Rethink safety

Guide on safe working at Stora Enso mills

8.8.2012

Welcome to work at Stora Enso mills!

This guide includes general safety instructions that ensure safe and disturbance-free working at Stora Enso mills. All employees must carefully study this guide and follow the instructions and regulations.

Stora Enso's safety goal is zero accidents. We require from our co-operation partners compliance with the occupational safety principles we follow, and we also monitor compliance with the principles.

There are also specific company-, mill and department-specific instructions and work permit practices for which you will receive instructions when necessary.

Stora Enso

Stora Enso is a global pioneer in the paper, biomaterial, wood product and packaging industry – a rethinker. We question what we do and the way we think to continuously find new innovative solutions based on renewable materials that we can offer to our customers.

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1. General disciplinary regulations

1.1 Shared workplace

The party exercising the main authority in a shared workplace is Stora Enso. There is a single employer managing the whole (i.e. the party exercising the main authority) in a shared workplace. The term ”shared workplace” refers to a site where tasks occur simultaneously or consecutively and the work performed by one party may influence the safety or health of others.

Working in an area that is currently in operation.
If installation, dismantling, repairs, maintenance or any other work must be performed in a production unit that is currently in operation, special care must be taken to ensure that the work will not disrupt production and that the production activities or any malfunctions therein will not pose any risks to the people performing the work.

Working during a shutdown.
The work done during a shutdown usually has a very tight schedule. Furthermore, several tasks are often simultaneously performed. The safety of all people working nearby must be ensured at all times.

Working in an improvement project.
The schedule in improvement projects is also often tight and several jobs of different types are being performed simultaneously by several companies. Focusing on cooperation in the scheduling of jobs, both in terms of time and place, and the reconciliation of jobs are needed to ensure safe working conditions for everyone. Cooperation in occupational safety and supervision of safety are arranged on a case-by-case basis for such sites.

1.2 Attendance

Each employee must be at his or her own workspace during working hours. Unauthorised loitering in other parts of the mill area is not allowed.

1.3 Visits

Visits to the mill area are only allowed based on a permit given by a representative of Stora Enso.

Photography in the mill area is not allowed, except with a special permit from Stora Enso. This absolute prohibition also applies to taking photos with a mobile phone.

Connecting computers into the Stora Enso IT network is only allowed based on a permit of Stora Enso.

1.4 Storing personal effects

Always store your personal effects in the designated places. Stora Enso cannot be held liable for any missing items.

1.5 Local security or monitoring safety

The industrial area comprising of the Stora Enso mill area is a fenced-in area. People and vehicles may only enter the area with a permit. Access to the mill area is through either a vehicle gate or a pedestrian/bicycle gate. All the gates are included in the scope of the access control system.

The local security unit uses the gate security system and vehicle patrols to monitor people and vehicles moving in the mill area. The security unit performs traffic control, maintenance of general order, security and fire safety in the industrial area, protects company property and monitores parking areas outside the fenced-in area.

There is a comprehensive CCTV system in the mill area and the port. There are both recording and non-recording closed-circuit cameras in the production facilities.

1.6 Moving onsite

Traffic regulations and instructions given by the local security personnel must be followed when

The speed limit in the mill area is 40 km/h or lower.

moving in the mill area. Furthermore, special care must be taken. The speed limit in the mill area is 40 km/h or any lower speed indicated by traffic signs. Seatbelts must be used in the mill area if the vehicle is fitted with seatbelts.

The bicycle and pedestrian routes are meant for cyclists and pedestrians only. Routes indicated for passenger traffic must be used in the mill area.

Using the mill area or the parking areas for residential purposes is not allowed.

Transporting people with working machines or pickups is not allowed. The local security personnel or employees of the security company have the right to inspect any vehicle within the mill area. If you notice an unauthorised person in the mill area or inside the production facilities, immediately notify the local security unit or a representative of Stora Enso.

1.7 Substance abuse

Bringing alcoholic beverages or any other intoxicants to work, using them or being under the influence of them at work is not allowed. Anybody violating this prohibition will be removed from the mill area. If the decision is disputed, representatives of Stora Enso have the right to have the case studied by means of testing the person in question with a breathalyser.

1.8 Smoking

Smoking in the mill area is only allowed at the indicated sites.

1.9 Staff rooms and offices

Each employee will be shown the facilities to be used when they enter the mill area.

1.10 Disturbing behaviour

Stora Enso reserves the right to, at its own discretion, deny access to the site to any person who has been dishonest or otherwise acted improperly or indecently, or breached the occupational safety regulations. A representative of Stora Enso must be immediately notified of any disturbances requiring the involvement of the police.

1.11 Transport permit

A written transport permit is required to remove any property of Stora Enso from the mill area.

1.12 Finalising work

When the job at hand is completed, the subcontractor must immediately remove all of its tools, supplies, temporary structures and scaffolding from the mill area.

1.13 Worksite order and cleanliness

Good order is a key issue in safety. It is the duty of every employee to maintain strict order and cleanliness, both at the worksite and in staff facilities. Order and cleanliness is supervised by the site supervisors. The following issues are especially important when maintaining good order:

Make sure that all passages are clear.

Do not leave any items in passages or corridors, or on scaffolding; make sure that all of these areas are unobstructed.

Do not store any goods in front of electrical control centres, fire extinguishers, exits, lifting holes or exit routes.

Never remove any safety equipment without the approval of the supervisor with the responsibility for the job in question.

Always store tools and supplies in the designated places.

Place timber, steel, pipes, etc. in solid piles and support them if necessary. Always keep nails and other dangerous objects out of access routes.

Make sure that the covers and grates over openings are securely fixed and, if a cover must be temporarily removed, place a fence around the hole and clearly mark the area.

Install wiring and electrical equipment such as cables, distribution boards and light fixtures – particularly in stairways and along other access routes – in such a manner that they will not easily break and cause the danger of an electric shock.

Sort waste and place waste fractions in the reserved recycling containers.

Notify your supervisor of any faults and defects you observe.

1.14 Plastic waste

Plastic can be very harmful in the pulp and paper industry: even a very small quantity of plastic in the pulp process can destroy a large batch of paper.

In the process, plastic will deteriorate into minuscule particles that cannot be separated from the pulp because the specific weight of plastic is almost the same as fibres. These particles will cause holes and streaks in the paper manufactured from the affected pulp.

Plastic waste must always be immediately placed in a waste container equipped with a lid.

