

Site Safety Coordinator
Tanja Lilja

Boliden Harjavalta Oy

SAFETY DOCUMENT ANNUAL SHUTDOWN 2024

Version	Date	Changes from previous year's safety document
1	27 Nov 2023	<p>6.1. Contractors shall submit their safety plans and risk assessments to Boha's contact person in a timely manner before work is begun. The contact person must also pass on any information they receive from the Developer's Safety Coordinator.</p> <p>7.19 To ensure fast access to first aid, the contractor must also have its own first aid equipment (eye washes, first aid kit) available for its employees to use.</p>
2	14 Dec 2023	Update to the annual maintenance organizations

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1 Introduction

This safety document has been prepared for the planning and preparation of construction and installation work and for the implementation of construction and installation work in accordance with Government Decree VNa 205/2009 on the safety of construction and installation work. Work carried out during the annual maintenance shutdown differs significantly from normal construction work. Several projects and maintenance and service tasks are carried out at the site during a short window of time. Coordinating these activities plays a key role in ensuring the safety of the project.

This safety document presents the general risks and hazards of Boliden Harjavalta's (Boha) 2024 annual maintenance shutdown and the measures needed to manage the resulting risks. Contractors must take these risks and hazards into account when planning and carrying out work and take the appropriate precautions by complying with applicable laws, regulations, and official guidelines on occupational safety. Ensuring safety must be taken into account both in the design, contract and implementation phases.

The safety document contains the safety obligations and procedures issued by Boliden Harjavalta, which the contractor and their subcontractor must comply with in all work included in the contract.

The contractor-related content of this safety document also applies to work contracted under other supplier agreements. **A contractor who acts as a client in the subcontracting chain must attach this safety document to each contract they order.**

The starting point is that each party in the construction and installation project knows the requirements of occupational safety legislation and acts in accordance with them. Contractors must be familiar with the general and common hazards in construction and installation work. This safety document is not intended as a generic list of risks and hazards in construction activities.

Each contractor operating on the site must follow the occupational safety instructions given by the client and participate in the orientation and occupational safety training provided by the client at the contractor's own expense.

In all tasks, adequate advance planning, comprehensive risk assessment and, as far as possible, preparations for work are prerequisites for safe work. No risks are allowed when it comes to working.

This safety document supplements the provisions of the other contract documents relating to the performance of the work.

No obligations of contractors are transferred to the client through this document or other documents, and this document does not reduce or eliminate the

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safety measures specified in other documents of the construction and installation project.

In this safety document, the separate work packages included in the contract are referred to as sites.

2 Safety targets and principles

Boha's safety principle is to be a workplace where everyone is able to work in a safe environment and go home at least as healthy as when coming to work.

Our key aim is to achieve the 0 zero harm goal in the broad sense, i.e. also regarding environmental and occupational health issues. According to our thinking, all accidents, environmental damage, and exposures can be prevented. We believe that even one accident is too many.

This requires continuous proactive safety work, compliance with instructions, the use of protective equipment and an adequate risk assessment before starting work. Each staff member is personally responsible for compliance with EHS rules and guidelines, and everyone is also responsible for taking immediate action in the event of a breach of any EHS rule.

The starting point for safety management is that in a construction and installation project, all parties, Boha, designers, contractors and independent workers, must jointly and for their part take responsibility for ensuring that the work does not cause danger or harm to employees or other persons affected by the work.

3 Contact persons

Client, developer and main contractor:

Name: Boliden Harjavalta Oy, this document uses the abbreviation Boha

Address: Teollisuuskatu 1, FI-29200 Harjavalta, Finland

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Safety Manager / Security Coordinator:

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Annual Maintenance Coordinator:
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Security Manager (fire/rescue/guard operations): Janne Vuorela
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Maintenance Manager: Markus Haavisto
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Electrical Maintenance Manager (including Electrical Distribution): Jari Holmberg
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Waste container emptying orders
Juha Kotala (L&T) 050 3856401

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Site Officers:

Concentrate warehouse and unloading station:
Arttu Hakanpää

Copper furnace, gas treatment, dryer:
Jaakko Korpela

Nickel smelter, gas and water treatment, Nickel matte treatment, dryer:
Tommi Veneranta

Anode furnaces, Converting, Foundry and cranes:
Jaakko Korpela

Sulphuric acid plants:
Jukka Tähkä

Slag refinery:
Eemeli Grönmark

4 WORKING AREA AND ITS CONDITIONS

4.1 OVERVIEW

The annual maintenance shutdown, VH2024, is scheduled for the period 13 May 2024 to 30 May 2024. The timetable for the copper smelter is from 13 May 2024 to 27 May 2024 and for the nickel smelter from 20 May 2024 to 30 May 2024.

4.2 Construction and installation site

Annual maintenance work will be carried out in several locations around Harjavalta Suurteollisuuspuisto industrial park, each of which have their special characteristics. The official address of all work sites is Teollisuuskatu 1, 29200 Harjavalta.

4.3 Operations located near the site

There are several operators within the industrial park, and the production facilities of Boha are also located throughout the area of the industrial park. There are several dozen companies operating continuously in the area whose activities must not be disrupted by the annual maintenance work. In addition, residential areas, road traffic, pedestrian and cyclist traffic and other factors in the vicinity of the industrial park not directly related to the annual maintenance work that must be taken into account.

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4.4 Use of the site

Each person working at the site must pay special attention to the temporary traffic arrangements caused by construction/installation work so that normal activities in other buildings of the factory area are not disturbed. Access to the construction site is only allowed along marked routes.

