

Marshall Municipal Utilities
SCAFFOLDS
Effective October 1, 2012

PURPOSE

Marshall Municipal Utilities scaffolds policy is designed to eliminate and/or control the recognized hazards associated with erecting, dismantling, inspecting, modifying and using scaffolds; as well as to ensure all the required procedures are applied to protect all exposed employees.

SCOPE

This policy applies to all access-related activities that involve scaffolds, including: erection, inspection, use, modification and dismantlement.

REQUIREMENT GUIDELINES

All MMU employees shall comply with the standard requirements set forth by this policy, the regulations established by United States regulatory agencies, and the manufacturer's recommendations of all scaffolds to be used. Scaffolds shall only be used, erected, dismantled or modified under the supervision of a Competent Person.

DEFINITIONS

1. ***Scaffold*** – Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees or materials or both.
2. ***Competent Person*** – One who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has **authorization** to take prompt corrective measures to eliminate them.
3. ***Qualified Person*** – One 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 related to the subject matter, the work, or the project.

SPECIFIC SCAFFOLD REQUIREMENTS

1. All scaffolds shall be erected, dismantled, moved, and altered by competently trained employees, and under the direction of a Competent Person.
2. A documented inspection of all scaffolds shall be conducted by a Competent Person prior to initial use, before the start of each shift when the scaffold is to be used, and after any occurrence which could affect the integrity of the system and the safety of personnel (see *Scaffold Safety Checklist*). Never use any equipment that is damaged or defective in any way. Mark it and tag it as defective, or completely remove it from the worksite. The Competent Person shall be on-site at all times while work is performed on or from any scaffold.

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3. Each scaffold or scaffold component shall be capable of supporting, without failure, its own weight and at least **4 times** the maximum intended load applied or transmitted to it. The use of unstable objects, such as – but not limited to – barrels, boxes, loose brick, or concrete blocks to level or support scaffolds or planks is strictly prohibited.
4. Marshall Municipal Utilities requires each employee on a walking/working surface at 4 feet or more in height above a lower level be protected from falling to that lower level. At 4 feet in height and higher scaffolds shall have:
 - i. Guardrails installed along all open sides and ends before releasing the scaffolds for use by employees. Guardrail systems shall meet the criteria defined in the *MMU Fall Protection Policy*.
 - ii. Toe-boards installed along every exposed side where there are people working or passing by underneath the elevated platform; there is moving machinery; or there is equipment, machine parts, chemicals, tools, etc., with which falling materials could create a hazard. Toe-boards shall meet the criteria defined in the *MMU Fall Protection Policy*.

NOTE: When a Competent Person determines guardrail systems are not feasible, personal fall arrest systems shall be used by each exposed employee. Personal fall arrest systems shall be in accordance with the *MMU Fall Protection Policy*.

5. Employees shall not work on or from scaffolds during storms or high winds, unless the Competent Person has determined that it is safe, and those employees are protected by:
 - i. Personal fall arrest systems, or
 - ii. Wind screens (when windscreens are used the scaffold must be secured against the anticipated wind forces).
6. Scaffolds and all other conductive objects or tools shall maintain a safe distance of at least 10 feet from any overhead power line or electrical source that is greater than 300 volts. For **insulated** power lines or electrical sources that are less than 300 volts, scaffolds and all other conductive objects or tools shall maintain a safe distance of at least 3 feet.

NOTE: Scaffolds may be closer to overhead power lines than specified above if such proximity is necessary for the type of work being done, and if MMU's Electric Distribution Director, or Assistant Director in the absence of the Director, has been notified, and has authorized one of the following:

1. De-energize the lines (must be tested to ensure de-energized);
 2. Relocate the lines;
 3. Install protective coverings to prevent accidental contact with the lines.
7. Tools, materials, and debris shall not be allowed to accumulate in quantities to cause a hazard, and slippery conditions shall be eliminated immediately after they occur.
 8. Each employee working on, below or near a scaffold shall be protected from falling objects by use of hardhats. To prevent materials, equipment or other objects on scaffolds that could potentially fall between the guardrails and/or toe-board systems to

the area(s) below, mesh screens or paneling shall be utilized. The area below the scaffold shall be barricaded so other non-scaffold work-related employees or personnel are not permitted to enter the work zone.