1.15 Product safety

Product safety requirements affect mills that manufacture different types of food service boards and papers, i.e. board and papers used when manufacturing milk or juice cartons, disposable dishes and sweets packages.

The entire mill organisation is committed to working in a responsible manner to ensure the manufacture of safe products of high quality.

Most of the requirements and expectations pertaining to compliance of products with regulations come from the customers or the applied legislation. The legislation states that packaging materials may not influence the product in any way or pose any harm to the users.

In our business, we stress the importance of hygienic production facilities, safety and order.

The term ”production facility” refers to any area that is connected to the manufacture of a product.

All employees must use working methods that ensure the manufacture of clean and safe products.

The requirements for the manufacture of clean and safe products include:

- Ensuring good order and cleanliness.
- Smoking is only allowed at separately indicated sites, and the doors of smoking rooms must always be kept shut.
- Bringing glass bottles or any other objects manufactured from glass into the production facilities is not allowed.
- Eating is only allowed in designated areas. Waste must be sorted in compliance with the instructions.
- Employees must ensure proper hand hygiene.
- All doors and windows must be kept shut to prevent birds and other animals from entering the production facilities.
- Access to the production facilities is only allowed when wearing the required protective clothing and using the marked routes, unless the work tasks require moving in other areas. Furthermore, a protective hat or a protective hood under a hard hat must be used in the further processing unit.

2. Occupational safety

2.1 General

All employees of supplier companies working at a Stora Enso mill must have a valid occupational safety card, proof that they have studied the safety guide within the past two years and an ID card with a photo.

The supplier must always obtain permission to start the work from a representative of Stora Enso. The Stora Enso representative will issue a work permit when the site has been made safe from the process viewpoint and all the employees to work onsite have been informed of all known safety issues pertaining to the site. The responsibility for safe working and compliance with statutory regulations within the organisation is divided in the manner laid down by the company's organisational structure. All employees working onsite are obligated to ensure that the accidental start-up prevention methods and work permits indicated in the instructions are used. Hot work instructions and instructions on working in confined spaces must always be followed.

No hoisting devices, retractors, falling guards, scaffolding or installation platforms may be mounted onto any existing pipelines, pipe supports or cable racks. Walking on top of insulated pipelines, channels or cable racks is not allowed.

Opening/closing existing valves or detaching plugs is not allowed without the permission of a Stora Enso representative.

Using portable ladders leaning on a wall as a work platform is not allowed.

2.2 Responsibilities and liability of supervisors

Each supplier must name a person who will act as the employer's representative onsite, monitor compliance with legislation and instructions given, supervise occupational safety and carry the responsibility for these issues.

The representative must pay special attention in the following:

- Employees assigned for each task are qualified for the task and have received the necessary training.
- The employees are aware of areas where danger may occur, such as (please note indentation and alignment)
  - hot and/or pressurised pipelines and tanks,
  - live electrical equipment and cables,
  - remote operation and rotating or moving parts, and
  - pipelines, tanks and equipment containing flammable liquids or gases or hazardous chemicals.
- The tools given to the employees are safe, and they are being appropriately used and maintained.
- The scaffoldings used are safe and inspected.
- The working environment as a whole is safe.
- The required personal protective equipment is being used.
- The regulations take into account occupational and fire safety issues.

If the employees of supplier A are being assigned to work normally done by supplier B, suppliers A and B must agree on which company will handle work supervision.

2.3 Preparing for first aid

Each supervisor must ensure that there are sufficiently many employees who are capable of administering first aid and first aid kits onsite.

2.4 Accident reports and accident/ close call investigations

All employees are obligated to notify their supervisor of any dangerous situations or safety defects they observe at the workplace. Each employee is obligated to address any immediately dangerous situations they observe, regardless of where the dangerous situation is observed. The supervisor is obligated to report all accidents and close call situations in their area of responsibility in writing to a representative of the client and the occupational safety manager. All accidents will be investigated and an investigation report will be submitted to Stora Enso Group. The investigation is usually carried out in compliance with the recording and investigation procedures of the Stora Enso mills.

2.5 Using personal protective equipment

The term "personal protective equipment" or "PPE" refers to equipment or clothing the employer has obtained for the employees to protect them from safety risks when exposure to mechanical, chemical, biological or physical dangers cannot be prevented by any other means.

Prior to starting work, a risk assessment must be performed to find out which PPE must be used in the job in question.

Prior to starting work, a risk assessment must be performed to find out which PPE must be used in the job in question. The assessment must take into account instructions by device manufacturers, these instructions on PPE, etc. The PPE to be used when handling chemicals must be selected based on the information included in the chemical's material safety data sheet (MSDS). Each supervisor must verify that employees have at their disposal proper PPE that comply with the requirements and that the employees know how to use and maintain their PPE.

Employees are obligated to use and maintain the PPE issued to them with care and in compliance with the instructions, and communicate any potentially dangerous faults they are unable to eliminate themselves.

General instructions for different types of PPE

Hearing protectors must be used when working in areas where the noise level exceeds 80 dB or in tasks where there is danger of hearing damage. There are signs indicating the need to use hearing protectors at the doors of any areas where the noise level exceeds 80 dB.

Safety shoes must be used in production and maintenance facilities and when doing any work that poses an obvious danger of injuries to the feet.

A hard hat must be used if the risk assessment has verified the task as a task requiring a hard hat. Such tasks include, for example, tasks where there is the danger of falling objects. A hard hat will also protect you from compression, thermal radiation and splashing hot agents.

During a shutdown of a production line or a part of it, hard hats must be used in the shut-

down area. Hard hats must also be used at all times at construction and installation sites. Units have more specific instructions on the obligation to protect one's head.

Eye protectors must be used in production and storage facilities, and when doing any work that involves the danger of splashing agents or airborne impurities. Such work includes, for instance, any work involving the use of water or compressed air, such as web feeding and washing. When handling chemicals, the eye protectors to be used are leak-proof goggles in compliance with the MSDS. Goggles must also be used when abrading, disc cutting, drilling, etc.

During a shutdown of a production line or a part of it, goggles must be used in the shutdown area. Goggles must also be used at all times at construction/installation sites and in maintenance work.

Face protectors must be used when doing any work involving hot or pressurised air, liquid, gas or steam, and when opening chemical pipelines, flanges or manholes. Furthermore, face protectors must be used when handling chemicals if stated so on the MSDS.

