





HONKA TECHNOLOGY

Healthy houses, innovated by nature.



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Read more about the benefits and possibilities of modern log technology – and how the industry pioneer Honkarakenne can help you to realise your ideas.











INDUSTRY PIONEER

Founded by five brothers Saarelainen in 1958, Honka is the first industrial log home manufacturer in the world. We are experts in healthy, ecological and safe construction.

We have built almost 85,000 houses around the world and come up with countless innovations that have changed log construction to its core. We are constantly developing new and improved ways to build log houses. We will continue this way.



Marko Saarelainen, CEO

"When it comes to developing our production and quality, we're just as passionate today as we've always been. Being an industry pioneer isn't something you achieve once, it has to be earned time and time again."





THE MOST MODERN FACTORY IN THE INDUSTRY

All Honka products are manufactured in Finland, Karstula. The new laminated log production line was launched in 2014.

One of the biggest mill investments in the house package industry in recent years was motivated by Honka's decision to focus massive wood house production at Karstula, where the company began log house production in the 1970s.



The high level of automation helps to ensure that the woodwork behind every Honka house is dimensionally accurate.

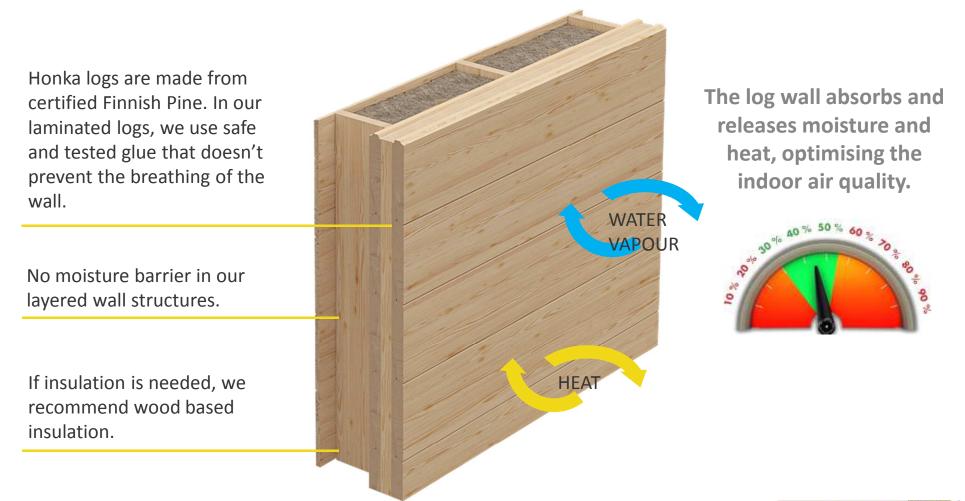






NATURALLY BREATHING LOG WALL STRUCTURES

Solid wood has an exceptional ability to balance the moisture and thermal changes in the inside air. We have developed our wall structures specifically to maintain the natural breathing of the wood, letting the water vapour move freely from the air to the wall and back.



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GOOD INDOOR AIR QUALITY

According to an extensive European study, the more massive wood is used in the interior walls of a house, the more optimal the air quality is for health. The balancing effect of log walls has also been proven in a test conducted by VTT inside a Honka house in Finland.

According to the studies, log walls help to maintain the indoor air humidity in the optimal area for health, between 30 %– 55 %.



TOO DRY

- Bacteria, viruses
- Allergy and asthma
- Respiratory tract infections
- Ozone formation

OPTIMAL

- Easy to breathe, cosy
- Minimising the effect of viruses, bacteria, fungus

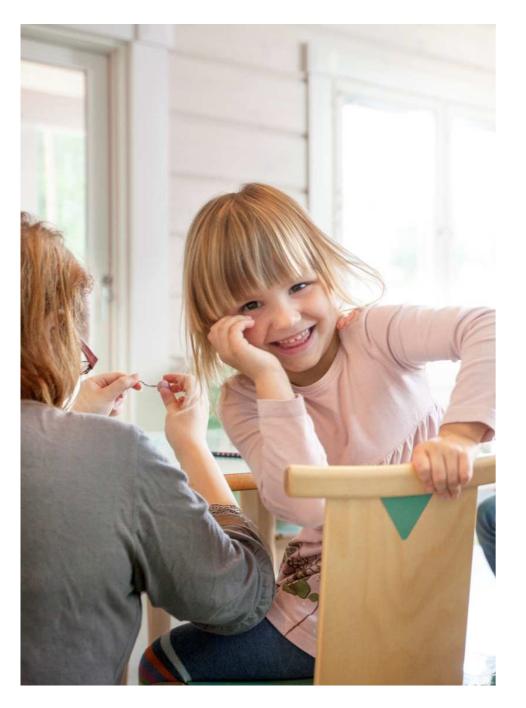
TOO HUMIC

- Fungus, mould
- Bacteria, viruses
- Acarina
- Allergy and asthma
- Chemical reactions

Reference: Simonson, Salovaara, Ojanen: Improving Indoor Climate and Comfort with Wooden Structures. VTT Publications, 2001. http://www.vtt.fi/inf/pdf/publications/2001/P431.pdf







STRESS-REDUCING ENVIRONMENT

In various studies, it has been discovered that environments with wooden structures lower blood pressure and heart rate and induce relaxation. Wood has a similar stress-reducing effect as exposure to nature.

