Safe Use of Ladder Policy

Purpose

Manchester Metropolitan University (the university) has developed this program to ensure the safety of employees, contractors and visitors who work with ladders/stepladders whilst at the university.

Scope

This program applies to all University Faculty’s, Departments and Schools staff that may be expected to use a ladder/stepladders during the course of work. This program covers the following ladders: step, extension, and other portable ladders. Users must be able to recognize and avoid ladder hazards and be aware of safe practices in setting up, storing, and working with ladders.

Policy

All ladders used at the university for construction, alteration, repair, demolition, and general purposes are covered by this program.

Authority and Responsibility

Each Faculty, Department or School are responsible for:

1. Ensuring that ladder safety measures are in place according to this program.
2. Ensuring that workers are trained in ladder safety;
3. Maintaining training records;
4. Ensuring that ladders meet HSE regulations; and
5. Periodically evaluating program implementation.

Supervisors are responsible for:

1. Ensuring that all ladders used at University are free from defects and all moving parts are working properly;
2. Ensuring that all affected employees using ladders have been trained;
3. Ensuring that all affected employees comply with this program;
4. Taking ladders out of service if they are defective; and
5. Conducting periodic inspections of work areas.
Employees are responsible for:

1. Complying with the requirements of this program;
2. Attending required training programs;
3. Inspecting ladders for defects or possible hazards prior to use;
4. Tagging any defective ladder as out of service; and
5. Reporting any ladder defects to their supervisor.

Types of Portable Ladders

Stepladder: Self-supporting portable ladder, non-adjustable in length, having flat steps and a hinged back.

Single Ladder: A non self-supporting portable ladder, nonadjustable in length, consisting of one section.

Extension Ladder: A non self-supporting portable ladder adjustable in length, consisting of multiple sections.

When selecting a ladder, be sure to use the proper duty rating to carry the combined weight of the user and material. The ladder duty ratings are as follows:

Selection of Ladders

Ladders are generally available in three material compositions: wood, fiberglass, and metal.

Wood Ladders

Wood Ladders are electrically non-conductive and are the best natural insulator against heat. They can be electrically conductive if wet. Wood ladders are heavier than metal. They are susceptible to drying and rotting and need a clear finish to protect them.

Fiberglass Ladders

Fiberglass ladders are strong, lightweight, and electrically non-conductive. They do not dry out and split like wood. They are slow to conduct heat, so they are able to withstand heat exposure without losing strength. They are heavier than wood or metal and are not available in longer extension ladders. Fiberglass may chip or crack under severe impact. When overloaded, fiberglass does not bend, it cracks and fails.

Metal Ladders

Metal ladders are very strong and lightweight. They dent, but do not chip or crack when subjected to severe impact. They do not require a protective varnish for protection. They do conduct heat rapidly.
If they are exposed to heat, they will lose their tensile strength. They must not be used when working on or near electrical wires or when working around energy sources. Metal ladders must be labelled with a DANGER warning sticker indicating electrocution hazard.

**Ladder Care and Maintenance**

Ladders shall be maintained in good condition at all times by ensuring the following:

1. The joint between the steps and side rails shall be tight;
2. All hardware and fittings shall be securely attached;
3. Movable parts shall operate freely without binding or excessive play;
4. Locks, wheels, pulleys, and other bearings shall be frequently lubricated;
5. Frayed or badly worn rope shall be replaced;
6. Safety feet and other auxiliary equipment shall be kept in good condition;
7. Ladders shall be inspected frequently;
8. Ladders with defects shall be taken out of service and tagged as "Dangerous, Do Not Use."
9. Ladder repairs must restore the ladder to its original design criteria before the ladder may be returned to use;
10. Rungs shall be kept free of grease and oil;
11. Metal steps and rungs shall be grooved or roughened to prevent slipping; and
12. Wood ladders shall not be painted with an opaque finish or coated with any material that may hide defects. Use only clear varnish.

**Ladder Storage**

When not in use, ladders shall be stored in a designated location out of direct sunlight and not exposed to harmful elements that may cause decay/damage. Never store materials on a ladder. Straight and extension ladders should be stored in storage racks. Be sure that ladders are secured when in transit. Vibration and bumping against other objects may cause damage.

**Ladder Inspection**

The user shall inspect the ladder prior to use. Ladders shall be inspected by a department supervisor or designee for visible defects on a semi-annual basis and after any incident that could affect their safe use. The person performing the semi-annual inspection shall complete the IUPUI Portable Ladder Inspection Checklist. The checklist is found in Appendix A of this program. The Department shall maintain a record of the inspection report.
If a ladder tips over, immediate inspection of the following is required:

1. Inspect for side rail dents or bends or excessively dented rungs;
2. Check all rung-to-side-rail connections;
3. Check hardware connections; and
4. Check rivets for shear.

