

PERSONAL SAFETY

Life saving procedures

A simplified collection of our most
important safety procedures

NIKKELVERK
A GLENCORE COMPANY

SAFEWORK

PREFACE

Purpose

These life saving rules will save lives and help us reach our goal of no injuries.

Critical controls are the most crucial measure to avoid incidents. We require everyone to carry a copy of “Life-saving procedures” and to use it actively. Before you start any work assignment that doesn’t have a written SOP, it is always necessary to carry out a risk assessment and review of critical controls. If this isn’t performed, you are not permitted to carry out the assignment.

Always remember the value of a good risk assessment before work commences.

Stop and correct when conditions change.

References to other documents.

For additional information, please refer to the HSE manual for the procedures on which the checklists are based.



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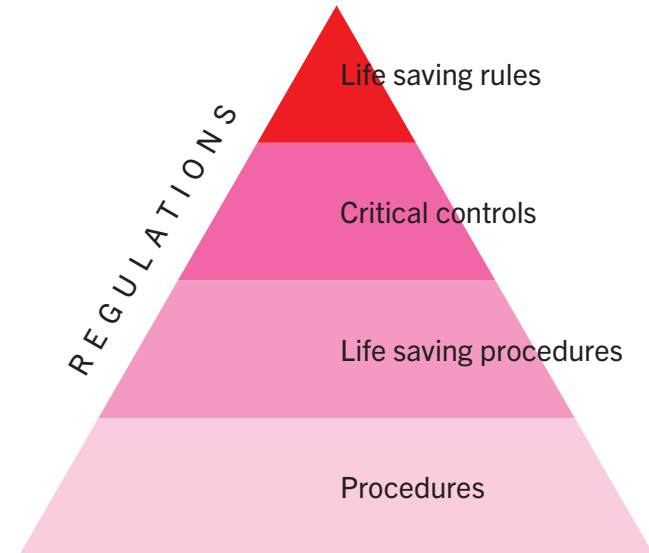
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REGULATIONS

It is our mission to produce nickel, copper and cobalt without harming ourselves. All our regulations and standards are built around this goal.

We have an obligation to comply with the laws, regulations and protocols given by government agencies, owners and other authorities. We ensure compliance through a comprehensive set of procedures.

Our most important lifesaving procedures are found here. They are linked to critical controls that guard against typical failure modes for each hazard area.



LIFTING AND CRANAGE

Life saving rule

Never walk under a suspended load

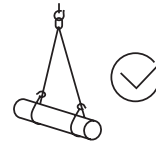


Never walk by a possible violation of a life saving rule without speaking up

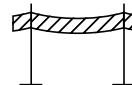
Critical controls



I confirm that the lifting device is suitable for the intended use



I confirm that I use the lifting gear correctly



I barricade and mark the area

Life saving procedures

Lifting operations without a procedure

IMPORTANT: Never walk under a suspended load

Startup

1. Plan your lifting operation
 - a. Document the plan if required
2. Assess the risk
3. Choose the correct lifting device (crane, pulley)
 - a. Check the capacity of the lifting equipment
 - b. Check the weight of the load
 - c. Check / perform a function test of lifting equipment
 - d. Ensure there is a secure attachment point for mobile pulleys
4. Choose the right lifting gear (strap, wire, chain)
 - a. Use a lifting chart if necessary
 - b. Check the condition of the lifting gear
 - c. Check the contact diameter

Lifting

5. Hook on safely
 - a. Secure the load
 - b. Use guide ropes if necessary
6. Barricade the zone as necessary

✓ PROCEDURE COMPLETE

CONFINED SPACES

Life saving rule

Always have the required permit before entering confined spaces



Never walk by a possible violation of a live saving rule without speaking up

Critical controls



I confirm MLP (LOTO) has been performed



I confirm gas measurement has been performed, and that there is always enough oxygen present



I confirm that an entry guard is present, and we have a rescue plan in place



Life saving procedures

Work inside process equipment, tanks and towers

IMPORTANT: Risk of irrespirable atmosphere

NOTE: Requires documented training.
For work in other confined spaces, requirements vary

