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Procedures  
for  
**Scaffolding**

REVISION

Rev No.	DCN No.	Change Summary	Release Date	DCN Initiator	Document Owner
3	DCN2520	Changes made for nomenclature and simplification	3-16-23	K. Rydberg	K. Rydberg

Prior revision history, if applicable, is available from the Document Control Office.

## 1. PURPOSE

- 1.1 This document is intended to provide detailed procedures to be used when using scaffolds at the Albany Nanotech Complex (ANC). It also establishes minimum rules to protect the health and safety of workers required to use scaffolds when performing duties that cannot be done safely from the ground or from solid construction (except ladders that conform to **EHS-00050: General Guidelines for Handling, Storage, and Maintenance of Ladders**), and to minimize the potential for personal injury.
- 1.2 Although this practice describes specific safety measures to be used for using scaffolds, it is not intended to prevent the use of any additional measures that may be deemed necessary for a particular situation.
- 1.3 To comply with the regulations outlined in the Occupational Safety and Health Administration's (OSHA) Part 29 CFR 1910.28, Safety requirements for scaffolding; 29 CFR 1910.29, Manually propelled mobile ladder stands and scaffolds (towers); 29 CFR 1926.450, Subpart L, Safety Standards for Scaffolds Used in the Construction Industry.
- 1.4 All additions or deletions to this specification shall be under a Document Change Notice, coordinated by Document Control with sign-off required by, but not limited to, the NY CREATES Environmental Health and Safety (EHS) Department.

## 2. SCOPE

- 2.1 This program establishes the minimum requirements for the use of scaffolds at ANC. Tenant employees and contractors may comply with their own organization's program, provided that it meets and/or exceeds the minimum requirements set forth in this procedure.
- 2.2 This program applies to scaffolding used by site employees, tenant employees, and contractors hired to work at ANC, or any scaffold erected outside a construction zone.
- 2.3 This does not apply to buildings without a Certificate of Occupancy, or when scaffolds are located within a construction zone.
- 2.3.1 Sub-contractors that are exempt from this policy are still responsible for ensuring that scaffolding meets all manufacturer and OSHA requirements.
- 2.4 Employees, contractors, and sub-contractors will be notified of the requirement to follow this program and are required to comply with the restrictions and limitations imposed upon them by NY CREATES during scaffolding activities.

2.5 Facility Engineering Group (FEG) and Departmental Supervisors are responsible for supporting and enforcing this program to ensure compliance by all personnel.

2.6 This procedure will address only general guidelines on the use of scaffolds.

### **3. RESPONSIBILITIES**

#### **3.1 NY CREATES EHS**

3.1.1 The EHS Department is responsible for the implementation, enforcement, and maintenance of the provisions outlined in this program and as specified below:

- Oversee the policies and procedures of the program,
- Provide guidance on the requirements of the program,
- Perform risk assessments of work activity,
- Perform fall protection evaluations,
- Select and establish standard operating procedures for scaffold signoff and usage,
- Understand the hazards when using scaffolds, and
- Notify contractors of activities that involve improper use of scaffolds.

#### **3.2 Facilities and Supervisors**

3.2.1 Facility Engineering Group (FOG) and Departmental Supervisors are responsible for supporting and enforcing this program to ensure compliance by all personnel.

3.2.2 Supervisors are responsible for ensuring that their employees have been trained on the use of scaffolds.

#### **3.3 All Employees**

3.3.1 Employees are responsible for understanding the fall hazards associated with their job task and following established scaffold safety policies and procedures.