Protective clothing must be worn if the task at hand requires them. Instructions included in the MSDS must be taken into account when handling chemicals. Loose clothing may get caught in rotating machinery. Clothes manufactured from flammable materials are dangerous when doing hot work, electrical work or any work involving the use of chlorate or oxygen. Using compressed air to clean clothes someone is currently wearing is not allowed.

Protective gloves must be worn when handling sharp objects to protect the hands from cuts. Gloves are mandatory in any work involving the risk of injuring your hands. Furthermore, protective gloves must be used when handling chemicals if stated so on the MSDS.

Falling guards – such as harnesses and safety catches and lifelines used to attach the harnesses – must be used when doing work involving the danger of falling. Such work involves working in a hoisting cage or working close to the edge of a lifting hole or roof. Harnesses must be fixed at the designated fixing points.

Respiratory masks must be used at sites where the air contains impurities. The mask type must be selected based on the MSDSs of the impurities. Impurities may be dust, fumes, gases, biological exposure agents, etc. Anybody welding alloyed metals must use a motorised respirator mask. If there is not enough oxygen in the air when working inside a tank, for example, a pressurised respirator mask must be used.

Reflective clothing must be used when working close to or along a vehicular traffic route, such as a product warehouse or a timber storage area.

Any other PPE specified based on the risk assessment results and instructions of the supervisors must also be used. The units or departments may have separate, more detailed instructions on the use of PPE in a specific area or during a particular event.

2.6 Protective structures and scaffolding

Each party is responsible for the condition of protective structures in its working area and for ensuring that they are not unnecessarily removed. Protective structures may only be removed based on a permit. If removing protective structures is necessary to complete a work stage, the person performing the work must ensure that the site is clearly marked and isolated, and any other necessary measures for the duration of the work are implemented. The protective structures must be reinstated to the condition laid down in the requirements immediately after finishing the work stage.

Building, inspecting and using scaffolding and riggers

Statutory regulations must be followed in all issues pertaining to scaffolding and riggers.

Worksite allocation scheme

The client is obligated to draw up a written worksite allocation scheme if the scaffolding or rigger to be used is more than ten metres in height or the scaffolding or rigger will essentially influence the use of the worksite due to its hazardous location or any other issue.

Structural plan

As a general rule, scaffolding elements designed to be used as the components when building scaffolding and riggers are to be used. The material supplier will provide building instructions and a user manual.

If a scaffolding or rigger is to be built from piece goods or any other similar materials, or if compliance with the instructions included in the element user manual is not possible, a detailed structural plan drafted by a structural designer must be submitted.

Building scaffolding or riggers

The people building scaffolding/riggers and the people supervising them must have sufficient qualifications and work experience in the different stages of the work.

Commissioning inspection

Scaffolding or riggers may not be used until they have been fully erected and a commissioning inspection has been carried out. The inspection must be carried out by representatives of the party who ordered and representatives of the party who built the scaffolding or rigger. A scaffold tag must be filled out during the commissioning inspection. The tag must be fixed onto the approved scaffolding or rigger. Separate commissioning records must be drawn up for each scaffolding or rigger. The records must be archived by both the party who built the scaffolding or rigger and the client. Each scaffolding or

Responsibilities of the party who orders scaffolding or rigger, the party who builds it and the party who will be using it

The party who orders a scaffolding or rigger must ensure that the order includes the following:

- Site in which the scaffolding or rigger will be erected and any special conditions therein
- Intended use and future loads of the scaffolding or rigger
- When the scaffolding or rigger must be ready to use and when it can be removed
- Any other issues to be taken into account (environmental risks, locations of access routes and exits, emergency exits, etc.)

The party building the scaffolding or rigger must verify the following:

- The scaffolding or rigger has been built in compliance with the user manual or structural plan.
- The scaffolding or rigger will be safely erected.
- There is a user manual or a structural plan for the scaffolding or rigger.

The party using the scaffolding or rigger must verify the following:

- The scaffolding/rigger is applicable for the intended use.
- The scaffolding or rigger has been inspected and there are the proper inspection markings on the scaffold tag.
- All observed defects are being communicated in compliance with the regulations.
- Working platforms are being kept clean and orderly.
- The scaffolding or rigger is being used in compliance with the instructions.
- The scaffolding or rigger is not being overloaded.

rigger must always be inspected weekly to verify that it is in working order.

2.7 Hoisting devices, lifting and machinery

All machines, hoisting equipment, transport equipment and other equipment used at the worksite must comply with safety regulations and they must be used in compliance with instructions given by the manufacturer, work instructions and statutory regulations. The equipment must be properly inspected before use. All hoisting accessories must include the statutory inspection, approval and loading markings.

Hoisting devices owned by Stora Enso may only be used by people named by the owner who have undergone the required training. In any case, heavy lifting and special lifting must always be separately planned and performed under supervision. A report of the lifting plan must be submitted to a representative of Stora Enso.

Hoisting accessories, harnesses, etc. must always be visually inspected before use. If there is any reason to suspect that a hoisting accessory, harness, etc. is not in full working order, the piece of equipment must be taken out of use.

The guard rails from doors and wall openings may never be removed. When working

close to unprotected wall openings or at an unprotected roof edge from which the protective railing has been removed, the necessary precautions must be taken by using a harness and exercising special caution. The site must be clearly marked or isolated.

Only equipment approved for personnel hoisting may be used when lifting people. When lifting machine reels, special instructions on lifting machine reels and crane-specific user manuals must be followed.

2.8 Verifying worksite safety

When a worksite is in a safe state from the process viewpoint (in the de-energised state or NET), it means that the people working onsite cannot be directly or indirectly influenced by any pressure, temperature, chemical, voltage, electric current or radiation used in the process and unintentional start-up of all the motors, automated equipment, manual valves and other pieces of equipment has been prevented in compliance with the guideline on preventing accidental start-ups.

Worksite refers to the actual machine, piece of equipment or process being repaired and any other similar machines, equipment and processes in the immediate vicinity where a malfunction may, directly or indirectly, influence the people at the worksite or in the immediately vicinity.

Work permit refers to a notice given by the supervisor of the organisation that has been in charge of placing the worksite into the safe state from the process viewpoint. With this notice, the supervisor announces that the worksite is now de-energised and communicates any issues influencing worksite safety to the people who will perform the work or their supervisors.

