



WORKING AT ELEVATED PLACES Scaffolds Standard

Selection and Use

University workers who require access to elevated locations while performing work are faced with a potential risk of falling. Scaffolds may offer a superior alternative to a work surface with a limited footing, or a more temporary means of accessing the work area such as a ladder. Proper use of scaffolds is essential to minimize the risk of falling.

APPLICATION:

Any worker who uses a scaffold during the course of work at the University. This standard does not apply to suspended scaffolds.

Note: *In this standard, “worker” includes faculty, staff, students, and visitors.*

RESPONSIBILITIES:

Principal investigators/supervisors and all others in authority shall:

- Identify situations where scaffolds are required;
- Determine (using this standard or in conjunction with the Office of Environmental Health and Safety) the appropriate type of scaffold for a specific application;
- Provide the appropriate scaffold and any additionally required equipment including all assembly instructions, plans and specifications;
- Ensure that workers are protected by a guardrail system or a fall protection system when a guardrail system is not reasonably possible to install;
- Ensure that workers are informed of the proper use of and maintenance of scaffolds, and any applicable safety devices;
- Where any travel restraint or fall arrest system is required, ensure that workers have been trained on the proper use of and maintenance of the system (refer to the UofT Fall Protection Standard);
- Appoint a competent individual to inspect a scaffold following erection, prior to first use; and
- Ensure that workers follow appropriate usage practices for scaffolds.

Workers shall:

- Use scaffolds in a manner consistent with their training at all times;
- Use any protective devices or equipment as required,
- Maintain scaffolds in good condition; and
- Report any defects to their supervisor.

SCAFFOLDS:

For most applications around the University, pre-fabricated metal scaffolds are rented or purchased and then erected. If lumber is used, it must be construction grade or Number 1 Grade spruce. Some important directions regarding structural features of a scaffold include the following:

- Every scaffold shall be designed and constructed to support two times the max load to which it will be subjected without exceeding allowable stresses on its components and four times the



- maximum load without overturning;
- All scaffold sections must be braced diagonally in the horizontal and vertical planes, in a manner that prevents any lateral movement;
 - Scaffolds must have safety catches on all hooks;
 - Connecting devices between frames must offer positive engagement in tension and compression;
 - A built-in or dedicated access means such as a ladder, ramp or stairway must be provided;
 - A scaffold must be rated to support all loads and forces to which it will be subjected in a particular application;
 - Scaffolds must be accompanied by drawings (stamped by a professional engineer) and specifications, the rated load, and written instructions for the safe use, assembly, maintenance and dismantling;
 - Scaffolds equipped with castors or wheels must have a braking device on each castor or wheel, to be applied when a worker is on the scaffold;
 - Scaffold work platforms must have a guardrail (top rail, intermediate rail and toeboard) where:
 - a worker may fall 2.4 m.
 - a worker may fall 1.2 m if the platform is a path for equipment
 - The top of the guardrail must be at least 0.9 metres but not more than 1.1 metres above the surface of the platform with a mid-rail halfway between the top guard rail and the surface of the platform;
 - Guardrails made of wood, must be made of spruce, pine or fir timber of construction grade quality or better
 - Work platform shall have each component secured against slipping from its supports;
 - Work platforms should have a minimum width of at least 460 mm;
 - Scaffolds must be leveled using stable objects that will support twice its maximum load and protect the scaffold from settling, displacement or deformation;
 - Overhead protection must be provided where there is or will be work above;
 - All scaffolds shall be secured at vertical intervals not exceeding more than three times the smallest base dimension, to prevent lateral movement;
 - Horizontal members of all scaffolds shall be secured to prevent lateral movement and shall not have splices between the points of support;
 - As a minimum requirement, a scaffold mounted on castors or wheels that is more than three times the height of the smallest base dimension requires a form of additional support such as outriggers or guy wires to prevent overturning; and
 - Scaffolds that are not equipped with wheels may require additional support as listed above (follow the manufacturer's directions). Generally, outriggers are required where the height of the scaffold is four times the smallest base dimension.

Construction of Scaffolds

Construction of scaffolds from raw materials requires a knowledgeable and experienced individual familiar with all relevant legislation and practices. Scaffold construction should never be attempted by those not intimately familiar with this process. Minimum requirements are detailed in the Construction Project Regulations (O. Reg. 213/91) made under the Ontario Occupational Health and Safety Act.

Erection of Scaffolds

Proper erection of pre-fabricated scaffolds is crucial for the safety of individuals working on or around them. Erection of scaffolds should meet the following requirements:

- Fall protection equipment must be used during erection at heights above 3 meters;



- Erection must be conducted according to the manufacturer's instruction;
- Erection must be supervised by a competent person and;
- All required parts must be in place, and the structure inspected by a competent individual before a scaffold is used.

Scaffold Use

General Points

- If possible, materials to be loaded onto a scaffold work platform from the ground by a forklift or other device should be done with no personnel on the scaffold;
- Loads of working materials should be distributed evenly across the working platforms, and never be placed outside the frame on overhangs unless there is an outrigger specifically designed for such a purpose;
- Care must be taken when heavy loads such as masonry cubes are placed on the work platform, heavy loads must be placed over the frame;
- If the nature of the work prevents the use of a guardrail where required, fall protection equipment must be used;
- Work platforms and access ways must be kept clean and clear of materials that may cause a person to lose their footing; and
- Scaffolds must not be used outdoors in adverse weather conditions such as high winds, lightning storms etc.

Rolling Scaffolds

- Care must be taken while moving a rolling scaffold to avoid contact with power lines, ground depressions or other hazards;
- Rolling scaffolds must not be moved while persons are on them;
- Scaffolds equipped with pneumatic tires must not be supported by these tires while being erected, used or dismantled; and
- Scaffolds equipped with castors or wheels shall have the braking device on each wheel locked during erection, use or dismantling, and should be additionally chocked.

Appendix A INSPECTING EQUIPMENT

All scaffolding equipment must be carefully inspected before use to ensure that it is serviceable and in good condition. Damaged or deteriorated equipment must be removed from service. The inspection of the equipment should include the following:

- Check for bent components, in particular where the tube is kinked, flattened, or crushed.
- Check for cracks around welds, joints, or around the circumference.
- Look inside the tube and inspect for rust.
- Check moving parts, such as gravity locks, for freedom of movement.
- Check for brackets with deformed attachment hooks.
- Check the holes in the cross braces for splitting out.
- Check manufactured planking for missing looks, locks, or rivets; bent siderails; or a damaged walking surface. If the surface is plywood, check for rotten areas.
- Check castors for damaged brakes, axles, or stems.
- Look for any painted area that appears blistered, cracked, or crazed, which may indicate prior damage.
- When in doubt about the condition of scaffold equipment, either discard the component or consult with the scaffolding supplier.



Do not use scaffold equipment or accessories that are obviously damaged. Do not use rusty or corroded scaffold equipment. If any areas show pitting, flaking, powdering, or excessive rust, discard the equipment.