the direct supervision of a licensed electrician
- d. Only a licensed electrician can repair electrical equipment
- e. All electrical lines and equipment 50V or more shall be guarded and signed with DANGER and the voltage of the equipment.
- f. A work space of 3' wide x 6 ½' tall x space required to open the equipment door shall be provided in the work area of the electrical equipment
- g. The required work space shall not be used as a passageway, aisle way, or hallway
- h. GFCI (Ground Fault Circuit Interrupter)
 - i. All 120V outlets used for construction shall be protected by a GFCI
- i. Cords:
 - i. Cords shall be a 3 wire type
 - ii. Cords shall have the ground prong in place
 - iii. Cords shall be plugging into grounded outlets
 - iv. Cords shall be rated for hard or extra hard use
 - v. Worn, frayed, nicked, cracked, separated cords shall not be on the jobsite
 - vi. Cords shall not be run through any opening, across any passageway or hung over anything that could cause damage to the cord
 - vii. Cords shall have either molded plug ends or cord clamps to provide strain relief
 - viii. Cords shall be of a wire gauge suitable for the current carried
- j. Tools:
 - i. Tools shall be 3 wire ground type or
 - ii. Be double insulated

- k. Panels, Boxes, and Conduit:
 - i. All openings shall be covered
 - ii. Panels shall be closed when not actively being worked on
 - iii. Cables shall be protected and have strain relief devices at the panel, box, and conduit
- l. Temporary Lights:
 - i. Temporary lights shall be provided with guards for the bulbs
 - ii. Temporary lights shall not be hung from cords, unless designed for that use
- m. Lockout, Tagging, and Signing:
 - i. Signs shall indicate DANGER and the voltage of the equipment.
 - ii. Electrical lines and equipment being worked on shall be locked out and tagged with the contact information of the person working on the equipment or lines

10. Material Handling:

- a. Material shall be stacked, raked, blocked, interlocked or otherwise secured to prevent sliding, falling, or collapse during storage and transit
- b. Keep work areas and aisle ways clean, so as not to create a hazard
- c. Roofing materials and equipment shall not be stored within 6' of the roof edge
- d. Materials shall not be stored on scaffolds or runways in excess of what is needed for immediate operations
- e. Manually stacked piles of bagged material weighing 30 lbs per bag or more shall not be stacked higher than 5'
- f. Lumber:
 - i. Shall be self-supporting and stacked on level solidly supported sills
 - ii. Width of the pile shall not be less than ½ of the height (4' tall can be 2' wide)
 - iii. Manually stacked piles shall not exceed 6'
 - iv. Used material shall have all protruding nails removed or bent over before stacking
- g. Material shall be stored 10' plus the length of the material away from electrical lines
- h. Disposal of Waste Material:
 - i. The area into and through where the material is to be dropped shall be completely enclosed with a 36" to 42" tall barricades, placed not less than 6' back from the area receiving the material
 - ii. Material dropped through more than 1 level:
 - 1. The opening shall be enclosed between upper and lower floors, or
 - 2. In an enclosed chute
 - 3. Drops 40' or more inside a building shall use enclosed chutes only
 - 4. Drops 20' or more outside a building shall use enclosed chutes and extend within 8' of the ground
 - iii. If mechanical equipment or a wheelbarrow is used to dump material, a 4" thick x 6" tall bumper shall be secured to the floor at the chute openings