### **4. ASSOCIATED DOCUMENTS**

4.1 **EHS-00074-F1 – Scaffolding Permit**

## 5. DEFINITIONS

- 5.1 **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.
- 5.2 **Construction Zone** – A demarcated area where work for construction, alteration, and/or repair, including painting and decorating. The area is restricted to authorized personnel only and hard hats, safety shoes, gloves, and safety glasses are required to be worn.
- 5.3 **Guardrails** – Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the mid rail or other member.
- 5.3.1 Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches plus or minus 3 inches above the walking/working level.
- 5.3.2 Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches high.
- 5.4 **Mud Sill** – Platforms designed to distribute scaffold weight. Size is determined by ground support conditions and maximum anticipated loads. Do not use working planks for mud sills since this could damage planks.
- 5.5 **Permit Identification Sign (PIS)** – The sign is comprised of the Scaffolding Permit inside the NY CREATES labeled protective sleeve, issued by *an Emergency Response Team (ERT) Technician / EHS only*, and posted for the duration of the permit.
- 5.6 **Qualified Person** – Designs the scaffold. One who, by possession of a recognized degree, certificate, or professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or project.
- 5.7 **Toe boards** – Shall be a minimum of 4 inches in height and withstand 50 lbs of force.

5.8 **Scaffold** – A temporary elevated platform ([supported or suspended](#)) and its supporting structure ([including points of anchorage](#)) used for supporting workers, materials, or both.

5.8.1 **Supported Scaffold** – Consists of one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support. These include:

- Frame Scaffold or Fabricated Frame: Platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.
- Manually Propelled/Mobile: Unpowered, portable, caster- or wheel-mounted supported scaffold.
- Pump Jack: Platform supported by vertical poles and movable support brackets.
- Ladder Jack: Platform resting on brackets attached to ladders.
- Tube and Coupler: Platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.
- Pole: Posts with fixed connection points that accept runners, bearers, and diagonals, also made of wood that can be interconnected at pre-determined levels.
- Specialty: Scaffold types designed for a narrow and very specific range of applications. Includes plasterers', decorators', and other large-area scaffolds; bricklayers' square scaffolds; horse scaffolds; outrigger scaffolds; step, platform, and trestle ladder scaffolds; form and carpenter's bracket scaffolds; window jack scaffolds; crawling boards (chicken ladders); and roof bracket scaffolds.

5.8.2 **Suspended Scaffold** - Platforms suspended by ropes, or other non-rigid means, from an overhead structure. These include:

- Two-point (swing stage): Platform supported by hangers (stirrups) suspended by two ropes from overhead supports and equipped with a means to permit the platform to be raised and lowered.
- Single-point Adjustable: Platform suspended by one rope from an overhead support and equipped with a means to permit the platform to be moved to desired working levels.
- Catenary: Platform supported by two essentially horizontal and parallel ropes attached to structural members of a building. Additional vertical pickups may also provide support.

- Multi-point Adjustable: Platform(s) suspended by more than two ropes from overhead supports and equipped with a means to permit the platform to be raised and lowered. Includes chimney hoists.
- Interior Hung: Platform suspended from the ceiling or roof structure by fixed-length supports.
- Needle Beam: A platform suspended from needle beams.
- Multi-level: Two-point or multi-point adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.
- Float (ship): Braced platform resting on two parallel bearers and hung from overhead supports by ropes of fixed length.

5.9 **Screw Jacks** – Designed for leveling scaffold.

5.10 **Test Load** – The applied load used to demonstrate compliance with a performance test requirement.

5.11 **Tie** – A system of bracing or anchorage to an adjacent structure from a standing scaffold to prevent toppling.

- Tube and Clamp – A tube fixed at a node by clamp bracing the scaffold from falling inward while tie wire is attached to counteract the tension.
- Eye Bolt and Anchor – An eye bolt is fitted to a wall surface and attached to a node on the scaffold.
- Guy Wires – Tension cables that extend to the ground at a set distance from the base in a configuration as to offset each other.

5.12 **Visual Inspection** – Inspection by the eye without recourse to any optical device except prescription eyeglasses.

5.13 **Working Load** – The maximum applied load, including the weight of the user, materials, and tools that the scaffolding is to support for the intended use.