Traffic and access routes, demarcated areas and other information related to site activities during annual maintenance are presented on the annual maintenance website of the Suurteollisuuspuisto Intranet.

Due to limited parking spaces, long-term parking of vehicles should be kept to a minimum.

5 SAFETY TASKS OF DIFFERENT PARTIES

5.1 Boliden Harjavalta's safety obligations as the developer and main contractor

Boha is the main contractor and developer of the VH2024 (Annual maintenance 2024) project. The main contractor is responsible for planning the work during VH2024 to be safe, taking into account the risks, work stages, the timing of the work stages, and occupational safety and health factors of the work environment. The main contractor must take appropriate steps to remove risks and hazards or, if this is not possible, assess their significance for the safety and health of personnel working on the site and others affected by the work.

Boha ensures that the work does not cause danger or harm to site workers, processes, equipment, structures and/or buildings, or outsiders. It is Boha's duty to pass on all the necessary information to those who carry out the work.

The developer (Boha) has prepared a safety document for construction work referred to in section 9 of the Government Decree on the Safety of Construction Work (VNa 205/2009), as well as safety instructions and development plans for the site. In addition, the common safety guidelines of Harjavalta Suurteollisuuspuisto must be followed.

Boha's other safety tasks include:

- Communicating about risks to serve as the basis for safety planning by contractors
- Onboarding of employees
- Filing notifications to the authorities
- Performing site maintenance checks
- Performing required measurements related to work hygiene

Boha is responsible for site safety, traffic and mobility arrangements and other general planning and overall safety and health at the site.

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Boha shall take care of the general management of the construction site necessary for safety and health, the organization of cooperation and information flow between the parties, the coordination of operations, and the general cleanliness and safety of the construction site.

Boha is responsible for coordinating the work and activities of all contractors so that simultaneous work does not cause safety risks to any of them.

Contractors are required to follow Boha's instructions on work arrangements and to participate in Boha's guidance and orientation meetings on site safety instructions. The client has the right to issue more detailed safety regulations and instructions concerning the contract at a later date.

All representatives of the employers of employees working in the area (Boha, contractors, suppliers) must agree among them on the practical implementation of onboarding at the work site. Onboarding must be carried out in a documented manner before starting work. Onboarding must ensure at least the following concerning the work site:

- contact information
- general arrangements
- risks
- protective equipment, prohibited work equipment
- permit and inspection practices
- preparedness for accidents.

5.2 Contractor's safety tasks

Contractors must commit to following Boha's safety requirements. Contractors must participate in safety tours and site meetings, if necessary. Contractors ensure that their employees are adequately trained in the work. All contractors must comply with local regulations, the client's requirements and the provisions of the annual maintenance site safety document.

The contractor-related content of this safety document also applies to work contracted under other supplier agreements. **A contractor who acts as a client in the subcontracting chain must attach this safety document to each contract they order.**

Contractors must designate a safety contact person for the site. The safety contact person is responsible for ensuring that the contractor's employees are appropriately aware of the safety regulations and that compliance with safety regulations is monitored. The contractor's site manager (or equivalent) is responsible for safety in his/her area. The contractor's site manager is responsible for ensuring that subcontracting work is adequately monitored and organized, and for cooperating with Boha's annual maintenance organization.

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Boha requires contractors and their subcontractors to draw up **written plans** for hazardous work and work phases as described in section 9.3 (see Government decree 205/2009). Boha requires contractors, as well as their subcontractors, to prepare risk assessments by work phase for all work to be done. The assessment must cover the entire work cycle, from the preparatory phases to the final cleaning after the work.

Each contractor presents Boha with the **safety plans and risk assessments for their own contract before work is begun. Appropriate safety plans are a requirement for obtaining a work permit.**

When a contractor has foreign employees, the contractor must ensure that at least 1 person/team is present at the site at all times, who can communicate understandably in either Finnish or English. If necessary, the contractor must arrange an interpreter at their expense for the construction site and for orientations. Boha's annual maintenance orientation has been prepared in Finnish and English.

5.3 Safety tasks of designers

In their plans, designers must take into account that all planned construction phases can be carried out safely, and that occupational safety is included in all design stages.

Each designer must take into account the laws and regulations concerning occupational safety in the plans of their own field of design, as well as the regulations set by Government decree 205/2009. The designer must bring up the occupational safety issues they have identified in the design meetings and include the issues required by occupational safety in the design documents.

Designers must provide the construction site with sufficient instructions regarding the severity and temporary support during installation. The designer shall provide sufficient information on the safe lifting and handling of the equipment, equipment parts and components and on the reservations required for the fixing of installation platforms, guardrails or other similar safety devices during work.

If the site prevents the use of existing access routes at its location and therefore causes the need for changes to the emergency plan and escape routes of its location, appropriate access and escape routes shall be planned for the duration of the work / construction. The plans shall also take into account the continuous normal operation of the plant, unless it is completely suspended for the duration of the contract. In connection with the initial meeting, the designer and contractor will specify the planning of the escape routes more in detail. The plans and their updates shall be communicated to the fire fighting and rescue services of Suurteollisuuspuisto.

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5.4 Safety tasks of other parties

A contractor who acts as a client in the subcontracting chain must attach this safety document to each contract they order.

Each contractor and their subcontractors must have a qualified responsible person appointed before starting work. That person shall take care of the safety tasks and working safety for their part.

