

## 1. Introduction

Korvenranta Oy aims to minimize its environmental impact by paying proper and comprehensive attention to the environmental aspects.

## 2. Coverage

The procedure covers the company's all processes. The aspects related to the production process are essential in keeping the level of the environmental protection high, and also when aiming to improve it. In addition to order-delivery –process and the other core-processes, the procedure covers also the environmental aspects related to the factory's built surroundings.

## 3. Description

Korvenranta Oy minimizes the environmental burden caused by its activities by obeying the environmental and waste management laws and regulation, by acting according to the requirements set by the certified environmental management system, and by investing to modern machinery. The timeliness and coverage of the environmental and waste management laws and regulation is reviewed yearly.

The environmental aspects are evaluated yearly according to the following sequence: function – its possible environmental burden – current situation – actions needed – allowable goal level for the burden. Significant environmental aspects are mentioned separately, but the evaluation process for them is the same. The evaluation of the environmental aspects is scheduled within the year-plan. The reduction or elimination of the environmental risks and disadvantages are often carried out by utilizing the BAT-principle, which usually automatically means that also the environmental aspects are highlighted in the modern machinery design. The effectiveness of the actions carried out are evaluated when the year plan –based environmental aspect evaluation is done next time, at the latest. It is then estimated, if the action or process phase is an environmental risk or disadvantage any more.

## 4. The key factors in the environmental protection

### Environmental management system

Korvenranta Oy operates according to the requirements set by the certified ISO 14001:2015 environmental management system. In practice this means that the company is committed to constant improvement of the environmental protection by setting goals for it and evaluating the effectiveness of the actions carried out

(Business plan, MO 102 L1). One of the key elements is to clarify and obey the environmental laws and regulation, and to recognize the environmental aspects and burden caused by the company's own processes. For this, sufficient resources are reserved.

### Environmental permit

The company has an environmental permit. The reason for the need of the permit is waste's industrial management (the Environmental Protection Act 527/2014): utilization of the excess wood in the company's own power plant.

The overview of the plant's processes required by the environmental permit is made to the municipality's environmental protection authoritative yearly by the end of the March. In the overview there is announced at least:

- fuel consumption
- observation- and servicelog
- environmental accidents
- the management of waste and dangerous waste

### Power plant

The reason for the need of the environmental permit is the industrial utilization of waste. In practice this means the operation of the power plant, where the process's excess wood is burned for energy production. The operation of the power plant is observed, and a report of its functioning is done (MO 205 L5). The ashes' eligibility to be delivered to landfill has been clarified (MO 205 L7).

### Waste management

A comprehensive contract of the waste management has been made with a service provider, who fulfills the requirements set by the Waste Act. The contract covers regular collecting of energy waste, mixed waste and the waste paper and cardboard. Other waste is collected when needed by a separate order.

The company is obliged to keep a record of its waste for two reasons: because the waste is utilized industrially, and because the business requires environmental permit (Waste Act 646/2011, 118 §, paragraph 3 and 4).

The overview of the quantities of the different waste types is reported yearly to the municipality's environmental protection authoritative (MO 205 L4).

### Water quality and consumption

In the factory's production processes water is used in the painting process. The painting line's conveyor belt is cleaned in a continuous automatic washer. The volume of the washing liquid –tank is 10 liters, and this volume is recycled for about a week. After this the liquid is led into a larger container, which in turn is delivered to a waste treatment facility when it's full. Also the paint spray nozzles and pipes are cleaned with similar washing liquid. This liquid is not recycled, but it's led directly to the above-mentioned larger container. Within the paint tray's washing about 10 liters of washing liquid is used, and this liquid is similarly led to the container.

In the painting line hall there are no sewers on the floor. This is to prevent any accidental leakage to the municipal sewerage system.

The quality of the water used in the personnel's refreshment facilities is of a very high quality and safe to use for example for showering, drinking and cooking. In Finland water can be drunk straight from the water tap, because it's clean, clear and odorless. The quality of the domestic water is controlled in the waterworks according to the Social and Health Ministry's regulation.

### Air quality

In the production halls there is very efficient ventilation, because of the wood powder suction/deletion installed within the direct range of each machine. In winter time part of this air is recycled back to the halls. Both this recycled air and the outgoing air are led through multiple, efficient filter systems. In the painting line hall the drying air from the line is similarly led through multiple, efficient filter systems before it's led outside. This air is not recycled.

The factory has own small-scale power plant (450 kW), in which the excess wood from the manufacturing process is burned. The power plant is new and its filter systems are modern and high-tech. In the flue gas cleaning a new, innovative technique is used, in addition to more traditional multi-cyclones.

### Responsible chemical management

Korvenranta Oy complies with the Government Decree on Chemical Agents at work. According to this, the company has records and safety data sheets of all the chemicals used within the manufacturing process. It is known what dangerous substances they contain, the risks the substances cause to health, and how the workers are protected against these risks. The objective is to use as few chemicals as possible: chemicals are used only in the painting line, and they are water-based.

### GHG emissions, energy efficiency and renewable energy

The GHG emissions (mostly CO<sub>2</sub> and H<sub>2</sub>O) are formed indirectly by using electricity to power the machinery. Although green electricity (renewable energy) is favored, part of it can be produced for example by burning biomass or waste. The machinery is new and the best available technology, and therefore their energy efficiency is high.

Direct GHG emissions are produced by the power plant, which uses the process' excess wood as fuel. The energy produced by the plant is used to warm the factory halls and to heat water. The power plant is new and its burning efficiency is high (approximately 93 %), so other gases but CO<sub>2</sub> and H<sub>2</sub>O are in very low level. The plant itself is small-scale, so the used capacities of excess wood burned as fuel are quite low. The carpentry industry's excess wood is categorized in Finland as biofuel class B, so it's renewable energy. Part of the wood is categorized even in the biofuel class A, which is pure wood. In the summertime, part of the excess wood is transported to a nearby plant (about 5 km), which needs a lot of heating power in its processes through the year (manufacturing of plywood and chipboard).

In the painting line hall the heat of the drying air is utilized by warming the hall with it. The warm air coming from the drying units is not circulated, but its warming capacity is saved in the heat exchanger. Therefore the painting line hall doesn't need any other warming system, on the contrary the warm air formed in the hall is led also to other parts of the factory.

All lighting in the halls and in the offices is based on LED-technology. LEDs are more efficient than fluorescent tubes (they consume less power and produce more light).

As well as for the energy- and mixed waste, Korvenranta Oy has set goals for the energy consumption. The consumption and its relation to the goal is monitored regularly, and a graphic diagram of it is presented in the Quality System's attachment MO 205 L9, The environmental goals.

## **5. Responsibilities**

The personnel responsible for quality-, environment- and occupational safety and health issues.

## **6. Instructions**

Form for evaluating the environmental aspects	MO 205 L1
Instructions for waste separation	MO 205 L2
Waste management	MO 205 L3

Overview of the plant's activities	MO 205 L4
Power plant and its environmental aspects	MO 205 L5
Environmental permit	MO 205 L6
Eligibility of the ashes	MO 205 L7
The environmental goals	MO 205 L9

## **7. Files**

The annual evaluations of the environmental aspects and the overviews of the plant's activities are in the annual quality-files.