## 6. PROCEDURE FOR USING SCAFFOLDS AT THE ANC

6.1 The following shall be submitted to the Work Authorization Permit Meeting at least three (3) business days prior to the requested start day of scaffold erection:

1. Two copies of the Work Authorization Permit (**CFM-00004-F1**)
2. Two copies of the Scaffolding Permit (**EHS-00074-F1**)

**NOTE:** All blank lines in the top portion of the Scaffolding Permit must be completed at time of submittal:

- Inspection Date Requested
- Duration of Work
- Location of Scaffold
- Purpose of Scaffold
- Permit Requestor & Phone #
- NY CREATES Work Sponsor & Phone #
- Designated Competent Person Name & Phone #
- Type of Scaffold
- Max. Material Weight on Scaffold
- Max # of Workers on Scaffold

6.2 Once the Work Authorization Permit is stamped “Approved,” the permit MUST be picked up from the shelf below the drop box outside CESTM CR-1. Work may then proceed, and the scaffold shall be erected under the supervision of a Competent Person.

6.2.1 The person performing work must have the approved Work Authorization Permit ‘In Hand’ when performing work and at the time of ERT / EHS Inspection.

6.3 After the scaffold has been erected, the Competent Person shall inspect and ensure that the scaffold complies with relevant federal and state regulations and this policy and sign the colored tag on the scaffold.

6.4 Tag Colors indicate the following:

Safety Determination	Color Code	Conditions
Safe for Intended Use	Green (Safe to Use)	The structure is considered safe for its intended use. - The Competent Person has inspected scaffold and declared ready for use. - NY CREATES ERT/EHS has visually reviewed scaffold.
Special Mitigation Required	Yellow (Caution)	A special situation exists. Condition is described on the “action/comment” section of the Daily Inspection Checklist. <b>Requirements:</b> - Scaffold Workers to determine restriction(s) from Competent Person (e.g.: “Fall Protection may be required”). - The Competent Person demarks the condition with tape or other identifying object to keep workers away (e.g.: Handrail is bent or does not fit well. That section would be marked with tape). - The Competent Person informs everyone using the scaffold of the situation and the appropriate mitigation required to continue work.
Unsafe for Intended Use Or Scheduled to be Constructed or Dismantled	Red (Do Not Use)	The structure is unsafe for occupancy. <b>Requirements:</b> - Only those authorized by the Competent Person can go on, in, or around the structure.

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- 6.5 Before the scaffold is to be used, the Competent Person must contact an ERT [Technician](#) or EHS member to perform a visual inspection using the Scaffolding Permit. Once approved by EHS / ERT, the scaffold is released for use.
- NOTE:** The Competent Person must be present during ERT/EHS Inspection and sign the Scaffolding Permit upon completion of inspection.
- 6.5.1 If any items are found to be deficient, the scaffold cannot be used and should be either immediately corrected or tagged “out of service” until corrected.
- 6.6 A copy of the approved Scaffolding Permit shall be left with the scaffold and a copy placed in the NY CREATES EHS file.
- 6.7 ERT/EHS will issue a Scaffolding Permit Identification Sign (SPIS) when the permit has been issued. The SPIS will be comprised of the Scaffolding Permit inside the [NY CREATES](#)-labeled protective sleeve. The SPIS will be attached to the scaffolding bracing with a zip tie, [or other comparable method](#), in a conspicuous location.
- 6.7.1 This shall remain posted for the duration of the work.
- 6.7.2 The purpose of the SPIS is for NY CREATES representatives to be aware the scaffolding permit has been issued and signed off by ERT / EHS.
- 6.8 Thereafter, if the scaffold will be used over multiple days, the Competent Person must sign and date their own tag each day the scaffold is used, prior to use. This indicates they have inspected the scaffold before each work shift and ensured the conditions of the scaffold and environment have not changed to adversely affect the scaffold or the safety of the scaffold users.
- 6.9 Upon completion of the work, the contractor or supervisor will either return this SPIS to the NFE Security desk or ERT/EHS. This will notify ERT/EHS the scaffolding use is complete.
- 6.10 Each scaffold permit is valid for **one week only**. If scaffold use must extend to the next week, this process must begin anew.

## 7. SCAFFOLD GENERAL REQUIREMENTS

- 7.1 All scaffolds must be designed by a qualified person and constructed and loaded in accordance with that design.
- 7.1.1 Due to differences in design and fit, scaffold components of different manufacturers should not be intermingled.



