DOMSJÖ FABRIKER

SAFETY INFORMATION

In this document you will find important information for our common safety. Everyone who works with us is an important part of our safety work.

Department managers	**Departments**	
Roger Grönlund	Wood handling, Cooking department, Cooking liquor preparation Bleach plant, Drying machines section, Water supply	tel. 070-295 60 94
Patrik Lindström	Boiler house, Ethanol, Evaporation, Lignin, Bio treatment	tel. 079-1424808

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COMMON SAFETY INFORMATION, PRODUCTION DEPARTMENTS

GENERAL RISKS

Process:

- Steam – burns. Risk of e.g. leaks from flanges or drains. Major leak: poor visibility and the oxygen in the air may run out (the air is replaced with steam). Comment: Overheated steam is not visible, therefore a leak of outgoing high-pressure steam (approx. 33 bar) from the boilers is often characterised by an audible sound only (sharp hissing).
- Steam condensate – burns.
- Warm/hot water – risk of burns in the event of leaks.
- Dust – risk of dust explosion.
- The water from the jetting hoses may possibly be too hot.
- Nitrous gases from Evaporation. Be observant for yellowish-green gases on the roof outside the evaporation.
- SO_2 gas – Irritates the respiratory system, high concentrations >500 ppm can be potentially fatal. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 0,5 ppm and STEL 1 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- H_2S gas – Toxic gas that paralyses the sense of smell at high concentrations
  Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 5 ppm and STEL 10 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- If you feel a drop from above, be aware that it may be a chemical, so look upwards with caution even if you are wearing safety glasses.
- Keep in mind that machinery/equipment can be started without prior warning at any point, and that it is controlled from a control room where the operator does not have a full view of the installation. There are therefore start signals that you need to be aware of, e.g. on conveyors.
- Ammonia pipe – runs from the ammonia tank below the woodchip screening station, up via the roof of Evaporation and between the cooking department/cooking liquor preparation, on over the pipe bridge between cooking liquor preparation and the Ethanol mill.
  After the pipe bridge, it goes over the roof to Fermentation tank 1.

ROUTINES

- During all work in, at and in connection with the department, consideration must be taken to the environment, health and safety.
- Before starting work, notification must be given to the supervisor and the operator in the control room, and you (someone from each company) must “sign in” on the board and indicate the number of people who will be working. This applies to both internal and external personnel. The company name and the supervisor’s phone number must be written on the attendance board at the control room. The supervisor for each company is responsible for knowing exactly how many people are in the department and for checking the headcount of their own personnel during evacuation.
- Similarly, notification must be provided to confirm that the job is complete, and you must remove your name from the board.
- Blue-marked walkway: If you are only passing through on a walkway marked with blue lines, no attendance registration to the department’s control room is required (these lines are not yet present in all departments). However, if you are going to perform work within this area, attendance registration is required according to the points above.
- Before starting work, find out what you need to do with any residual products and waste.
- Before starting work, ensure that the equipment is shut down and ready for work.
  Our lock-out procedures must be followed. The lock-out list for the object is held by the operators in the control room. This must be signed and a personal lock must be locked in the clamp belonging to the object.
- On completion of the work, you must clean up after yourself and remember to remove locks in the control room, as well as delete your name from the board.
- Fire doors must not be left open; this also applies to all doors to stairwells.
- Fire hoses must be rolled up and must be reset when the work is complete.
- The gas bottles must always be stored in gas carts, in order to be transported quickly if necessary. On completion of the work, gas bottles/cylinders must be moved to ground level and stored in the indicated location, close to a door/gate leading outside. Only trained personnel may lift/lower gas bottles. Exceptions may be granted if necessary during weekly stops or major projects. If necessary, the Manager of Fire and Security appoints one temporary storage area per level, bearing in mind any risks and the fact that gas bottles/cylinders must be brought to safety quickly in the event of fire. At the end of the working day the number of bottles leaved at the temporary storage should be noticed at the board.
- Only Oxygen cylinders are approved as breathing air in closed areas. For exceptions with an in-house compressor, a risk assessment must be performed before reaching a decision. In open areas where breathing air is required, compressor-driven air is also approved in combination with a gas mask when the evacuation route is more straightforward.
- At the factory area smoking is prohibited and is only allowed at restricted areas, through the conditions that no one is exposed to passive smoking.
- Incident reports from entrepreneurs should be sent to the contact person for the work.

EMERGENCY EXITS

- Supervisors provide information about the most suitable/fastest way out and about the assembly point, before the work can start. Emergency lighting and evacuation markings are present. Note that if any road is closed, there must be signs about this.
- Always ensure that you have an evacuation route from the workplace if you are working close to areas where hazardous chemicals and/or hot media may be present.
- In the event of an emergency alarm (evacuation alarm)/gas alarm or fire, the areas must be evacuated immediately, and you must assemble at the indicated assembly point.
- In the event of an alarm, use the stairs, not lifts.

WORKING PERMIT

- Written working permit is needed when working in confined spaces, hot work in temporary workplaces and EX-classified areas. Working permit is issued by supervisor maintenance for each department.

