



Department of the Air Force
HQ AEDC (AFMC)
Arnold AFB, TN 37389

Safety, Health, and Environmental Standard

Title: SCAFFOLDS

Standard No.: D10


Effective Date: 06/12/2015

Releasability: There are no releasability restrictions on this publication.

The provisions and requirements of this standard are mandatory for use by all personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

Approved:


Contractor/ATA Director
Safety and Health Group


Air Force Functional Chief

SHE Standard D10 Scaffolds

Record of Review/Revision

(Current revisions are highlighted in yellow and marked with a vertical line in the right margin.)

Date/POC	Description
05/11/15 Glover/Tate	Three-year review: Expanded Paragraph 1.3 Applicability. Updated references to replace obsolete AFOSHSTD 91-501 with AFI 91-203 which replaced it.
01/25/13	Added NFAC supplement; no other change required.
02/08/12 Glover/Tate	Minor revisions: Added paragraph to reiterate OSHA requirement that all planking be scaffold grade lumber; revised attachment to show example of scaffold tag currently in use by operating contractor.
03/22/10 Tate/Glover	Review: In addition to administrative changes and reformatting; deleted unnecessary definitions and added others as needed; minor clarification to responsibilities; incorporated new scaffold tags [Brady Scafftag MKII (#104117)].
08/29/07 Eichel	Annual review; corrected minor typos; minor rewording in Section 4.3.
07/13/06 Jones	Annual review: minor changes throughout
03/15/05 Eichel	Defined applicability, added many definitions, reformatted, major revision.
7 Oct 2002	Complete revision



Safety, Health, and Environmental Standard

SCAFFOLDS

1.0 INTRODUCTION/SCOPE/APPLICABILITY

This standard establishes general guidelines for the erection, use, and dismantling of scaffolding, and the components and hardware employed in construction, repair (including painting and decorating) or demolition activities.

- 1.1 Introduction – This standard describes the tasks, activities and actions required when erecting, using, and dismantling scaffolding at AEDC.
- 1.2 Scope – This standard shall be considered to be the Operating Contractor-developed Scaffold policy, which incorporates the requirements and objectives of OSHA, ANSI, Air Force and other nationally recognized standards to assure implementation at AEDC.
- 1.3 Applicability – This standard applies to all AEDC personnel and operations, including Air Force, Navy, Army Corps of Engineers and Contractors (including Subcontractors) at the Tennessee location and operations conducted by AEDC personnel outside the confines of Arnold AFB. Training requirements (to include use and inspection) for Subcontractor personnel training requirements are established and provided by their management.

2.0 BASIC HAZARDS/HUMAN FACTORS

The most common causes of injuries associated with scaffolds include: plank slippage, support collapse, personnel slips/trips and falls, or personnel being struck by a falling object.

3.0 DEFINITIONS

Adjustable suspension scaffold – A suspension scaffold equipped with a hoist(s) that can be operated by an employee(s) on the scaffold.

Bosun's (Boatswain's) chair – A single-point adjustable suspension scaffold consisting of a seat or sling designed to support one employee in a sitting position.

Brace – A rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

Cleat – A structural block used at the end of a platform to prevent the platform from slipping off its supports.

Competent Person – One who is capable and designated by the operating contractor to identify existing and predictable hazards in the area of scaffolds, surroundings, work areas or conditions which are unsanitary, hazardous, or dangerous to employees, and who has authority and authorization to take prompt corrective measures to eliminate such hazards.

Competent Scaffold Erector – responsibilities similar to Competent Person, but due to training and experience with scaffold erection have acquired skills to be an erector in addition to a Competent Person.

Coupler – A device for locking together the tubes of a tube and coupler scaffold.

Crawling board (chicken ladder) – A supported scaffold consisting of a plank with cleats spaced and secured to provide footing, for use on sloped surfaces such as roofs.

Deceleration device – Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline lanyard, which dissipates a substantial amount of energy during a fall arrest or limits the energy imposed on an employee during fall arrest.

Exposed power lines – Electrical power lines that can be accessed by employees and are not shielded from contact.

