


STANDARD OPERATING PROCEDURE

Safe Use of Ladders and Stairs		Document Number: 960C-SOP-006
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SAFE USE OF LADDERS AND STAIRS

						
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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

- Malfunctioning and/or damaged ladders/stairs causing personal injury.
 - Always inspect the ladder or stairs carefully before use.
 - All ladders shall be Type IA extra heavy duty (136 kg or 300 lbs.).
 - Ladders or stairs that are found to be defective or damaged must be tagged with a "Danger Do Not Use" tag and taken out of service for repair or discard.
 - Always check the ladders/stairs load capacity sticker. Ensure the ladder or stairs will hold/support the weight of personnel using it.
- Improper ladder/stair use around energized electrical equipment causing electrocution and/or personal injuries.
 - Only fiberglass ladders with no aluminum attachments shall be used when working around energized electrical equipment.
 - Use LOTO when working around energized equipment.

Note: Aluminum ladders can be used for all other types of work. Some clients do not allow aluminum or wooden ladders. Check the standards for your site.

- Incorrect ladder or stair use causing personal injury.
 - Ensure the ladder/stairs are stable and level before climbing.

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- When climbing up or down a ladder always faces the ladder.
- Use four-point contact when climbing. (Two hands and one foot or one hand and two feet. Eye contact is the fourth point of contact.)
- Before climbing ladders/stairs inspect your footwear, ensure the rungs or steps are clean, clear, and safe prior to 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.
- 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.
- Place the ladder on a solid, firm, flat surface. The feet of extension or stepladders must be level. Avoid ladder use on slippery surfaces. A board may be necessary to ensure the ladder is level or to prevent it from sinking into soft ground.
- Ladder or stairs must NEVER be placed on boxes, barrels, tables and/or other unstable bases to obtain additional height.
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- The ladder must be erected at an angle of 75° from the horizontal, Use the “4 to 1” rule. For every 4 feet (1.2 meters) in height place the ladder 1 foot (0.3 meters) out from the base (see Appendix A).
- Ensure the ladder/stairs are not placed in front of a door that opens towards the ladder/stairs unless the door is blocked, locked, or guarded.
- Do not work from the two top rungs of the ladder.
- Never modify a ladder and always follow manufactures 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, be conscious of how you place your feet onto the new surface.

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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.
- 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) Supervisor and workers will discuss the task and plan the safest way to approach the work. During that time workers will complete an FLRA card to identify hazards in the area.
- 2) Workers are responsible to update FLRA cards as conditions change (example: new worker, scope, weather, equipment, hazards).
- 3) Workers are responsible to use, wear, and inspect the fall protection equipment as required, in accordance with the training and instruction received.

6.1 Portable Staircases

- 1) Ensure the base is secured against movement (wheel locks, chocks, blocking, 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.

6.2 Portable Ladders

- 1) Portable ladder design, construction, and use must conform to the requirements of applicable legislation for the area the work is being conducted in.

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- 2) All portable ladders must be secured against movement and placed on a stable base. Motions to stop are the top sliding or tipping to the side; the top falling outwards; the base kicking out; and the ladder rolling to the side (pivots on one foot). A temporary securing method while a climber secures the ladder is to have another worker hold the ladder at the base (This is not a suitable method for longer term securing).
- 3) Extension ladders must extend about 1 meter (3.3 feet) above the edge they are resting against.
- 4) A worker must not perform work from either of the top two rungs, steps, or cleats of a portable ladder.
- 5) Fall protection must be used if the person's feet are more than 1.82 meters (6 feet) above the ground. However, a worker may work from a portable ladder without fall protection if:
 - (i) The work is a light duty task of short duration at each location,
 - (ii) 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.

Note: Fall Protection is not required when climbing a ladder.

- 6) Ensure that locking braces on step ladders are always in the locked position while in use.
- 7) When an extension ladder is used, the overlap of the sections must be at least 1 meter (about 3.3 feet).
- 8) When setting up the extension ladder, use the 4 to 1 rule (see Appendix A).
- 9) The rope used to extend extension ladders must not be used to tie off the ladder.

6.3 Fixed Ladders

- 1) Fixed Ladder design, construction, and use must conform to the requirements of applicable legislation for the area the work is being conducted in.
- 2) Cages shall be provided on ladders more than 6 meters (about 20 feet) in length,
- 3) 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.
- 4) A self-closing double bar gate must be in place at all ladder-way floor openings and platforms, except rest platforms or intermediate landings.
- 5) Intermediate landings will be installed at a maximum of 9 meters (about 30 foot) intervals on all fixed ladders.
- 6) 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.

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6.4 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 Ladders

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Appendix A 4-to-1 Rule on Extension Ladders

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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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Appendix B Examples of Portable Staircases

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Appendix C Examples of Type 1A Ladders

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