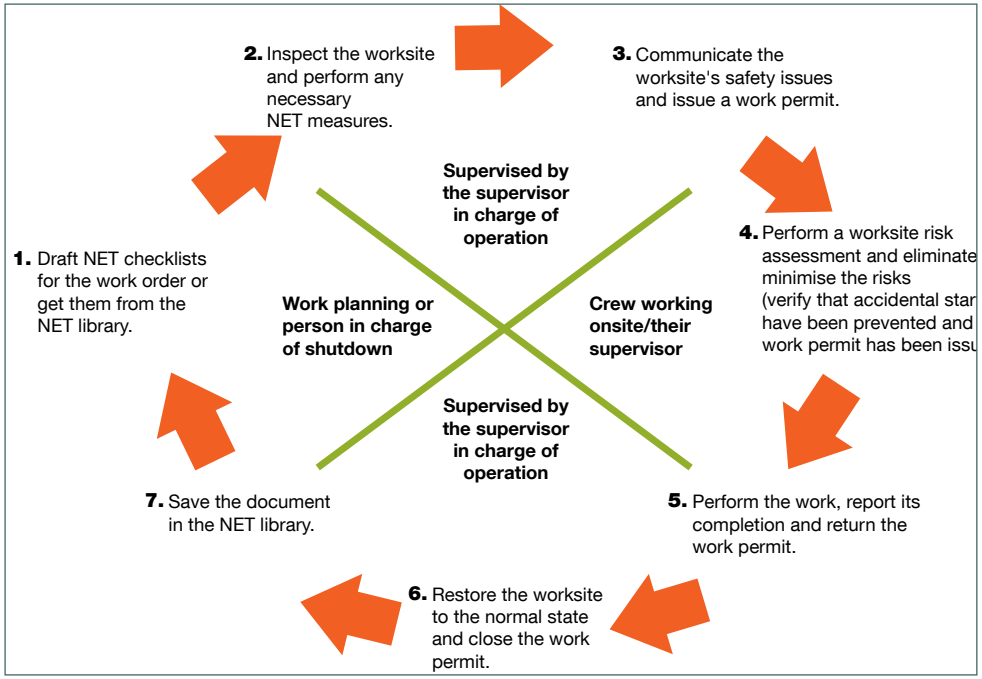
Risk assessment refers to a risk assessment using a checklist performed by the operating personnel of the worksite and the organisation that will work onsite. The purpose of the risk assessment is to find any risks that will influence the worksite and eliminate these risks or decrease their impact prior to starting work. The risk assessment is partly based on information obtained at the worksite.

Responsibilities

The operating organisation or the organisation in charge of the use of machinery, devices and processes at the worksite bears the responsibility for de-energising the worksite.

All work at the worksite must be performed in compliance with the safety guidelines of the Stora Enso mills. The supervisor of each employee working onsite and the employer organisation in compliance with its organisational structure are in charge of ensuring the compliance.

Work permit requiring de-energisation



Objective: putting processes and devices into a safe state so that nothing will endanger the people within the sphere of influence of the worksite.

Actions when de-energising a worksite

Before starting work, the maintenance organisation must report in with the operator of the piece of machine or the supervisors. **No work may be started at the worksite without a work permit issued by the supervisor of the organisation that has been in charge of placing the worksite into the safe state from the process viewpoint**. All the measures required by the work permit and the operating guidelines and any other actions influencing the safety of the worksite will be performed under the supervision of the person who has issued the permit. Furthermore, control room-specific locking devices and locks or any other items preventing accidental start-ups will be placed on safety switches.

The issuer of the permit must explain the worksite's safety issues to the employees who will work onsite or their supervisor. **The work permit may be either written or verbal**. The issuer of the permit will determine whether a written permit is necessary. Written permits are used when doing work requiring de-energisation of equipment where there is an apparent accident risk, when doing maintenance work in explosive environments, when working with equipment involving hazardous chemicals, etc. Units and departments may have more detailed instruction documents on the written work permit procedure.

When planning work to be done during a shutdown, the people planning the work and the supervisors in charge of the work must record, based on observations made during planning, the measures needed to de-energise each work-

site using a so-called NET form. These measures must also include a note of all hazardous chemicals involved with the worksite, etc. However, filling out the form will not free the issuer of the work permit from the obligation to verify that the measures needed to de-energise the worksite have been implemented. The form is only a tool used to facilitate the work permit handling process.

The employees participating in the work must also verify from their supervisor who issued the work permit that it is safe to start the work and install the locks stated in the work permit. A notification to the issuer of the permit about starting and ending work is always mandatory.

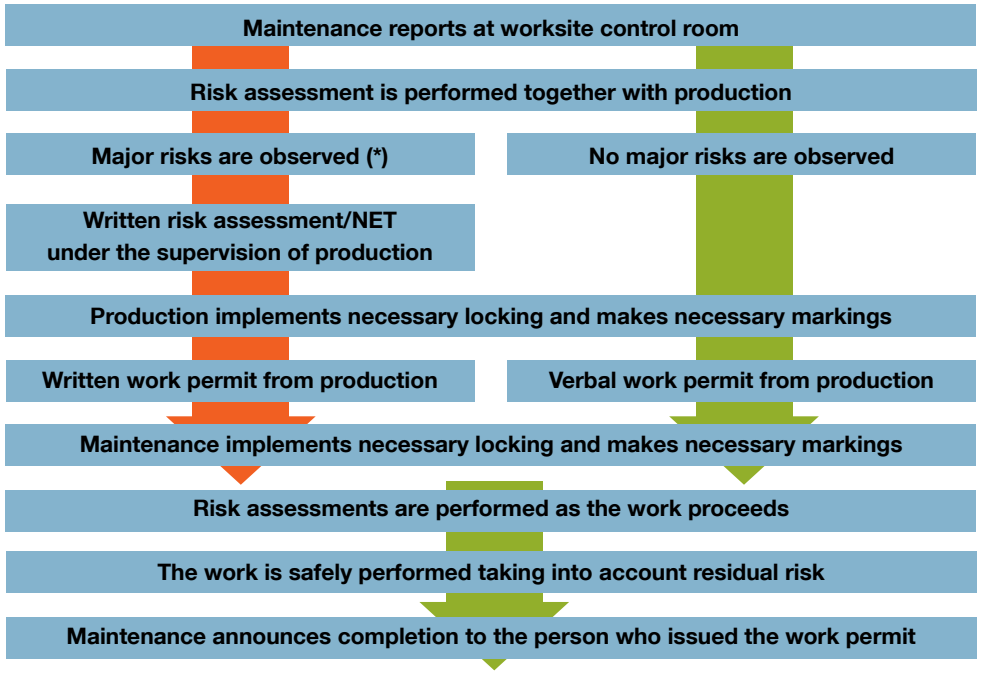
Worksite risk assessment

The safety measures required at the worksite must be determined before starting the work by performing a risk assessment. The worksite risk assessment will be performed together by the worksite operating personnel and the employees who are coming to work onsite. If these employees do not have the qualifications needed to perform the risk assessment, their supervisors must assist them in the assessment.

