

# Glencore Nikkelverk Contractors Handbook

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# NIKKELVERK

## Welcome to Nikkelverk

“Think safety first”. It is three words representing our strategy. Three words representing how we expect our contractors to have a clear risk -based approach when working at Nikkelverk. Three words which clearly states that safety is more important than any production targets. It is not only allowed to stop and think carefully about the dangers that can meet you in the work you are about to perform. We expect you and your team to plan for all work so that it can be performed without any incidents and damages. Zero harm is no vision, that's our goal.

Glencore Nikkelverk is a process industry with several potential high dangers. To manage these, a management system, Nikkelverk Business System (NBS), has been introduced. NBS defines the standard operating procedures and one-point lessons. This management system is a necessity for directing activities to many people who work with complex tasks. This of course also requires that you as a contractor are familiar with the standards and procedures - and that you follow them.

Think Safety First – then You are a professional!

Harald Eik

Director EHS & Quality

## Purpose

This Contractor's Handbook sets the requirements and expectations for the HSE standard to our contractors. The terms of the Handbook applies to contractors as well as to their subcontractors.

## Prequalification

As a contractor at Nikkelverk, we expect you as a company to focus on HSE improvement. A good safety culture is a major criterion when evaluating inquiries. Nikkelverk has a practice in which all contractors have to be pre-qualified and approved for work at the Nikkelverk.

Contractors are responsible for following up their own subcontractors, also called subcontractors (UE). Any use of subcontractors who will work inside the Nikkelverk premises shall also be prequalified and approved by the Nikkelverk.

For prequalification, the purchasing department must be contacted; [innkjop@glencore.no](mailto:innkjop@glencore.no)

## Personal safety course

All contractor employees who are going to carry out work on site needs to have completed a safety course in advance. This is to be taken as online training course. For registration, please contact [reception@glencore.no](mailto:reception@glencore.no).

## Local safety course

In order to perform work in the various departments, further on-site safety training are required. Please contact the responsible contact person for further information on this matter.

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## Life-saving rules

### **Purpose**

The life-saving rules will prevent us from being exposed to situations that have the potential to kill if something goes wrong. The rules will help to make Nikkelverket safer and help us achieve zero injuries. The life-saving rules make up the last barrier to prevent a fatal accident.

The critical controls is the most important actions to perform to avoid accident related to our lifesaving rules.

See below for overview of the lifesaving rules with connected critical controls.

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Danger area	Lifesaving rule	Critical control
SAFE LIFTING OPERATION	 <p>NEVER WALK UNDER A SUSPENDED LOAD</p>	<ul style="list-style-type: none"> <li>• I barricade and mark the area.</li> <li>• I confirm that the equipment is suitable for the intended use</li> <li>• I confirm that I operate the lifting gear correctly</li> </ul>
CONFINED SPACE	 <p>ALWAYS GET REQUIRED APPROVAL BEFORE ENTERING CONFINED SPACES</p>	<ul style="list-style-type: none"> <li>• I confirm that the isolation and test for dead have been performed</li> <li>• I check that gas measurement has been performed and make sure there is enough oxygen all the time</li> <li>• I make sure that the stand-by person is present and that we have a rescue plan</li> </ul>
FALL TO GROUND	 <p>ALWAYS BE SECURED WHEN WORKING AT HEIGHT.</p>	<ul style="list-style-type: none"> <li>• I seek to use the safest method and equipment.</li> <li>• I secure loose objects</li> <li>• I establish a hard barricade before making openings that create a fall risk.</li> <li>• I consider the potential of squeezing and tipping over when using EWP.</li> <li>• I use the required safety equipment and have a secure anchor point</li> </ul>
WORKING WITH CHEMICALS	 <p>ALWAYS USE THE CORRECT PROTECTIVE EQUIPMENT WHEN HANDLING CHEMICALS</p>	<ul style="list-style-type: none"> <li>• I have knowledge about the chemicals I handle.</li> <li>• I have checked my protective equipment and use it correctly</li> <li>• I don't stand in potential "spray zones" when opening equipment containing chemicals</li> </ul>
ISOLATION OF ENERGY	 <p>ALWAYS ISOLATE AND 'TEST FOR DEAD' PRIOR TO WORKING ON ENERGY SOURCES</p>	<ul style="list-style-type: none"> <li>• I confirm that all energy sources are identified, isolated, marked and locked</li> <li>• I check that the isolation has been carried out by a competent person and verified by another competent person</li> <li>• I confirm that I am working on the right equipment and I test that it is energy free).</li> </ul>
SAFETY BARRIERS	 <p>NEVER DISABLE A SAFETY BARRIER WITHOUT APPROVAL</p>	<p>I perform MOC before changing any safety system  MOC = documented change management. The consequence of the change must be considered as acceptable by at least two competent persons</p> <p>I get an approval:</p> <ul style="list-style-type: none"> <li>• Before I make any change on a safety equipment</li> <li>• Before I disconnect a safety interlock</li> <li>• Before I deviate from a safety procedure</li> <li>• When the plan cannot be followed</li> </ul>
TRAFFIC	 <p>DO NOT ENTER THE SAFETY ZONE BETWEEN VEHICLES AND PEDESTRIANS WITHOUT A CLEAR</p>	<p>Pedestrians and drivers are to make eye contact and give signal</p> <p>As a driver I always:</p> <ul style="list-style-type: none"> <li>• Perform a daily pre-check of my vehicle</li> <li>• Wear seat belt</li> <li>• Use two barriers when parking</li> </ul> <p>As a pedestrian I:</p> <ul style="list-style-type: none"> <li>• Stay out the working zone or blind zone of a vehicle</li> <li>• Do not cross a carriageway before the vehicle has come to a complete stop</li> </ul>