The procedure is carried out by the person entering

Process equipment, tanks and towers

1. Conduct a risk assessment
2. Confirm MLP (LOTO) has been carried out
 - a. Apply a personal padlock
3. Confirm entry clearance from gas tester
4. Review escape route and rescue plan
5. Complete work permit
6. Station entry guard
 - > See SOP for entry guard
7. Wear a gas detector on outside of clothing
8. Bring a gas mask and flashlight if necessary
9. Use isolation transformer in conductive environments

✓ PROCEDURE COMPLETE

Check list before entry

- | | |
|----------------------------------|------------------|
| 1. MLP (LOTO) – PERSONAL PADLOCK | LOCKED ON |
| 2. GAS TEST CERTIFICATE | ISSUED |
| 3. PERSONAL GAS DETECTOR | CHECKED |
| 4. ENTRY GUARD | STATIONED |
| 5. WORK PERMIT | ISSUED |
| 6. RESCUE PLAN | REVIEWED |

✓ CHECK LIST COMPLETE

WORKING AT HEIGHT

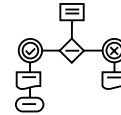
Life saving rule

Always be secured when working at height

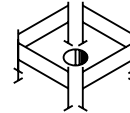


Never walk by a possible violation of a live saving rule without speaking up

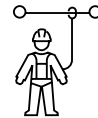
Critical controls



I commit to using the safest method and equipment



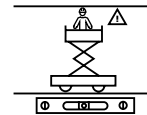
I install a hard barricade before creating any opening that can lead to a fall risk



I always use the correct protective gear and have secure anchor points



I secure loose objects



I consider the risk of crushing and tipping when using personnel lifts



Life saving procedures

Working on scaffolding

IMPORTANT: Changes to the scaffolding can only be performed by a qualified scaffolder

NOTE: Use of scaffolding requires documented training

Preperation and use

1. Bring a full-face respirator into areas where there is a gas hazard
2. Check
 - a. Check the green tag
 - b. If there are defects on the scaffolding, contact the scaffolder
3. Use fall protection if required
4. Secure loose objects
 - a. Keep parts and equipment under control
- b. Cordon off as necessary

✓ PROCEDURE COMPLETE

Check list

- | | |
|--------------------------------|---------|
| 1. GREEN TAG | CHECKED |
| 2. VISUAL CHECK OF SCAFFOLDING | DONE |

✓ CHECK LIST COMPLETE

Life saving procedures

Using personnel lifts (EWP)

IMPORTANT: MLP (LOTO) must be in place for all cranes in the area. Use a standby person if necessary.

Preperation

IMPORTANT: Always assess the risk of crushing and tipping over

1. Conduct a risk assessment
2. Perform daily check of the lift
3. Make yourself familiar with the emergency lowering procedure
4. Check the location where the lift is to be used:
 - a. The ground is safe
 - Consult the lift workshop if in doubt
 - b. Check if there are any high-voltage cables in the area
 - Consult the high voltage department for information and permissions
 - c. Cranes in the area
 - MLP (LOTO) must be in place for cranes in the area
 - d. Other traffic, lifts, vehicles
5. Cordon off the zone or use a guard
6. Bring a full-face respirator into areas where there is a gas hazard



Life saving procedures

Setup/usage

NOTE: Check the capacity of the lift if disassembled equipment is to be brought onto the platform

7. Use preventive fall protection
8. Test the functions on the lift
 - a. Contact the lift owner if you suspect a defect
9. Secure loose objects

Conclusion

10. Clean lift
11. Park in a safe area
 - a. Never park the lift on a steep incline
12. Notify the lift owner that you have finished work

✓ PROCEDURE COMPLETE

Life saving procedures

Check list

- | | |
|---|---------|
| 1. EMERGENCY LOWERING PROCEDURE | CHECKED |
| 2. GROUND CONDITION | CHECKED |
| 3. MLP (LOTO) ON CRANES | DONE |
| 4. CORDONING OFF | DONE |
| 5. FALL PROTECTION | IN USE |
| 6. STANDBY PERSON FAMILIAR WITH
EMERGENCY LOWERING PROCEDURE | CHECKED |