SAFETY EQUIPMENT

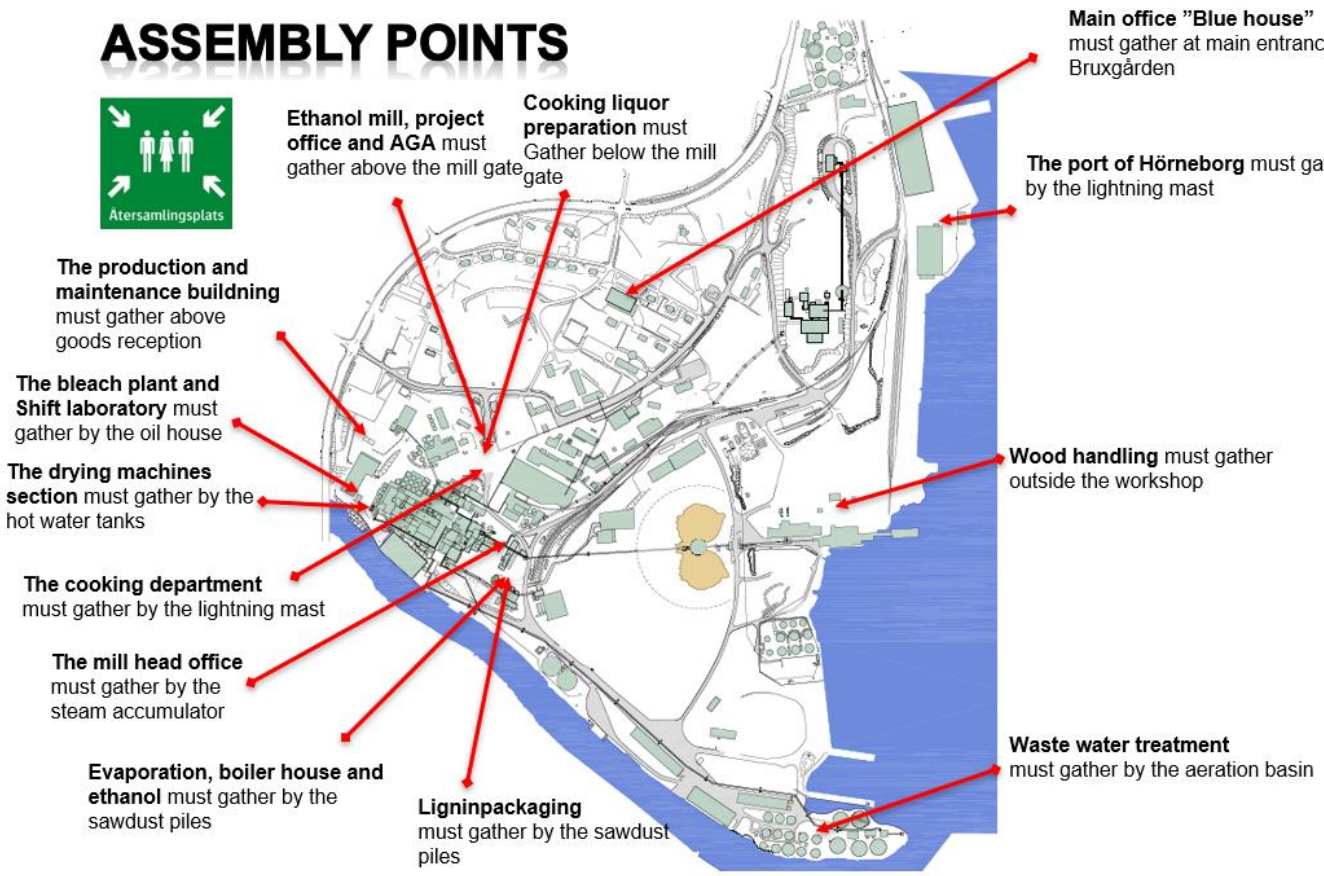
- Eye protection approved for specific use shall be worn by everyone. Excluded areas are office, dining rooms, dressing rooms control rooms, storage and vehicles.
- Helmet and safety shoes must be worn. Full length-work clothing must always be worn in accordance with applicable rules.
- Gas meter for SO_2 and H_2S and escape mask with ABEK-filter are mandatory to wear in all departments except wood handling, lignin packaging and water supply.
- Ear protection should be used as the factory area is a noisy environment.
- Personal protective equipment such as a safety visor, protective clothes, safety shoes, etc., shall be used when working with hot and corrosive substances.
- For more specific information, contact a supervisor or operator.