In case of subcontracting work, the supervisor's tasks in the risk assessment must be performed by the supervisor in charge of subcontracting work in the organisation that ordered the work. On call officers will participate in risk assessment when necessary during their on call hours.

Based on the risk assessment results, the measures needed to ensure occupational safety must be implemented. When these NET measures have been implemented, the work permit may be issued and the work may be started. Units and departments may have more detailed instruction documents on the risk assessment procedure.

Worksite risk assesment



(*) Examples of major risks: hazardous chemicals, equipment containing hot or pressurised chemicals, explosive atmosphere or work in a confined space.

Measures to restore the worksite into the operating state

Notify the issuer of the work permit when the work is complete. When all employees and teams working onsite have announced the completion of their work, the work permit issuer or the supervisor in charge of the worksite instead of the work permit issuer will verify that the safety locks are removed and the worksite is restored to the operating state.

In case of a written work permit, the person restoring a position must enter the position as restored on the NET form. Lastly, the operating personnel must verify that there are no persons within the danger zone, remove the safety locks they have installed and return the safety switches to the operating position. When all the sites have been restored to the operating condition and the operating personnel have verified that these measures have been implemented, the supervisor in charge of restoration will close the work permit, thus issuing a permit to restart the machinery, equipment and processes at the worksite.

2.9 Preventing accidental start-ups and safety locking

Before starting work, employees operating, maintaining or repairing equipment or doing any other work must verify that the process is in a safe state and accidental start-up of all the machines onsite has been prevented. Starting up any machines or valves that could cause a danger onsite must be prevented. Safety circuits and safety limits are not a sufficient means to prevent accidental start-ups.

The operating personnel have access to control room specific safety locks and safety tags. The operating personnel record all sites where safety locks are used, including the name of the person who has installed the lock. Maintenance personnel must use their personal safety locks and tags. The safety locks and tags used must include the employer company's name and the name and phone number of the lock/tag owner.

The operating personnel have asses to safety locks and signs in operating rooms and they are recording all sites where the locs are used. Maintenance personnel uses their own personal safety locks and signs.

Safety switches and safety valves must be used when doing repairs, maintenance or any other similar work inside areas limited by protected hatches, gates or doors. Merely using the safety feature of the safety door or a limit sensor is not enough in the case of such work.

Blind flanges may be placed on pipes or limiting bolts may be used to prevent the operation of valves. Decisions on using these measures are made on a case-by-case basis based on the risk assessment results.

Main principle

Employees operating, maintaining or repairing equipment or doing any other work must verify that the accidental start-up of machines at the worksite has been prevented. Work may not be started until the supervisor in charge of the piece of equipment has issued a work permit.

Starting up any machines or valves that could cause a danger onsite must be prevented.

If several teams working independently will do work influencing a single piece of equipment, a representative from each team must separately check the issues mentioned in these instructions.

The piece of equipment may not be restarted until the supervisor in charge of the piece of equipment has issued a permit to do so. The operator must verify that the start-up of the equipment will not cause any danger.

Preventing accidental start-ups

The operator must stop the motor using the actual control device and place a tag indicating the prohibition to start the machine onto the motor starting switch. In case of a process automation system, the operator must use the keyboard to prevent motor start-up.

A device with a separate safety switch:

The safety switch is locked into the OFF position. The operator must perform a start-up test to verify that the motor will not start. When the start-up test has been performed, the control switch must be turned to the OFF position. The start-up test may not be performed if it would endanger anything else in the area (such as sequential start-ups).

The person to perform work onsite will lock the safety switch (a locking comb or a wire) with their personal lock. If several people will be working on the device, each of them must use their own lock.

A device without a separate safety switch:

The operator will ask an electrician to remove the motor fuses or open the disconnecting switches. The measures carried out must be recorded on the NET form. The electrician will open the operating group's master switch or main disconnecting switch and place a tag indicating that reconnecting is not allowed.

A tag indicating that reconnecting is not allowed must be placed in the electrical room. The tag must include the name of the person who requested the prohibition, the date, the time and the name of the person performing the disconnection.

The operator must perform a start-up test to verify that the motor will not start. When the start-up test has been performed, the control switch must be turned to the OFF position. The start-up test may not be performed if it would endanger anything else in the area (such as sequential start-ups).

When the work has been completed, the person who performed the work must remove their lock and other tags and announce the completion of the work to the issuer of the work permit and their supervisor/contact person.

After having received a permit to do so, the operator must remove the safety lock from the safety switch, remove the tags, and request the electrician to restore the motor fuses and turn the safety switch into the ON position. When these measures have been completed, the warning tag may be removed from the device's start switch or the prohibition on operation may be deleted from the process automation system. The measures carried out must be recorded on the NET form.

Preventing accidental start-ups in pneumatic and hydraulic systems

In case of a pneumatic or hydraulic system, the system must be brought to a safe position and depressurised before starting work.

The measures to prevent an accidental start-up must be performed under the supervision of the supervisor in compliance with the NET instructions for the device in question. Special attention must be paid in the position of line control valves and three-way valves, stopping of hydraulic pumps and de-energising hydraulic accumulators.

- Manual valves, three-way valves and automatic valves must be locked into the safe position required by the work to be performed and tags prohibiting start-up must be placed on them.
- Safety switches must be locked into the OFF position when stopping hydraulic pumps.
- The varying elastic and potential energy of different devices must be taken into account. The necessary mechanical backups must be used.

All measures to prevent accidental start-ups must be recorded on the NET form. The work may not be started until the operating personnel have issued a work permit.

When the work has been completed, the person who performed the work must remove their lock and other tags and announce the completion of the work to the issuer of the work permit and their supervisor/contact person.

After having issued a permit to do so, the operator must remove the padlock from the safety switch, restore the safety switch to the ON position, and remove the warning tag from the start switch or delete the prohibition on operation from the process automation system. The equipment must be restarted under the supervision of the production personnel.

