

Karelia

Environmental Policy

Karelia strives to develop and continuously improve the company's products and services in a more environmentally friendly manner.

We commit ourselves to following environmental related regulations and to develop our environmental policy in accordance with changes with these regulations.

- Suppliers having environment management systems are favoured.
- We aim to maximise raw material saving and by-product utilisation and to minimise energy consumption and waste production.
- We openly inform authorities and our trading partners about the environmental effects of our activities.
- Our personnel are trained to work in an environmentally friendly manner.
- External audits and reviews of our environmental management systems are arranged on a regular basis.
- Only raw materials enabling recyclability of the end product are utilised.

Sensible and sensitive environmental policies help us to monitor and manage the increasing consumption of renewable natural resources, such as timber. These require the forest to be capable of retaining huge amounts of carbon dioxide. The more timber that is harvested, the more the forest needs to be managed in accordance with the principles of renewal and development. This assists the preservation of the precious reservoir of carbon dioxide in the forests so that nature is protected from what is known as the greenhouse effect.

Karelia wood flooring is made from timber originating from forests which have well established credibly certified programmes. The majority of raw material used for manufacturing Karelia, such as birch, pine, oak and ash species, come from Nordic countries and Central Europe; in these regions less timber is harvested than the forests produce.

Due to the rigorous quality requirements for the top layer lamina of Karelia wood flooring, no raw material which contains fungal decay or insect damage can be used. Timber from ancient and protected forests satisfies this requirement.

Raw material for the middle and bottom ply layers of Karelia wood flooring is genuine pure Scandinavian spruce. Suppliers of this material are required to observe strict environmental policies and are almost all ISO 14001 or EMAS certificated.

In Karelia wood flooring a strong cross-glued three-layer structure is used. The top layer is solid wear-and-tear-resistant hardwood. Because of the three-layer structure, the maximum benefit is derived from the hardwood, and the flooring will maintain its form and strength for decades without the need for frequent refurbishing. The raw materials used for wood flooring have a long useful life thereby conserving natural resources and the environment.

The top layer of Karelia wood flooring can be sanded a number of times. After refinishing, the surface will be like new. This process of re-sanding and refinishing extends the lifespan of Karelia wood flooring and provides an enduringly beautiful floor.

Raw material used for manufacturing Karelia wood flooring is free from impregnating substances and other chemicals. Suppliers of raw materials are carefully monitored in accordance with ISO 9001 quality system requirements. Comprehensive inspections and verifications ensure the cleanliness and purity of the raw materials used.

Formaldehyde emissions of Karelia wood flooring fall well within E1-norm requirements.

For pre-finishing Karelia wood flooring, either odourless and solvent-free UV lacquer or linseed-based wood oil is used. UV hardened acrylic lacquer forms a tight and crack-free surface on the top layer preventing wood dust spreading into the air of the room. The air remains fresh and clean and the satin matt lacquer enhances the vivid grain pattern of the timber. UV lacquer and wood oil do not contain environmentally hazardous substances, such as heavy metal, arsenic or chlorine compounds.

Karelia wood flooring packaging materials are environmentally safe and can be recycled. The timber or cardboard used can be disposed of through normal waste collection systems. No special arrangements are required. In the unlikely event of anyone ever wishing to dispose of Karelia wood flooring, it can be burned safely after removal from site or disposed of through normal waste collection systems without any special arrangements.

During the manufacture of pre-finished wood flooring, timber is processed in several different ways. One by-product of these processes is timber chips, which are made of sawdust, offcuts and waste pieces of veneer and flooring wood.

To utilise these chips in the most efficient way and to fully control the burning of them, Karelia has constructed modern incineration plants equipped with high technology control systems.

In these plants, wooden chips from the wood flooring manufacturing process are burned in carefully monitored circumstances. Heat energy arising from this burning process is utilised in Karelia's kiln-dryers and in heating Karelia's production and office facilities.

Based on this efficient and closely monitored burning process in incineration plants, - Karelia is able to supply wooden chips to external heating plants.

The burning process of Karelia's incineration plants is regularly monitored and the fumes analysed by an independent laboratory, Technical Research Centre of Finland (VTT). Results of these tests indicate that the CO₂-, CO-, O₂- NO-, HCN-, HCHO- and HNO₃-content of fumes safely satisfies the requirements of the environmental authorities. This has been achieved by using a high burning temperature and sophisticated filter systems, which systematically remove hazardous particles from the fumes.

Fine wood dust from machines on the production line is efficiently extracted. Dust is prevented from entering the air by using filters approved by BIA (Berufsgenossenschaftliches Institut für Arbeitssicherheit). Filtered wood dust is forwarded into Karelia's incineration plants and burned with other wood waste.

Karelia use limited amounts of water for producing wood flooring. Most of the water used is to provide sanitary facilities and the waste water from these is forwarded under control into the municipal sewage system. Water used for cleaning glue press rollers is burned in Karelia's own incineration plants at a very high temperature to ensure clean fumes.

Carbon Footprint

In an on-going effort to reduce carbon emissions, Karelia-Upofloor oy have carried out the following disciplines and investment in their operations:

- Use of external accredited companies to carry out emission measurements in production units on two years intervals.
- Measuring devices are calibrated when measuring the emissions.
- During the last two years
 - over €100,000 has been invested in Kuopio to improve the properties of heat production units aimed at reducing carbon emissions.
 - over €500,000 has been invested in Heinola for the same purpose including a completely new heat production unit featuring state of the art technology.
- Woodbased waste (sawdust, wooden chips, etc.) from production is used instead of oil to produce the heat energy needed.

- For several years the level of particle discharges has been approx. 100 mg/Nm³ whereas the acceptable level in Finnish legislation is max. 150 mg/Nm³.
- Excess woodbased waste is sold to other companies for heat production purposes
- Volatile Organic Compound (VOC) emissions
 - No solvents are used in the production process (in glues, lacquers, hardeners, etc.) therefore total emissions of VOC (=TVOC) is extremely low i.e. < 2,0 mg/Nm³
 - There is no recommended level of production process emissions in Finland for TVOC but for example the German TA-Luft uses max. 20 mg/Nm³ as a guideline for best emission class
- Formaldehyde
 - The factory level of formaldehyde in the exhaust air in Karelia factories is approx. 1,2 mg/Nm³
 - There is no recommended level of production process emissions in Finland for formaldehyde but for example in Denmark the guideline is max. 20 mg/Nm³
- Ozone emissions
 - Ozone emissions from the production are 2,0 mikrogramms/m³ air, which is approx. 6 % of the allowed max. value 65 mikrogramms/m³ air.
- Other actions taken
 - Karelia-Upofloor oy have reduced the amount of normal waste by approx. 50 % during the last three years
 - this has a direct impact on the amount of gases (like methane) emitted from dumping areas into the ambient air
 - All plastic packing materials are recycled
 - they are forwarded to a subcontractor producing raw materials for factories producing plastic materials
 - Investment in videoconference equipment
 - Reducing the need to travel abroad