IN CASE OF AN ACCIDENT

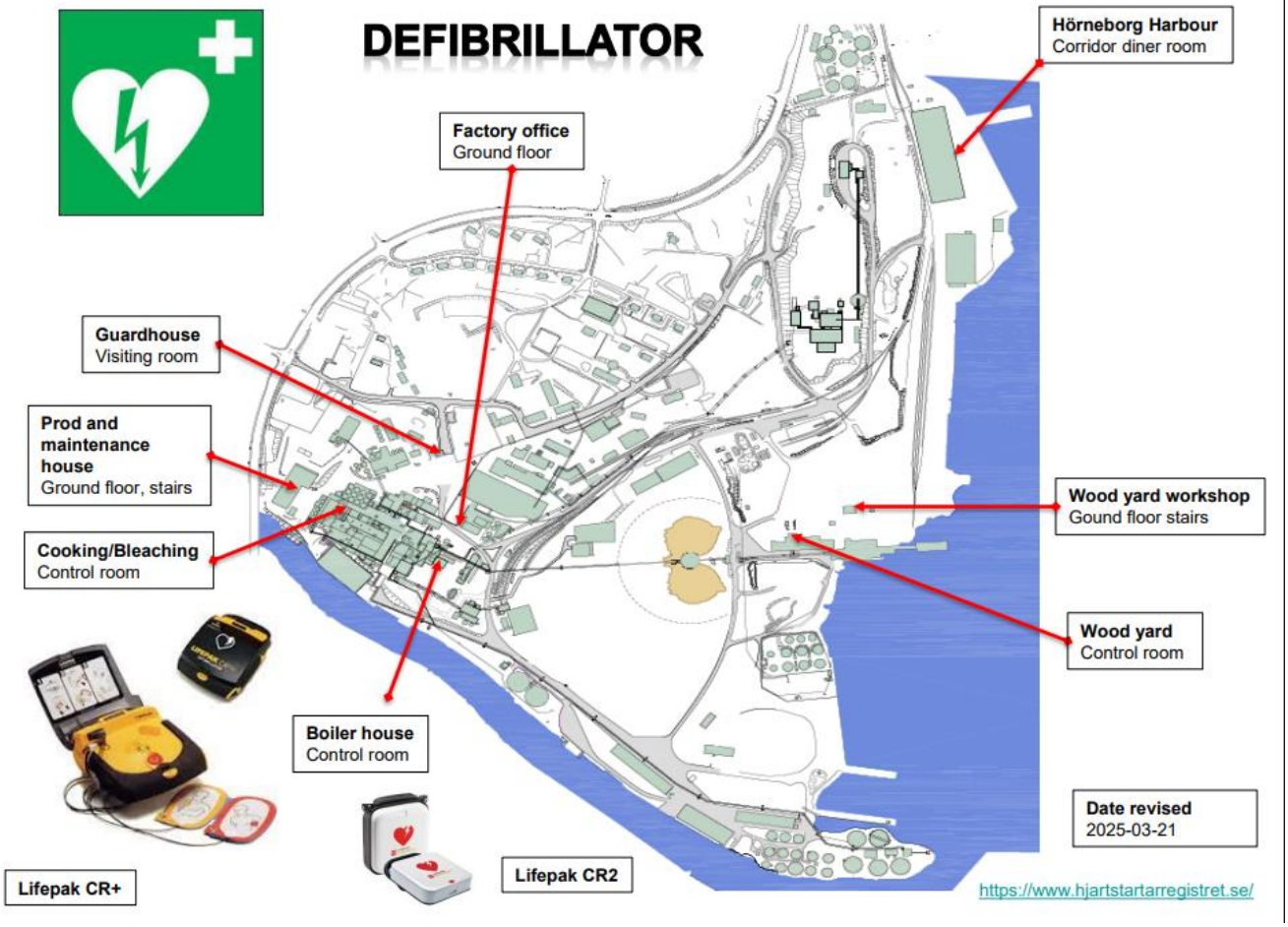
- In case of an accident or fire, call 112 (also notify the Guardhouse on 0660- 27 56 91 and the shift in charge on 070-693 59 40).
- If the injured person does not need to be moved due to e.g. a fire, wait for the rescue team. Leave the person where they are to avoid making the injury worse.
- There are defibrillators in the factory area: central workshop (DU building), bottom of the stairwell; cooking/bleaching, control room; mill head office, bottom floor; boiler house in control room; wood handling, workshop, stairwell, bottom floor; wood handling control room, Hörneborg (harbour) diner room and Guardhouse.

For more detailed information, contact your contact person or production engineer at Domsjö Fabriker. Can also be found using in Domsjö Fabriker's intranet.

ASSEMBLY POINTS



Evacuation
When evacuating, assembly must take place at the assembly point. See also the evacuation procedure.
Indoor shelter
In the event of gas emissions, individuals who are outdoor in the gas plume must move across the wind direction. Go into a building/area, close windows and ventilation (in and out) and notify your manager where you are.


DEFIBRILLATOR
Hörneborg Harbour
Corridor diner room
Factory office
Ground floor
Guardhouse
Visiting room
Prod and maintenance house
Ground floor, stairs
Cooking/Bleaching
Control room
Wood yard workshop
Gound floor stairs
Wood yard
Control room
Boiler house
Control room
Date revised
2025-03-21
Lifepak CR+
Lifepak CR2
https://www.hjartstartarregistret.se/

SAFETY INFORMATION, WOOD HANDLING

Shift Operators in wood handling	Control room 2-shift	0660-27 56 69 072-202 18 00
Manager fibre line Coordination responsible	Roger Grönlund	070-295 60 94
Operating Technician Stop coordinator	Niklas Tjärnström	070-222 99 30
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Kjell Berglund	070-379 24 14
Safety representatives	Robert Bergqvist Isak Karlsson	Shift work 072-092 70 01
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Kjell Berglund Shift in charge Stefan Svensson	0660-756 73 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Kjell Berglund Shift in charge Stefan Svensson	070-379 24 14 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- Forklift driving – e.g. timber yard forklifts and wheel trucks.
- Chip control – binder operation.
- Operation of the crane situated beside the chipper is controlled from inside. A light signal is turned on beside the crane and the passage at ground level is closed. Stay alert!
- Chain saw operation.
- Wood conveyors – moving parts.
- Chip conveyors and augers – moving parts.
- Bark conveyors and augers – moving parts.
- Bark shredder – moving parts.
- Bark press – moving parts.

Hazardous gases

- Gases from nearby "Kiken" area, including tanks belonging to Nouryon and Sekab. Acetaldehyde, methyl chloride, ethyl chloride and ethylene oxide.

Risky substances in the process:

- Steam condensate
- Sodium hydroxide (NaOH).

Flammable substances:

- Wood substances (bark, sawdust, chips, etc.).

EMERGENCY EXITS

- Assembly point outside the workshop building (see map).

SAFETY EQUIPMENT

- Gas masks can be found in control rooms and forklifts (Note: only for evacuation).
- High visibility clothing mandatory.
- Special safety clothing when required. E.g. when operating a chain saw and when sharpening the cutter.