Each contractor and independent worker must comply with the provisions of the Occupational Safety and Health Act and the regulations issued thereunder, as well as the safety rules and codes of conduct issued by Boha.

6 SAFETY POLICY

6.1 Safety plans and documentation

At the initial meeting of the contract, the information in the safety document and other matters relevant to the safety of the contract are reviewed.

Contractors shall submit their safety plans and risk assessments to Boha's contact person in a timely manner before work is begun. The contact person must also pass on any information they receive from the Developer's Safety Coordinator. Boha has the right to require changes to the content of the plans. The content of the documents shall be reviewed at work site meetings or when the data changes.

The contractor shall maintain safety documents in accordance with all occupational safety regulations concerning the plans, inspections, meetings and onboarding of work classified as hazardous related to the contract.

6.2 Reporting accidents and damage

The contractor must notify and report any industrial accidents, damages to property and the environment, and near misses at the site to the safety coordinator, installation supervisor or occupational safety and health officer. Accidents in the workplace and environmental damage should be reported as soon as possible, at the latest within 12 hours of the incident. An investigation of the accident must be launched without delay. A representative from Boha's annual maintenance organization and the safety coordinator must participate in the investigation of the accident's root cause. An investigation of the root cause should be conducted at least in the following cases.

- fatal accidents
- injuries that result in disability or require medical treatment
- serious situations involving a hazard
- fires
- serious near miss situations

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If necessary, the accident must be reported to the occupational safety authorities and the Finnish Safety and Chemicals Agency (Tukes) in accordance with Boha's policies.
Contractors are required to report serious accidents suffered by their employees to the occupational safety authorities.

6.3 Meeting policies

An initial meeting is held before starting work. During the work and after it, meetings are held according to need. Boha shall invite participants to the initial meeting. The meeting policy and, if necessary, the convener shall be agreed in more detail at the initial meeting. In all meetings, occupational safety is a separate item on the agenda.

6.4 Inspections and safety monitoring of work sites

Boha will conduct safety inspections at work sites using an appropriate inspection method at least once a week. Persons in charge must be appointed for safety deviations, which must be dealt with immediately. The safety level for fall protection is 100%. The monitoring of deviations is included in meeting practices.

The contractor and their subcontractors must ensure continuous safety monitoring and supervision so that, among other things, the safety of working methods and environment, traffic arrangements, machinery and equipment for employees and those affected by the work can be ensured throughout the contract.

Work equipment and machinery, as well as other construction and installation equipment, must be appropriate and meet the requirements set for occupational safety. Contractors must ensure the condition and suitability of the machinery and equipment used at the site for the purposes in question. Every machine and technical equipment entering the site, as well as scaffolding and lifting equipment and lifting accessories, are subjected to a commissioning inspection by the contractor before they are put into use, and the inspection documents must be kept on the site. The condition of machines and technical equipment must be monitored throughout the duration of the work, e.g., by means of regular maintenance inspections, and any deficiencies must be rectified immediately. If immediate repairs are not possible, the machine or technical equipment in question is banned from use or replaced for the duration of the repair.

The scaffolding and the access bridges and protective structures leading to it are subjected to commissioning, acceptance and weekly inspections. More detailed instructions for scaffolding work can be found *in the scaffolding instructions of Suurteollisuuspuisto*.

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6.5 Collaboration

Boha is responsible for coordinating the work and providing information on the project. The site shall take into account industrial activities and related processes, material flows, and the chemicals and gases used in the vicinity of the work site.

6.6 Planning and monitoring of work

Before starting the work packages, Boha shall plan the execution of different tasks and work phases and their timing so that the tasks and work phases can be carried out safely without causing danger to those working on the contract or others affected by the work.

Other parties shall respect the general schedule and working hours. Tasks that are critical to work progress shall be scheduled in such a way that sufficient leeway is left for disturbances caused by changes in work or conditions.

6.7 Access passes and employee list

Section 13(3) of the Government Decree on the safety of construction work requires the main contractor to ensure that it has:
information about the employees and independent workers working on the site. In order for the main contractor to be able to fulfil this obligation, employers must provide the main contractor with the necessary information about their employees and the independent contractors themselves.

An estimate of the number of employees starting work should be provided to Boha as early as possible. At least five working days before the start of a work phase, the contractor must record in the access control system the names, birth dates, tax numbers and other relevant information of their own and their sub-contractors' employees working on the site. When a person has been set up with the correct information in the access control system, the information is also transferred to the training portal, where the general onboarding for annual maintenance is carried out. Information filled in correctly in the access control system, the general orientation for the safety of Suurteollisuuspuisto and the successful completion of the annual maintenance onboarding videos are prerequisites for obtaining an access pass. For more information, see Suurteollisuuspuisto's instructions on *Driving authorizations and access passes*.

Everyone working at the work site must wear their photo ID in a visible place. The ID must indicate whether the worker is an employee or independent contractor. The ID must also show the personal tax number.

The employee's ID must include the name of the employer. However, a person temporarily transporting goods to the construction site does not need to have an ID. The tax number must be entered in the tax number register.

Contractors are responsible for the bookkeeping of their own personnel.

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Contractors must submit accounts in accordance with the Act on the Contractor's Obligations and Liability when Work is Contracted Out (1233/2016) to Boliden Harjavalta's representative in good time and notify the authorities before starting work of sending workers (Act on Posting Workers 447/2016). A copy of this notification must be submitted to Boliden Harjavalta's representative.

