Artek's environmental policy

August 1, 2007

Artek and the environment

A superior standard of quality has always been part of the Artek tradition.
However we depend
upon the earth's resources to design and manufacture our products and therefore we have a huge responsibility to act wisely in the environmental choices we make.
Since 1935, Korhonen Oy is Artek's main manufacturer of our Alvar Aalto furniture line. Korhonen Oy holds both an ISO9001 quality certificate and an ISO14001 environment certificate and is obligated to adhere to the high quality requirements that Otto Korhonen and Alvar Aalto laid out for more than seventy years ago.

Artek and Korhonen Oy are committed to assessing the environmental impact of our manufacturing processes and business practices. This includes:

- reduce quantities of waste and environmental effects on earth, air, water and other natural resources arising from our production installations
- obtain most efficient use of the raw material and conserving energy in the manufacturing process.
- follow legislation and the guidelines by the EU, local authorities and other environmental advisory boards but not always be satisfied with fulfilling minimum requirements.
- work actively with customers, suppliers and authorities
- to make sure our employees are carrying out their work in an environmentally responsible manner see environmental work as continuous improvement.

Environmental report

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0. Factory

Korhonen Oy, based in Turku in Finland, is today Artek's main supplier of Alvar Aalto furniture. The cornerstone of the Korhonen factory's production is uncompromising craftsmanship. The production park includes exceptionally sophisticated machinery and special machines that have been custom designed to suit the manufacture of Artek's Aalto furniture. The factory holds an ISO9001 quality certificate since 2001 and an ISO14001 environment certificate since 2006.

1. Materials

The table below states the total purchase of different materials used per one production year for making Artek's furniture.

Birch	801964 kg	73,0 %
Ash	2810 kg	0,3 %
Birch plywood	51290 kg	4,7 %
Chipboard	164164 kg	14,9 %
Hardboard	8223 kg	0,8 %
Laminate	13857 kg	1,3 %
Linoleum	4549 kg	0,4 %
Paper	4541 kg	0,4 %
Glue	21164 kg	1,9 %
Varnish	26614 kg	2,4 %
Total	1099176 kg	100,0 %

1.1. Wood

The birch trees used are felled from well-maintained mixed forests in middle and eastern Finland. Finland has strict rules for sustained yield management in forestry with a request to plant or secure natural seeding of new trees instead of fallen ones.

- No tropical wood species, no fungicides or insecticides or impregnated wood are used in the production.

1.2. Plywood

Our plywood is made of birch veneer and carbamidi glue. Main supplier is UPM-Kymmene Wood Oy.

- The formaldehyde content of plywood approx. 2mg/100g dry product
- Free formaldehyde content is less than 0.04 percent by weight.
- The free formaldehyde content of the glue used in plywood manufacture is less than 0.4 percent by weight.
- Plywood can be disposed of by burning (minimum 600°C and sufficient oxygen), composting and chipping for other sheet product raw material or by disposal at a landfill site.
- No fungicides or insecticides are used
- 17% of the raw material comes from certified forests (year 2000) and increasing every year
- No materials that are classified as carcinogenic, toxic or harmful to the reproductive or genetic systems are used

1.3. Chip board

- Chipboard is made of sawdust, a wood industry by-product, and chippings. The glue used is urea glue.
- Chipboard formaldehyde content in compliance with EN 120 is 5–6 mg HCHO/100g dry chipboard.
- Uncoated chipboard belongs to finishing material emission category M2.
- Chipboard can be disposed of by controlled burning in a high temperature (above 800°C).
- The chipboard supplier, Finnish Koskisen Oy, holds an environmental system ISO 14001 certificate.
- No materials that are classified as carcinogenic, toxic or harmful to the reproductive or genetic systems are used

1.4. Laminate

Melamine varnished board has a durable melamine plastic surface layer which complies with hygiene requirements. The frame consists of unbleached paper treated with heat-setting phenol resin plastic. The board is extremely durable (service life 15–25 years for kitchen furniture) and complies with formaldehyde emission requirements in compliance with EN 120 standard E1. Supplier is Formica IKI Oy.

- Laminate varnished board can be disposed of by burning at an energy plant.