9. A registered professional engineer shall:

- i. Design pole scaffolds over 60 feet in height.
- ii. Design tube and coupler scaffolds over 125 feet in height.
- iii. Design fabricated frames scaffolds over 125 feet in height above their base plates.

10. **BASE SECTION**

Scaffolds shall be erected on sound, rigid footing. To ensure stability, base plates shall be used on all "supported" scaffolds. Mudsills – when used – shall extend along the width or length of the scaffold from one base plate to the other. Base plates and mudsills shall be capable of supporting the loaded scaffold without settling or displacement.

11. **SUPPORT STRUCTURE**

Scaffold poles, frames, uprights, etc. shall be level and braced with all cross braces securely attached to prevent swaying and displacement. Scaffolds with a height-to-base ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or the equivalent. Scaffold components manufactured by different manufacturers:

- i. Shall not be intermixed, unless they fit together without being forced and a competent person determines the scaffold's structural integrity is maintained.
- ii. Shall not be modified to make them fit together, unless a competent person determines that the resulting scaffold is structurally sound.

12. **WORK SURFACES – PLATFORMS AND PLANKS**

Scaffold planks shall be of the "approved" type, and inspected prior to each use. Planks with severe cracks, splits, or show signs of rotting shall be removed from service and replaced.

Scaffold planks shall be marked to ensure they are not used for any other purpose. If a plank is used as a mudsill, it shall never be used as a plank again and marked accordingly.

NOTE: Load carrying timber members should be a minimum of 1,500 lb-f/in² (Stress Grade) construction grade lumber. Wooden planking shall not be covered with opaque finishes, except for platform edges may be marked for identification. Platforms may be coated periodically with wood preservatives, fire retardants, and slip-resistant finishes, provided they do not obscure the top or bottom wood surfaces.

Scaffold platforms shall be planked or decked – as fully as possible – between the front uprights and the guardrail supports. There shall be no gaps greater than (1) one inch wide between adjacent planks or deck units, or between the platform and the uprights.

Exception: When side brackets or odd-shaped structures result in a wider opening between the platform and uprights, the space must be as small as possible and not exceed 9 inches.

Each scaffold platform or walkway shall be at least 18 inches wide. When the work area is less than 18 inches wide, guardrails and/or a personal fall arrest system shall be used.

The distance between the front edge of the scaffold platform and the face of the work surface shall be 14 inches or less; unless, guardrail systems are erected along the front edge, and/or personal fall arrest systems are used.

Scaffold platforms shall be cleated or otherwise secured at each end, and shall not extend over its end supports less than 6 inches or more than 12 inches for platforms 10 feet or shorter in length. Platforms which are more than 10 feet in length can extend over the end supports a maximum of 18 inches.

Scaffold planks that overlap to create a long platform shall only occur over supports. The planks shall overlap at least 12 inches, or be secured to prevent movement (i.e., nailed together).

13. ACCESS AND EGRESS

Employees shall be able to safely access any level of a scaffold that is 2 feet above or below a point of access. Climbing the cross-braces on scaffolds is strictly prohibited, unless the scaffold has been designed and engineered for such a purpose.

Types of proper access include:

1. Ladders – Portable, hook-on, attachable, and/or stairway
2. Stair towers
3. Ramps and walkways
4. Integral prefabricated frames

NOTE: Portable, hook-on, and attachable ladders shall be positioned to not cause the scaffold to tip-over. Additionally, hook-on, attachable and stairway ladders, stair towers, ramps and walkways, and integral prefabricated frames shall be specifically designed for use with the type of scaffold on which they are used

MOBILE SCAFFOLDS (In addition to the above *Specific Scaffold Requirements*)

1. Platforms to the scaffolding shall be tightly planked the full width of the scaffold, with no more than 1 inch between planks.
2. Height shall not be more than (4) four times its minimum base dimension without securing the unit or installing outriggers to prevent displacement.

3. All wheels shall be locked when scaffold is in use. Locks that are found defective shall be removed from service and replaced before using the scaffolding.
4. Employees shall not ride on mobile scaffolding while it is being moved. Employees may access mobile scaffolding once it has been moved and the wheels are locked.

