

VENTILATED PALIKKA: DRY AND SOUND PASSIVEHOUSES



INTRODCTION

PALIKKA® is the Original low-energy building block from Finland. PALIKKA was developed in the 1970's at the time of the first oil crisis. PALIKKA® is a trademark registered in several countries.

In the 1970 's PALIKKA was 50 years ahead its time and thus also the first PALIKKA buildings still fulfill all the newest EU-demands (rules and regulations) concerning energy saving, tightness, soundinsulation and sound dwelling, without any additions of thermal insulation or repairs. U-values down to 0,1 and even lower are available. The PALIKKA Building System for sound low-energy buildings is still the only one with a ready built in ventilation system, which effectively prevents moisture and mould problems in passive and zero energy buildings .

PALIKKA is produced of pure foodgrade polystyrene, there is no HBCD or any other poisonous or hazardous additives. The insulating gas is pure air, the thermal insulation properties always retain the same high level.

During the past 40 years PALIKKA has been used for hundreds of sound and safe buildings in many countries, basements 2 storeys below ground and buildings up to 4-5 storeys above ground, swimming pools and bungalows of all shapes, cinema-theatres and public buildings with excellent acoustics and sound insulation and other energy saving buildings for all purposes etc.

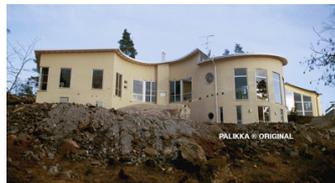
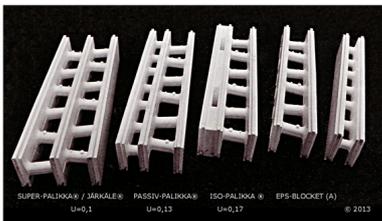
All architectural shapes, even curved walls with any radius, can easily be achieved using just one type of PALIKKA building blocks.

PALIKKA is safe, a plastered PALIKKAHOUSE is classified as a non-burning stonebuilding, the fire does not burn through the wall.

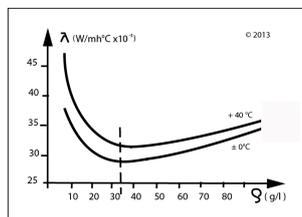
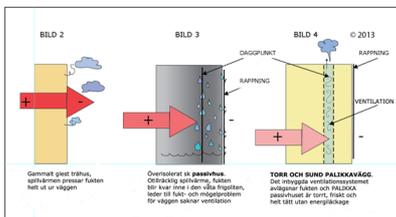
OBJECTIVES

Based on a thorough knowledge about plastics and the excellent properties of expanded polystyrene, the aim was to develop a building product to be the best on the market, regardless of costs. Surprisingly, high quality building was not at all more expensive, it was only much better. As a result I also myself have been living in a sound low-energy PALIKKAHOUSE for the last 40 years.

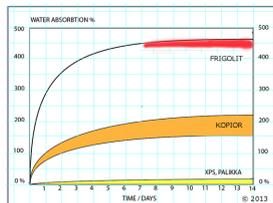
This advanced building element was named PALIKKA®, which is Finnish, meaning Simple Buildingblock for the clever builder.



PALAZI® stonecastles by PALIKKA®



PALIKKA ORIGINAL has only superior properties: optimal lambda-value, the only built-in ventilationsystem for sound buildings, PALIKKA does not soak water, functionally correct design, safe foodgrade quality, does not contain HBCD or other harmful additives and has already 40 years of good experiences from many countries. Swift deliveries to Your building site directly from the factory in Sweden. Technical PALIKKA service available also at your building site.



<- Copies without ventilation have moistureproblems

RESULTS & CONCLUSIONS

The result of the development work was the PALIKKA® Building Block suitable for all kinds of high-quality buildings on all types of ground in all countries, up to northern Lapland with winter temperatures of -55 °C . PALIKKA is so easy and lightweight to use, that anybody can build his own house even without any previous building experience.

eg the walls of a 100 m2 PALIKKAHOUSE were erected in 4 days by a woman and a 170 m2 house in 97 hours by myself. Building is 3-4 times faster and 50 times more lightweight than when using ordinary "lightweight" concreteblocks.

The easy to handle PALIKKA Building Block measures L 120 x H 20 x W 22- 40 cm. The lightweight PALIKKA has a weight of only abt 1 kg .

The PALIKKA Building Block consist of a thermally insulated mould, which can be filled with eg concrete (Ecobeton®) or insulating material. The U-value can be chosen 0,17 ... 0,1 or even lower depending on what is needed. The insulation is correctly on the outside keeping the cold out and the colder it is, the better the insulating properties.

The same, of course, applies also to warmth from outside - the PALIKKA house is cool inside in summertime, thus saving warming/ cooling energy in all seasons.

Based on real energy consumption, eg a PALIKKA low energy building built more than 20 years ago, long before the marketing phrase PASSIVE was invented, has shown to be a passive house according to present terminology.

The ecological Savings Village (Sparbyn) with more than 20 PALIKKA low-energy buildings (the word "passive" was not yet invented in 1983) in Helsinki, which was built 30 years ago by the inhabitants and their families, was awarded by the French Academy of Architecture.

For extremely low energy or + energybuildings the ACTIVE ® window is available, with a U-value down to 0,2.

Only the PALIKKA ORIGINAL Building Blocks are internally ventilated for sound constructions.

It is not necessary to glue aluminium foil onto the PALIKKA walls, which would prevent e.g. the use of mobile phones.

The ecological ANTTU ® slabmould is made of paper and the RADONIX® profile prevents radon gas to penetrate into your and sound safe PALIKKA house.

The concrete completely fills the PALIKKA ORIGINAL moulds without lifting them apart, there are no empty concretefree hollows left in the construction, the steel reinforcement is completely surrounded with concrete. The thermal insulation shall not be removed, PALIKKA can be rendered, tiled etc directly on the surface. PALIKKA does not soak water and does not rot. Frozen wet insulation does not insulate.

The PALIKKA inventions have been granted patents and design protections in several countries and has been internationally awarded.

Now 40 years of experience in real life (not only in the calculations and test tube)shows that all the initially made calculations were correct, and PALIKKA is a superior product on the Scandinavian building market. The material costs for a PALIKKA wall are abt 100€/ m2.

REFERENCES

- Rakennustaito 1975, Solupolystyreenin ominaisuudet, pp 13-15, B. Wasenius
- Muovit rakentamisessa, RIL- 127, 1986, B. Wasenius
- Byggnadskalendern 1992, pp 1037 -1053, B. Wasenius
- RT datakortet G(22)-30705, 1981, Rakennustietosäätiö
- RT datakortet E 33504, 1990, Rakennustietosäätiö
- PROFI datakortten, kontinuerligt uppdaterade -2013, PALIKKA Oy
- Talrika slut- och diplomarbeten 1983 -
- PALIKKA produktbroschyrer och talrika artiklar 1970-2013

Information about the PALIKKA® ORIGINAL Building System:

Birger E. Wasenius, M.Sc, Eur Eng, PALIKKA Oy

Inventor of the PALIKKA Building System and developer of the building method

www.palikka.se

www.palikka.eu

palikka@palikka.eu

PB 6, 23801 Letala, Finland