SAFETY INFORMATION, COOKING DEPARTMENT

Shift Operators in Cooking department	Operator managing the cooking Assistant cooking operator	0660-27 56 97
Manager fibre line Coordination responsible	Roger Grönlund	070-295 60 94
Operating Technician Stop coordinator	Frank Holmgren	070-175 32 08
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Kjell Berglund	070-379 24 14
Safety representatives	Robin Näslund Christian Westman	Shift work 070-567 56 47
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Kjell Berglund Shift in charge Stefan Svensson	0660-756 73 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Kjell Berglund Shift in charge Stefan Svensson	070-379 24 14 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- Chip conveyors – moving parts.
- SO_2 gas – Irritates the respiratory system, high concentrations >500 ppm can be potentially fatal. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 0,5 ppm and STEL 1 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- H_2S gas – Toxic gas that paralyses the sense of smell at high concentrations. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 5 ppm and STEL 10 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- Open digester lids – Risk of hot liquid/steam and SO_2 gas.
- Emptying digesters – Light signal turned on by each digester when emptying, watch out for any leaks.
- Risk of chemical leaks in the cooking department.
- Cooking liquor – burns.
- Hot liquors – burns.
- Spent liquor - burns
- SO_2 water – risk of burns, contains SO_2.
- Steaming condensate – burns.
- Final relief condensate – burns, contains SO_2.

Risky substances in the process:

- Sodium hydroxide NaOH (650 g/l), SO_2 water (20-70 g/l), liquid SO_2, cymene, sulphite solution (65 g/l), acetic acid, perchloric acid.
- Cooking acid, hot liquors, steaming condensate, final relief condensate.

Flammable substances:

- Acetic acid, stored on the bottom floor in $1m^3$ IBC containers. Max. storage: 2 x IBC.

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

SAFETY EQUIPMENT

- Fresh air masks and gas masks in lifts (Note: only for evacuation).
- Oxygen gas cylinders can be found in the control room.
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.
- Harness must be worn during internal jobs in digesters (fall protection training is required).

EMERGENCY EXITS

- Assembly point by the lighting mast outside “Servicehuset” (see map).

ALARMS

- Emergency alarms (evacuation alarms) can be found at each entrance to the department and in the department.
- Sulphur dioxide alarms (detectors) can be found at a number of locations in the department.
- In the event of an alarm: entry prohibited + evacuation of the premises.
- In the event of an alarm, use the stairs, not lifts.

These alarms are tested routinely.

1st weekend of each quarter	Emergency alarm (Evacuation alarm)	Pulsating acoustic and red/white flashing signal – the entire cooking department and at entrances.

SAFETY INFORMATION, COOKING LIQUOR PREPARATION

Shift Operators	Cooking liquor preparation	0660-27 56 89
Manager fibre line Coordination responsible	Roger Grönlund	070-295 60 94
Operating Technician Stop coordinator	Frank Holmgren	070-175 32 08
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Kjell Berglund	070-379 24 14
Safety representatives	Tony Holmgren Benny Byström Patrik Morén Stefan Bylund	Shift work 070-216 70 83
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Kjell Berglund Shift in charge Stefan Svensson	070-379 24 14 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Kjell Berglund Shift in charge Stefan Svensson	070-379 24 14 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- SO_2 gas – Irritates the respiratory system, high concentrations >500 ppm can be potentially fatal. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 0,5 ppm and STEL 1 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- H_2S gas – Toxic gas that paralyses the sense of smell at high concentrations. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 5 ppm and STEL 10 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- Washing of sulphite/bisulphite heat exchangers, 1st floor – Light signal turned on beside the heat exchangers, all personnel must leave the immediate area.
- Risk of chemical leaks in the cooking liquor preparation.
- Green liquor – burns.
- Sulphite solution – burns.
- Liquid SO_2 – burns.
- Elementary sulphur – highly flammable. SO_2 is formed when burned.
- SO_2 water– risks of burns.
- Liquid sulphur – burns.
- Feedwater/steam lined sulphur pipes – burns.
- Ammonia cylinders (2) can be found by the sulphur burner.
- Oxygen tanks (Linde gas) - frostbite

Risky substances in the process:

- Sodium hydroxide NaOH (650 g/l), SO_2 water (20-40 g/l), liquid SO_2, cymene, green liquor, sulphite solution (65 g/l), ammonia, LPG.
- Bisulphite solution, carbonate solution, liquid sulphur, green liquor, feedwater, steam condensate.
- Sulfamic acid, used during wash of heat exchangers, Wiguard 600 to protect welds during wash.

Flammable substances:

- Liquid oxygen, stored in AGA's container (50 m^3) located outdoors. Used as oxygen gas in thiosulphate destruction. Oxygen is not flammable, but sustains combustion. Oxygen is

strongly oxidising and reacts powerfully with flammable substances, and can cause fire or explosion.
- LPG bottle (1) can be found outside the sulphur burner, on the wall facing the cooking department.

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

EMERGENCY EXITS
- Assembly point below the gate (see map).

SAFETY EQUIPMENT
- Fresh air masks and gas masks in lift (Note: only for evacuation).
- Oxygen gas cylinders can be found in the control room.
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.

ALARMS
- Emergency alarms (evacuation alarms) can be found at each entrance to the department and in the department.
- In the event of an alarm: entry prohibited + evacuation of the premises.
- Sulphur dioxide alarms (detectors) can be found at a number of locations in the department.
- Hydrogen sulphide alarms (detectors) can be found at a number of locations in the department.
- In the event of an alarm, evacuate the department.
- In the event of an alarm, use the stairs, not lifts.

These alarms are tested routinely.

1st weekend of each quarter	Emergency alarm (Evacuation alarm)	Pulsating acoustic and red/white flashing signal – the entire cooking liquor preparation and at entrances.

