

STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs

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Page 1 of 6

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SAFE USE OF LADDERS AND STAIRS



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STANDARD OPERATING PROCEDURE

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Document Number: 960C-SOP-006

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Page 2 of 6

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The following is a step-by-step procedure on how to complete a specific task or meet a facility specific requirement. Standard Operating Procedures (SOPs) are written for all identified critical tasks. By virtue of the hazard or complexity associated with critical tasks it is paramount that the SOP be followed as written. SOPs contain a listing of high-level hazards associated with the task, for detailed hazard analysis reference the applicable Task Hazard Assessments. SOPs do not replace the requirements contained in the company Standards, Codes, and Processes nor does it replace the need to comply with required legislation. Section 8.0 references documentation that the worker shall understand before work commences.

1.0 PURPOSE

- To establish a Company standard to safely and effectively carry out work as it applies to setting up and using a ladder.

2.0 SCOPE AND APPLICATION

- This document applies to all Company Heavy Construction Mining operations. Ensure all site-specific requirements are being met or exceeded before performing the task.

3.0 HAZARDS AND CONTROLS

- Using damaged or malfunctioning ladders or stairs resulting in serious personal injuries.
 - The design, construction, and use of portable ladders must conform to the requirements of applicable legislation for the area in which the work is being conducted.
 - Inspect ladders and stairs thoroughly before each use to ensure they are in good working condition.
 - All ladders shall be Type IA, extra-heavy duty (136 kg or 300 lbs.).
 - Tag and remove from service any ladder or stair found to be defective or damaged. Use a "Danger – Do Not Use" tag, and ensure it is either repaired by qualified personnel or discarded appropriately.
 - Always check the ladder/stairs load capacity sticker. Ensure the ladder or stairs can hold the weight of personnel using them.
- Improper use of ladders or stairs in proximity to energized electrical equipment, resulting in electrocution or serious injury.
 - Only fiberglass ladders with no aluminum components or attachments shall be used when working near energized electrical equipment.
 - Always apply **Lockout/Tagout (LOTO)** procedures when working around energized equipment to ensure it is de-energized and safe to approach.

Note: Aluminum ladders are permitted for non-electrical work; however, some clients prohibit the use of aluminum or wooden ladders altogether. Always verify and adhere to site-specific safety standards.

STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs		Document Number: 960C-SOP-006
Original Approval Date: Mar 06, 2019	Revision Number: 5	Page 3 of 6
Latest Revision Date: June 03, 2025	Next Revision Date: June 03, 2028	Document Approval Level: 4

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- Improper use of ladders or stairs can lead to falls, slips, and other serious personal injuries.
 - Place the ladder on a firm, flat surface. Ensure feet are level and stable. On soft ground or slippery surfaces, use a board or anti-slip device to prevent shifting or sinking.
 - Never place ladders on unstable objects such as boxes, barrels, or tables to gain height.
 - Position the ladder at a **75° angle** using the “4-to-1” rule: for every 4 feet (1.2 m) of vertical height, the base should be 1 foot (0.3 m) away from the wall or support. (see Appendix A)
 - Do not place ladders or stairs in front of doors that open toward them unless the door is blocked, locked, or guarded.
 - Do not obstruct access or egress by leaving tools or materials at the base or top of the ladder.
 - Always face the ladder when ascending or descending and maintain four-point contact: two hands and one foot, or two feet and one hand. Eye contact with the ladder is considered the fourth point of contact. Only one person at a time when climbing the ladder.
 - Do not carry heavy, bulky, or hazardous materials when climbing a ladder or stairs. Use suitable hoisting equipment instead.
 - Inspect footwear and ensure rungs or steps are clean, dry, and free of debris before climbing.
 - The ladder must be long enough for the job. When a ladder is used to climb onto a platform and/or structure, it must project at least 1 meter (3.3 feet) above the contact point to provide support for the worker getting on and off.
 - Do not work from the top two rungs, steps, or cleats of a portable ladder.
 - Never modify a ladder and always follow the manufacturer's specifications.
 - Do not obstruct the access/egress areas around ladders by placing tools or materials at the top or base of a ladder.
 - Fall protection must be used if working at a height greater than 1.8 metres (6 feet) without an adequate fall protection system (refer to 950C-C-016 - Fall Protection Code).
 - Take your time while ascending and descending ladders and staircases. Ensure feet contact the ground before releasing the handrail or ladder rungs and be conscious of how you place your feet onto the new surface.