**NEVER PASS A POSSIBLE BREACH ON A LIFESAVING RULE WITHOUT INTERVENING**

## Breaches on life-saving rules

Conditions that are considered as violations or possible violations of life-saving rules should be followed up in your own company and line at the factory. Depending on the actions, such violations should as also result in a consultation with Director HSE, in conjunction with the person who has violated the rule and his immediate superior. It is the Nikkelverk contact person who will initiate such a meeting.

## Code of conduct and raising concerns

It is expected that all employees and hired employees, and those who work on behalf of the Nikkelverk, comply with the company's values and code of conduct.

You can find [our code of conduct here](#)

### Raising concerns

The company wants any critical conditions in the business to be brought up for verification and to take the necessary actions

We therefore encourage all employees to notify if they discover such circumstances. To achieve this we want to make sure that employees at all levels can feel safe to notify internally about such conditions without adversely affecting those who are alerting.

Please contact the responsible contact person for further information on this matter.

## Risk-based approach

Prior to a work assignment, a systematic and step-by-step review of all risk factors will be carried out, so that actions can be taken in order to remove or control identified risk factors. This is done either by performing a safe job analysis, SJA, or filling out the TSF form.

Please contact the responsible contact person for further information on this matter.

## Prohibited protective equipment

Required protective equipment for contractors who work at Nikkelverk area are:

- Helmet
- Protective clothing with upper part according to EN 471 / ISO20471 class 2
- Eye protection
- Safety shoes

It is permitted to walk from parking/ rotation gate to wardrobe / office (and reverse) without required protection equipment, but reflective vest should be used.

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## Safety shoes

Contractors can use the type of safety shoes that their own risk assessment shows are satisfactory. Glencore Nikkelverk reserves the right to require other types of safety shoes where selected safety shoes are not considered acceptable.

## Respiratory protection

Emergency mask should be easily accessible to anyone who travels in the production premises and who does not already wear respirators with equivalent protection. **In areas with risk of gas, full facepiece respirators must be brought if escaping might be difficult and may take some time.**

For regulation on mandatory use of masks in the various departments, reference is made to local safety courses.

## Hearing protection

Hearing protection should be used in areas or work operations signposted as a noise zone (where equivalent noise levels exceed 85 dBA). There is a ban on the use of radio / MP3 / e.t.c in hearing protection on the company.

There is a general ban on all use of headphones with music and radio when traveling on the business area. This also applies to and from the wardrobe / office.

## Gloves

It is mandatory to use gloves during production and maintenance work.

This requirement may be waived by:

- Documented SOP / EPL based on a risk assessment
- Documented SJA / TSF

Gloves should provide appropriate protection for the hazards identified. If two or more hazards come into conflict with a suitable protection, one should choose the glove that provides protection against the danger that has the highest consequence, cf. the principles of life-saving rules. You can also combine gloves, such as cut gloves under chemical gloves.

## Eye protection

By eye protection is meant safety glasses, helmet visor, welding masks and full face masks. Private glasses are not considered eye protection.

It is mandatory to use a face shield when grinding and cutting with a grinding wheel. Except for stationary workplaces where the protective device on the grinding machine will provide adequate protection.

Some departments may have stricter requirements for eye protection and information is given in on-site safety courses.

## Work on pipelines that carry the following chemicals:

SO<sub>2</sub>, Cl<sub>2</sub>, H<sub>2</sub>S, O<sub>2</sub>, NaOH, NaHS, KOH, HCl, H<sub>2</sub>SO<sub>4</sub> and H<sub>2</sub>O<sub>2</sub>

Work on equipment that carries hazardous liquids or gases is associated with a risk and requires good precautionary measurements. Life-saving rule number 4 states that one must always use mandatory protective equipment when handling chemicals. This section provides guidelines for this.