SAFETY INFORMATION, BLEACH PLANT

Shift Operators, bleach plant	Bleach plant	0660-27 56 96
Manager fibre line Coordination responsible	Roger Grönlund	070-295 60 94
Operating Technician Stop coordinator	Niklas Tjärnström	070-222 99 30
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Daniel Kristofersson	070-693 59 56
Safety representatives	Leif Thorsell	Shift work 0660-27 56 96
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Daniel Kristofersson Mikael Berglund Produktionsledare Stefan Svensson (Brandstation)	070-693 59 56 070-300 85 29 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Daniel Kristofersson Mikael Berglund Produktionsledare Stefan Svensson (Brandstation)	070-693 59 56 070-300 85 29 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process

- Risk of hot pulp suspension from tower and filter.
- In the event of overflowing pulp from the filter, the optical signal comes on with light and audio signals. Watch out for hot pulp. Do not stand and look into the wash filter covers, unless you have many years' experience of working with filters and know the signs to be able to take care in time.
- There is no through-route under the filters in the bleach plant.
- If the pulp has overflowed and has ended up on the floor, remember that it retains its heat for a long time and that there can be strong chemicals in the pulp. Wear rubber boots and protective clothing when working in such an environment.
- SO2 (sulphur dioxide) is used in the ultrafiltration, resin flotation and pre-screening. The greatest risk of SO2 gas is where emissions from the cooking department and cooking liquor preparation reach the diffuser wash and the bleach plant.
  SO_2 gas – Irritates the respiratory system, high concentrations >500 ppm can be potentially fatal. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 0,5 ppm and STEL 1 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
  - In the event of a stationary alarm, evacuate the building and go to your assembly point.
  - In the event of a personal alarm, leave the area for alarm and get in contact with operator
  - Evacuate the premises in the event of discomfort from the smell of SO_2 gas
- Risk of chemical leaks in the bleach plant.
- Risk of slipping on liquor in the diffuser wash on the bottom level and on the roof.
- Steam is used for heating the bleach towers and in the separator. Risk of e.g. leaks from flanges or drains, can cause burns. Major leak: difficult to see and the oxygen in the air may run out (the air is replaced with steam).

Risky substances in the process:

- H_2O_2 (Hydrogen peroxide), can break down strongly/rapidly and cause an explosion. See procedure for the breaking down of hydrogen peroxide.
- NaOH 700g/l (Sodium hydroxide), liquid sulphur dioxide (SO_2) and SO_2 water (20-40 g/l), EDTA, Magnesium sulphate ($MgSO_4$).
- Defoamer (one based on white mineral oil and one silicone defoamer).
- Polyethylene oxide (PEO).
- Risk of hot pulp suspension from tower and filter, risk of hot liquids and process chemicals, risk of bio-resin.

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

EMERGENCY EXITS

- Assembly point by the oil house outside the Production and maintenance building (see map).

SAFETY EQUIPMENT

- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.
- Fresh air masks and gas masks in lift (Note: only for evacuation).
- Oxygen gas cylinders can be found in the control room.
- In the event of wet pulp on floors, boots must be worn.
- A harness must be worn when working out on the diffuser roof; these can be found in the control room (fall protection training is required).

ALARMS

- The bleach plant can activate the emergency alarm (evacuation alarm) from a button in the control room. Alarms can be found in pre-screening, on the filter level, the pump level, by the flotation basin and in the walkway between the drying machines and the Cooking department. Evacuation alarms that have been activated from the cooking department can be found in pre-screening and in the diffuser washer basement.
- In the event of an alarm: entry prohibited + evacuation of the premises.
- In the event of an alarm, use the stairs, not lifts.

SAFETY INFORMATION, WATER SUPPLY

Shift Operators, bleach plant	Bleach plant	0660-27 56 96
Shift Mechanic		070-343 06 09
Manager fibre line Coordination responsible	Roger Grönlund	070-295 60 94
Operating Technician Stop coordinator	Niklas Tjärnström	070-222 99 30
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Niklas Sjölund	070-670 07 46
Safety representative	Arkadiusz Grzelczak	072-731 67 48
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process

- Risk of leaks of chemicals in the water treatment (sodium hydroxide (NaOH) and Ecoflock).
- Risk of slipping on polymer from the upper floor in the water treatment.
- The water treatment includes basins of cold water and dispersion air (causes reduced buoyancy) with immediate risk of drowning.
- Drowning risk by the sluice.

Risky substances in the process:

- NaOH 700g/l (Sodium hydroxide), Polymer and Ecoflock (PAC)

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

SAFETY EQUIPMENT

- Life jackets must be worn when working by the sluice; these can be found up in the control room.

SAFETY INFORMATION, DRYING MACHINES SECTION

Shift Operators Drying machines section	Machine operators TM1-3 Quality controller Magazine	0660-27 57 08 0660-27 56 95 0660-27 57 09
Manager fibre line Coordination responsible	Roger Grönlund	070-295 60 94
Operating Technician Stop coordinator	Daniel Kristofersson	070-693 59 56
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Daniel Kristofersson	070-693 59 56
Safety representatives	Lars Höglund	070-230 12 77
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Daniel Kristofersson Mikael Berglund Produktionsledare Stefan Svensson (Brandstation)	070-693 59 56 070-300 85 29 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Daniel Kristofersson Mikael Berglund Produktionsledare Stefan Svensson (Brandstation)	070-693 59 56 070-300 85 29 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process