2.10 Work in confined spaces

A confined space may be one of the following, for instance:

- A tank or a pressure vessel
- A channel, chest, basin or reaction vessel
- A large pipe or ditch
- An electric filter or washer

Study the instructions on the tank or other confined space in question and follow the instructions.

Before entering the confined space

Before starting work, make sure that you have the **required work permit** (a separate permit is issued for each work task to be done in a confined space), the risks inherent to the work have been identified and the confined space has been de-energised.

Implement all the measures to prevent accidental start-ups listed in the instructions.

Ventilate the confined space with compressed air or another manner specified for the worksite in question. Use suction if there are gases that are heavier than air or the exhaust outlet is high up.

Oxygen depletion or the presence of toxic gases are possible in confined spaces.

Regularly monitor the oxygen and gas content of the space while working.

Check that the electrical equipment and tools you plan to use are suitable for work done in a confined space. This applies particularly to any pneumatic or battery-powered tools. (See the figure attached.)

Use the necessary personal protective equipment. Take into account any impurities there may be in the air (use a respirator mask or ventilator).

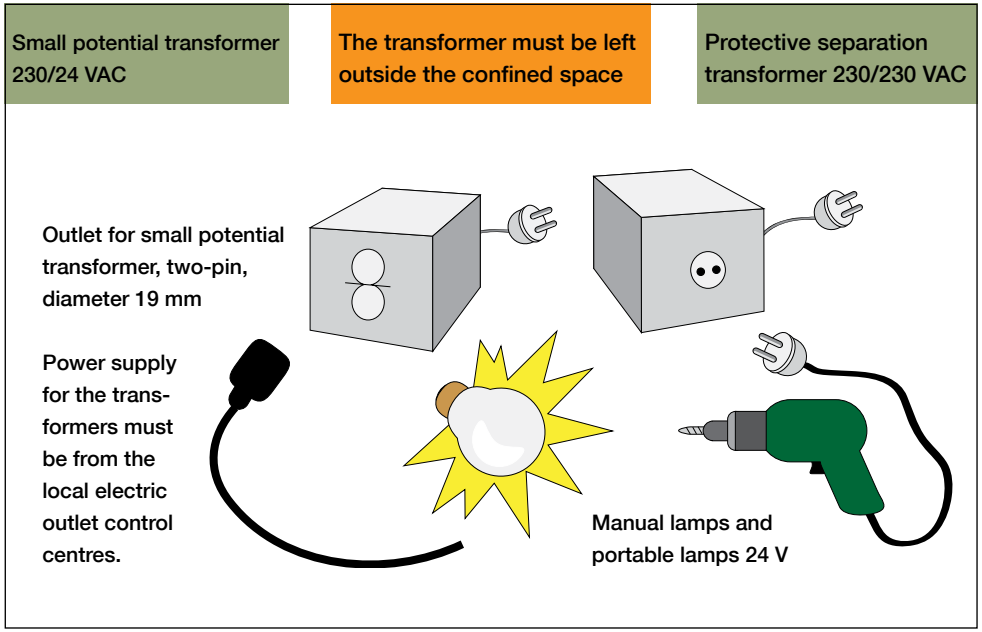
If the confined space is also an explosive atmosphere (EX), follow the related instructions (see Chapter 2.11).

When inside the confined space

- Make sure that the ventilation is always sufficient.
- Regularly monitor the oxygen and gas content of the space in the manner specified in the risk assessment while working.

PLEASE NOTE:
At least two people must always be involved in work in confined spaces, and at least one of them must have previous experience of such work. One person must remain outside the confined space to ensure the safety of those working in the confined space. The supervisor in charge of the work must verify that the employees understand and follow these instructions.

Using electrical equipment in confined, conductive spaces



1. If necessary, use a separate residual current device installed in the outlet or a separate, portable worksite control centre with a 30 mA residual current device.
2. Test the residual current device before use.
3. Verify condition of wire insulation prior to use.
4. Make sure that the wiring will not be pinched or rubbed against sharp edges.
5. When working in a confined, conductive space (width x height < 1.25 metres x 1.8 metres):
   - Use a protective separation transformer.
   - Place the transformer outside the conductive space.
   - Only connect one electric device at a time to the protective separation transformer.
6. Use low voltage (24 V) lamps.

2.11 Working in an explosive atmosphere

The danger of an explosion is caused by air under normal pressure being mixed with a flammable gas, steam/mist generated by burning liquid or burning dust. An explosion will occur if the air mixture is ignited, whereupon the fire will spread to the entire volume of air.

For an explosion to occur, there must be a source of ignition (a spark, hot surface or friction). All areas with an explosive atmosphere are marked EX.

Cleaning is of utmost importance when managing the risk of a dust explosion.

The following must be taken into account when working in an explosive atmosphere:

- The employees must be given sufficient training about the site.
- Sufficient written work instructions must be available.
- There must be a written work permit issued by a person named by the operating organisation. The work permit specifies the measures required to protect the employees from explosions.

All areas with an explosive atmosphere are marked EX.

- The employees may only use tools and working clothes applicable for explosive atmospheres, unless the explosion hazard can be completely eliminated.
- Spare parts used must be applicable for an explosive atmosphere.
- The equipment may only be started under the supervision of the operating organisation.

2.12 Hazardous chemicals and material safety data sheets

A chemical hazardous to health refers to a chemical element, compound or a mixture of these two or a product that is, when being used professionally,

- a danger to human health
- corrosive
- irritating
- generally allergising
- carcinogenic or otherwise detrimental to health
- explosive
- strongly reacting
- oxidising, flammable
- highly flammable or radioactive.

Such chemicals may be used as the raw materials or additives in production or they may be present in solvents in maintenance work, paints or coating agents and the chemicals used in a laboratory. The health hazard may occur in skin contact or through inhalation or ingestion.

There must be a material safety data sheet (MSDS) available for all chemicals used at the worksite. The MSDS lists all the properties and adverse effects of the chemical and how to protect oneself from the chemical. There are safety markings on the sales packages and other packages of chemicals.

Chemicals detrimental to the environment are hazardous or toxic to organisms living in the water or soil, plants, animals or the atmosphere. Such chemicals may not be released into the environment.

