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 $1/60^{th}$ 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'x4=20' = 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'x4=16' = 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'x2=8' = 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