Fabricated decking and planking – Manufactured platforms made of wood (including laminated wood, solid sawn wood planks, and plywood), metal or other materials.

Fabricated frame scaffold (tubular welded frame scaffold) – A scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

Full Body Harness – A component with a design of straps which is fastened about a person in a manner so as to contain the torso and distribute the fall arrest forces over the upper thighs, pelvis, chest and shoulders with means for attaching it to other components or subsystems.

Guardrail system – A vertical barrier, consisting of, but not limited to, toprails, midrails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Hoist – A manual or power-operated mechanical device to raise or lower a suspended scaffold.

Horse scaffold – A supported scaffold consisting of a platform supported by construction horses (saw horses). Horse scaffolds constructed of metal are sometimes known as trestle scaffolds.

Ladder jack scaffold – A supported scaffold consisting of a platform resting on brackets attached to ladders.

Lean-to scaffold – A supported scaffold which is kept erect by tilting it toward and resting it against a building or structure.

Lanyard – A component consisting of a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body support to a fall arrestor, energy absorber, anchorage connector or anchorage.

Lifeline – A component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system (PFAS) to the anchorage.

Lower levels – Areas below the level where the employee is located and to which an employee can fall. Such areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.

Maximum intended load – The total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Mobile scaffold – A powered or un-powered, portable, caster or wheel-mounted supported scaffold.

Multi-level suspended scaffold – A two-point or multi-point adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.

Multi-point adjustable suspension scaffold – A suspension scaffold consisting of a platform(s) which is suspended by more than two ropes from overhead supports and equipped with means to raise and lower the platform to desired work levels. Such scaffolds include chimney hoists.

Open sides and ends – The edges of a platform that are more than 14 inches (36 cm) away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access.

EXCEPTION: For plastering and lathing operations the horizontal threshold distance is 18 inches (46 cm).

Operating Contractor – A long-term contractor directly accountable to the Air Force for the AEDC mission.

Outside Contractor/Subcontractor – An organization employed by the Operating Contractor or the Air Force to do construction, maintenance, repair or other work at AEDC. This term includes those who may be subcontracted by an outside contractor for specific portions of a project. Also referred to as the construction contractor.

Outrigger – The structural member of a supported scaffold used to increase the base width of a scaffold in order to provide support for and increased stability of the scaffold.

Personal fall arrest system (PFAS) – A system used to arrest an employee's fall. It consists of an anchorage, connectors, and a body harness and may include a lanyard, deceleration device, lifeline, or combinations of these.

Platform – A work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

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/her ability to solve or resolve problems relating to the subject matter, the work, or the project.

Rated load – The manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.

Scaffold – Any temporary elevated platform (supported or suspended) and its' supporting structure (including points of anchorage), used for supporting employees or materials or both.

Single-point adjustable suspension scaffold – A suspension scaffold consisting of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels.

Supported scaffold – One or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Suspension scaffold – One or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

Swinging or two-point suspension – A scaffold featuring a platform supported by hangers (stirrups) at two points. The suspension design permits the raising or lowering of the platform to the desired working level using hoisting machines or block and tackle.

System scaffold – A scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

Tube and coupler scaffold – A supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

Tubular welded frame scaffold – (see "Fabricated frame scaffold").

Two-point suspension scaffold (swing stage) – A suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two ropes from overhead supports and equipped with means to permit the raising and lowering of the platform to desired work levels.

Walkway – A portion of a scaffold platform used only for access and not as a work level.

4.0 REQUIREMENTS/RESPONSIBILITIES

4.1 Procedures

- 4.1.1 Before any work is performed from a scaffold the employee shall ensure that a current inspection tag is attached to the scaffold. If an inspection tag as defined in section 4.10 is not attached, the scaffold **shall not** be used and supervision shall be notified.
- 4.1.2 Before an inspection tag is attached, the scaffold shall be completely erected and inspected by a competent person.
- 4.1.3 A scaffold inspection is required each shift before using.
 - 4.1.3.1 The inspection shall be performed by a competent person and the inspection tag shall be signed and dated where noted on the tag.