- Risk of slipping on wet floors, primarily by the wet end.
- Risk of slipping on the floor due to oil, primarily by/under the baling presses.
- Risk of coming into contact with hot water and hot steam from the drying machines. Risk of e.g. leaks from flanges or drains, can cause burns. Major leak: difficult to see and the oxygen in the air may run out (the air is replaced with steam).
- It is very hot in the drying machines section, risk of dehydration in the event of prolonged work.
- Crushing risk, many moving parts, such as rollers and presses in the drying machines. You should not move your hands towards moving parts during operation under any circumstances.
- Cutting risk on the blades in the cutters in the drying machines.
- There are many moving parts in the bale handling area, such as conveyors and turning conveyors; these are located behind protective barriers and they stop if the barriers are broken. Notify the operators if such an area needs to be accessed, in order to go through the location of access buttons and resetting buttons.
- Watch out for forklifts, above all in the pulp store and the bale handling area.
- The lifts by the fan dryers have audio and light signals when they are in operation to warn people not to walk underneath them.
- Working alone is not permitted when working on the unit binder in the pulp storage.
- There are normally no hazardous gases in the drying machines section. However, SO_2 gas can come from the cooking department via floor ducts to the walkway between the drying machines and the cooking department and to Post-screening.
- SO_2 gas – Irritates the respiratory system, high concentrations >500 ppm can be potentially fatal. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 0,5 ppm and STEL 1 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
    - Evacuate the premises in the event of discomfort from the smell of SO_2 gas

Risky substances in the process:

- NaOH 350g/l (Sodium hydroxide), SO_2 water (sulphur dioxide), Visco-388.
- In post-screening, there is a risk of hot pulp stock spraying out in the event of a hose rupture, hot water in the wire part in the drying machines, and there is hot steam in both the cylinder part and the fan dryer in the drying machines.

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

EMERGENCY EXITS

- Assembly point by the tanks for chemically cleaned hot water (see map).

SAFETY EQUIPMENT

- In the event of wet pulp on floors, boots must be worn.
- Wear a visor when working with wire.
- Fresh air masks and gas masks in lift (Note: only for evacuation).
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.

ALARMS

- When lifting packaging and wire, the area must be cordoned off and an optical signal turned on. It is then prohibited to enter the area!
- In the event of an alarm, use the stairs, not lifts.

SAFETY INFORMATION, ETHANOL

Shift Operators	Ethanol mill	0660-27 56 72
Manager recovery line Coordination responsible	Patrik Lindström	079-1424808
Operating Technician Stop coordinator	Tomas Sjölund	070-3196010
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Niklas Sjölund	070-670 07 46
Safety representative	Johan Elander Jonatan Söderlund	Shift work 0660-27 56 72
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 0660-27 55 98 070-359 20 35
Oxygen measurement in closed spaces	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 0660-27 55 98 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS
Process:
Fermentation

- EX classified areas; pumping tank/ethanol condensate heat exchanger.
- Sodium hydroxide NaOH, ammonia NH_3, pH-adjusting in fermentation tank 1.
- Carbon dioxide CO_2, is formed in the fermentation tanks. Keep in mind that the gas is heavier than air and accumulates at the lowest point.
- Storage and dosage of chemicals.
- Traffic from forklifts and other vehicles.
- Hot liquors and hot water.

Distillation

- EX classified in all areas
- Steam, hot liquors and hot water
- Sodium hydroxide NaOH, next to mixing tank

Discharging and storage of ammonia
AGA factory

- Carbon dioxide CO_2. Keep in mind that the gas is heavier than air and accumulates at the lowest point.
- Ammonia NH_3, next to the cooler machine

Explosive gases:

- Ethanol, methanol and fusel oil.

Risky substances in the process:

- Ammonia
- Sodium hydroxide (NaOH)
- Phosphoric acid H3PO4
- Sodium borohydride $NaBH_4$
- Carbon dioxide CO_2
- p-toulenesulfonic acid
- Dosing/defoamer chemicals
- Ethanol
- Secondary ethanol
- Green liquor (storage tank next to the ethanol mill).

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

ROUTINES

- Parts of the ethanol mill are EX classified regarding to the risk of explosive gas mixtures. Before working, ascertain where the EX classified areas are, as these areas require a special permit before commencing work. During operation only airdriven tools are allowed in EX classified areas.

EMERGENCY EXITS

- Assembly point above the gate (see map).

GAS MEASUREMENT

- Parts of the ethanol mill are EX classified regarding to the risk of explosive gas mixtures. Before work starts, a special permit from an authorised permit issuer is required for this area.

SAFETY EQUIPMENT

- Gas masks in lift (Note: only for evacuation).
- Gas masks are in the fermentation department next to the entry to distillation and next to the workshop.
- Air tubes are available in the control room.
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.

ALARMS

- Emergency alarms (evacuation alarms) can be found at each entrance to the Boiler house and Evaporation, as well as in stairwells.
- In the event of an alarm: entry prohibited + evacuation of the premises.
- In the event of an alarm, use the stairs, not lifts.

These alarms are tested routinely:

Thursdays, 12.00	Emergency alarm	Pulsating acoustic and red/white flashing signal – the entire boiler housing and at entrances.

When the alarm is being tested, the building does not need to be evacuated.