- 7.2 Scaffolds and their components shall be capable of supporting four times the maximum intended load. Intended load includes all personnel, equipment, and supply loads. The intended load should never exceed the rated load unless approved by an engineer, EHS, and the manufacturer.
- 7.2.1 The maximum rated load of the scaffold per the manufacturer should be posted or tagged on the scaffold.
- 7.2.2 The tag/post should indicate whether the scaffold is rated for light, medium, or heavy duty, and list any restrictions.
- 7.2.3 The Competent Person who inspected and approved the scaffold for use [must initial the tag / post daily and per shift](#).
- 7.3 Scaffolds shall not be altered or moved horizontally while they are in use or occupied.
- 7.4 Any damaged or weakened scaffold shall be immediately repaired and shall not be used until repairs have been completed. These scaffolds should be tagged "out of service."
- 7.5 Fall protection is required for employees working on a surface greater than 6 feet in height. Refer to **EHS-00041: Fall Protection**, for more information on fall protection requirements.
- 7.6 Employees shall not work on scaffolds during storms or high winds or when covered with ice or snow, unless all ice or snow is removed and planking is [treated with](#) sand to prevent slipping.
- 7.7 Scaffold will not be placed within 10 feet of an electrical power source (power lines, transformers, etc.).
- 7.8 Tools, materials, and debris shall not be allowed to accumulate in quantities on platforms or around scaffold areas to cause a hazard.
- 7.9 Only treated or protected fiber rope shall be used for or near any work involving the use of corrosive substances or chemicals.

## 8. PLANKING AND PLATFORMS

- 8.1 Platforms must be fully decked or planked so that space between units is less than 1 inch.
- 8.2 Platforms and walkways must be at least 18 inches wide.
- 8.3 Planking shall be overlapped at a minimum of 12 inches or secured from movement.

- 8.4 Scaffold planks shall extend over their end supports no less than 6 inches and no greater than 12 inches or must be cleated, hooked, or restrained. This prevents the movement of platform units.
- 8.4.1 For planks longer than 10 feet, the ends may not exceed 18 inches past the support ends.
- 8.5 On scaffolds where platforms are overlapped to create a long platform, the overlap may only occur over supports and must overlap at least 12 inches or more, unless the platforms are restrained (e.g., nailed together) to prevent movement.
- 8.6 Space between the front edge of the platform and face of work must be less than 14 inches, unless guardrails or fall arrest system are in place to prevent the worker from falling.
- 8.7 Platforms cannot deflect more than 1/60<sup>th</sup> of span when loaded.
- 8.8 Wood platforms cannot be covered with opaque finishes. Opaque finishes may cover defects, cracks, or other deficiencies of the material.

## 9. FALL PROTECTION

- 9.1 Fall protection is required for employees working on a surface > 6 feet high.
- 9.2 Guardrail Systems**
- 9.2.1 Guardrails and toe boards shall be installed at all open sides on a scaffold.
- 9.2.2 A self-closing gate that slides or swings away from the hole and is equipped with a top rail and midrail or equivalent intermediate member that meets the requirements must be installed.
- 9.2.3 The top edge height of top rails shall be between 38 inches and 42 inches in height.
- 9.2.4 Midrails shall be installed at a height midway between 19 inches and 21 inches to the top edge of the guardrail system and the platform surface.
- 9.2.5 Toe boards shall be installed at a minimum of 4 inches in height and withstand 50 lbs of force.
- 9.2.6 Guardrail systems must be surfaced as to prevent injury from punctures or lacerations and to prevent the snagging of clothing.
- 9.2.7 Employees are prohibited from standing on guardrails, midrails, or toe boards to gain extra height.

- 9.2.8 It is prohibited to place planks on guardrails or midrails to gain extra height.
- 9.2.9 Scaffolds shall be provided with a screen between the toe board and guardrail, extending along the entire opening where persons are required to work or pass under the scaffold. If no screen is present, then the area under the scaffold must be barricaded so that no person can pass underneath the scaffold.
- 9.3 Personal Fall Arrest Systems (PFAS)**
- 9.3.1 Personal fall arrest systems **shall** comply with OSHA 1926.502(d) and **EHS-00041: Fall Protection**.
- 9.3.2 Personal fall arrest systems must be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member.
- 9.3.3 If vertical lifelines are used, they must be fastened to a **fixed** safe point of anchorage (e.g., structural members), be independent of the scaffold, and protected from sharp edges and abrasion.
- 9.3.4 Horizontal lifelines, when used, shall be secured to two or more structural members of the scaffold, and shall **not** be attached only to suspension ropes.