4.2 Operating Contractor Purchasing Shall

Refer all Operating Contractor requests for procurement of scaffold planking and other associated scaffold components to Facilities Maintenance and purchase them under Real Property Maintenance specifications.

4.3 Management (Organization) Shall

Designate an appropriate number of employees to serve as competent persons for scaffolding and shall ensure that individuals designated as competent persons meet the following criteria by way of training and/or experience:

- 4.3.1 Knowledgeable of applicable standards
- 4.3.2 Capable of recognizing existing or predictable hazards
- 4.3.3 Empowered to take prompt and corrective actions to protect employees, and
- 4.3.4 Able to perform required inspections (i.e., initial, pre-use, and after any occurrence that could affect structural integrity).

4.4 Operating Contractor Base Maintenance Shall (for operating contractor work)

- 4.4.1 Fabricate scaffold platform planks/decks under internal procedures or initiate request for Purchasing, to purchase wood scaffold platform planks when required.
- 4.4.2 Inspect new scaffold platform planks/decks for compliance with specifications.
- 4.4.3 Repair, replace, or destroy defective components when necessary.

4.4.4 Erect, dismantle, or move scaffolds when required / requested.

4.5 Supervision Shall

4.5.1 Coordinate with the Operating Contractor Safety and Health to review requirements for/of scaffolding equipment before ordering the equipment to ensure equipment will meet all required needs.

4.5.2 Provide specifications to buyers for purchase of new equipment.

4.5.3 Ensure designated competent persons have received training.

4.5.4 Ensure each employee involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds has received scaffold training and when required refresher training.

4.5.5 Ensure all employees, who by job requirements are required to perform work while on a scaffold, have received user scaffold training and when required refresher training.

4.5.6 Monitor operations to ensure employees use the scaffolding properly. If employees are observed working in an unsafe manner, schedule employee for retraining or take other appropriate actions as dictated by company policy to prevent recurrence.

4.5.7 Provide adequate storage for scaffold components/equipment.

4.5.8 Randomly inspect scaffold equipment/components for serviceability and remove from service any defective, unserviceable equipment/component and ensure that it is properly repaired or disposed of.

4.5.9 Ensure that requirements of this standard are met and that employees are informed of its provisions, including the requirement for scaffold inspection before each shift used.

4.5.10 Obtain necessary work permits.

4.6 Employees Shall

4.6.1 Ensure a current, properly filled out inspection tag, as described in Section 4.10, is attached to the scaffold before attempting to use the scaffold. **DO NOT USE A SCAFFOLD IF IT DOES NOT HAVE A CURRENT INSPECTION TAG ATTACHED.**

4.6.1.1 Inform supervision if a scaffold is missing a required inspection tag.

4.6.1.2 Follow any instructions written on an attached inspection tag.

4.6.2 Satisfactorily complete initial scaffold training before using a scaffold to perform work and refresher scaffold training as/when required.

4.6.3 Use scaffolding in accordance with training, this standard, and manufacturer's instructions.

4.7 Operating Contractor Safety and Health Shall

4.7.1 Provide Operating Contractor organizations support in identification and recommendations for purchase and use of scaffolding equipment/components.

4.7.2 Serve as a consultant to management and the competent person(s) in scaffolding matters. Assist in evaluation and research for scaffolding concerns whenever requested.

4.7.3 Provide initial and refresher scaffold training for users and competent persons as required per Section 5.0.

4.7.4 Provide assistance in the selection of equipment, base preparation, placement of tie-offs, outriggers, etc. **NOTE:** When a requirement of this standard cannot be met, due to location, lack of tie off point, infeasibility, etc., the requirement can be waived, but only after consultation with a safety professional and if a satisfactory alternative to the requirement has been developed.