Some departments may have more stringent requirements for protective equipment.



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## Requirements for gases:

Before working on pipelines / equipment, this must have been drained and vented beforehand.

NOTE: Remember EX-secure equipment in EX-areas.

Operation: Gas mask must at all times be at hand when operating or working on pipelines / equipment that carry toxic gases such as chlorine (Cl<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) or hydrogen sulphide (H<sub>2</sub>S).

Opening: Gas masks should be used for interventions on pipelines / equipment that carry toxic gases. (Cl<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) or hydrogen sulfide (H<sub>2</sub>S).

## Requirements for hazardous chemicals (liquids)

Before work on pipelines / equipment, this must have been drained and vented beforehand. Where possible, equipment shall be flushed.

## Requirements for eye protection hazardous chemicals

The best protection is provided by using a full face mask or Airstream. When other protective equipment is mentioned, it is as minimum equipment, and can always be replaced with full mask or Airstream.

## Handling:

Face shield and chemical goggles should be used when operating valves and pumps that carry sulfuric acid, lye, hydrochloric acid and hydrogen peroxide.

## Opening:

Face shield and chemical goggles should be used when opening pipelines, valves or pumps for hazardous chemicals in general. This also applies when unloading and loading hydrochloric acid.

In case of intervention on pipelines, valves and pumps that carry sulfuric acid, hydrogen peroxide, or lye, full protection must be used (helmet with visor and chemical goggles (possibly full mask) rainwear / chemical dress, and neck protection, chemical gloves and boots). This also applies to the unloading and loading of sulfuric acid, lye and hydrogen peroxide. It is emphasized that the pants should be on the outside of the boots and that the chemical gloves should be at least 27 cm long.

## Inspection:

Must follow local orders for clothing, unless other risks are known.

## MLP

Life-saving rule No. 5: Release and isolate power sources when working on equipment

The main purpose of the Mark-Lock-Test (MLP) is to ensure that all work on equipment are done in a safe and secure manner, for preventing injury on personnel or equipment destruction. This applies for work under the execution of:

- Maintenance, repair and inspection
- Cleaning
- Modification and project work.

Everyone who is going to work on equipment SHALL lock with their own personal lock, lock bar and label. If more

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than one lock point, there must be an MLP declaration, completed by the MLP responsible in the area. Please contact the responsible contact person for further information on this matter.

## Working at height

Life-saving rule No. 3 Always be secured when working at height.

The purpose of the company's rules for working at height is to ensure that persons can stand safely and secured when carrying out work where there is a danger of falling to underlying levels. We want our employees and contractors to map risks and make an assessment of injury potential in all cases of fall hazard, so that they are able to choose appropriate equipment and use it safely and securely.

Prior to commencement of work, a risk assessment must always be undertaken to identify possible falls and damage potential if falling. It is not only the fall height but also the properties of the foundation that determine the potential of injury.

Special rules at the Nikkelverk:

- Fall-arrest with 2 fall blocks are preferred equipment at the Nikkelverk
- Aluminium ladders are not allowed in production facilities
- There is a requirement for documented training to use scaffolding, ladders, person lifts and walking on roofs.

Please contact the responsible contact person for further information on this matter.

## Confined space

Life-saving rule 2: Always ensure the required permission before entering confined spaces

Working in confined spaces causes increased risk, and therefore requires a risk assessment and possible actions before the work is commenced (white work permit). The most important thing is to ensure safe escape.

In the event that such areas may have a lack of oxygen content in the air, check this, for example, prior to descent in the basement.

There must be an entrance guard at the entrance of tanks, confined spaces and narrow, leading surroundings. Entrance guard must have completed courses in advance.

Please contact the responsible contact person for further information on this matter.

## Traffic

Life-saving rule number 7: Do not breach the safety zone between vehicles and pedestrians unless you have received a go-ahead signal. The safety zone is the distance between vehicle and person, and may vary for different types of vehicles. For the life-saving rule, the safety distance is defined to be 2 meters. This is a minimum requirement, and some vehicles have a greater safety zone than this:

- The safety zone behind wheel loaders is 5 meters

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· For work machines (eg excavator), the safety zone starts where the work area until the machine ends.

The signal must consist of eye contact and a physical signal. For excavators, the physical signal shall consist of reduced speeds or the grab in the ground.

All unnecessary driving in the factory area is prohibited. If there is a need to use vehicles on site, special permission must be obtained.

The speed limit on site is 20 km / h, unless otherwise noted.

Companies that have an assignment on site must park at designated parking spaces. The reception issues such a parking permit. If there is no parking permit in the area to be operated, its allowed to unload tools. Thereafter, vehicles must be parked in the designated parking area.

