



HSE-Manual Returkraft



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Preface

This document has been prepared as a tool for use by workers and contractors who will carry out work at Returkrafts facilities. The document contains guidelines for achieving a common goal of zero injuries and accidents.

Please note that during Returkrafts maintenance stop, there may be deviations from the described routines and rules. Follow the instructions you get from the Project Manager.

Returkraft places high demands on health, environment, safety and quality assurance. These requirements must be included in the daily work so that we and our employees are safe. Our safety rules and good HSE culture should help prevent accidents and health damage, as well as create well-being in the workplace. Safety is emphasized more than production and economy.

In order to achieve our HSE and quality goals, we depend on good cooperation and a focus on safety at all times. Through good dialogue and information, we want to create motivation and understanding that each individual is responsible for ensuring that all work assignments are carried out in accordance with Returkrafts safety rules and procedures. We also encourage you to contribute with evaluation of the work and seek improvements.

Your and my safety is our joint responsibility.



About Returkraft

Returkraft AS is located in Kristiansand and is an energy recovery plant that was put into operation in 2010. The plant annually burns 130,000 tonnes of residual waste and food waste. The energy in the waste is converted into electricity and district heating. The flue gas is cleaned before it is released from the pipe.

On average, there will be approx. 50 cars every day to empty waste in Returkrafts bunker. The waste is burned in the incinerator, which maintains a temperature of approximately 1,000 degrees. The smoke is cleaned in three stages (filter bags, SCR catalyst and scrubbers) and what is released from the pipe is mainly water vapour, nitrogen, oxygen and CO₂. Heated water is converted into steam in the boiler and enables us to run a turbine that produces 95 GWh of electricity a year. The heat energy from Returkraft is also used to heat the water that goes into Å Energi Varme's district heating network in Kristiansand.

You can read more about Returkraft at www.returkraft.no.



Contact information

You can get in touch with us on weekdays between 07.30 and 15.00 through Returkrafts information centre on telephone +47 958 46 000 or email post@returkraft.no.

If you have questions regarding the delivery of waste, you can contact us at avfall@returkraft.no or telephone +47 416 45 050.

The control room is manned 24 hours a day and can be reached on +47 974 74 500.



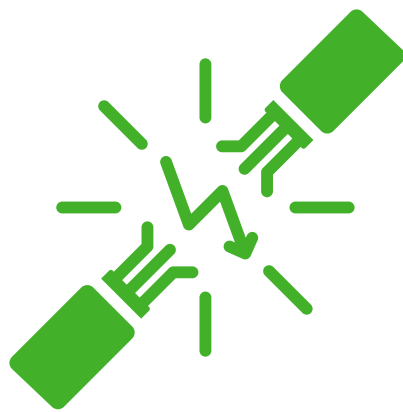
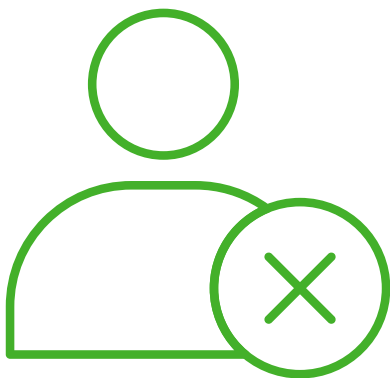
Goals

Returkraft has three main goals for everyone who travels to the facility:

- No injury absence
- No material damage
- No pollution of the external environment

Returkraft is responsible for making the best possible arrangements to create a good and safe workplace, and you are responsible for carrying out the work within the framework of the objectives. Don't let time pressure come at the expense of safety, it's okay to take a break and "buzz a bit". Always think safety first!

We ask you to always think about both your own safety and the safety of others when you stay at the facility.



Attendance

Language

In order to avoid misunderstandings, we require workers entering the facility to be fluent in Scandinavian and/or English, possibly via an interpreter. Our safety courses can be conducted in Norwegian or English.

Safety course

To be able to move around freely on Returkrafts facilities, we require that you have undergone and passed our safety course. The course can be taken digitally on both mobile and PC using this link: <https://muniolms.com/r/2456-ABDE-GMVX>.



In the course, you get an introduction to personal safety, risk reduction measures and Returkrafts emergency plan. The course will also give you some practical information, and at the same time make you more confident about our safety routines.

The safety course must be repeated annually to give you valid access to the facility, by using your personal access card.