✓ CHECK LIST COMPLETE

Life saving procedures

Use of fall protection equipment

IMPORTANT: Always use a secure anchor point

NOTE: Requires documented training

Approved anchor point:

- Anchor point is certified and marked
- Anchor point for fall arrest must have a capacity of 1500 kg for 1 person and 2100 kg for 2 persons
- Contact the Crane Workshop if you need expert help

Preparation

1. Perform daily equipment check
2. Conduct a risk assessment
 - a. Assess the fall distance and drop surface
 - b. Assess rescue options
 - The rescue plan is documented
3. Choose the correct equipment:
 - Fall restraint
 - Fall arrest
4. Always two persons present

Life saving procedures

Use

IMPORTANT: If the harness has been stressed, it should be checked by the Crane Workshop

IMPORTANT: Be aware of sharp edges

4. Put on a fall arrest harness
 - a. Adjust the shoulder straps, the rear D-ring should sit between the shoulder blades
 - b. Correct the distance between the chin and chest strap
 - c. Attach the thigh strap and tighten it well (max. 2 fingers clearance)
 - d. Perform a buddy check
5. Select an anchor point, minimum shoulder height
6. Make sure you are always securely fastened
 - a. When moving - use 2 hooks

Conclusion

NOTE: Avoid the pendulum effect

7. Remove temporary anchor points
8. Equipment is returned to its place
 - a. Clean equipment if necessary
 - b. Report errors and defects

✓ PROCEDURE COMPLETE



Life saving procedures

Check list

- | | |
|--------------------------------|-------------------|
| 1. CORRECT EQUIPMENT FOR TASK | CHECKED |
| 2. EQUIPMENT WORN CORRECTLY | CHECKED |
| 3. ANCHOR POINT ABOVE SHOULDER | CHECKED |
| 4. SECURE ANCHOR POINT | CHECKED |
| 5. NECESSARY CORDONING OFF | DONE |
| 5. RESCUE PLAN | DOCUMENTED |

✓ CHECK LIST COMPLETE

Life saving procedures

Self-supporting ladder

IMPORTANT: Max fall height 2 meters to the ground

NOTE: Documented training required

Preparation

1. Consider safer alternatives
2. Conduct a risk assessment
3. Check the ladder
4. Control the surface the ladder is placed on
5. Consider cordoning off

Use

6. Keep a firm grip – do not lean out
 - a. Always three contact points, 2+1
 - b. The body can create contact point 3 on a self-supporting ladder

Conclusion

7. Return the ladder to its place
8. Report damage to the ladder

✓ PROCEDURE COMPLETE



Life saving procedures

Check list

- | | |
|--------------------------------|----------------|
| 1. LADDER IS STABLE | CHECKED |
| 2. FALL HEIGHT TO LOWEST LEVEL | CHECKED |

✓ CHECK LIST COMPLETE

Life saving procedures

Leaning ladder

IMPORTANT: Two persons present

NOTE: Documented training required

Preparation

1. Consider safer alternatives
2. Conduct a risk assessment
3. Assess the fall height and drop surface around the ladder
4. Check the ladder
5. Check the surface the ladder is placed on
6. Consider cordoning off

Setup

IMPORTANT: Ladders that are used for repeated acces should always be securely fastened at the top

NOTE: Max length fo leaning ladder is 6 meters

7. Secured against slipping and tipping over
8. Recommended angle is 65–75 degrees
9. The ladder must protrude 1 meter above the roof/ ledge when used for access

Life saving procedures

IMPORTANT: Never lean out

Use

10. Use fall protection equipment when
 - a. Working on an unsafe surface
 - b. Working above 2 meters
11. Make sure you have a secure grip
 - a. Always use three contact points with hands and feet
12. Secure loose objects