The access pass policy must take into account the factory area's own regulations and any existing access restrictions. The policy is agreed at the initial meeting. Boha can give a third party the right to monitor access passes, such as guarding the factory area.

6.8 Information for the tax authorities

Each person arriving at the annual maintenance site must sign in for tax verification purposes with their access tag at the separate access terminal. Boha is responsible for forwarding the information to the tax authorities.

6.9 Work requiring authorization

Contractors must ensure that the persons working on the site have the appropriate qualifications and practical experience for the tasks in question (e.g. electrical, welding, elevator, fire, lifting and blasting work). If necessary, certificates of competence must be presented to the client.

The factory area has a written work permit system in place. All annual maintenance work is planned well in advance of starting it.

6.10 Boha's supervisory rights

Boha's appointed representatives, such as the safety coordinator and the occupational safety representative, have the right, at any time, to perform safety-related inspections and surveys at the work site. If the work is estimated to endanger health, life or the environment, Boha's representatives have the right to suspend work they consider dangerous.

Boha's representatives also have the right to set a deadline for correcting the omission. If the non-compliance is not rectified within the given deadline, Boha can refer the matter to the occupational safety and health authorities.

Deficiencies that endanger occupational safety, as highlighted by the representatives appointed by Boha, must be rectified immediately. This also applies to deficiencies that may cause danger or serious harm to other parties affected by the work site.

6.11 Addressing negligence of occupational safety

In order to ensure the safety of work, every person at the workplace has an obligation to intervene if they notice safety being neglected.

Intervening in cases of negligence, guidelines:

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1. Verbal reminder and serious reprimand, event logged in the work site journal.
2. For the second similar breach, the offender is removed from the work site for the rest of the day, the event is logged in the work site journal and a written complaint to the responsible person is recorded in the contract. The contractor's CEO must provide a written account of corrective action to Boha's contact person.
3. For repeated breaches, the offender is permanently removed from the work site, the event is logged in the work site journal. The ban on working is valid for at least one year.
4. The most serious consequence is the cancellation of the contract and banning the company from working at Boliden Harjavalta's work sites.

In case of serious neglect of safety causing an evident accident risk, such as neglecting to wear personal fall protection equipment or unauthorized movement within a restricted lifting area, a **warning will be issued**. The warning is issued by the person's supervisor or the person in charge of supervising the area. The second violation will result in the person **being immediately banned** from working in the Suurteollisuuspuisto area. The ban on working is valid for at least one year.

If the negligence is related to the use of alcohol or drugs or a violation of traffic rules, Suurteollisuuspuisto has separate guidelines for it.

7 CODE OF GOOD PRACTICE

7.1 Work site tidiness and order

Work sites must be kept organized and tidy. Waste and other unnecessary items accumulated in the work area must be taken immediately to the places designated for them. Each contractor is responsible for taking care of the tidiness and order of their own work site during working hours so that more thorough cleaning of the work site is possible. Each contractor must clean and move construction, installation and packaging waste daily to their designated locations.

Installation supplies and materials shall be stored in the places or indoor locations specified in the work site plan or other work documents and adequately protected to prevent damage.

Contractors must keep workstations and auxiliary facilities and their surroundings in a clean and tidy condition.

Boha is responsible for the proper removal of waste containers from the site in accordance with its guidelines and standards.

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7.2 Access routes and marking the limits of work sites

Each contractor must contribute to the management of stairs, access bridges, corridors and floors in such a way that there is no risk of falling, slipping or tripping. All unnecessary movement on the site should be avoided.

Roads on the site used by excavators, trucks, lifting equipment, etc. shall be kept open (clean). An emergency access road must be arranged in the site area and kept open. The sufficient load-bearing capacity of construction sites must be ensured. Any changes in access routes and their effects on the emergency access roads at the location of the site must be checked, and it must be considered whether fencing, for example, affects driving routes in emergency situations.

Safety enclosures are used to prevent people from accidentally entering hazardous areas, such as the vicinity of unguarded openings or lifting operations. The safety enclosure must be equipped with a sign stating the name, company and telephone number of the person in charge of the marked-off area. The marked-off area must also be supervised. Safety enclosures shall be removed immediately when they are no longer required.

7.3 Electrical safety regulations

All electrical installations must comply with the current electrical safety regulations SFS6002. Equipment or equipment parts which have power switched on shall be marked and fitted with protection against contact. Only tools equipped with a protective isolation transformer may be used in conductive spaces (confined or enclosed spaces).

Work related to electricity supply shall be performed according to Suurteollisuuspuisto's guidelines: *Instructions for work and connections related to electricity supply*.

7.4 Organisation of dangerous work

Boha coordinates the tasks and work phases of its various contractors. The organisation of tasks and the timing of work phases shall take into account the requirements of occupational safety. A separate project planning tool shall be used to plan the work.

If work is not coordinated, there is a risk of disruptions and delays in the work of the main contractor and other contractors.

Before starting work, the contractor and Boha shall agree on the procedures for managing the coordination risks of the contract and other activities on the site. The general guideline for risk management is to ensure a sufficient exchange of information between the contractor and Boha.

7.5 Special working methods

The contractor shall draw up a list of the specific working methods included in the contract, as well as their descriptions. A list of special working methods

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and their descriptions is delivered to the person in charge of the work site or a person authorized by them well in advance of starting work.