4.0 CHECKLIST

- ☐ Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOPs for the job)
- ☐ Complete FLRA cards before starting the work.

STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs		Document Number: 960C-SOP-006
Original Approval Date: Mar 06, 2019	Revision Number: 5	Page 4 of 6
Latest Revision Date: June 03, 2025	Next Revision Date: June 03, 2028	Document Approval Level: 4

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- ☐ Ensure all personnel involved in the task are aware of the hazards and the controls to be used, as identified in the SOP's; JSA's; and FLRA's.
- ☐ Conduct a pre-job inspection of all equipment to be worked on and tools to be used.
- ☐ **Standard of Training required for working on this job: On-the job training.**

5.0 DEFINITIONS

5.1 Company

Means North American Construction Group Ltd. (NACG) and all directly or indirectly owned subsidiary companies, including joint ventures.

5.2 Company Personnel

Includes the Company's employees, officers, directors, agents, associates, consultants/contractors, temporary employees, and third-party processors

5.3 HSE

Refers to the Health, Safety & Environment department.

6.0 PROCEDURE

- 1) The supervisor and workers will discuss the task and plan the safest way to approach the work. During that time, workers will complete a hazard assessment (e.g., FLRA) for the task to identify potential risks and determine the necessary equipment.
- 2) Workers are responsible for using, wearing, and inspecting the fall protection equipment as required, in accordance with the training and instruction received.

6.1.1 Fall Protection Requirements

- 1) Set up fall protection. Fall protection must be used if the person's feet are more than 1.82 meters (6 feet) above the ground. A worker may work from a portable ladder without fall protection if:
 - The work is a light-duty task of short duration at each location,
 - The worker's center of balance (indicated by the belly button) is always at the center of the ladder, even with an arm extended beyond the side rails of the ladder, and the worker maintains three-point contact whenever the worker extends an arm beyond a side rail.
 - Fall protection is not required while climbing a portable ladder.

6.2 Portable Staircases

- 1) Ensure the base is secured against movement (use wheel locks, chocks, blocking, or tie-off).
- 2) Ensure the unit is level and all legs are on a firm and even surface.
- 3) Hand and platform rails must be placed to protect from fall hazards.

STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs

Document Number: 960C-SOP-006

Original Approval Date: Mar 06, 2019

Revision Number: 5

Page 5 of 6

Latest Revision Date: June 03, 2025

Next Revision Date: June 03, 2028

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6.3 Portable Ladders

- 1) Confirm that the ladder's design and construction meet the task's requirements.
- 2) Confirm the ladder is rated for the task (e.g., CSA Grade 1 for industrial use).
- 3) Perform an inspection and confirm it is safe to use.
- 4) Place the ladder on firm, level, and stable ground.
- 5) Ensure the locking braces are fully engaged and locked before use.
- 6) Secure the ladder to prevent movement, including top sliding or tipping to the side, the top falling outward, the base kicking out, and the ladder rolling or pivoting on one foot.
- 7) As a temporary securing method, have another worker hold the base of the ladder only while it is being secured. This is not acceptable for extended use.
- 8) Do not work from the top two rungs, steps, or cleats of any portable ladder.

6.3.1 Setting up Extension Ladders

- 1) Follow the instructions listed in section 6.2
- 2) Extend the ladder approximately 1 meter (3.3 feet) above the landing point or surface it rests against.
- 3) Set up the extension ladder using the 4:1 rule (refer to Appendix A).
- 4) Tie off the extension ladder. Do not use the ladder's extension rope to tie off or secure the ladder.

