Palmako

LEMEKS GROUP

Bespoke Buildings

ABOUT US

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Palmako produces and exports over 50,000 wooden houses per year, and 20 years of active operation have given us significant experience to become Northern Europe's leading manufacturer and distributor of glulam and solid timber garden log houses. In addition to log cabins, Palmako manufactures wide selection of garden products, glulam products and heating pellets.

Palmako's Business Concept is to sell a wide range of high quality wooden products to a conscientious and environmentally aware client base.

We belong to the Lemeks Group which is the biggest forestry company in Estonia that is funded by Estonian capital, and operates successfully in the sphere of timber processing and forest stocking as well as in agriculture.

We are considerate towards the wishes and needs of our partners in order to find best possible solutions. We believe that reliable partnership relations create the basis for mutually profitable and satisfying results. Belonging to the Lemeks Group enables us to use the knowledge and support of other Group Members.

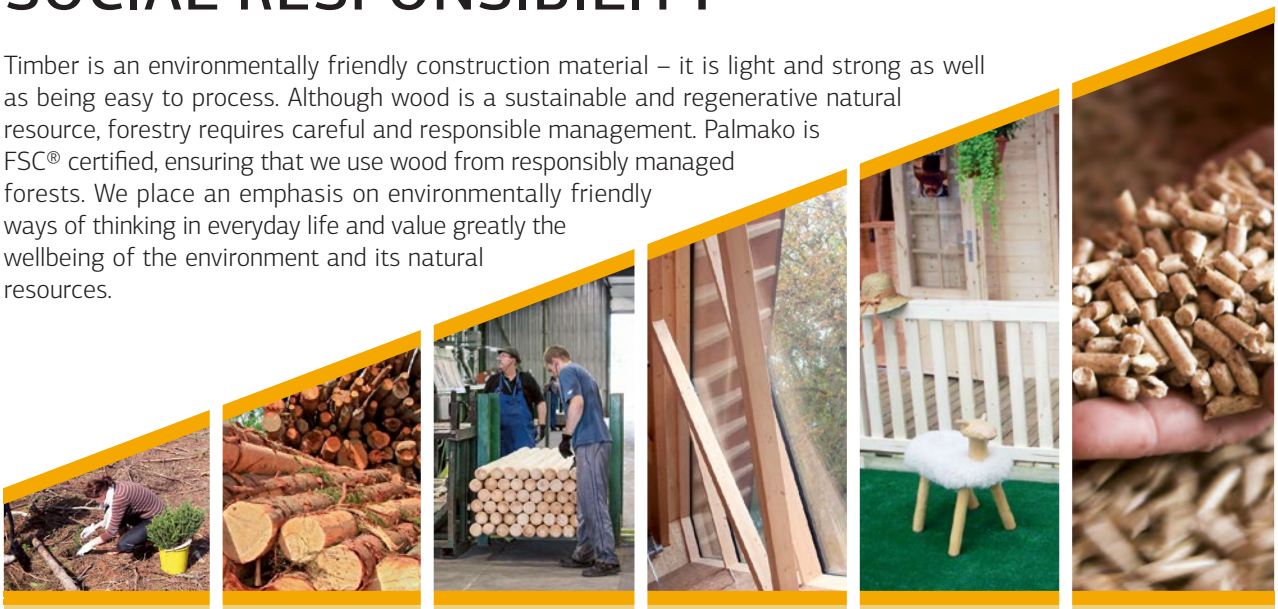
QUALITY

Product quality is Palmako's main priority. Our companywide quality management system covers the entire production process and ensures conformity of the final product with the established quality requirements. Our glulam products are CE certified by MPA Stuttgart Otto-Graf-Institute and when necessary, FSC® certified by the Forest Stewardship Council.

Our products are made of high quality Nordic spruce, which is known for its excellent properties all over the world. Long cold winters and short summers, characteristic to Estonia, bring about a slow growth rate of timber, providing it with longevity and durability. By using the best raw materials, advanced technologies and highly skilled labour we can manufacture products that meet the needs of even the most demanding clients.

SOCIAL RESPONSIBILITY

Timber is an environmentally friendly construction material – it is light and strong as well as being easy to process. Although wood is a sustainable and regenerative natural resource, forestry requires careful and responsible management. Palmako is FSC® certified, ensuring that we use wood from responsibly managed forests. We place an emphasis on environmentally friendly ways of thinking in everyday life and value greatly the wellbeing of the environment and its natural resources.