7.6 Work equipment

Work equipment, machinery and other construction equipment must be appropriate and meet the requirements set for occupational safety. When necessary, they must be fitted with auxiliary equipment so as not to damage the materials and articles to be handled, building elements or the environment. Angle grinders, for example, should be used with handles intended for them. Working without a handle must be agreed separately with the client and based on a risk assessment. The agreed operating model shall be documented in the risk assessment of the work in question.

In the management of falling objects, proactive measures play a significant role. The material and equipment required for the work must be secured, for example, by tying them so that they do not fall. Where necessary, a safety net, protective roof or other similar safety devices shall be used to prevent objects from falling. Scaffolding platforms should be equipped with a skirting board.

7.7 Scaffolding

The scaffolding shall be ordered from an approved scaffolding supplier. The person ordering the scaffolding shall determine the location, height and other properties of the scaffolding. Scaffolding needs shall be scheduled and identified during the work planning phase and ordered well in advance so that the scaffolding is ready at the site before the actual work begins.

The scaffolding supplier is responsible for ensuring that the scaffolding complies with Suurteollisuuspuisto's guidelines. Work and protective equipment are implemented at the work site in compliance with the safety regulations for construction and installation work.

A scaffolding may not be taken into use if it doesn't have a scaffolding card indicating the acceptance and commissioning inspection. The scaffolding supplier is responsible for the weekly inspections of the scaffolding, and the client is responsible for the acceptance inspection. The representative of the client ordering the scaffolding shall check that the scaffolding has been made safe for both the site and the work to be done.

If the scaffolding does not have a scaffolding card or the necessary inspections have not been carried out, the scaffolding shall be banned from use. The user of the scaffolding is responsible for its cleanliness. The scaffolding must be dismantled immediately after completion of the work, preferably without interruption. Further instructions can be found in Suurteollisuuspuisto's Scaffolding Safety instructions.

7.8 Working in an enclosed/confined space

Work carried out in an enclosed/confined space must be subject to a separate risk assessment and a work permit covering tanks before starting work. Work

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permits are used to ensure that the enclosed/confined space is isolated from the process and safe for work. The permit policy ensures that the work is planned in advance, in which the identification and management of hazards play an important role.

The sufficiency of breathable air must be ensured by measuring. A security guard must be posted to supervise those working in the confined space. The security guard must stay in constant contact with the person working in the enclosed space, and the security guard will raise an alarm and help if something happens. Rescue from the confined space must be planned so that it does not put the rescuers themselves into danger. When leaving the tank to take a break, for example, the security guard is responsible for ensuring that the necessary gas measurements are renewed when work is resumed in the tank.

7.9 Excavation and blasting of land

Mining and blasting work are carried out in accordance with the applicable rules and regulations, and separate plans are drawn up for it.

In excavation, special attention should be paid to preventing the ejection of stones and eliminating the risk of falling. Cable maps shall be made available to all contractors. Each contractor must comply with the *Excavation work instructions* of the Suurteollisuuspuisto industrial park.

In connection with excavation work, the potential contamination of the soil shall be investigated, which always includes the concentration of harmful substances and, if necessary, the suitability for landfilling. The quality of the soil shall also determine under permanent structures to be built, such as soles and pipelines. The investigation of contamination is primarily the responsibility of the person ordering the excavation work. As a rule, the investigation is carried out before starting excavation work.

An environmental impact assessment must be carried out if perched water is pumped to the water utility during excavation work. If, during construction work, organic pollutants (e.g. oil) are detected in the soil over a large area, or excavation work is carried out below the surface of upper ground water, the supervisory authority must be notified. The notification is handled by Boliden Harjavalta's environmental department.

7.10 Personal protective clothing and equipment

Contractors must organize the work in such a way that it does not pose a danger to those working at the sites. Contractors shall provide their staff with sufficient and appropriate personal protective equipment at work sites and ensure that the required protective equipment is actually used. When instructing personnel, it should be taken into account that the correct use, maintenance and storage of a protective device increase its service life.

Employees must wear personal protection for the eyes, breathing and hearing, safety helmets and safety shoes required by the work and working conditions. In welding work, the mandatory use of a safety helmet is assessed on a case-

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by-case basis, and it must be based on a risk assessment of the work. The agreed operating model shall be documented in the risk assessment of the work in question.

Suppliers shall note that filtering protectors that are not equipped with fans should not be chosen for physically strenuous, hot- or time-consuming work. The protection class of respirators used in annual maintenance is ABEK P3. Employees must wear visible, reflective high-visibility clothing certified according to standard EN471, or protective clothing required for the specific task at the construction site. The general requirements for protective clothing are spelled out in standard ISO 13688.

If there is a risk of chemical spills associated with the work, appropriate chemical protective clothing should be worn. At sites where there is a risk of clothing coming into contact with heat or fire, protective clothing must meet the requirements of standard EN ISO 11612. If necessary, the standards for welding workwear and clothing that protects from electric arcs or cuts should also be taken into account.

Due to the gas hazard, when moving around the factory area, it's necessary to carry a respirator with a combination filter (protection class ABEK P3). **You should be able to take the respirator into use quickly.**

In the case of work where there is a risk of falling, protective equipment suitable for such work must be worn.

Additional instructions on the basic protective equipment of work sites can be found on Suurteollisuuspuisto's website: *Boliden Harjavalta's basic protective equipment and hazard signs*.

7.11 Chemicals to be used

All contractors must submit safety data sheets for substances to be used on the site that are hazardous to health. If a chemical brought into the area poses a danger to other workers in the area, the client must be notified.