Access control

The access card is provided by Returkraft, and has two functions - it:

Opens doors and gates
Generates a crew list

The manning list is an important tool for us to be able to have an overview of who is at the facility at all times. Should a situation arise where the building has to be evacuated, we know exactly who and how many we have to make sure have got out. Therefore, always remember to register when you arrive and when you leave Returkraft by registering the card.



If you do not already have an access card, you will receive this when the safety course has been completed and the first time you come to Returkraft. Come within the opening hours (07.30 -15.00) so that the Information Centre can produce your card and give you valid access. The card goes dormant if it has not been used for 90 days. Contact the Information Centre to activate the card again.

Please contact the project manager if you would like a tour/get to know the facility.

Stays at the facility without a safety course can only be accompanied by people with valid access, who must register in the Information Centre's OnVisit portal.

Project Manager

You or your company must relate to the project manager. This is the person at Returkraft who has overall responsibility for the work to be carried out. The project manager will give you details about the work assignment, and whether there are special conditions in the work area itself that you must take into account.



Work permit (WP)

The project manager will design a work permit (AT) that describes:

- Who will carry out the work
- Where in the facility the work will take place
- What the work consists of
- When the work will take place
- Risk factors

For some types of work, it will be necessary to describe more details. This applies to the following work operations:

- Warm work
- Work in EX zone
- Electrical work
- Work in the bunker

These work operations are described on page 2 of the work permit.

We ask that you familiarize yourself with the content of the work permit and talk to the project manager if there is anything you are unsure about.

The work permit is valid for one day only and must be activated and terminated in the Control Room on the 6th floor every day. The work is not considered finished until the area is cleared. The control room is responsible for coordinating works and ensuring that they do not conflict with each other and can postpone a work operation if they deem it necessary for practical and safety reasons.

Safe Job Analysis (SJA)

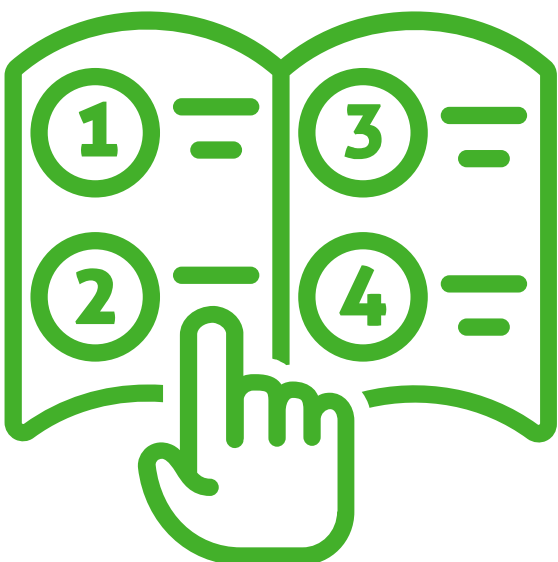
A Safe Job Analysis (SJA) must be carried out for all work operations where the risk is not covered in routines (procedures/instructions) for execution, for particularly risky operations, and where there is a need for coordination of parallel activities.

Everyone who will take part in the job must take part in the review of the SJA and sign it. Adhere to the SJA during the work. If, during the work, you should find that there is a deviation from the content of the SJA, or if unforeseen things occur that compromise safety, you must stop the work and update the SJA so that further work is secured.

Always think safety first!

Instructions and procedures

Many of Returkrafts work operations and regulations are described in instructions or procedures. It may be relevant that you have to deal with some of these during the work you will carry out. If so, you will be informed of this by the project manager.



Work equipment and training

Work tools, lifting equipment, machines etc. that require certification must have a valid approval. For many types of tools and equipment, there is a requirement for the user to have training before it is put into use. Such training must be documented by using a form that will be provided by Returkraft.



How to stay and work at Returkraft

Before you start the actual work, it is a good idea to orient yourself in the area you will be working in. The sections below describe conditions you should pay special attention to when staying at Returkraft.



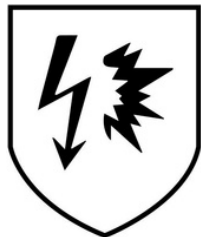

Protective equipment and workwear

If you are in Returkrafts processing hall, or at our outdoor area, you must always wear a **helmet**, **high-visibility clothing** (total class 2) and **safety shoes**. Some works may require additional protective equipment, such as eye protection, hearing protection, respiratory protection, gloves, and fall protection equipment. Relate to signage, procedures/instructions, project manager, work permit and any SJA. The use of hearing protection is encouraged during your stay in The Reception Hall.