Our value-added chain starts from Estonian forests, for accelerating the growth of which we organise forest planting events each spring.

We manage forests prudently, ensuring thereby the sustainability of Estonian forests. For us it is important to know that we can be confident in the heritage of the timber.

Primary processing of timber is performed in saw mills partially owned by the Lemeks Group. We like it that as a natural material timber has many application areas. The possibility to reuse it adds even more value to it.

Glued laminated timber manufactured by us gives building structures and elements the best load-bearing capacity and durability.

Companies belonging to the Lemeks Group give timber new life. We use it to manufacture playgrounds, summerhouses, industrial buildings and many other items with the aim of making the surrounding environment natural and closer to the nature.

We do our everyday work efficiently and we use timber processing waste in new and sustainable value-added forms.

Timber value-added chain

LEMEKS GROUP

WHY A LOG HOUSE?

Wood is known as a sturdy, natural building material and renewable resource. It has a great impact on the atmosphere inside the house and especially on the moisture balance plus it is an excellent noise absorbing material. Each log home has its own personality due to its natural origin. Practical experience shows that people feel good in a house where a lot of wood has been used in the construction. Wooden houses are highly valued because of their cozy, peaceful and relaxing atmosphere.

Wood is also a really energy efficient building material. Solid log construction has a natural ability to retain heat and transmit it inside the entire house. Compared to a house with a brick or concrete block wall structure, a log house uses free solar energy to heat the house. In early spring and autumn, when the sun shines low, a wall made from logs is heated and during the night this heat is transferred slowly into the interior of the house, thereby helping to save on heating costs. In summer, when the sun shines higher, wide roof overhangs cover the sun, thereby avoiding warming of the walls. A correctly designed log house also stores the night time coolness of the wall, and in the process, preserves a pleasant temperature on hot summer days.

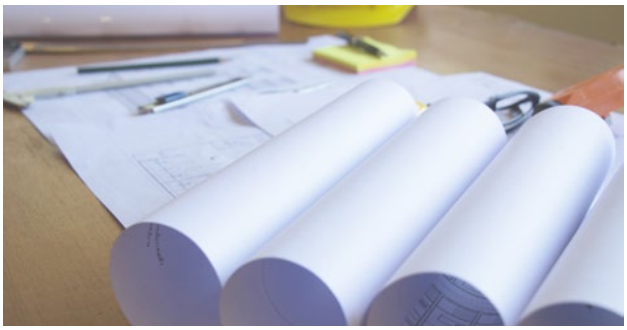
WHAT SHOULD BE KEPT IN MIND WHEN SELECTING A HOUSE?

- **FUNCTION** – What do I need a house for? The use of log houses with a bespoke design is wide: a summer house, camping house, sauna, living house, ancillary building, pool house, home office, etc.

- **STYLE** – What style am I looking for? Does the design have to suit the neighbouring houses and surroundings and, if yes, how? What should its general appearance be? What about the style of the doors & windows, the roof design & the roof overhang?

- **SIZE** – How much space do I have for the house?

- **DETAILS** – What else should be kept in mind? (Structure / wall thickness / accessories)



A Palmako log house is a house built according to the client's wishes and to an exacting design. The maximum measurements of the house depend on the wall thickness chosen by the client.

ORDERING PALMAKO BESPOKE HOUSES

Customer inquiry → Primary quote with 3D views and floor plan → Customer confirmation / amendments → Technical drawings → Order → Pre-payment → Final drawings → Production → Final payment → Delivery

WHAT CAN WE OFFER?

The following pages show you some examples of what we can offer regarding differents points pointed out on previous page. Please note that these pages include only some of our models and ideas for Palmako log houses – with the help of our architects and bespoke design service we are also able to offer you exactly the kind of house you would like. About different opportunities we can offer please read from pages 8 to 16.