Boha maintains an electronic format list of other chemicals used in the area. It is possible to print out safety data sheets from the list of chemicals upon request.

7.12 Preventing the spread of dust

Contractors must handle dusty work phases using compartmentation and local extraction according to need. The passage of dust outside the working areas must be effectively prevented. All open ends of air ducts must be protected from construction site dust. Dust-generating or heavily dusty work phases include breaking and drilling, as well as sanding and cleaning of concrete and screed surfaces, in which equipment with local extraction must be used during the work phases.

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If the dust generated during the construction/installation phase is estimated to include quartz-containing dust, the contractor must draw up a separate dust control plan.

The processing and cleaning of construction waste is carried out causing as little dust as possible.

Contractors must ensure adequate daily cleaning with appropriate equipment, protectors and methods.

7.13 Fire safety and hot work

Each contractor must pay special attention to fire safety and act, in their area of responsibility, in such a way that there is no risk of fire. A contractor performing work that poses a fire hazard is liable for any damage caused to the client, the developer and third parties. Persons performing hot work must have hot work training, a valid hot work card and a hot work permit.

Storing gas cylinders and LPG cylinders indoors is prohibited, and their storage, as well as the storage of flammable liquids, must be agreed in advance with the installation supervisor and the representative of users.

Hot work is prohibited unless it is strictly required for the performance of the work. The measure and the necessary precautions will be agreed separately with the issuer of the hot work permit before the work phase in question. Hot work carried out in a temporary location in the Suurteollisuuspuisto area at Harjavalta always requires a written hot work permit. The hot work permit shall primarily be issued by the person responsible for the work area or task. In the absence of the person in charge, the permit shall be issued by another person present and authorized to issue a hot work permit. Before issuing a hot work permit, a written hazard survey and risk assessment must be carried out at the hot work site. It's possible to record the risk assessment in a work permit in accordance with the work permit system.

The safety of the work site is the responsibility of the worker performing hot work. The issuer of the permit is responsible for providing the correct protection instructions to avoid damage. A separate fire watch must be arranged in good time. Hot work must not be started until a fire watchman has arrived at the site.

The annual maintenance construction site observes Suurteollisuuspuisto's *Hot work instructions*. The main contractor may set tighter requirements at the construction site than those specified in the hot work plan.

7.14 Lifting

For routine and repeated lifting work, the plan shall be laid out before the first lifting operation. Lifting equipment shall be subjected to a commissioning inspection before lifting, after installation. In addition, statutory inspections must be taken into account.

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Lifting must be carefully planned so that it can be performed without putting the safety of the worker at risk. In particular, people must be prevented from passing under the load or moving in the danger zone during the lifting operation. The lifting area must always be marked as appropriate. The person securing the load must have the required abilities and skills for securing the load.

A risk assessment shall be prepared for demanding lifting work that poses a significant danger, and a written lifting work plan shall be drawn up. Demanding lifting includes, for example, lifting exceptionally large or heavy parts, lifting objects with difficult shapes, lifting in difficult conditions, lifting with two or more cranes or lifting that is otherwise uncommon and exceptional. A separate lifting work plan must be drawn up for lifting elements.

The lifting plan is written by the crane operator. For demanding lifts, the contractor draws up a lifting work plan, which defines the progress of the lifting work, the job descriptions related to lifting and the auxiliary equipment to be used. You can ask the client for plan templates or use the company's own form.

If lifting work is carried out in street areas, a separate plan must always be drawn up to safeguard the environment. Before lifting, the maximum permissible load on lifting equipment and auxiliary equipment must be confirmed. The uneven distribution of the load and the lifting method used must be taken into account when lifting.

The contractor shall present their plan to the person in charge of the work site or a person authorized by them well in advance of the planned lifting work.

7.15 Lifting platforms and personnel lifting

The driver of a lifting platform must have written permission from the employer for its use. In order for a contractor to authorise an employee to use a lifting platform, they must ensure either themselves or with the help of a person specially knowledgeable in the safe operation of lifting platforms that the worker has been trained in matters related to lifting platforms.

When working on lifting platforms, a safety harness must be worn.

To lift persons, lifting equipment manufactured for this purpose must be used. In special situations, certain lifting devices designed and manufactured for lifting goods may be used if the use of a lifting platform or another working method is not appropriate or safe. In this case, the conditions required by the construction site and the work are taken into account when using the lifting platform. The selection of the lifting platform takes into account, among other things, the working height and reach, the body load and the need to move the platform on site. Similarly, the load-bearing capacity and evenness of the ground or other base are taken into account.

Before starting lifting work, a plan is drawn up for person lifting, taking into account the risks and general conditions of lifting work. The plan is reviewed with those involved in the lifting work.

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7.16 Fall protection

Openings (30x30cm or larger) that pose a risk of falling must be covered at all times.

The open area protection can be done with plywood, sheet metal or similar material that, without damage, can withstand at least 2 times the weight of the equipment, persons or material on it. The movement of protective covers from their place must be prevented by core panels or fastening. The protective cover should be distinctive (for example, marked with a red cross) and not slippery. If the smaller side or diameter of the opening is larger than 1 m, opening protection is carried out with a guardrail and skirting board.

A fall protection plan must be drawn up for work that involve a falling hazard. When a person falls more than 0,5 meters, it's counted as a fall. When planning the work, fall protection and guardrail solutions must be provided when the work involves a risk of falling. If necessary, the solutions for fixing the fall protection shall be approved by the designer. In addition, provisions must be made to rescue a person who may have fallen on a fall guard.