## **10. SCAFFOLD ACCESS**

- 10.1 Safe access shall be provided to the scaffold.
- 10.2 Access shall be provided by an attached ladder to a point of access that is guarded by gates, removable rails, or chains.
- 10.3 Access **to or from another surface shall** be provided no more than 24 inches away vertically and no more than 14 inches away horizontally.
- 10.4 Cross braces cannot be used as means of access to a scaffold platform.
- 10.5 Ladders that lean against a scaffold for access must be secured to the scaffold and the top must extend 3 feet above the platform.
- 10.5.1 Scaffolds must have adequate stability or be secured so it does not tip.
- 10.6 Treads and landings must have slip resistant surfaces.

## 11. MOBILE SCAFFOLDS

- 11.1 Maximum work level height shall not exceed four times the minimum base dimension otherwise outrigger frames shall be employed to achieve this dimension, or the unit must be tied, guyed, or braced to prevent tipping.
- 11.2 Minimum platform width must be at least 20 inches.
- 11.3 Supporting structure for the work level shall be rigidly braced with adequate cross or diagonal bracing with rigid platforms at each work level.
- 11.4 Wheels or casters must support four times the design working load and be able to be locked in place to prevent movement when in use.
- 11.5 Mobile scaffolds may only be moved after removing all material and equipment from the scaffold, while unoccupied and across level surfaces. Beware of holes, floor, and overhead obstructions.
- 11.6 When leveling of the work platform is required, screw jacks or other means for adjusting height shall be provided in the base section of the unit.
- 11.7 Mobile scaffolds shall be inspected by a Competent Person as often as necessary to ensure safety. Inspections shall occur after assembly, significant alteration, and before each use.

## 12. SUPPORTED SCAFFOLDS

- 12.1 If the scaffold has a height-to-base width ratio of more than 4:1 including outrigger supports if used, then the scaffold must be restrained from tipping by guying, bracing, tying or equivalent means.
- 12.2 Scaffolds shall be secured to permanent structures, through the use of anchor bolts, reveal bolts, or equivalent means.
- 12.3 Scaffolds shall be level and set upon a firm foundation. The footing or anchorage shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement.
- 12.3.1 Poles, legs, posts, frames, and uprights must be placed on base plates and mud sills or other adequate firm foundation.
- 12.4 Poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

### **13. GUIDELINES FOR ERECTING, ALTERING, OR DISMANTLING SCAFFOLDS**

- 13.1 Erecting, altering, or dismantling scaffolds shall be performed under the supervision of a Competent Person.
- 13.2 Dismantling a scaffold will require submittal of a new Work Authorization Permit, following the same guidelines stated in 'Instruction for Obtaining Work Authorization Permits' (**CFM-00004**).
- 13.3 Any alterations to a scaffold will require submittal of a new Work Authorization Permit and the permit process must begin anew, as listed in Section 6.1 of this procedure.
- 13.4 Ensure area below is clear of personnel and area is secured against unauthorized access.
- 13.5 Work within the inside of the scaffolding.
- 13.6 Raise and lower scaffold components in a safe manner. Do not throw or drop components since this could cause injury or damage.
- 13.7 Use fall protection when feasible.

### **14. RECORDKEEPING REQUIREMENTS**

- 14.1 ANC maintains [Documented Inspections of scaffolds](#) in the EHS office for at least three years unless otherwise indicated.

### **15. VIOLATION**

- 15.1 If anyone chooses to disregard or violate any of the instructions provided in this procedure, such parties must submit in writing the reason for violating this protocol and have such reasoning approved by all signature parties.
- 15.2 If they violate this protocol three or more times, their badges will be revoked, and they must re-apply for badge access to the site.