1.5. Linoleum

Linoleum products are made of vegetable oils; resin and filling materials such as ground wood and limestone. The ground layer is made of paper. Paper made of unbleached sulphate pulp is used on the inside of linoleum tabletops and seats.

- Linoleum products can be disposed of by burning or composting
- Supplier: Forbo Linoleum AB

1.6. Varnish

Varnishing is done either by sinking or by spraying. All varnishing methods use identical base varnish, whereas finishing varnish varies according to the method used. Base varnish, hardeners and thinners do not contain formaldehyde. Finishing varnish contains less than 0.124 mg/m3 of formaldehyde.

- Supplier Swedish Becker Oy
- No materials that are classified as carcinogenic, toxic or harmful to the reproductive or genetic systems are used
- Meets the EU-requirement according to E1-norm

1.7. Glue

Urea glues are used in bends, moulds and veneering, whereas PVAc glues are used in gluing edging strips, linoleum and laminate as well as in assembly. PVAc glues do not contain free formaldehyde and the free formaldehyde content of urea glues is less than 0.2%.

- Two suppliers, Finnish Kiilto Oy, Swedish Akzo Nobel Casco Products AB
- No materials that are classified as carcinogenic, toxic or harmful to the reproductive or genetic systems are used
- Meets the EU-requirement according to E1-norm

2. Production

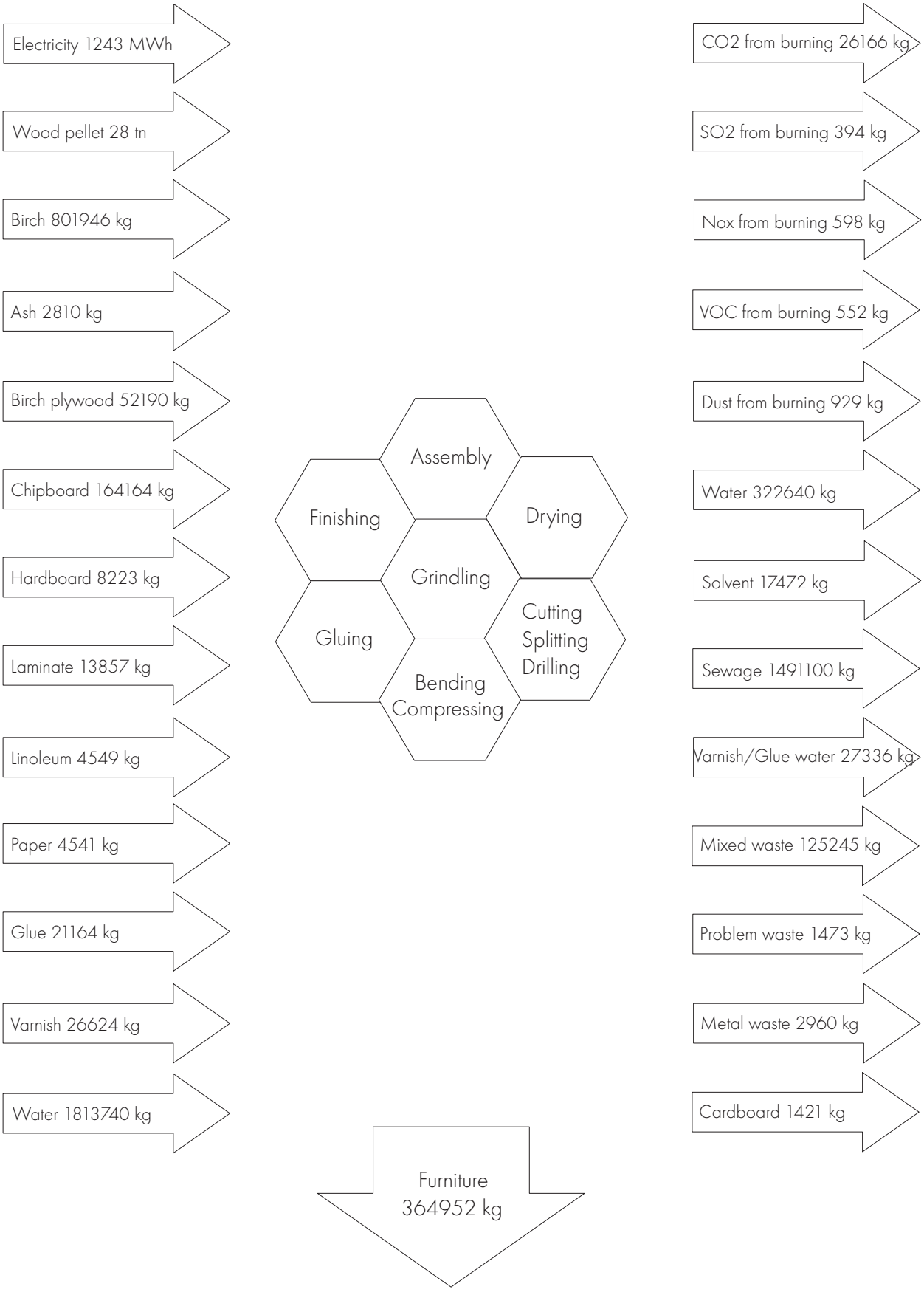
High quality products are manufactured in short production series using both handcraft skills and new technology. Renewable raw materials, i.e. birch and wood-based sheets, make up over 90 percent by weight of most products. Tabletops and some chair seats have been made lighter and their use of materials reduced by a so-called honeycomb structure, which is made of unbleached, 100% recycled material.