Conclusion

14. Return the ladder
15. Report damage to ladder

✓ PROCEDURE COMPLETE

Check list

- | | |
|---------------------|---------|
| 1. LADDER ANGLE | CHECKED |
| 2. LADDER CONDITION | CHECKED |
| 3. LADDER STABLE | CHECKED |
| 4. LADDER SECURED | DONE |
| 5. FALL HEIGHT | CHECKED |

✓ CHECK LIST COMPLETE

Life saving procedures

Platform ladder/Work trestle

IMPORTANT: Fall height around the ladder

NOTE: Exempt from the 3 contact points rule

Preparation

1. Follow height restrictions
 - a. Platform ladders 2 meters
 - b. Work trestle with brace 1,2 meters
 - c. Work trestle without a brace 0,6 meters
2. Conduct a risk assessment
3. Check the ladder/trestle
4. Consider cordoning off

Use

5. Make sure surface is safe
6. Stable placement

Conclusion

7. Return the ladder
8. Report damage to the ladder

✓ PROCEDURE COMPLETE

Life saving procedures

Check list

- | | |
|--------------------------------|----------------|
| 1. LADDER IS STABLE | CHECKED |
| 2. FALL HEIGHT TO LOWEST LEVEL | CHECKED |

✓ CHECK LIST COMPLETE

Life saving procedures

Roof access and work

IMPORTANT: Use fall protection closer than 2 meters from edges and openings

NOTE: Documented training required

Preparation

1. Conduct a risk assessment when working on roofs
2. Establish collective protection, scaffolding, railing when:
 - a. Work duration exceeds 4 hours
 - b. Identified in risk assessment
3. Use fall protection equipment when no collective protection is established and:
 - a. Closer than 2 meters to the edge/opening
 - b. Roof angle exceeds 6 degrees
 - c. Hazards such as wind, slipping, poor lighting conditions etc.
4. Secure loose objects
5. Consider marking 2 meter boundaries to edges/openings

✓ PREOCEDURE COMPLETE



Life saving procedures

Check list

- | | |
|--------------------------|-----------------|
| 1. COLLECTIVE PROTECTION | CHECKED |
| 2. WEATHER CONDITIONS | ASSESSED |
| 3. LOOSE OBJECTS SECURED | DONE |

✓ CHECK LIST COMPLETE

Life saving procedures

Falling objects

IMPORTANT: Falling objects may change direction

Preparation

1. Conduct a risk assessment.
2. Assess the work area
 - a. Persons on a lower level
 - b. Energized equipment
 - c. Machinery and process equipment
3. Cordon off the zone below
4. Reduce the risk of falling objects
 - a. Personal tools and light equipment
 - Can be secured by using suitable equipment
 - b. Heavier equipment
 - Assess the need for straps or equivalent
 - c. If necessary, secure any equipment that falling objects may hit
 - Safety net, safety panels

✓ PROCEDURE COMPLETE

Life saving procedures

Check list

- | | |
|------------------------------|------------------|
| 1. CORDONING OFF | PERFORMED |
| 2. LIGHT EQUIPMENT SECURED | DONE |
| 3. HEAVIER EQUIPMENT SECURED | DONE |

✓ CHECK LIST COMPLETE

WORKING WITH CHEMICALS

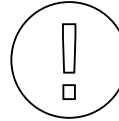
Life saving rule

**Always use required PPE
when handling chemicals**



Never walk by a possible violation of a life saving rule without speaking up

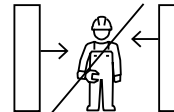
Critical controls



I have knowledge of the
chemicals I handle



I have checked my PPE and I
use it correctly



I position myself away from
the line of fire when working
on equipment



Life saving procedures

Working on open process equipment

IMPORTANT: Always wear full coverage eye protection when working on open process equipment

NOTE: Working on open process equipment includes any task that carries a risk of releasing gas, liquids or solids from the equipment worked on. These tasks require a work permit.

Preparation

1. Check work permit requirements
2. Conduct a risk assessment
3. Locate the nearest emergency shower
4. Drain and flush the equipment
5. Perform necessary MLP (LOTO)

NOTE: Full coverage eye protection is: Safety goggles in addition to full face visor or welding mask.