SUSPENSION SCAFFOLDS (In addition to the above *Specific Scaffold Requirements*)

Each set of suspension scaffolding shall be erected under the direct supervision of a Competent Person and used only by Qualified and Trained Employees. It is Marshall Municipal Utilities policy to have only trained and authorized employees set-up, assemble, use or dismantle the suspensions scaffold systems for MMU use. The following guidelines are to ensure safe set-up and inspection criteria:

1. The manufacturer's recommendations and guidelines shall be strictly followed.
2. A suspension scaffold checklist shall be obtained from the manufacturer or distributor for the type of suspension scaffold system received, and completed by a Competent Person prior to initial use, before the start of each shift when the scaffold is to be used, and after any occurrence which could affect the integrity of the system and the safety of personnel. The purpose of the checklist is to provide useful reminders to the Competent Person inspecting suspended scaffold rigging and equipment. It is required that the Competent Person complete the checklist for each stage and every rigging operation **BEFORE ANYONE OPERATES** the equipment and/or leaving the jobsite.
3. All suspension scaffold and support devices shall be attached to or rest on the surfaces capable of supporting at least **4 times** the intended load weight.
4. Suspension outrigger beams shall be made of structural metal or equivalent strength material, and restrained to prevent movement. They shall be provided with: Stop bolts or shackles at both ends; securely fastened together with the flanges turned out when channel iron beams are used in place of I-beams; installed with all bearing supports perpendicular to the beam center line; set and maintained with the web in a vertical position; and the shackle or clevis with which the rope is attached to the outrigger beam shall be placed directly over the center line of the stirrup.
5. The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights.
6. Counterweights shall be made of non-flowable material; sand, gravel and similar materials that can be easily dislocated shall not be used. Counterweights shall be secured by mechanical means to outrigger beams to prevent accidental displacement, and shall not be removed from an outrigger beam until the scaffold is disassembled.
7. Outrigger beams which are not stabilized by bolts or other direct connections to the floor or roof deck shall be secured by tiebacks. Tiebacks shall be equivalent in strength to the suspension ropes.

8. Outrigger beams shall be placed perpendicular to its bearing support (usually the face of the building or structure). If it is not feasible to place an outrigger beam perpendicular to the face of the building or structure due to obstructions that cannot be moved, the outrigger beam may be placed at some other angle, provided opposing angle tiebacks are used.
9. Tiebacks shall be secured to a structurally sound anchorage on the building or structure. Sound anchorages include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit. Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.
10. Suspension scaffold support devices such as cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices shall be made of steel, wrought iron, or materials of equivalent strength. Such devices shall be supported by bearing blocks, and secured against movement by tiebacks.
11. All wire ropes shall be inspected for defects by the Competent Person prior to each use, and after any occurrence which could affect the ropes integrity. Ropes shall be replaced if any of the following conditions exist:
 - a. Any physical damage which impairs its function and strength;
 - b. Kinks that might impair the tracking or wrapping of rope around the sheave or drums;
 - c. Six randomly broken wires in one rope lay or three broken wires in one strand in one rope lay;
 - d. Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires;
 - e. Heat damage caused by a torch or any damage caused by contact with electrical wires;
 - f. Or evidence that the secondary brake has been activated during an over speed condition and has engaged the suspension wire rope.
12. Suspension scaffold power operated hoists and manual hoists shall be tested by a qualified laboratory. Request this certification from the rental company prior to delivery.
13. Gasoline powered equipment and hoists shall not be used on suspension scaffolds.
14. Gears and brakes of hoists shall be enclosed.
15. When working from suspension platforms, the platform shall be tied or otherwise secured to prevent movement or swaying.

TRAINING REQUIREMENTS

1. Each employee who performs work while on or from a scaffold shall be trained by a Qualified Person to recognize the hazards associated with the type of scaffold used, and to understand the procedures to control and minimize all potential hazards.
2. Employees who erect, disassemble, move, operate, repair, maintain or inspect scaffolds shall be trained by a Competent Person to ensure employees recognize all hazards associated with the work which may differ from those employees who only work upon scaffolding. Training shall include the nature of the hazards, and the correct procedures for erecting, disassembling, moving, operating, repairing, maintaining, or inspecting the type of scaffold in use.
3. Retraining is required when:
 - i. The supervisor or Competent Person believes an employee lacks the necessary skill, understanding, or proficiency to work safely during the erection, use, or dismantling of the scaffold.
 - ii. Work site changes present a hazard which an employee has no previous training or knowledge; or when any changes in the scaffold present a hazard.