A large amount of birch chips is generated as a manufacturing by-product, and the company burns these to create energy at its own heating plant. Burning generates the heat necessary for drying birch and heating the premises. Electricity is purchased.

Energy consumption at the factory by energy sources:

- birch	54 %
- electricity	43 %
- wood pellets	3 %
	100 %

The level of environmental impacts from furniture factory Korhonen's manufacture operations has been analyzed with the help of incoming and outgoing material and energy flow information. The inventory covers key energy sources for manufacturing, raw materials (except deliveries, upholstery and packaging materials) as well as waste and emissions created by manufacturing. The environmental profile has been limited to deal with Artek's production, which accounts for 85% of the company's total production.


Electricity 1243 MWh
Wood pellet 28 tn
Birch 801946 kg
Ash 2810 kg
Birch plywood 52190 kg
Chipboard 164164 kg
Hardboard 8223 kg
Laminate 13857 kg
Linoleum 4549 kg
Paper 4541 kg
Glue 21164 kg
Varnish 26624 kg
Water 1813740 kg
Assembly
Finishing
Drying
Grindling
Gluing
Cutting
Splitting
Drilling
Bending
Compressing
Furniture
364952 kg
CO2 from burning 26166 kg
SO2 from burning 394 kg
Nox from burning 598 kg
VOC from burning 552 kg
Dust from burning 929 kg
Water 322640 kg
Solvent 17472 kg
Sewage 1491100 kg
Varnish/Glue water 27336 kg
Mixed waste 125245 kg
Problem waste 1473 kg
Metal waste 2960 kg
Cardboard 1421 kg

3. Properties in use

3.1 Durability and product disposal

Furniture use does not generate adverse environment impacts – unlike the use of vehicles, for example. Environmental impacts of furniture use are caused by the manufacture and disposal stages. This means that the service life of an item of furniture is an important parameter. The service life of an item of furniture depends on many factors ranging from planning, design, choice of materials and production quality to the item's use properties as well as the retail and design values. It can be said that the sustainability of an item of furniture depends as much on the length of its service life as on the environmental impacts of its production.

Artek's products achieved international acclaim already in the 1930s, and have since then enjoyed continuous respect in the design world. These high quality products are durable. They have proved to stay is every day use for many decades and their retail even as secondhand goods is easy and profitable due to their design value. The products are designed to be practical and have remained unchanged – even an old item of furniture can be fitted with a new part (e.g. a leg) to replace a broken one. Only a few Aalto items of furniture have metallic or plastic parts and these can easily be removed. If a product is in unusable condition, its wood, melamine varnished board and linoleum parts can be burned. Wood and linoleum can also be composted.

- Durability tests for individual products according to ISO standard are available.