Workwear

Returkrafts requirements for workwear are according to the following classifications:

	EN ISO 20471. Visible workwear
	EN ISO 1149. Electrostatic properties
	IEC 61482. Open arc
	EN ISO 11612. Protective clothing against heat and flame

Visibility requirements for workwear:

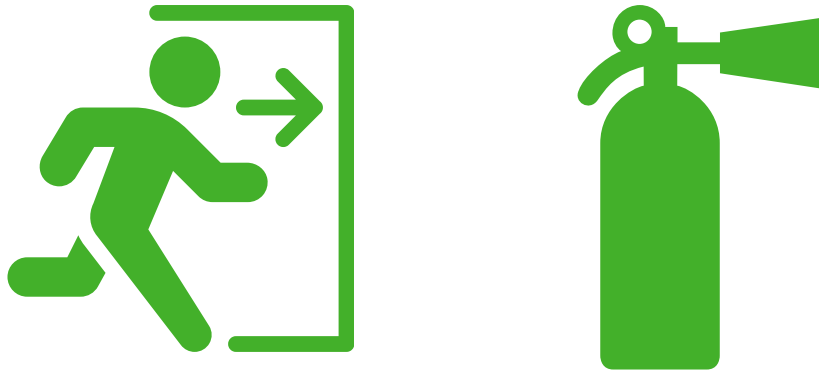
- For work in the process hall/outdoor area, a minimum of visibility class 1 is required on both trousers and top = total visibility class 2.
- For stays in the process hall/outdoor area, you can wear class 2 on the top and no class on trousers.
-

Returkrafts procedure "01.17 Arbeidstøy" contains more details, including requirements for workwear during welding and work with liquid chemicals.

Emergency exits and fire extinguishing equipment

Before you start working, familiarize yourself with the nearest emergency exit. You can find evacuation plans in all stairwells for the respective floors. The plans are also marked with fire extinguishing equipment.

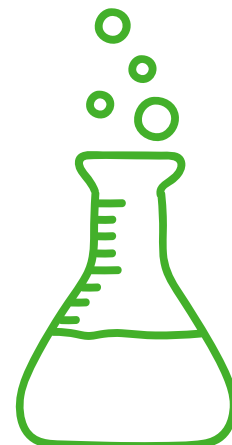
Fire doors must be kept closed.



Chemicals

At Returkraft, there are local notices with QR codes for the relevant chemicals that are found in the area you will be working in. This way, you have easy access to data sheets if needed. Chapter 4 of all data sheets describes first aid measures.

If you bring your own chemicals, we ask you to inform the project manager to make sure that the data sheet is easily accessible. The chemical can be temporarily entered into our electronic data sheet system, or it can be attached to a printout together with the work permit.



Emergency showers

Returkraft has four chemicals that you should be aware of (in addition to "consumable chemicals"):

- **Filter dust/boiler dust.** Filter dust is not acutely dangerous but can be carcinogenic through repeated or prolonged exposure.
- **Ammonia water (25%).** Corrosive in contact with skin.
- **Sodium hydroxide.** Corrosive in contact with skin
- **Burned lime.** Lime develops a heat reaction if it comes into contact with liquid, such as tears or saliva (large amounts of water neutralize the effect).

If you should be exposed to any of these chemicals, you must rinse the skin with water for a minimum of 20 minutes. You will find emergency showers with eye washers in areas where these chemicals are stored. All the emergency showers at the plant are connected to an alarm that goes off in the Control Room if they are turned on. In this way, you'll quickly get help for further treatment. For the same reason, we ask you never to use emergency showers for anything other than emergency purposes.

We ask you to handle all liquids at the facility - especially unknown ones - with care. **Always wear the required protective equipment when handling chemicals.**



Ex-zones

If the work is to take place near an Ex-zone, you must comply with the information given by the project manager.