4.7.5 Audit scaffold usage during inspections and walkthroughs to assure compliance with current standards.

4.7.6 Outside contractors shall have their own scaffold safety program support.

4.8 Designated Scaffold Erector and Competent Person(s) Shall

4.8.1 Serve as the organization's point of contact for scaffolding issues.

4.8.2 Directly supervise/observe the erection, movement, dismantling or alteration of scaffolds. (Scaffold Erector Only)

- 4.8.2.1 Provide job-specific (onsite) training for employees involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold to recognize any hazards associated with the work in question. (Scaffold Erector Only)
- 4.8.2.2 After scaffold has been completely erected to job requirements/limitations/specifications, attach and sign appropriate inspection tag.
- 4.8.3 Inspect scaffold for visible defects before each work shift/pre-use, and after any occurrence which could affect the scaffold's structural integrity and sign and date the inspection tag.
- 4.8.4 Ensure the work area meets AEDC and OSHA standards for guarding, necessary warning signs, and PPE required by the activities in the area.

4.9 Operating Contractor Training Shall

- 4.9.1 Establish and maintain employee training in PeopleSoft by:
 - 4.9.1.1 Entering into the record any training received by the employee.
 - 4.9.1.2 Providing supervisors of employees with a by name listing of required and recurring training and a schedule for when the employee can attend the training.

4.10 General Requirements for all Scaffolds

- 4.10.1 Scaffolds shall be erected, moved, dismantled, or altered only under the supervision of a competent person qualified in scaffold erection, moving, dismantling, or alteration.
 - 4.10.1.1 Upon completion of the erection of a scaffold set the competent person shall inspect the scaffold, sign the inspection tag and hang the tag in a conspicuous place on the scaffold.
 - 4.10.1.1.1 Inspection tags shall be BRADY Scaffoldtag MKII (#104117) (copy attached). The tags are self-explanatory.
NOTE: Outside contractors may use an equivalent tag.
 - 4.10.1.1.2 Scaffolds without an inspection tag shall not be used, except by the scaffold construction crew and then only for the purpose of erecting, altering, moving or dismantling.
- 4.10.2 Manufactured scaffold components shall be installed/used in accordance with manufacturer's written instructions.
- 4.10.3 Job-made scaffolds shall be designed by a qualified person and constructed and loaded according to that design.
 - 4.10.3.1 Scaffolds shall be capable of supporting their own weight and at least four times the maximum intended load.
 - 4.10.3.2 Supporting components shall have a safety factor of four, except ropes, which shall have a safety factor of six.
- 4.10.4 Work levels shall be completely decked except where prevented by equipment or structural members.
 - 4.10.4.1 Plywood decking shall have a minimum thickness of $\frac{1}{2}$ inch, and be supported sufficiently so that the deflection is no more than $\frac{1}{60}$ of the span.
 - 4.10.4.2 If plywood is used, it shall be secured to horizontal support members to prevent displacement, i.e. nailed or cleated.
- 4.10.5 Platform planks (boards) shall be laid with no openings more than one inch between adjacent planks or platform members.
- 4.10.6 Scaffold platforms shall be at least 18 inches wide unless the work area is too narrow.
- 4.10.7 Legs and uprights shall be plumb and securely braced and supported to prevent movement.
- 4.10.8 The foundation shall be sound, rigid, and capable of carrying the maximum intended load. Base plates and mudsills or other adequate firm foundation shall be used to support scaffold poles, legs, post, frames or uprights. Adjustable screw jacks are to be used where changes in foundation levels occur.
- 4.10.9 Personnel shall inspect for obvious defects or damage before each use.

4.10.10 Bracing is intended for support only and not for access. Ladders shall be placed every 30 feet of continuous scaffold length. Portable ladders shall extend at least 36 inches above the scaffold platform or elevation onto which workers step from the ladder. When used portable ladders shall be secured to prevent displacement.

NOTE: When climbing or descending, personnel shall face the ladder and keep both hands free for climbing. Mud, grease, and oil shall be removed from soles of shoes before climbing.

4.10.11 Tools, materials, and debris shall be removed from scaffolding work levels to prevent unsafe accumulations.

4.10.12 Ice or snow shall be removed from scaffold planking before employees are allowed to work from the scaffold.

4.10.13 Personnel shall discontinue work on outdoor scaffolds during electrical storms or high winds.

4.10.14 The maximum distance from the front edge of all platforms shall not be more than 14 inches from the face of the work unless guardrail system is erected along the front edge and/or personal fall arrest systems are used. Exceptions to this requirement are covered in 29 CFR 1926.451(b)(3). (See Definitions - "open sides and ends.")