GHS Pictograms and Hazard Classes


Acuty Toxicity


Carcinogen
Respiratory Sensitizer
ReproductiveToxity
Target Organ Toxicity
Aspiration Toxicity


Gases Under Pressure


Irritant
Dermal Sensitizer
Acute Toxicity
Narcotic Effects
Respiratory Tract Irritation


Corrosives


Explosives
Self Reactives
Organic Peroxides


Oxidizers


Flammables
Self Reactives
Pyrophorics
Self-Heating
Emits Flammable Gas
Organic Perosides


Environmental Toxity

Supervisors must inform their subordinates of any chemicals hazardous to health prior to taking the chemical into use or in connection with employee orientation. Furthermore, the chemical's MSDS must be available at the place where the chemical is used or in another agreed place so that subordinates will be able to obtain information about the chemical themselves. There must also be MSDSs for all chemicals brought in by a supplier or subcontractor available at the worksite.

All employees are obligated to familiarise themselves with the health, safety and environmental impacts of the chemicals they use.

Employees are obligated to study the MSDSs and packages of all chemicals they use, and follow the instructions therein on protection, etc.

Using a gas meter when handling chemicals or working in the danger zone may be necessary. The minimum hazardous content of a chemical in the air is given as its HTP value, and the HTP value of a chemical is available on its MSDS.

Compliance with and supervision of occupational safety regulations

Anybody working or moving in a Stora Enso mill area must follow occupational safety regulations.

Supervisors are obligated to verify compliance with the regulations. They must immediately address any negligence they observe in their area of responsibility. In the case of negligence in another part of the mill area, they are obligated to report it to the organisation in charge. Each employee is obligated to address any immediately dangerous situations they observe, regardless of where the dangerous situation is observed.

Neglects are to be investigated in compliance with the currently valid instructions by each company working at the Stora Enso mill and the unit's own organisation. In the case of subcontractors, the terms and conditions of the subcontracting agreement apply. A person who recurrently violates safety regulations may be removed from the worksite and denied access to the mill area.

3. Electrical safety

3.1 Devices

Only approved electrical devices that are intact may be used in the mill area. Furthermore, the electrical device must be applicable for the area in which it is used.

If there is anything unclear about using electrical devices, please contact your supervisor or the work supervisor.

3.2 Working close to live elements

An agreement on the required protection and allowed working distances must be made with the unit's electrical department when working close to unprotected electric cables or other unprotected live components.

Working in electrical rooms is only allowed based on a permit from and under the supervision of the electrical department.

3.3 Radiation danger

Radiation danger may occur due to radiation sources included in radiographic imaging or measuring instruments.

Closed radiation sources that contain a small amount of a radioactive substance are used in some measuring and survey instruments. These instruments are usually fixed and always marked with a "Säteilyvaara" (Radiation Danger) sign. Closed radiation sources are used in tank liquid level detection, liquid densitometers and basis weight gauges of some products.

If employees need to work close to such meters or gauges for a longer period of time (several hours without a break) or directly under the radiation beam, the radiation source must be shut down. The radiation source must also be shut down if employees need to enter a tank whose liquid level detector contains a radiation source.

Radiation sources are marked with a "Säteilyvaara" (Radiation Danger) sign.

4. Fire prevention

4.1 General

Fire prevention is an important part of the total safety of the company. The objectives are securing continuity of the business and protecting the employees and the company's assets from damage and losses caused by fires.

Fire safety is implemented as part of the daily work. Employees are obligated to follow all safety instructions and regulations. Good order and cleanliness of the worksite are of utmost importance from the viewpoint of anticipating and extinguishing any fires.

Fire prevention is an issue all of us need to take into account.

4.2 Electrical and heating devices

When temporary heating devices are used, they must be placed sufficiently far away from any flammable materials.

Any unnecessary electrical devices must be switched off at the end of the working day. The condition of electric wires must be monitored to prevent loose contacts, earth faults and short circuits. Any broken or worn down devices must be repaired without delay.

4.3 Flammable liquids and gases

Liquefied petroleum gas, sodium chlorate, oxygen and other flammable chemicals are stored at the mill area.

Instructions and statutory regulations on storage and use of highly flammable liquids and liquefied petroleum gas must be followed also under worksite conditions. Gas cylinders and other containers used to store these chemicals must be stored in a safe place, such as under a canopy manufactured from a non-flammable material.

4.4 Hot work

Prior to starting hot work, the employee who will perform hot work, the hot work guard and the person who issued the hot work permit must study the company's hot work plan. All the instructions included in the hot work plan must be followed. In the case of a temporary hot work site, the person performing the hot work, the hot work guard and the person who issued the hot work permit must all have a valid hot work card. Employees performing hot work on a roof must have a valid roof hot work card.

The written hot work permit specifies the safety measures that must be implemented prior to starting hot work, during the work and when the work is complete. The person who issued the written hot work permit must verify that the specified safety measures are actually implemented.

4.5 Fire extinguishers

Fire extinguishers must always be kept in working order. Their locations must be clearly marked and they must always be easily accessible. A used fire extinguisher that is partly or completely empty may not be returned to its storage location. Instead, it must be immediately taken to maintenance. Fixed fire extinguishers inside buildings may not be transferred to any temporary worksite.

Experience has proven that the damage caused by a fire largely depends on what employees do during the first seconds after ignition. This is why it is very important to know in advance what you must do in case of a fire.

4.6 Automatic fire alarm and extinguishing systems

Most of the buildings are protected by an automatic fire alarm system. Several buildings also include an automatic extinguishing system. The presence of fire protection systems must be taken into account at the worksite. The work may not cause any unnecessary fire alarms, for example. Only the person named as the manager of the system may switch the automatic fire alarm or extinguishing system off or on. The manager of the system and the supervisor of the worksite are obligated to verify that the automatic fire alarm or extinguishing system has been switched back on when the work is complete. When automatic protection systems are switched off, a temporary plan to maintain the proper level of protection must be specified for the area in question.

A used fire extinguisher that is partly or completely empty may not be returned to its storage location.

5. Procedures

5.1 In case of gas danger

Causes of danger

Hazardous chemicals are handled at different units of Stora Enso and some hazardous chemicals are generated during the manufacturing processes. These may pose a gas danger. You will hear more about the hazardous chemicals used onsite at the site-specific safety information event.

Most common chemicals causing a gas danger in chemical wood industry are sulphur dioxide, hydrogen sulphide, chlorine dioxide and chlorine gas. These gases may irritate the eyes or respiratory system. They are potentially life-threatening as high doses. Furthermore, different kinds of gas mixtures may cause the danger of a fire or explosion. Always find out which chemicals causing a gas hazard are being used onsite before starting work.