For all parking of heavier vehicles there should always be two barriers. For example, handbrakes and blocks.

Outerwear (jacket, vest shirt) must have visibility 2, ref. EN 471 / ISO 20471.

Pedestrians shall not use a doorway where it is possible to use a door.

Pedestrians should not use a mobile phone, hearing protection with earphone (music / radio) that prevents caution.

## Electrical safety

Life-saving rule 5: Release and isolate power sources when working on equipment.

For contractors working on electrical equipment, FSE courses are required. This is a requirement in Norwegian regulations. Everyone who is going to work in our electrolysis departments must also complete an internal course "electrical safety in electrolysis departments".

MLP (see above) is also an important part of electrical safety at the company. By following MLP, you ensure that the system is free of energy before work starts.

## Lifting operations

Life-saving rule 1: Never walk under suspended load.

A procedure for lifting operations has been prepared. The purpose of this procedure is to clarify regulatory requirements and the Nikkelverk requirements for the safe use of lifting equipment and the safe planning and execution of lifting operations.

Please contact the responsible contact person for further information on this matter.

## Fire and explosion

There are many reasons that there are few fires and explosions at the Nikkelverk. Good systems for detection and well-developed sprinklers are among these.

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In addition, the company has a good work permit system for hot work. This system sets a number of requirements before starting work that can cause hot surfaces or ignition sparks near flammable substances

Among the requirements are:

- Completed the company's electronic safety course with optional module for hot work
- Approved certificate of hot work
- Required professional qualifications
- Local safety education in the different areas

Before hot work is started, red or yellow work permit must be completed.

Please contact the responsible contact person for further information on this matter.

## Reporting of accidents

Everyone at the Nikkelverk has a duty to notify if they see or perceive that an accident has occurred or is happening.

The emergency number at the Nikkelverk is **(38 10) 13 33**. Contractors are advised to store this number on the mobile phone so that it is easily accessible in an emergency. Notification via this number provides the fastest response, and further notification is in accordance with the Nickel's internal routines.

## Reporting of deviations

If you discover a hazardous condition at Nikkelverk as a contractor, which could cause serious damage, you should try / assess if it is safe to contact the person, stop work and help to reassess the risk. If necessary, report the matter with your local supervisor, who is required to report the observation, or you may address it directly with your company's contact person or local employment management. It is also important that unwanted events are recorded for corrective learning in Synergy. The responsible contact person at the Nikkelverk can order such access to our Synergi app via the HSE department (v / verneleder). Verneleder will create user for the current company as well as provide instruction for installation and training.

## Work Permits

The company has three types of work permits, red, yellow and white.

The red and yellow permit applies to hot work in areas with an explosion / fire hazard and in areas without explosion or special fire hazard.

White work permit is work without fire or explosion hazard and shall be used for the following work:

- Work in thoughts and confined spaces
- Work on pipelines with hazardous chemicals
- Digging in reason; work in hard-to-reach places
- Work in safety zones
- El-room work, near power rails, near high voltage
- Vinyl ester or polyester work

Contact the contact owner / order for additional information about the work permit system

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## Training courses

The following courses are internal courses that apply to the Nikkelverk. These courses are not necessarily valid outside the business area. All courses are not mandatory for different types of work. Please contact the responsible contact person for further information on the different courses.

To many contractors, courses are registered in the competence portal to the Nikkelverk. It is the wish of the Nikkelverk that contactors' courses are recorded in our database. Please contact the responsible contact person for further information on this matter.

If contractors have taken an equivalent course externally, they can be approved at the Nikkelverk, provided that the course content is approximately identical. It is the contractors who must prove the correspondence between the courses.

Type of course	Estimated duration	Validity
Electronic safety course (taken before arrival by the Nikkelverket)	1 hour	2 years
Local safety training in each department at site	20 minutes	2 year
Course for work in the electrolysis department	2 hours	1 years
Angle grinder training	3 hours	5 years
Course in confined spaces and entrance guard	2 hours	5 years
Use of scaffolding*	1 hour	
Use of ladders	30 minutes	5 years
Working on roof	30 minutes	2 years

\* Public course, but rather new, hence on this list.

## Revision history

Revision No.	Date	Chapter	Page(s)	Purpose of change
1	Januar 18	All	All	Major change of previous version 12 of Contractor Handbook. New version 1
2	Juli 2018			Changes in layout. No new information.
3	Mai 2019			New chapter on PPE
4	24.02.2021	Lifesaving rules	5 og 6	Added chapter on critical controls
		Respiratory protection	8	Added demand on full facepiece respirators
		Work on pipelines	8	Added O <sub>2</sub> to the list.