Returkraft has three areas with explosive atmosphere:

Propane cabinet with associated pipelines

- Zone 1 inside cabinets for propane bottles
- Zone 2 from pressure control valve and 0.5 meters out in all directions (5th floor)
- Temperature class: T1
- Ignition temperature: 470 °C
- LEL: 2.1%, UEL 9.5%
- Gas Group: IIA

Ammonia water tank (25% ammonia solution)

- Zone 2 inside the tank at temperature between 0 and 18 °C
- Temperature class: T1
- Ignition temperature: 651 °C
- LEL: 15%, UEL 27%

Activated Carbon (Dust Explosion)

- Zone 21 inside tank and pipe
- Zone 22 inside pipes and around flanges
- The coal silo is equipped with an extinguishing system based on nitrogen (N₂) to be able to create an inert atmosphere if the conditions in the silo should indicate this. The extinguishing system is triggered automatically at a high temperature in the silo.
- Activated carbon can form a dust explosion, so you should never vacuum unknown powder at the plant.

These three areas are particularly important to be aware of if you are going to perform hot work. Please relate to locally posted zone maps, project manager, work permit and SJA.



Double barrier

Working on chemical-bearing, rotating and energized equipment requires a double barrier. This means that the systems always must be locked off at two different places (for example, a switch and a fuse), so that the systems cannot be started unintentionally.

Safety switches in the process must always be locked off with a padlock (provided by the control room). Check that the system is powerless before the job starts. Every job is responsible of securing itself.



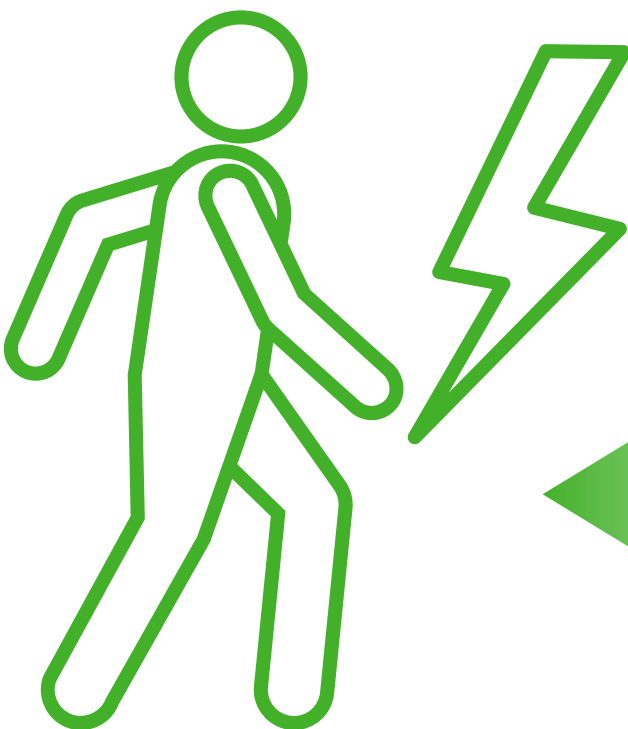
Narrow conduction surroundings

Returkrafts boiler is defined as a narrow conductive area (an area with limited possibilities of movement surrounded by metallic or conductive parts, NEK400-7-706). For that reason, safety transformers must be used as power supply for tools when working in the boiler to prevent earth faults outside the area from spreading into the narrow conductive area.

Returkraft has 10 safety transformers for use during work in narrow conductive environments; 8 which can withstand 10 A and 2 which can withstand 16 A. These transformers must be placed outside the narrow conductive area, and it is only permitted to connect 1 tool per isolating transformer. If, for example, you are going to use an angle grinder and a drill, only one tool should be connected at a time – or you can use two safety transformers.

It is **not** permitted to use an extension cord with a branch outlet (more than one outlet) connected to an isolating transformer.

Portable lamps must be supplied from a SELV-approved transformer (SELV = Safety Extra Low Voltage) or have battery operation with lower voltage than 50VDC.



