

## **Environment**

Karelia is sensitive to the environment, its needs and its demands. The endeavour is to live in harmony with nature - now and in the future. Karelia cherishes Nature's benefits in every part of the production process; from product development to sales and marketing. Production, sales, marketing and product development are certified in full accordance with international EN ISO 14001 environmental management standard.

### **Environmental policy**

The goal of Karelia's activities is to develop the company's products and services in a more environmentally friendly manner taking into account the principle of continuous improvement.

We commit ourselves to following environmental related regulations and developing our environmental policy in accordance with changes in 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 recycling of the end product are utilised.

### **Forest - ecosystem continuously renewing itself**

The cycle of forest and timber starts from assimilation, i.e. photosynthesis, which is the most important part of the life supporting process. The source of energy for this is the light of the sun itself. Photosynthesis takes place in green leaves, which convert the light of the sun into the energy the forest and wood require. This energy, together with water and minerals from the soil, encourages the natural process of timber growth.

The fabulous result is a versatile forest, which regenerates itself every year and produces an abundance of new raw material, timber. If the forest is healthy, both you and the environment benefit.

Today, 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 phenomena.

### **Timber - renewable natural resource**

As a raw material, timber is today more significant than it has ever been. It has many benefits compared to concrete, plastic and steel, and its importance is likely to increase as the years go by. It is the most valuable and renewable natural resource. Karelia wood flooring is made from timber originating from forests which have well established silvicultural 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.

## **Karelia wood flooring - for a long and healthy life**

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 resanding 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.

The temperature and relative humidity of the air are important factors where health is concerned. In all buildings, the relationship between the temperature of the air and the temperature of the surfaces is crucial to the wellbeing of the occupants.

Synthetic flooring materials like plastic and laminate feel cold beneath your feet. Genuine timber feels comfortable and warm. This is due to the low thermal conductivity of wood. Wood flooring does not allow cold underfloor air draughts to enter. Instead wood flooring provides extra thermal insulation. An exceptionally comfortable environment is achieved when Karelia wood flooring is combined with underfloor heating, since wood flooring distributes the heat evenly into the air of the room across the entire surface of the flooring.

Wood is a hygroscopic material. As the relative humidity of air rises, wood absorbs water. When the relative humidity of air goes down, wood releases the water it has absorbed. This has a balancing effect and you will notice the improved quality of the air where wood flooring has been installed.

Materials used for the packaging of Karelia wood flooring 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.

## **Karelia - conserving the resources of nature**

Nature's own material, timber, is used for manufacturing Karelia wood flooring. Harvesting the wood and processing it to pre-finished flooring consumes a tiny amount of energy per unit compared to the manufacture of synthetic materials like plastic. The amount of energy it takes to produce 1 kg of plastic will produce 5 kg of timber.

Timber and timber products are part of nature's regenerative cycle since, when no longer required for their original purpose, they can be recycled or returned as waste product to produce new forests and new timber. This is the way Karelia, showing kindness to nature for the benefit of mankind.

## **Karelia wood flooring - heat energy from nature**

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, off cuts 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 CO<sub>2</sub>-, CO-, O<sub>2</sub>- NO-, HCN-, HCHO- and HNO<sub>3</sub>-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.

## **Packing**

Karelia wood flooring is delivered on wooden sleepers wrapped with transparent recyclable weather resistant polyethylene membrane. Packing is secured with steel bands. Cardboard marked with product details is 100 % recyclable. None of the packing materials require special arrangements during disposal.



**DET NORSKE VERITAS**  
**MANAGEMENT SYSTEM CERTIFICATE**

Certificate No. 2000-HEL-AE-202

*This is to certify that*

**KARELIA CORPORATION,  
WOODFLOORING DIVISION**

Kuopio, Heinola, Tuupovaara and Nastola, Finland

*has been found to conform to the Environmental Management System Standard*

**ISO 14001:2004**

*This Certificate is valid for the following product/service ranges:*

SALES OF MULTILAYER PARQUET COVERINGS PROCESS. DEVELOPMENT OF PRODUCTS AND  
TECHNOLOGIES PROCESS. MANUFACTURING PROCESS.  
SUPPORT ACTIVITIES/PROCESSES TO FORMER PROCESSES.

Place and date  
Espoo, 2006-05-23

for the Accredited Unit  
DNV Certification OY/AB

  
Kimmo Haarala  
Management Representative



This certificate is valid until  
2008-10-30

Original certificate valid from  
2000-12-22



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**DET NORSKE VERITAS**

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**MANAGEMENT SYSTEM CERTIFICATE**

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Certificate No. 2018-2004-SMS-HEL-DNV

*This is to certify that*

**KARELIA CORPORATION,  
WOODFLOORING DIVISION**

Kuopio, Heinola, Nastola and Tuupovaara, Finland

*has been found to conform to the Chain of Custody Standard*

**Annex 4 and 5 of PEFC Technical Documentation 2004**

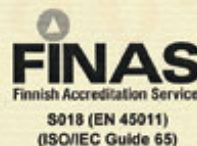
*This Certificate is valid for the following product/service ranges:*

SALES OF MULTILAYER PARQUET COVERINGS PROCESS.  
DEVELOPMENT OF PRODUCTS AND TECHNOLOGIES PROCESS.  
MANUFACTURING PROCESS.  
SUPPORT ACTIVITIES/PROCESSES TO FORMER PROCESSES.

Place and date  
Espoo, 2006-05-10

for the Accredited Unit  
DNV Certification OY/AB

  
Kimmo Haarala  
Management Representative



This certificate is valid until  
2010-10-30

Original certificate valid from  
2004-10-29