For example, a classroom study conducted in Austria showed that a solid wood classroom could positively affect the mental and physical health of children. In this study, students in the solid wood classroom were shown to be healthier, calmer and less stressed than those who studied in traditional classrooms.

Reference: Human Research 2009: School without stress. Weiz; Institute of Health Technology and Prevention Research http://www.holzfachberater.at/seiten/news.php?m=12&id=2



SAFE HOMES FOR DECADES TO COME



WEATHERPROOF AND DURABLE

There are many log buildings in Europe that are 200 to 300 years old: churches, mansions and private houses. Breathing structures are moisture-safe, which is an important factor for durability. Honka wall structures are breathing structures that last for several generations if the house is designed and built correctly.

- Single material wood based wall structures are breathing and can dry from both sides – no closed structures.
- We have developed suitable roof structures for all climatic areas, watertight wall and corner structures and window details.
- We recommend eaves that are at least 30 to 40 cm long as their structural weather protection will further prolong the life of wall structures

- Automated and precise industrial wood processing minimises errors on construction site
- Trained building experts and precise instructions for building
- Long expertise from designing and building in extreme conditions, like seismic areas and very cold or hot climates.

All Honka structures are certified by VTT Technical Research Center Finland.



FIRE SAFETY

Massive wood is a surprisingly fireproof material that can endure fire even better than concrete or steel pillars. Wood contains about 15% of water. Therefore, before wood can catch fire, all water has to evaporate. In a fire, a massive wood house will char, but it will not collapse in the same way as light- or steel-structured houses. Surface charring also protects wooden structures.

- Fire resistance of Honka log walls can be up to 2 hours.
 This means there's time for the people to escape and time for the fire brigade to come— the building stands safely.
- Smoke-tight structures: the tightness of the walls can protect from the toxic smoke gases up to 1,5 hours.
- +

Honka solutions fulfill code requirements. Even multistorie buildings are allowed in most European countries.

Honka Fusion log (204 mm): R 120, EI 90 Honka Fusion log (134 mm): R 60, EI 60



Certified values based on official fire-loading tests by VTT Technical Research Centre.





SEISMIC SAFETY

Honka has developed the technology to build seismic safe house in cooperation with Tampere University of Technology. The seismic safety of our houses has been proof-tested on shaking table tests in Japan simulating an earthquake over 7 in Richter magnitude.

- Log walls can tolerate big deformations. The whole building consist of small components – each joint tolerate deformations and the system can absorb very well seismic forces.
- The deformations will not causes visible damages or deteriorating the quality

- Small own weight the less weight the smaller seismic forces
- Easy connector technology and anchorage system
- Existing tightening and stiffening systems can be utilized in seismic design

See a video of Honka house on a shaking table test: www.honka.com/en/superb-earthquake-resistance

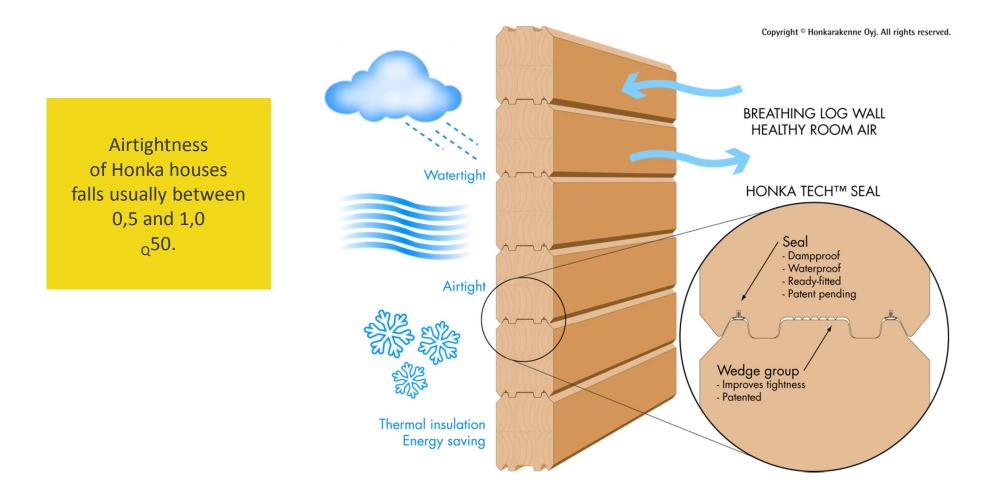






AIRTIGHT WALLS

The tighter the house is, the more energy efficient it is. In independent tests, Honka Fusion™ homes have proven to be airtight and energy efficient.