The contractor must inform the element designer in good time of the reservations and fastening parts required by safety devices that will be installed on the elements.

The contractor is responsible for ensuring that the hazard caused by building elements and auxiliary devices that may fall during the installation of the elements is eliminated by structural measures with protective roofs and appropriate skirting boards. If necessary, the hazard area shall be marked with protective rope or a similar obstacle. If necessary, safety harnesses shall be used when removing guardrails in accordance with regulations.

The installation contractor is responsible for arranging fall protection during the installation of the elements. During the installation of the elements, a safety harness must be used if the guardrails have not been installed or they have been removed.

7.17 Element work

A contractor whose contract includes the installation of elements shall ensure that an installation plan is drawn up for element installation work in accordance with Annex 3 to Vna205/2009. If necessary, the manufacturers and designers of the elements shall be contacted. The structural designer, the supervisor in charge and the person responsible for the installation shall each approve the final installation plan. Before starting installation work, it's necessary to make sure that those who carry out the installation work are familiar with the installation plan and have sufficient professional skills to perform the work safely.

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If necessary, the elements must be supported in the ground from concrete installation support bases. Special care must be taken when installing and supporting elements.

7.18 Work hygiene

The concentrates and dust treated in Boliden Harjavalta's process contain harmful and carcinogenic substances such as arsenic and nickel. The dust levels of the work areas increase during annual maintenance. The surfaces and structures of the structures of the work site contain chemicals classified as hazardous, which can be carcinogenic or corrosive. In areas with high dust concentrations, it is recommended to wear a full mask.

Contractors should note that respirators without fans should not be chosen for physically strenuous, hot- or time-consuming work. The protection class of respirators used in annual maintenance is ABEK P3.

There is also a risk of exposure to sulfur compounds in the area of the sulphury acid plant or when the smelter is running. Sulphury compounds can cause coughing, shortness of breath and watering of the eyes.

Protracted physical stress can also result in dermal symptoms. The reaction of sweat with sulphury and acidic gas can cause minor "burns" on the skin.

Exposure to harmful substances shall be avoided by wearing the required protective equipment, washing hands and, if necessary, the face when leaving production facilities, changing dirty workwear often enough and ensuring adequate washing before leaving for home. Keep your work clothes and civilian clothes separate. It's important not to take work clothes home for washing so that dirt containing harmful substances is not taken outside the factory area.

Hazardous substances in the production premises might end up in your body via your respiratory tract or from your hands when you eat or smoke. Eating and drinking is only allowed in the designated eating areas. Eating in the production facilities is not allowed. To reduce your exposure to hazardous substances, always wash your hands and, if necessary, also your face before you eat. Leave your dirty clothes outside the eating areas and wear shoe covers. Personal work clothes and protective equipment must be cleaned before entering the staff quarters and, for this purpose, Boha will arrange a cleaning place for staff use.

Smoking is only allowed in official smoking areas.

During annual maintenance, Boha performs occupational hygiene measurements and biomonitoring of employees.

7.18.1 Hot work and hydration

At certain workstations, working conditions expose workers to heat exhaustion. Heat exhaustion occurs due to the combined effect of physical strain, heat and inadequate hydration.

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Hygiene instructions do not allow eating or drinking in production facilities. The work permit must specify any risks of heat exhaustion. If the risk of heat exhaustion is considered high and the person is unable to leave their work-station, hydration at the department can be arranged with the department's safety and health officer. The permission for hydration and practical implementation in the department are recorded in the work permit.

7.19 How to act in case of an accident

General instructions in the event of an accident are given in the safety orientation of Suurteollisuuspuisto. This orientation shall be reviewed annually. A valid orientation is a prerequisite for obtaining an access pass. Safety instructions can also be found in *Suurteollisuuspuisto's safety notice and Suurteollisuuspuisto's internal emergency plan*.

In the event of an environmental accident, take immediate action to prevent and limit the introduction of harmful substances into the environment. Any damage to the environment (e.g., oil) is removed and cleaned. General instructions can be found in *Suurteollisuuspuisto's Internal emergency plan*.

To ensure fast access to first aid, the contractor must also have its own first aid equipment (eye washes, first aid kit) available for its employees to use. If the contractor has its own site office, it must also have an appropriate first aid kit stored in the office and personnel trained in first aid present on the site.

Important emergency phone numbers:

- 112 GENERAL EMERGENCY NUMBER

- (02) 535 8112 Emergency number for the main gate of Suurteollisuuspuisto industrial park

The caller must give their name and describe the nature and location of the emergency in as much detail as possible. The main gate of Suurteollisuuspuisto industrial park must always be notified immediately in the event of an emergency call to the general emergency number.

8 DETAILED SAFETY INFORMATION

8.1 Hazards caused by the nature of the site

The hazards identified at the work site, how to prepare for them and the magnitude of the risk are described in the work site plans. Contractors shall take these hazards into account in all their design work and operations. Suurteollisuuspuisto's instruction bank contains department-specific signs that show the general hazards of the department/area, *Boliden Harjavalta's basic protective equipment and hazard signs*.

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The contractor, in cooperation with Boha, must find out the structures, pipelines and networks (process, chemical, water, sewerage, electricity, etc.) to be kept and dismantled at the work site before starting work.