SAFETY INFORMATION, EVAPORATION

Shift Operators	Evaporation	0660-27 56 87
Manager recovery line Coordination responsible	Patrik Lindström	079-1424808
Operating Technician Stop coordinator	Tomas Sjölund	070-319 60 10
Shift in charge	Shift in charge	0660-27 5598 070-6935940
Supervisor – Maintenance	Niklas Sjölund	070-670 07 46
Safety representative	Johan Elander Jonatan Söderlund	Shift work 0660-27 56 87
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 0660-27 55 98 070-359 20 35
Oxygen measurement in closed spaces	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 0660-27 55 98 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- Steam, hot liquors and hot water
- Sulphur dioxide SO_2, mainly in pre-evaporation
- Sodium hydroxide NaOH, is used in a various of position in the department
- Discharging of chemicals such as HNO_3 and WiAl
- Nitric acid HNO_3 is used during acid wash
- Nitrous gases NO_x may occur at the event of acid wash
- Sudden stop of the recovery boilers – smoke-filled premises
- Boiler explosion (the premises are adjacent to the boiler house).
- EX classified areas (distillation room station 7).
- Calcium oxide - burns

Explosive gases:

- Ethanol (distillation room station 7).

Risky substances in the process:

- Nitric acid HNO_3, WiAl, NaOH - burns
- NO_x – Irritates the respiratory system
- SO_2 – Irritates the respiratory system, high concentrations >500 ppm can be potentially fatal.
- H_2S – Toxic gas that paralyses the sense of smell at high concentrations
- Calcium oxide – Burns and irritates the respiratory system

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

ROUTINES

During acid-washing, the department is cordoned off. Any work in nearby areas such as roof should be avoided.

EMERGENCY EXITS

- Assembly point by ash sedimentation (see map).

SAFETY EQUIPMENT

- Fresh air masks and gas masks in lift, boiler house (Note: only for evacuation).
- Oxygen gas cylinders can be found in control room.
- Defibrillator in control room.
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.

ALARMS

Evaporation's evacuation alarm is linked to the boiler house.

- Emergency alarms (evacuation alarms) can be found at each entrance to the department and in stairwells.
- In the event of an alarm: entry prohibited + evacuation of the premises.

These alarms are tested routinely:

Thursdays, 12.00	Emergency alarm	Pulsating acoustic and red/white flashing signal – the entire Evaporation, the boiler housing and at entrances.

When the alarm is being tested, the building does not need to be evacuated.

SAFETY INFORMATION, BOILER HOUSE

Shift Operators in the boiler house	Machinist Recovery boilers	0660-27 56 88 RB8: 0660-27 56 85 RB9: 0660-27 56 98
Manager recovery line Coordination responsible	Patrik Lindström	079-1424808
Operating Technician Stop coordinator	Erik Salomonsson	073-079 35 78
Shift in charge	Shift in charge	0660-27 55 98 070-693 59 40
Supervisor – Maintenance	Jimmy Westman	070-204 94 96
Safety representatives	Marine Holmgren Carl Valan Marcus Thorén	Skiftgång 0660-27 56 98 070-282 09 40
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Jimmy Westman Niclas Salomonsson Shift in charge Stefan Svensson	070-204 94 96 070-379 32 62 070-693 59 40 070-359 20 35
Oxygen measurement in closed spaces	Jimmy Westman Shift in charge Stefan Svensson	070-204 94 96 070-693 59 40 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- Overflow of melt from recovery boilers: Rapid melt loss from the boiler to the green liquor mixer can suddenly occur. Associated with a danger, in all positions, of being in front of the melt spouts. Passage prohibited – burns.
- Green liquor – burns.
- During normal operation it can be expected leakage of dust water from floors above when cleaning is performed. Contact control room if any water leakage is found.
- Sudden stop in the recovery boilers – smoke-filled premises.
- Boiler explosion.
- Hydrogen sulphide (H_2S), basement and thick liquor tank building.
- In the event of a stationary alarm, evacuate the building and go to your assembly point.
- In the event of a personal alarm, leave the area for alarm and get in contact with operator.
- Thick liquor 120-130°C – burns.

Risky substances in the process:

- Thick liquor, green liquor, feedwater, boiler water, steam condensate, bio-resin, fuel oil EO5, sodium hydroxide NaOH, feedwater chemicals, flue gases, methane gas, hydrogen sulphide gas, electric filter dust.

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

ROUTINES

- Working alone is not permitted when working in an electrical filter.

EMERGENCY EXITS

- Assembly point down by ash sedimentation (see map).

GAS MEASUREMENT

- The basement in the boiler house is not regarded as a tank or similar. There are stationary sniffers in the basement and control measurement is not required.

SAFETY EQUIPMENT

- Fresh air masks and gas masks in lift (Note: only for evacuation).
- Oxygen gas cylinders can be found in the control room.
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.
- A harness must be worn when loading and unloading the telpher when the railing has been removed. Block and harness can be borrowed from the control room (fall protection training is required).
- There are stretchers by the electrical filters.

ALARMS

- Emergency alarms (evacuation alarms) can be found at each entrance to the department and in stairwells.
- In case of an alarm: entry prohibited + evacuation of the premises.
- Hydrogen sulphide alarms can be found at each access route down to the basement level. In the event of an alarm, evacuate the basement level.

These alarms are tested routinely.

Thursdays, 12.00	Emergency alarm	Pulsating acoustic and red/white flashing signal – the entire boiler housing and at entrances.
Fridays, 12.00	Hydrogen sulphide (H_2S) alarm	Alternating high and low acoustic signal and flashing optical orange signal – basement.

When the alarm is being tested, the building does not need to be evacuated.