Life saving procedures

Personal protective equipment

6. Full coverage eye protection and:
 - a. Chemical protection suit when working on sulphuric acid, hydrogen peroxide or lye. This includes unloading operations
 - b. SCBA and 2 persons present when working on open process equipment where H₂S or NaHS may be present
 - c. Respirator in areas with a gas hazard
 - d. Dust mask when working in areas with a particle or dust hazard
7. Perform a buddy check

Performance

8. Check that the equipment is drained and flushed, and that MLP (LOTO) is in place
9. Always open the equipment as if it was pressurized

After work

Sanitize all PPE before taking it off

✓ PROCEDURE COMPLETE

ENERGY ISOLATION

Life saving rule

Release and secure energy when working on equipment

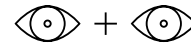


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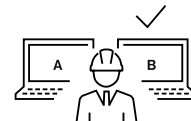
Critical controls



I confirm that all energy sources have been identified, isolated, marked and locked



Isolation has been done by a competent person and has been checked by another competent person



I confirm that I am working on the correct equipment and that I test for dead



Life saving procedures

MLP (Mark - lock - test / LOTO)

NOTE: Use the MLP (LOTO) procedure or MLP declaration for more than one locking point.
Documented training required.

Preparation

1. Lock according to MLP procedure
2. Create an MLP declaration if there is no procedure
 - a. Identify energy sources
 - b. Assess the degree of isolation

Mark and lock

3. Lock and mark according to procedure/statement
4. Place the equipment lock key in the lockbox
5. Secure the lockbox with an operations lock

Test

6. Check that energy sources are secured
 - a. Check isolation
 - b. Perform test for dead

IMPORTANT: Remember to apply your padlock

✓ PROCEDURE COMPLETE

Life saving procedures

Restoration

NOTE: This procedure is performed by the designated person responsible for MLP, when all work teams have removed their personal padlocks

1. If a personal padlock has been left after work is complete > See procedure in the HSEC manual
2. Remove operations lock from the lockbox
3. Remove equipment locks and tags from all lock points
4. Return the MLP equipment
5. Notify that work is complete

✓ PROCEDURE COMPLETE

✓ SIGN DECLARATION

NOTE: Prepare for setup. Covered by specific startup procedures

SAFETY SYSTEMS

Life saving rule

Never disable a safety barrier without approval



Never walk by a possible violation of a life saving rule without speaking up

Critical controls



I perform MOC (Management of Change) before any change to safety systems

MOC = Documented management of change. The potential consequences of the change has been assessed as acceptable by at least two competent persons



I ask for approval:

- Before I change safety equipment
- Before I disengage safety interlocks
- Before I deviate from safety procedures
- When the original plan changes



MOBILE EQUIPMENT

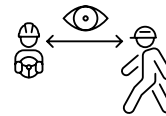
Life saving rule

Do not breach vehicle safety zones without a clear signal



Never walk by a possible violation of a life saving rule without speaking up

Critical controls



Pedestrians and drivers must make eye contact and signal



As a driver, I must:

- Conduct daily vehicle pre-check
- Always wear a seat belt
- Use two barriers when parking



As a pedestrian, I must:

- Not be in the work zone or in the blind zones of a vehicle
- Not cross in front until the vehicle is fully stopped



Life saving procedures

Vehicles

General provisions

1. Check the vehicle before using it
2. Fasten seatbelts
3. Secure any loads/cargo
4. Follow signs and directions
5. Adjust your speed to the conditions
6. Make sure you park safely:
 - a. Always use two barriers. Vehicles exceeding two tons must use wheel chocks.
 - b. In predefined, safe parking areas
 - c. All vehicles must be parked front out
7. Report any vehicle defects or faults

Walking at site

Be observant and alert when walking, and use marked walking lanes

PERSONAL SAFETY

This booklet is based on procedures that are in place at Nikkelverk. It requires that you know relevant procedures and training requirements for the work tasks.

The description of the procedures should always be used for work that fall under the SafeWork requirements. Always remember the value of a good risk assessment before work commences. Stop and correct when conditions change.

September 2024

Emergency number
38 10 13 33

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