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U-VALUES THAT MEET THE ENERGY EFFICIENCY REQUIREMENTS

Combining with an ecological and modern heating system Fusion is a high quality natural low-energy – concept, by which you can reach every asked energy level today and in the future.







USING SOLAR HEAT ENERGY

Log wall is a natural insulator with big thermal mass. Unlike timber frame walls, a log wall is capable of storing heat.

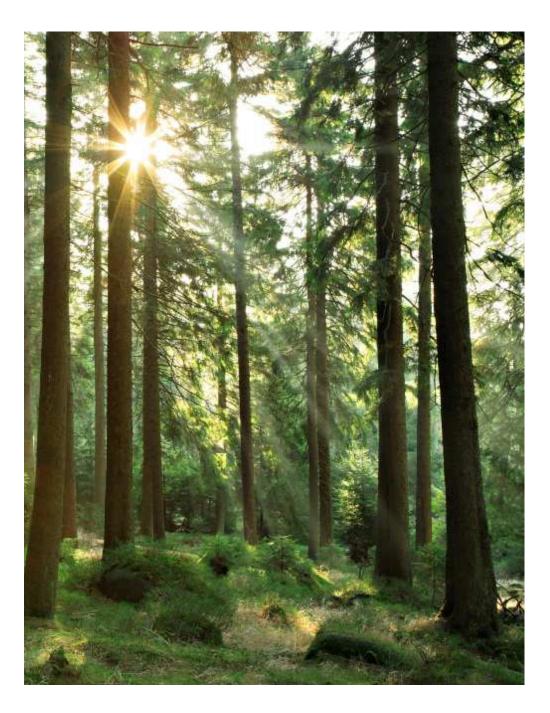
A log wall is a massive structure that has the ability to absorb heat and release it back into the air when it becomes cooler inside.

When the house temperature is lowered - for example during the night - the log walls give back heat into the rooms until the temperature is again equalized. This capability means saving in the energy consumption of a household.









SUSTAINABLE FORESTRY



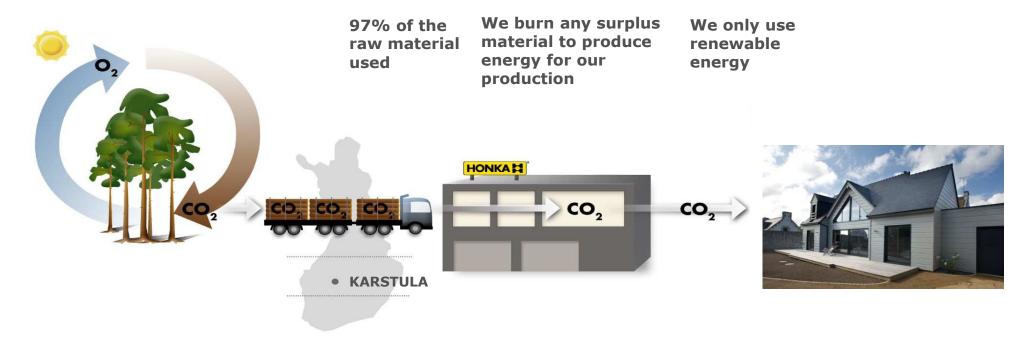
In Finland, the natural growth of forests far exceeds the number of trees cut down.

More than 70 % of Finlands land area is covered by forests. The most common tree is very durable and dense Finnish pine, ideal for building houses.

Honka is committed to sustainable forestry. The PEFC certification guarantees that the Honka's raw material originates from certified Finnish forests. We never buy wood from protected regions.



OUR TARGET IS TO MINIMIZE THE CARBON FOOTPRINT OF OUR HOUSES



Forest grow using solar energy, binding carbon, dioxide, which slows down climate change. Honka uses only Finnish massive wood from certified forests.

Short distance

Energy efficient production compared to other construction materials - only 50 % of the energy required for cement production and 20 % of that required for brick production.

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150 m² Honka house stores ca. 90 000 kg of CO_2 equals 560 000 km driving the car.



YOUR TRUSTED PARTNER IN HEALTHY, SAFE AND ECOLOGICAL LIVING

We are constantly looking for visionary architects to cooperate and showcase the benefits of modern log technology in small and large scale building projects all over the world. If you are interested in working with us on your current project or to represent Honka locally, please get in touch with us.



CONTACT US ON: Honka.com/architecture

