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**General Guidelines  
for**

# **Handling, Storage, and Maintenance of Ladders**

**REVISION**

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6	DCN1299	Rewrite of policy	4-11-16	Brenda Streeter	Tom Diamond

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

## 1. PURPOSE

- 1.1 This procedure establishes minimum rules to protect the health and safety of workers required to use ladders when performing duties at elevated levels, and to minimize the potential for personal injury.
- 1.2 To comply with the regulations outlined in the Occupational Safety and Health Administration's (OSHA) Part 29 CFR 1910, Subpart D, Walking-Working Surfaces. (29 CFR 1910.25, Portable Wood Ladders, 29 CFR 1910.26, Portable Metal Ladders, 29 CFR 1910.27, Fixed Ladders)

## 2. SCOPE

- 2.1 This program establishes the minimum requirements for the use, handling, storage and maintenance of ladders at Colleges of Nanoscale Science and Engineering (CNSE). Tenant employees, contractors and sub-contractors **are to** 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 CNSE employees, tenant employees, contractors and sub-contractor who may be involved in activities that require the use of ladders within the facility.
- 2.3 Facility Engineering and departmental Supervisors are responsible for supporting and enforcing this program to ensure compliance by all personnel.

## 3. RESPONSIBILITIES

### 3.1 Environmental, Health and Safety (EHS) Department

- 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,
- Assist in the selection of portable and fixed ladders at CNSE,
- Provide ladder safety training, and

## 3.2 Facilities and Supervisors

- 3.2.1 Facility Engineering 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 ladders.

## 3.3 All Employees

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

## 4. ASSOCIATED DOCUMENTS

- 4.1 EHS-00050-F1 – Ladder Inspection Checklist
- 4.2 EHS-00074 – Scaffolding Procedures
- 4.3 EHS-00074-F1 – Scaffolding Permit

## 5. DEFINITIONS

- 5.1 **Extension Ladder** - A non-self-supporting portable ladder that is adjustable in length. It consists of two or more sections traveling in guides or brackets to permit length adjustment.
- 5.2 **Highest standing level** - The vertical distance, expressed in feet and inches, from the uppermost rung or step the climber is advised to use to the horizontal plane of the ladder base support, with the ladder in the preferred climbing position.
- 5.3 **Ladder, foot, shoe, or skid-resistant bearing surface** - That component of ladder support that is in contact with the lower supporting surface.
- 5.4 **Portable Ladder** - A ladder that can readily be moved or carried, usually consisting of side rails joined at intervals by steps, rungs, cleats, or rear braces.
- 5.5 **Scaffold** - A temporary elevated platform and its supporting structure used for supporting workers or materials or both (see EHS-00074 Scaffolding Procedures).
- 5.6 **Step-ladder** - A self-supporting portable ladder, nonadjustable in length, with flat steps and hinged back.

- 5.7 **Top step** - The first step below the top cap of a portable stepladder. Where a ladder is constructed without a top cap, the top step is the first step below the rails.
- 5.8 **Working load** - The maximum applied load, including the weight of the user, materials, and tools that the ladder is to support for the intended use.

## 6. GENERAL GUIDELINES ON THE USE OF LADDERS

The correct types of ladder for the work activity should be chosen. All new portable ladders should be Type 1A (300 lb. rating) or greater. If the ladder is to be used with ladder jacks, it must be Type 1A or greater.

### 6.1 Pre-Inspection

- 6.1.1 Check that the ladder is in good condition before it is used. The ladder should be checked for:

- Broken or loose rungs,
- Rot or decay,
- Cracks or splints on the uprights of the ladder,
- Tie rods are secure,
- Corrosion or oxidation of metal ladders,
- Missing, broken or loose nails, bolts, screw and safety shoes
- If the ladder is warped,
- Oil, grease or other slipping hazards

### 6.2 Defective Ladders

- 6.2.1 Ladders found with defects are to be immediately taken out of service. The ladder is to be tagged "DO NOT USE". [The ladder shall either be repaired and returned to service or disposed.](#)
- 6.2.2 Workers should not use a ladder for access to a height greater than 10m. If work requires access to this height or above then a suitable scaffold (see EHS-00074) or another suitable means of access should be provided.