4.11 Boards

4.11.1 Metal cleats should be attached to each end of the board or the board should be otherwise restrained by hooks or equivalent means.

4.11.1.1 When unrestrained boards are used, on spans of less than 10 feet, they shall extend not less than 6 inches or more than 12 inches past the centerline of the support.

4.11.1.2 When unrestrained boards are used, on spans greater than 10 feet, they shall extend not less than 6 inches or more than 18 inches past the centerline of the support.

4.11.2 Boards dedicated to or purchased specifically for scaffold use are to be stored out of the weather when not in use. Boards shall be used for no other purpose.

4.11.3 Boards shall not deflect more than $\frac{1}{60}$ th of its span when loaded.

4.11.4 All planking shall be scaffold grade as recognized by grading rules for the species of wood used and shall be marked as such.

4.12 Guardrails, Midrails, and Toeboards

4.12.1 Guardrails, midrails, and toeboards shall be installed on open sides and ends at each working level more than 4 feet above the ground or floor and on scaffolds and platforms four feet high, having a minimum horizontal dimension in either direction of less than 45 inches. Floating scaffolds require toeboards only.

4.12.2 Guardrails shall be constructed of at least two-by-four-inch lumber, $1\frac{1}{4}$ × $1\frac{1}{4}$ × $\frac{1}{8}$ -inch structural angle iron or equivalent and shall be 42 (nominal) inches high.

4.12.3 Midrails shall be constructed of at least 1- by 6-inch lumber, $1\frac{1}{4}$ × $1\frac{1}{4}$ × $\frac{1}{8}$ -inch structural angle iron or equivalent and placed midway between the top rail and platform.

4.12.4 Toeboards shall be constructed of 1- by 4-inch lumber or equivalent. A floating scaffold may use toeboards one and one-half inches high by three-fourths of an inch thick or the equivalent.

4.12.5 Wire mesh screen shall be installed between the toeboard and guardrail (extending the entire length of the opening) where persons are required to work or pass beneath the scaffold. The wire mesh is to be 18-gage U.S. Standard wire, $\frac{1}{2}$ -inch mesh or the equivalent.

4.13 Erecting, Moving, Dismantling, or Changing

The tasks in this section (4.13) shall be completed only under the supervision of a competent scaffold erector.

4.13.1 No one shall be allowed on scaffolds while they are being moved.

4.13.2 Personnel shall not drop or throw scaffold boards off during dismantling.

4.13.3 Requirements of AEDC Safety, Health, and Environmental (SHE) Standard B3, Control of Hazardous Areas, shall be followed.

4.13.4 When close to electrical lines, the lines shall be de-energized during scaffold erection and during work from scaffolds. A minimum safe approach distance of 10 feet (up to 50 kV), or a solid barrier may be erected between the lines and the workers if the lines cannot be de-energized or verified de-energized.

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4.13.5 When a scaffold is to be located closer than 8¹/₂ feet from the centerline of a railroad, the group responsible for railroad operations shall be notified. Personnel shall blue flag the track 40 yards from the scaffold on both approaches to stop railway traffic.

4.13.6 Materials being hoisted onto a scaffold are to have a tag line.

4.14 Fall Protection

4.14.1 Each employee on a scaffold more than 10 feet above a lower level shall be protected from falling to that lower level.

4.14.2 The competent scaffold erector shall ensure that fall protection for employees erecting or dismantling scaffolds is used when feasible.

4.14.2.1 Fall protection shall be provided for employees erecting or dismantling supported scaffolds where installation and use of such protection is feasible and does not create a greater hazard.

4.15 Falling Objects

4.15.1 Employees working from scaffolds shall wear hard hats.

4.15.2 Additional protection from falling hand tools, debris, and other small objects shall be provided through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects.

4.15.3 Where there is a danger of tools, materials, or equipment, falling from a scaffold and striking employees below, the area below the scaffold shall be barricaded with danger ribbon, and employees shall not be permitted to enter the hazard area.