The site complies with the current regulations and rules on the protection of workers. Regarding the substances and materials used in work, environmental protection must also be taken into account. Substances and materials that may pose a danger to people, animals or structures affected by the area must not be used in work.

As a rule, work carried out in production facilities is classified as work that poses a particular risk of illness. Due to nickel exposure, a person allergic to nickel cannot work in the area. Due to exposure to arsenic and nickel, it's forbidden to work on the task during pregnancy.

Common hazards related to process and annual maintenance activities that should be taken into account in risk assessments:

- Machinery, factory area traffic
- Demolition work
- Hazardous materials in structures and piping to be dismantled and the dust from them (e.g. acids, hot steam, asbestos, PAHs, moisture damage/mold, other harmful substances in structures)
- Dismantling load-bearing structures
- Lifting
- Falling, tipping and collapsing structures
- Risk of falling
- Hot work
- Blasting work (explosives, blasting)
- Old (before 1980) building materials, for example, seam materials, may contain PCB.

Mechanical hazards

- Risk of accidental start-up of remotely operated devices →
- Other mechanical safety of equipment in the area (angular and sharp parts) → Risk of injury
- High-altitude work sites, working on scaffolding, roof → risk of falling
- Sites in enclosed or confined spaces → risk of injury
- Working on several floors → falling objects
- Slippery or uneven surfaces → risk of slipping and tripping

Physical hazards

- Hot steam, surfaces and materials, molten metal → burn injury
- General noise → risk of hearing impairment
- Bad lighting → accident risk
- Ionizing radiation sources → radiation exposure

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- Electromagnetic hazards in the electric oven area: when working in the electric oven area, workers must not have medical devices sensitive to electromagnetic fields (e.g. pacemaker, insulin pump).

Chemical hazards

- Gases → lack of oxygen, burns, respiratory symptoms
- Cables, sewers and pipelines; on pipe bridges and underground
- Exposing, carcinogenic or corrosive chemicals

Fire risks

The sites may contain materials that cause fire loads: dry concentrate, wooden sticks; oxygen, oil and propane passing through the pipelines in the area.

9 SAFETY PLANS

9.1 Work site plan by Boha

The work site plan shall present:

- The most significant tasks in the area that may have an impact on other work phases in the area
- Process risks at the site
- Protective equipment requirements/tools that deviate from the general safety instructions

9.2 Suurteollisuuspuisto's intranet

The annual maintenance website of the Suurteollisuuspuisto intranet contains general instructions related to work site plans:

- Timetables
- Capital goods interruptions
- Annual maintenance notices
- Safety instructions for lifting work
- Area boundaries and access/driving routes during annual maintenance
- Lifting area map
- What to do in the event of an oil spill
- What to do in case of an accident
- Annual maintenance organization
- Warehouse opening hours and contact persons

9.3 Safety plans of contractors and subcontractors

Each contractor presents Boha with safety plans and risk assessments for their own contract. All safety plans are drawn up through hazard identification and risk assessment of the site. The implementer of the work draws up detailed safety plans related to the chosen working method, following which the risks of the work can be eliminated / minimized.

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The safety plan and risk assessment, shall cover work involving special hazards to the safety or health of workers, including:

1. Work in which workers are exposed to a risk of being buried under a landslide, of sinking into the ground or falling from a height, which is particularly high because of the nature of the work or the working methods used or because of the conditions at the working place or the construction site.
2. Work involving the exposure of workers to chemical or biological substances that present a particular risk to the safety and health of workers or that involves periodic health monitoring (such as asbestos work)
3. Work involving the use of ionizing radiation requiring the marking of specified or monitored areas in a specified manner.
4. Work in the vicinity of high-voltage power lines.
5. Work carried out in confined, enclosed or conducting spaces.
6. Work under the Pressure Equipment Directive
7. Work involving the use of explosives.
8. Work involving the assembly or disassembly of heavy prefabricated parts.
9. Demolition of structures, structural elements or materials.
10. Work in railway areas. *For more information, see Suurteollisuuspuisto's instructions: Railway work instructions.*
11. If the dust generated during the construction/installation phase is estimated to include quartz-containing dust, the contractor must draw up a separate dust control plan.
12. Tasks that involve demanding lifting or hauling

The matters of the contract-specific safety plan can be presented, for example, in the project plan, which must cover at least the following work phases:

- Work methods
- Arrangements of the contract site (unless discussed elsewhere, e.g. in the main contractor's site plan)
- Taking into account and, if necessary, coordinating construction/installation work and other processes in the factory area, as well as the activities of third parties
- Operation of machinery and equipment

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10 The appendices to the safety document can be found on Suurteollisuuspuisto's website

[Appendix 1 Alcohol testing in Suurteollisuuspuisto](#)

[Appendix 2 Penalties for traffic offences in Suurteollisuuspuisto](#)

[Appendix 3 Penalty instructions for non-compliance with fall protection](#)

[Appendix 4 Instructions for work and connections related to electricity supply](#)

[Appendix 5 Excavation work instructions](#)

[Appendix 6 Boliden Harjavalta's basic protective equipment and hazard signs](#)

[Appendix 7 Hot work plan](#)

[Appendix 8 Suurteollisuuspuisto's Scaffolding Safety instructions](#)

[Appendix 9 Suurteollisuuspuisto's safety notice](#)

[Appendix 10 Railway work instructions](#)

[Appendix 11 Suurteollisuuspuisto's internal emergency plan](#)

[Appendix 12 Driving and access passes](#)

[Appendix 13 Instructions for oil spills](#)