### 6.3 Extension Ladders

- 6.3.1 [The ladder should be placed on level and firm ground and placed against a surface which is able to support the weight of the ladder, worker and appropriate equipment.](#)

- 6.3.2 Ladders should rest at an angle of 75° or 1 Unit horizontally to 4 Units vertically.
- 6.3.3 Fixed, straight, and extension ladders must extend three (3) feet or approximately 3 rungs above the landing surface. If this is not possible, a grab-rail must be put in place to assist an individual mounting and dismounting the ladder.
- 6.3.4 When using extension ladders the sections should overlap as follows:
- For ladders of up to 5m there should be an overlap of at least 1.5 rungs;
  - For ladders of 5-6m there should be an overlap of at least 2.5 rungs;
  - For ladders of 6m or greater, there should be an overlap of at least 3.5 rungs.

## 6.4 Stepladders

6.4.1 Stepladders are designed to be short elevations from which to work. Stepladders should not exceed 20 feet in height.

6.4.2 When using stepladders:

- Ensure the stepladder is located on firm level ground;
- Ensure that the stays/chains/cords holding the two halves of the ladder together are in good condition;
- Ensure the top steps or platform of the stepladder should not be used for standing on unless there is a 1.05m hand rail above the steps/platform. The stepladder should have this warning stenciled on the second step of the ladder.
- Allow only one person at a time on the stepladder.
- Keep both feet on the ladder.
- Do not lean laterally from the ladder to achieve a greater distance.

6.4.3 Stepladders are not to be used as straight ladders.

## 6.5 Roof Ladders

6.5.1 When using a ladder on a roof, workers should only use a ladder that can pass over the roof ridge. This is to ensure the ladder does not slip off the roof.

- 6.5.2 A roof ladder should have pads of a resilient material on the underside, so that it does not damage the roof.

## 7. HANDLING AND STORAGE

- 7.1 Never use a ladder that has been painted, as the paint may cover serious defects in the ladder.
- 7.2 Do not use metal ladders near electricity.
- 7.3 Handle ladders with care. Do not drop or hit with another item such that it may be damaged.
- 7.4 The user should always face the ladder.
- 7.5 Use both hands when ascending and descending a ladder.
- 7.6 Do not move ladder while in use.
- 7.7 If a ladder is used near a door or in a traffic area, barricades or guards are to be put in place.
- 7.8 Keep ladder access points clear of tools, material or debris.
- 7.9 Do not modify ladders by drilling holes, adding accessories, etc. Alterations may weaken the ladder structure and cause failure under load conditions.
- 7.10 Ladders should be tagged by the owner and stored horizontally at floor level leaning against the wall or stored vertically also leaning against the wall.
- 7.11 Ladders should be stored so as not to create a hazard or damage the ladder. (e.g. against electrical panels, near heat sources or near dampness, in exit passageways or in aisle ways).
- 7.12 Ladders should be kept clean and free from oil/grease/mud or any other item that may make the steps slippery or may damage the ladder.

## 8. EMPLOYEE TRAINING

- 8.1 Employee ladder safety training is included as a component of Safety Orientation. The CNSE Ladder Safety training includes the following elements:
- 8.1.1 Procedures for erecting, maintaining and disassembling portable ladders,
- 8.1.2 Proper placement and use of ladders,

- 8.2            **Specific training on the use of ladders unique to work assignments shall be done by the area supervisor.**
  
- 8.3            Retraining shall be conducted when the supervisor/department manager has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by this program. Circumstances where retraining is required include, but are not limited to, situations where:
  - 8.3.1           Changes in the workplace render previous training obsolete; or
  - 8.3.2           Inadequacies in an affected employee's knowledge or use of ladders and fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.