4.16 Scaffold Specifics

4.16.1 (Supported Scaffolds) Tubular Welded Frame, Tube and Coupler, Systems Scaffolding

4.16.1.1 Guys, ties, and braces shall be installed according to manufacturer's recommendations or at the closest horizontal member to the 4:1 height and be repeated vertically at locations of horizontal members every 20 feet or less thereafter for scaffolds 3 feet wide or less, and every 26 feet or less thereafter for scaffolds greater than 3 feet wide.

4.16.1.2 The top guy, ties, or brace of completed scaffolds shall be placed no further than the 4:1 height from the top. Such guys, ties and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (measured from one end towards the other).

4.16.1.3 Panels of sections shall be locked together vertically by coupling or stacking pins or equivalent means.

NOTE: Where uplift can occur which would displace scaffold end frames or panels, the frames shall be locked together vertically by pins or equivalent means.

4.16.1.4 Brackets used to support cantilevered loads shall

4.16.1.4.1 Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames.

4.16.1.4.2 Not be bent or twisted from the following positions:

4.16.1.4.3 Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces caused by those other loads being placed on the bracket-supported section of the scaffold.

4.16.1.4.4 Be spaced not more than 8 feet apart.

4.16.1.4.5 Be attached by bolts (minimum ⁵/₈ inch diameter), metal studs, welding, or by hooking over a supporting member.

4.16.1.4.6 Be occupied by no more than two workers at a time and no more than 75 pounds of tools and material on an 8-foot span.

4.16.1.6 Minimum width of a platform is 18 inches.

4.16.2 Swinging Scaffold or Two-Point Suspension Scaffold

4.16.2.1 Platforms shall not be less than 20 inches nor more than 36 inches wide, unless designed by a qualified person to prevent unstable conditions.

- 4.16.2.2 Securely fasten the hangers (stirrups) by U-bolts or by means which satisfy the requirements to support, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to them.
- 4.16.2.3 Hoisting machines shall be listed/approved by a Nationally Recognized Testing Laboratory (NRTL).
- 4.16.2.4 Hangers and roof hooks shall be of mild steel or equivalent material capable of sustaining 4 times the maximum rated load.
- 4.16.2.5 Ropes shall be wire or fiber capable of supporting at least 6 times the maximum intended load.
- 4.16.2.6 Safety harnesses, lanyards, and lifelines are required.
- 4.16.2.7 Guardrails, midrails, and toe-boards are required.
- 4.16.2.8 Tiebacks of $\frac{3}{4}$ -inch manila rope or equivalent serve as a secondary means of anchorage, installed at right angles to the face of the building whenever possible and secured to a structurally sound portion of the building.
- 4.16.2.9 On swinging scaffolds designed for a working load of 500 pounds, no more than two men may work at one time. On swinging scaffolds with a working load of 750 pounds, no more than three men may work at one time.

4.16.3 Bosun's (Boatswain's) Chair

- 4.16.3.1 Sling and suspension ropes shall be at least $\frac{5}{8}$ -inch first-grade manila or equivalent; when exposed to heat-producing operations, seat slings shall be at least $\frac{3}{8}$ -inch wire rope. (See SHE Standard F6 for fall protection requirements.)
- 4.16.3.2 Chair seat slings shall be reeved through four corner holes in the seat; shall cross each other on the underside of the seat; and shall be rigged so as to prevent slippage which could cause an out-of-level condition.
- 4.16.3.3 Chair seat shall be made of wood not less than 12 by 24 inches and 1-inch thick. Non-cross laminated wood boatswains' chairs shall be reinforced by cleats on the underside to prevent splitting.
- 4.16.3.4 Safety harnesses, lanyards, and lifelines are required.