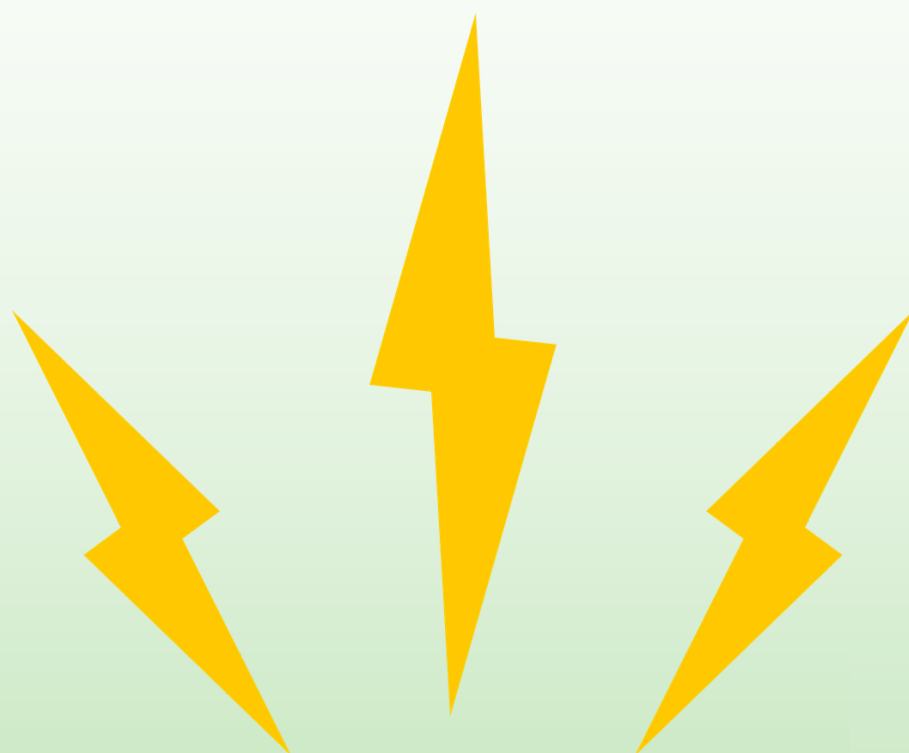
Electrical work

Companies that will carry out electrical work at Returkraft must be approved by The Norwegian Directorate for Civil Protection (DSB). This also applies to foreign companies. All projecting and performance of work should be done accordingly to Norwegian legislations. The contractor must have completed an FSE course (Regulations on safety when working in and operating electrical installations).

On page 2 of Returkrafts work permit, the electrical work must be described in more detail, including who is responsible for work (AFA).

This person is responsible for the HSE aspect of the work to be performed. To be an AFA, you must be approved by Returkraft. No electrical work should be carried out before you have a valid work permit signed by Svein Terje Grønnestad, Kristoffer Hagevik or Bent Jahnsen.

Before any electrical work start, a risk analysis must be carried out together with electrical professionals employed by Returkraft. All changes to electrical installations must be documented with drawings, lists, etc., and be accompanied by a declaration of conformity.



Chain barriers

To secure an area, it may be necessary to set up chain barriers/tape. Only red and white chains/tape should be used for this purpose. If you put up a chain barrier/tape, you must also hang up a sign marked with name, company name and phone number. Remember to take down the barrier when the job is done.

Make sure that tools cannot fall to a lower level, either by using a safety cord, a solid floor or a box for storing loose tools. If this is not possible, chain barriers must be used at exposed levels below the work site.

Barriers during the use of the lift must be placed at least 50% of the altitude meters.

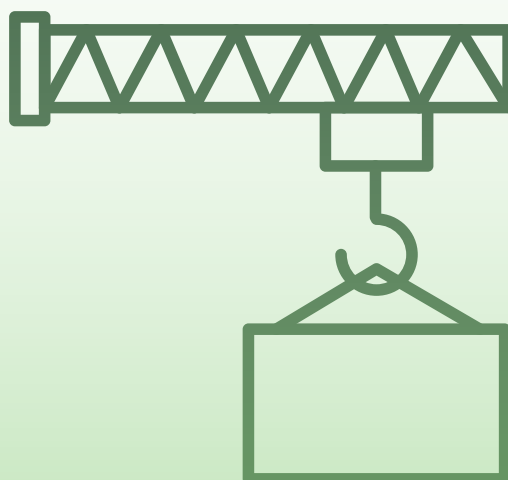
It is strictly forbidden to cross a barrier without the permission of the person indicated on the sign.



Lifting equipment

Do not walk under suspended loads. Warn others moving near the danger zone and cordon off the area with chain barriers.