**Ladder Set-up**

Prior to climbing a ladder, it shall be set up according to the following:

1. Position the ladder so that the side rails extend at least 3 feet above the landing;
2. Secure the side rails at the top to a rigid support and use a grab device when 3 foot extension is not possible;
3. Extension ladders shall be extended from the ground only;
4. Make sure the weight on the ladder will not cause it to slip off its support;
5. Portable ladders shall be used so that the base is a distance from the vertical wall equal to one-fourth the working length of the ladder;
6. The ladder base must be placed with secure footing;
7. The ladder shall be placed or held in place to prevent slipping;
8. Ladders shall not be used in a horizontal position as a platform, a runway, or scaffold;
9. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked upon, locked, or guarded;
10. Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height;
11. No ladder shall be used to gain access to a roof unless the top of the ladder extends at least 3 feet above the point of support, at eave, gutter, or roofline;
12. The user shall equip all portable rung ladders with non-slip bases or secure the ladder when there is a hazard of slipping;
13. The area around the ladders must remain clear from debris, equipment, etc.;
14. The minimum overlap for the two-sections on extension ladders shall be:
Size of Ladder (feet) Overlap (feet)

Up to and including 36 3

Over 36 up to and including 48 4

Over 48 up to and including 60 5

15. Never place a ladder near electrical wiring or against operational piping (chemical, gas, sprinkler systems) where damage may occur;

16. When two or more ladders are used to access a work area, they must offset with a landing or platform between the ladders; and

17. Always check for stability prior to climbing.

**To set up a straight or extension ladder:**

1. Lay the ladder on the ground with the base resting against the bottom of the wall and the top pointing away from the wall;

2. Starting at the top, lift the ladder over your head and walk under the ladder to the wall. Move hands from rung to rung as you go.

3. When the ladder is vertical and the top touches the wall, pull the base out so that the distance from the wall is one-fourth the height to the point of support; and

4. Reverse the process to remove the ladder.

**Climbing and Standing**

When climbing or standing on a ladder, the following safety precautions shall be followed:

1. Make sure shoes are free of mud, soil, or anything slippery;

2. When ascending or descending, the user must face the ladder;

3. Use at least one hand to grasp the ladder when climbing. Maintain at least three points of contact with the ladder (two feet and one hand or two hands and one foot);

4. The top rest for portable rung and cleat ladders shall be rigid and have strength to support the load;

5. The top two steps of a stepladder shall not be used for standing. The highest working height shall be clearly marked;

6. Do not stand on the pail shelf of a stepladder;

7. Do not straddle the front and back of a stepladder;
8. The bracing on the back legs of step ladders is designed solely for increasing stability and not for climbing;

9. Never stand on the top two rungs of a straight or extension ladder;

10. Supplies or equipment shall not be hand carried by the worker on the ladder; instead, a rope, block, or pulley system shall be used to move the equipment;

11. To help prevent loss of balance, carry small items such as hammers, nails, pliers, etc. in a tool belt;

12. When working to the side of a ladder, the centreline of the body must be maintained between the side rails;

13. Do not overreach or lean too far to one side;

14. No more than one person shall be on a ladder at a time unless the ladder is manufactured to support an additional person;

15. Do not move, shift, or extend ladders while in use;

16. Never climb onto a ladder from one side;

17. Never slide down a ladder;

18. Never sit on ladder rails; and

19. If you feel sick or dizzy while climbing or standing on a ladder, do not try to climb down in a hurry. Drape your arms around the rungs and rest your head against the ladder until you feel better. Then climb down slowly

**Securing the Ladder**

The following are required to secure ladders:

1. Single and extension ladders shall be secured at the top and bottom to prevent movement. To secure the ladder at the bottom, flip the ladder shoes so that the spurs poke the ground. If setting up a ladder on hard surfaces, tie ropes to both ladder legs beneath the lowest rung and tie the other end of the ropes to a solid anchored object at or near the base of the wall. If possible, nail a cleat behind the ladder's feet to prevent the ladder from slipping. To secure the ladder at the top, use roof hooks, tie it to a solid anchor, use rubber or soft plastic "mitts", or use a ladder stabilizer. If the ladder cannot be secured at both the top and bottom, it shall be secured at the base. If this still is not possible, an employee must stand at the base and secure it manually;

2. Step ladders shall be opened completely and ensure that the spreader is locked prior to use. Never use a stepladder in an unfolded position;

3. Never use ladders on slippery surfaces or on snow or ice unless secured or the ladder is equipped with non-slip or spike feet;
4. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

Use On or Near Electrical Equipment

Safety-related work practices shall prevent electric shock or other injuries from electrical contact when work is performed on or near equipment or circuits that are or may be energized. These work practices shall be consistent with the nature and extent of the associated electrical hazards.

Metallic or metal-type ladders shall NOT be used around electrical energy, components, and sources. Portable ladders shall have nonconductive side rails if used where the employee or ladder could contact exposed energized parts.

Training Requirements

All employees shall be trained prior to portable ladder use to recognize hazards and procedures to minimize hazards. Employees shall be trained in the following:

* The recognition of possible hazards associated with ladder use, maintenance, and safety precautions;

* The proper use and placement of ladders; and

* The maximum intended load capacities of ladders used.

Employees shall be retrained as necessary to maintain their understanding and knowledge on the safe use of ladders.