5.0 TRAINING

- 5.1 Each employee who performs work while on a scaffold shall be trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following areas, as applicable:
 - 5.1.1 The nature of any electrical hazards, fall hazards and falling object hazards in the work area;
 - 5.1.2 The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used.
 - 5.1.3 The proper use of the scaffold, and the proper handling of materials on the scaffold.
 - 5.1.4 The maximum intended load and the load-carrying capacities of the scaffolds used.
 - 5.1.5 Any other pertinent site specific hazards.
- 5.2 Each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining or inspecting a scaffold shall be trained by a qualified person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:
 - 5.2.1 The nature of scaffold hazards.
 - 5.2.2 The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting and maintaining the type of scaffold in question.
 - 5.2.3 The design criteria, maximum intended load-carrying capacity and intended use of the scaffold.
 - 5.2.4 Current rules and regulations pertaining to the subject matter.
- 5.3 Changes in the types of scaffolds used, fall protection requirements or other requirements may necessitate training on a more frequent basis.

6.0 INSPECTION/AUDITS

The Operating Contractor Safety and Health Group or AEDC Safety may conduct inspections of work activities as management directs.

7.0 REFERENCES

29 CFR 1926.451, Scaffolds, General Requirements
29 CFR 1910.28, Safety Requirements for Scaffolding
29 CFR 1910.29, Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)
ANSI/ASSE A10.8, Scaffolding Safety Requirements
ANSI/SIA A92.1, Transport Platforms
AFI 91-203, Air Force Consolidated Occupational Safety Instruction
Safety Standard B1, Master Work Permit
Safety Standard B3, Control of Hazardous Areas using Safety Signs, Tags, and Barricades
Safety Standard F6, Fall Protection

8.0 ATTACHMENT

Brady Scaffitag MKII (#104117)

9.0 SUPPLEMENT

NFAC A321-0801-XSP D10 Scaffolds

A321-0801-XSP D10 Scaffolds Supplement

This supplement has been approved for the NFAC Site.

Review: This supplement will be reviewed and updated using the same cycle as the SHE Standard D10 “Scaffolds”.

References: AEDC Safety Standard D10 – Scaffolds at the AEDC NFAC Site.

Scope:

This supplement describes the tasks, activities and actions required when erecting, using, and dismantling scaffolding at NFAC.

This supplement shall be considered to be the NFAC Scaffold supplement, which incorporates the requirements and objectives of OSHA, ANSI, Air Force and other nationally recognized standards to assure implementation at NFAC.

This supplement applies to all NFAC personnel and operations. Training requirements (to include erection, use and dismantling) for outside/subcontractor personnel will be established and provided by their management.

NFAC Worksite Application:

Specific Competent NFAC personnel will inspect any newly installed scaffold to ensure the following:

- Access is safe
- Assembled correctly
 - Bolts tight
 - Mounted on foundation correctly
 - Guardrails
 - Toe boards
 - Deck surface is flat (no trip hazards)
 - No openings within the deck walking surface
- Weight Load meets the requirements

If the previous are not correct they will work with the installing vendor to correct any issues. Upon completion of the inspection the vendor will then apply a daily inspection tag certifying the scaffold can be used.

Daily inspections will be performed by the NFAC trained users and the daily inspection tag signed off.

If the scaffold is modified or repaired due to damage, the scaffold will be taken out of service immediately until a competent NFAC person(s) inspect the scaffold to ensure it is safe to use.

NFAC will always install scaffolds with stairs unless impractical.

A321-0801-XSP D10 Scaffolds Supplement

- I. NFAC Site Management shall:
 1. Ensure all employees, vendors and customers are aware of and follow the procedures and use of a scaffold.

- II. NFAC Supervisors and Test Directors shall:
 1. Ensure on a daily bases that the scaffold has it daily inspection and the tag signed off
 2. Ensure that the scaffold is used as intended

- III. NFAC Safety Engineer/Management Designee shall:
 1. Shall be a Qualified Scaffold Competent Person
 2. Ensure that the scaffold meets the load requirements
 3. Vendor installing meets the training requirements
 - a. Certified Scaffold Erector
 - b. Fall Protection
 4. Participate with the Scaffold Competent person(s) to inspect any new scaffold construction, modification or repair due to damage

- IV. NFAC Staff shall:
 1. Follow the supplement
 - a. Per Shift Inspection (sign off)
 - b. Use scaffold as intended
 - c. Report any alteration, deficiencies, or damage to your supervisor