Alarm signal

A general alarm signal – a one-minute long undulating audio signal – will be issued in case of a gas danger. When the gas danger has passed, the danger over signal will be given. This signal is a continuous one-minute audio signal. There may also be other, department-specific alarm signals at the different locations. The high capacity speakers may also be used to give people instructions on what to do in case of a danger. The outdoor alarms are tested in each unit at specified testing times. The test signal is an undulating audio signal that lasts around seven seconds.

Actions and protection

1. If you notice a gas danger, call the emergency number 112.
2. Warn other people and report the danger to the organisation in charge of the area.

If you hear the alarm signal, stay indoors and close all doors and windows. Go to the designated meeting point and follow the instructions you will find there. If you are outdoors, try to get indoors (but do not go into any basement). Do not use a lift. If you are high up, stay there if there is any danger of gas below you. If you are unable to enter a building, try to get away from the danger zone; move cross-wind. If you smell gas, use a respirator mask or breathe through a wet piece of clothing. Find out where the closest gas shelter rooms and meeting places in case of evacuation are. The control rooms in mill facilities and some of the conference rooms in office areas are usually gas shelter rooms.

First aid

Important first aid measures for a person who has inhaled toxic gas is getting fresh air, resting in a half sitting position and keeping warm. Administer CPR if the person has trouble breathing. A person who has inhaled toxic gas must always receive medical treatment.

5.2 In case of fire

1. Rescue any people who are in danger.
2. Extinguish the fire with a fire extinguisher if this is possible without endangering your own safety.
3. Call for help:
   - Dial 112 (the emergency number is also 112 when calling from a mobile phone) and calmly tell the on-call officer your name, what has happened and where the accident took place (give the officer the number of the closest door).
   Please note: Do not hang up the phone until told to do so.
   - Press a fire alarm pushbutton (and confirm that help is coming by calling 112).
4. Report the fire to the supervisors who will usually handle the rescue measures until the fire brigade arrives.
5. Limit spreading of the fire by switching off the air-conditioning system and closing all windows, doors and manholes.
6. Remove any gas cylinders from the scene.
7. Guide the fire brigade to the fire.
8. Notify your supervisor or the work supervisor of the fire.

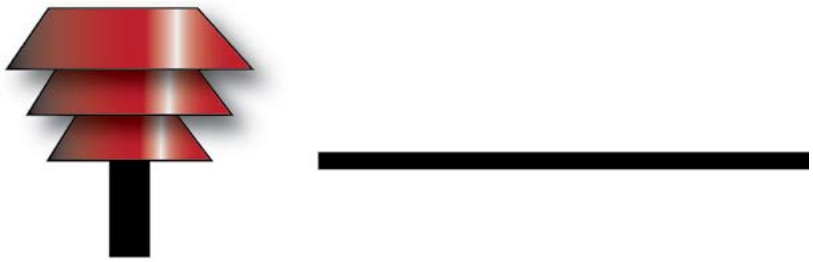
5.3 In case of accident

1. Call for help:
   - Dial 112 (the emergency number is also 112 when calling from a mobile phone) and calmly tell the on-call officer your name, what has happened and where the accident took place (give the officer the number of the closest door). Please note: Do not hang up the phone until told to do so.
2. Help the injured person any way you can.
3. Report the accident to the supervisors who will usually handle the rescue measures until an ambulance arrives.
4. Guide the ambulance crew to the scene of the accident.

5.4 First aid

1. Verify that the injured person is still breathing. If they are not breathing, remove any obstructions from their nose and mouth and administer CPR.
2. Touch their carotid artery to see if their heart is still beating. If not, administer CPR.
3. Staunch any heavy bleeding.
4. Monitor the injured person in case of shock and try to prevent shock by keeping them calm.
5. Do not waste any time! Act quickly but calmly.

A general alarm signal is a one-minute long undulating audio signal.



The danger is over signal is a continuous one-minute audio signal.

6. Environmental protection

6.1 General

The key principles of Stora Enso Group's approved environmental policy are:

- Sustainability
- Shared responsibility for environmental issues
- Continuous improvement
- Compliance with permits and obligations, and exceeding the requirements of national standards and laws, whenever possible
- Taking into account product lifecycle
- Transparent interaction

Subcontractors are expected to comply with these environmental policy principles. Each employee working in the mill area is responsible for the environmental impacts of their work. Environmental risks caused by a work task must be assessed prior to starting the work.

6.2 Malfunctions and emissions into the environment

In case of a malfunction, try to prevent environmental damage or limit the extent of any damage already occurred. Immediately report any observed environmental risk or damage to your supervisor or the supervisor of the department and local security (the entrance gate). Make sure that you know what is the emergency number of the unit's local security (the entrance gate). In case of major damage or an emergency, call 112.

The security department and line organisation will take care of further measures, call any backup needed and contact the environmental protection personnel.

6.3 Water protection

Prevent any chemicals, oils, solvents and toxic agents from entering a channel or waterway. Only water may be drained into sewers. Fuel tanks of subcontractors may only be kept onsite with a permit from Stora Enso. Vehicles may only be washed at the designated locations. Raw material transport containers may only be washed at the designated locations after having obtained a permit.

6.4 Air protection and noise

Report any abnormal air emissions or odours you observe. **Please note that toxic gas leaks may occur in some units. The instructions given must be followed in such a case**.

Prevent dust and particles generated by your work from spreading.

Idle running of vehicles in the mill area is not allowed.

If your work generates loud noise that could add to the noise level in the immediate vicinity of the mill site, working is only allowed on weekdays between 7 a.m. and 10 p.m. Furthermore, a separate permit is required for any work tasks generating exceptionally loud noise.

6.5 Waste management

Each employee is obligated to remove his or her waste from the worksite. Waste generated in the mill area must be sorted where it is generated. The waste containers are painted different colours or marked with colour codes and stickers. The unit's instructions on sorting waste must be followed. Find out what the unit's instructions on waste sorting are.

Hazardous waste must always be placed separate from other waste fractions, and different types of hazardous waste may not be mixed. Hazardous waste may only be handed over to a company that has a hazardous waste handling permit.

In case of a problem, please contact the unit's waste manager or the environmental protection personnel.

Waste may only be placed in the mill's landfill after having obtained a permit from Stora Enso.

Emergency Number

112

Stora Enso Oyj
puh. 02046 111
www.storaenso.com

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