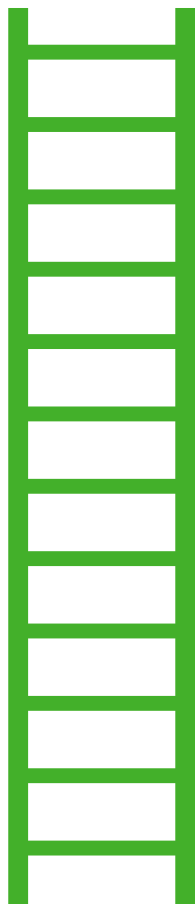
Some work requires the use of harnesses, hoists and straps. Before you start using them, we ask you to check if the equipment is certified and in good condition. Damaged equipment must be discarded.



Working at height

When working at height, you can use a ladder or step ladder as long as the height of any fall is not more than 2 meters. If there is a risk of falling higher than this, collective protection, such as a lift or scaffold, must be used. Scaffold must only be built or changed by certified personnel. **Always make sure to check that there is a green permit tag hanging on the scaffold before you use it.**

If collective protection is not possible, fall protection equipment must be used during work at height. This always applies when using a telescopic lift. A SJA must be carried out when the work requires use of harnesses, including a rescue plan and identification of approved attachment points. When using harnesses, you must have an approved fall protection course and a rescuer must always be available. Always check that the harness is in good condition before use.



Rules of conduct

Returkraft practices 5S standard. 5S stands for:

- Sort. We only deploy the necessary equipment at the workplace
- Systematize. We place tools, equipment and materials so that it provides the best possible overview and workflow
- Shine. We always put equipment back in its rightful place. Equipment and premises are kept tidy and clean
- Standardize. We design tasks and routines so that everyone understands them
- Secure. We develop and maintain standards so that the 5S focus is maintained at all times

We ask you to always make sure that your workplace is tidy. Escape routes and emergency exits must be kept open at all times. Returkraft has a dedicated building in the backyard where you can sort your waste.

No food is allowed inside the processing hall.

Smoking must only take place outdoors at marked places.

It is not allowed to be under the influence of alcohol or drugs when you are going to perform a job at Returkraft.

Parking inside Returkrafts area should be avoided as far as possible. Please use the parking lot outside the gate.



Action plan in the event of an accident or fire

If you witness an accident or fire, you must, if possible, secure the scene of the accident, notify and then start first aid. We recommend notifying the Control Room (+47 974 74 500). The Control Room has round-the-clock staffing, and can assist with first aid equipment, defibrillator and dialogue with emergency services. We recommend saving the Control Room number so that you have it easily accessible.

What to do in the event of a fire or accident?

- **Secure the area.** In the event of an incident, you should first secure the area. Always assess your own safety first.
- **Call for help.** If you notify the control room, they will assist with help and any dialogue with the emergency services. The control room is staffed around the clock.
- **Provide first aid.** First aid kits are located several places at the facility.



First aid kit

Returkraft has two defibrillators at the plant: one at the ground floor in the Information centre and one in the Control Room at the 6th floor.

First aid kits and burn kits are available in several places at the facility, including at the 6th floor in all the stairwells. The suitcases are well signposted and can easily be taken to the scene of the accident. You will also find eye washers and emergency showers in several places in the facility.



Registration of improvement proposals, deviations and accidents

Please report unwanted incidents, as irresponsibly acting people or malfunctioning equipment. By notifying us we can rectify the situation before something more serious happens. Returkraft has a digital nonconformance system (the HSEQ app) to register improvement proposals, deviations and accidents. You can get help from the project manager or another Returkraft employee if you want to register something in the system. All accidents should be reported and will be evaluated to identify measures so that we can prevent the incident from happening again.

Safety representative

A safety representative will safeguard the interests of employees in matters relating to the working environment. The safety representative shall ensure that the business is well organized and maintained, and that the work is carried out in such a way that the safety, health and welfare of the employees is well considered. Monthly safety rounds are carried out at Returkraft.

Returkraft has one safety representative, with the entire company as its area of responsibility. You can find information and contact details on the local bulletin in the Information Centre.

Feel free to contact the safety representative if you have any working environment-related issues you wish to raise at Returkraft.



Evacuation

If the fire alarm goes off, you must stop working immediately and evacuate via the nearest escape route by following the green emergency signs. You must not pull your access card on the way out during an evacuation.

The designated assembly point is outside the 207 building. Please stay close to the colleagues from your own company, and make sure your name is registered during the roll call of the crew list.



We wish you a nice and safe working day at Returkraft!



Returkraft
Vi brenner for miljøet