6.4 Fixed Ladders

- 1) Confirm that the ladder's design and construction meet all applicable local legislation and safety regulations prior to use.
- 2) Perform an inspection and confirm that it is safe to use (this includes ladder cages, fall protection, self-closing double-bar gate, etc.).
 - Cages shall be provided on ladders more than 6 meters (about 20 feet) in length,
 - Cages are also required on ladders less than 6 meters (about 20 feet) in length where the ladder is located at an elevated platform that does not provide adequate fall protection.
 - A self-closing double-bar gate must be in place at all ladder-way floor openings and platforms, except rest platforms or intermediate landings.
 - Intermediate landings will be installed at a maximum of 9 meters (about 30 feet) intervals on all fixed ladders.
 - If access from a ladder to a platform poses a hazard where the team member could fall backwards over a handrail to the ground below, a protective guard must be in place.

STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs		Document Number: 960C-SOP-006
Original Approval Date: Mar 06, 2019	Revision Number: 5	Page 6 of 6
Latest Revision Date: June 03, 2025	Next Revision Date: June 03, 2028	Document Approval Level: 4

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- 3) Maintain 3-point contact (two hands and one foot, or two feet and one hand) at all times.
- 4) Face the ladder when ascending or descending.
- 5) Do not carry tools or materials in your hands; use a tool belt or hoisting system (rope, chain hoist, crane, etc.).
- 6) Only one person should be on the ladder at a time, unless it is designed for multiple users.

6.5 Ladders on Extending Booms

- 1) If a ladder is a permanent part of an extending boom on powered mobile equipment, no person shall be on the ladder during the articulation, extension or retracting of the boom.
- 2) If outriggers are incorporated in the equipment, no person shall climb the ladder until the outriggers are deployed.

7.0 NOTES

If this task is to be done by a method different than described in this SOP, the work must **STOP**, and the alternate method must be **DOCUMENTED** with an adequate hazard assessment tool such as a JSA. The document must be **APPROVED** by a supervisor before such procedures are implemented.

8.0 REFERENCES

- Alberta Occupational Health and Safety Act, Regulation and Code - Part 8 Sections 122 to 137 - Entrance Walkways, Stairways and Ladders
- Alberta Occupational Health and Safety Act, Regulation and Code - Part 9 Sections 138 to 161 - Fall Protection
- Canadian Standards Association CSA standard CAN3-Z11-M81, "Portable Ladders"
- American National Standards - ANSI A14.1-1990 - "Safety Requirements for Portable Wood ladders"
- American National Standards - ANSI A14.2-1994 - "Safety Requirements for Portable Metal ladders"
- American National Standards - ANSI A14.5-2007 - "Safety Requirements for Portable Reinforced Plastic ladders"
- 950C-C-016 Fall Protection Code
- 950C-C-028 Hazardous Energy Isolation Code
- 950C-C-034 Ladders Code
- 913C-P-036 Ladders Safety Briefing
- 960C-SOP-001 Elevated Work Platform
- 960C-SOP-013 Three-Point Contact When Climbing

9.0 APPENDICES

- Appendix A – 4 to 1 Rule on Extension Ladders
- Appendix B – Examples of Portable Staircases
- Appendix C – Examples of type 1A Ladder

STANDARD OPERATING PROCEDURE

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Document Number: 960C-SOP-006

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Revision Number: 5

Page 7 of 6

Latest Revision Date: June 03, 2025

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Appendix A 4-to-1 Rule on Extension Ladders

STANDARD OPERATING PROCEDURE

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Document Number: 960C-SOP-006

Original Approval Date: Mar 06, 2019

Revision Number: 5

Page 8 of 6

Latest Revision Date: June 03, 2025

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4-To-1 Rule:

For every 4 feet up place
the base of the ladder 1
foot from the structure.



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Revision Number: 5

Page 9 of 6

Latest Revision Date: June 03, 2025

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Document Approval Level: 4

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Appendix B Examples of Portable Staircases

STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs

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Revision Number: 5

Page 10 of 6

Latest Revision Date: June 03, 2025

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Page 11 of 6

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Appendix C Examples of Type 1A Ladders

STANDARD OPERATING PROCEDURE

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Revision Number: 5

Page 12 of 6

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Next Revision Date: June 03, 2028

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