SAFETY INFORMATION, LIGNIN

Operator Operator	Lignin dryer Lignin packaging big bag Lignin packaging small bag	0660-27 54 03 072-233 90 09 070-237 80 70
Manager recovery line Coordination responsible	Patrik Lindström	079-1424808
Operating Technician Stop coordinator	Robert Björkén	070-643 93 20
Shift in charge	Shift in charge	0660-27 5598 070-6935940
Supervisor – Maintenance	Jimmy Westman	070-204 94 96
Safety representative	Andreas Sjölund Sandra Granberg	Shift work 072-233 90 09 070-307 88 11
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Jimmy Westman Shift in charge Stefan Svensson	070-204 94 96 0660-27 55 98 070-359 20 35
Oxygen measurement in closed spaces	Jimmy Westman Shift in charge Stefan Svensson	070-204 94 96 0660-27 55 98 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- Hot liquors (lignin).
- Hot air – burns.
- Gas leak (biogas (methane gas) in the gas house.
- Lignin powder, risk of dust explosion in the event of a major leak.
- Truck driving – wheel loader in store tent, lignin packaging.
- Sack conveyors – moving parts.

Risky substances in the process:

- Lignin, sodium hydroxide (NaOH), steam, steam condensate, hot air and biogas (methane), hydrogen sulphide (H_2S) and ammonia (storage tank next to lignin packaging).

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

ROUTINES

- Parts of the lignin department are EX classified with regard to the risk of explosive gas mixtures and/or dust explosion. Before working, ascertain where the EX classified areas are, as these areas require a special permit before commencing work.
- Parts of lignin drying and lignin packaging are counted as hygiene zones where special requirements for cleanliness and hygiene apply. Contact the staff of the Department for details and routine about this.

EMERGENCY EXITS

- Assembly point by ash sedimentation (see map).

GAS MEASUREMENT

- Parts of the lignin dryers and packaging are EX classified with regard to the risk of explosive gas mixtures and/or dust explosion. Before start work, a special permit from an authorised permit issuer is required for this area.

SAFETY EQUIPMENT

- Oxygen gas cylinders can be found in control room, boiler house.
- Evacuation mask in control room for lignin packaging due to the risk of ammonia emissions from the ammonia tank. Put on the mask and get out of the area, moving across the wind direction (in order to get away from the emission as quickly as possible).
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department, except the lignin packaging.

ALARMS

- Emergency alarms (evacuation alarms) can be found at each entrance to the boiler house and evaporation, as well as in stairwells.
- In the event of an alarm: entry prohibited + evacuation of the premises.

These alarms are tested routinely.

Thursdays, 12.00	Emergency alarm	Pulsating acoustic and red/white flashing signal – the entire boiler house and at entrances.

When the alarm is being tested, the building does not need to be evacuated.

SAFETY INFORMATION, BIO TREATMENT

Operator	Bio treatment	070-211 01 18
Manager recovery line Coordination responsible	Patrik Lindström	079-1424808
Operating Technician Stop coordinator	Robert Björkén	070-643 93 20
Shift in charge	Shift in charge	0660-27 55 98 070-6935940
Supervisor – Maintenance	Niklas Sjölund	070-670 07 46
Safety representative	Andreas Sjölund	Shift work 072-233 90 09
Senior safety representative	Helen Wallander	070-672 10 55
Permits, Hot Work	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 0660-27 55 98 070-359 20 35
Oxygen measurement in closed spaces	Niklas Sjölund Shift in charge Stefan Svensson	070-670 07 46 0660-27 55 98 070-359 20 35
In the event of accidents or fire, call 112 **Notify the gate on tel. 0660-27 56 91 and the shift in charge on tel. 070-693 59 40.**		

RISKS

Process:

- Gas house: Methane gas (biogas) and hydrogen sulphide (H_2S). The area is alarmed. H_2S gas – Toxic gas that paralyses the sense of smell at high concentrations. Respiratory exposure limit values in the work environment (AFS 2023:14): TWA 5 ppm and STEL 10 ppm. TWA is the eight-hour time weighted average and STEL is the short-term exposure limit for 15 minutes.
    - In the event of a stationary alarm, evacuate the building and go to your assembly point.
    - In the event of a personal alarm, leave the area for alarm and get in contact with operator
- Green liquor – burns.

Explosive gases:

- Biogas (methane gas).

Risky substances in the process:

- Sodium hydroxide NaOH, phosphoric acid H_3PO_4, falk, dosing chemicals, green liquor, steam, hydrogen sulphide (H_2S) and biogas.

For a more comprehensive risk assessment of chemicals in the department, see Domsjö Fabriker's intranet (link to iChemistry) or contact the production engineer.

ROUTINES

- Before working, ascertain where the EX classified areas are, as these areas require a special permit before commencing work.
- During cleaning work in sedimentation basins and tanks (closed areas), the workplace must, as far as possible, be covered with plastic or a tarpaulin to avoid the spread of aerosols. During breaks in the work (coffee breaks, lunch, etc.) or at the end of the working period, particularly good hygiene must be applied.

EMERGENCY EXITS

Assembly point above the aeration basin (see map).

GAS MEASUREMENT

- Parts of the bio treatment plant are EX classified with regard to the risk of explosive gas mixtures in explosion-classified areas. When working, a special permit from an authorised permit issuer (fire safety assistant) is required.

SAFETY EQUIPMENT

- Oxygen gas cylinders can be found in control room.
- Gas meter for SO_2 and H_2S and gas mask with ABEK-filter are mandatory to wear at any time in the department.
- During cleaning work that can result in the formation of aerosols, everyone on the bio purification headland must wear a half-mask with particle filter P3.
- During cleaning work in sedimentation basins and tanks (closed areas), the people carrying out the work must be equipped with suitable rainwear and suitable breathing protection, such as a hood with a particle filter P3 or a fresh air mask with particle filter P3.

ALARMS

- There are emergency alarms at each entrance to the gas house.
- In the event of an alarm: entry prohibited + evacuation of the premises.

These alarms are tested on the first weekend of each quarter.