EMMA

ALICE

LORENZA

STELLA

ALPINE I

AUDREY

GOTLAND

BEACH HUTS

INGER

ELISA

SVEA

LILIAN

PREGASSONA

OLIVIA

RATHENOW

SANDRA 70

SIMUNA

SUNNY

VARASTO

VERONA

ELINA

GERDA

PAULA

HEIDI

AGNETA

SARAH

CABINSTORE16

BOSTRON 44

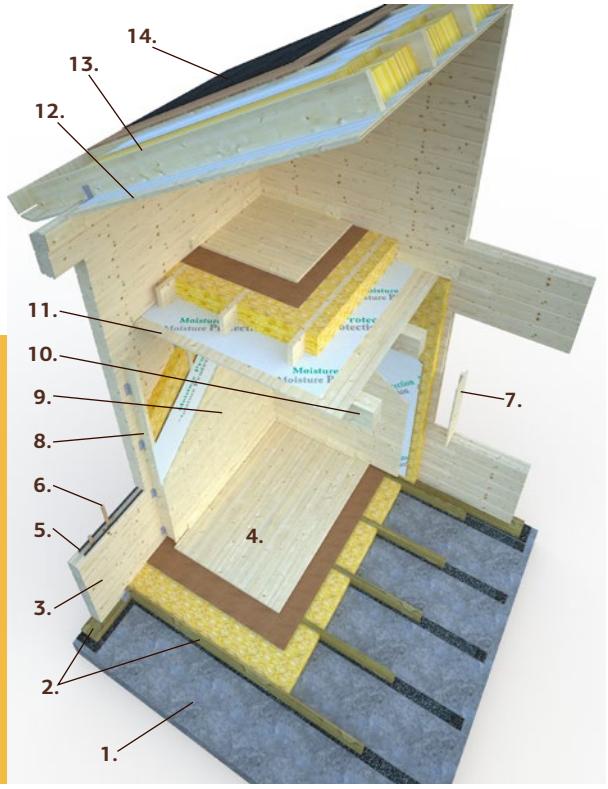
CAROLINE 1

OPTIONS

You can choose a standard house designed by Palmako or order a house according to your own design on a bespoke basis. To achieve the best possible result, the combination of various parts of the house has to be planned:

- Foundation and floor
- Walls
- Roof
- Openings
- Other accessories

General cross-section



1. FOUNDATION
2. FOUNDATION JOISTS
3. WALL
4. FLOOR BOARD
5. LOG SEALANT
6. HIDDEN PEGS
7. TENDER POLE
8. INSULATION SCANTLING
9. INTERIOR BOARDING
10. FLOOR
11. CEILING BOARDING OF THE GROUND FLOOR
12. ROOF CEILING BOARDING
13. RAFTERS
14. ROOFING

FOUNDATION

The foundation of the house is a set of underground structures on which walls or poles rest and which transmits loads to the base of the structure. The supporting surface of the foundation is called a pad, the structure forming it a footing and the part extending on the surface a socle.

Strip foundations, base slabs or pile foundations are mostly used in building living houses or summer cottages. As a log house is light, it does not require a foundation that is very complex or solid.

As the foundation is directly related to the structure of the foundation joists of the house, it is important to know the type of the planned foundation at the beginning of the design work.

The choice of the foundation is based on the results gathered via visual inspection or geodetic surveys. After the load-bearing capacity of the soil has been calculated, designing a foundation suitable for the surface can begin.

The choice of the foundation of the log house should be based on the surface and size of the house. If the soil contains much clay, limestone or sand, it is recommended to use a strip foundation. If the ground is lower, the foundation should be built on piles.

Foundation types

• STRIP FOUNDATION

Due to lower costs and shorter building process, log houses are often built on a strip foundation. To build a strip foundation, a reinforced concrete footing is built under the load-bearing walls after excavation work and soil compaction has been completed. Usually three or more rows of Fibo blocks are laid on the footing according to the designed socle height and excavation depth. The inner part of the foundation socle is insulated with foam polystyrene and filled with sand. After sand has been compacted, utility lines and insulation under the floor is installed. After the framework and heating pipes or cables of the floor have been installed, a reinforced concrete plate is poured on top of them.

• SLAB FOUNDATION

An advantage of a monolithic slab foundation is its great load-bearing capacity, due to which this type of a foundation is used in instances of unstable soils consisting of clay or floating sand. For slab foundations the top humus layer of the soil is removed, a sand base is made and the height from the ground is given according to the fixed points. Thereafter, the compacted sand is surrounded with foam polystyrene, it is covered with a durable waterproofing film and utility lines are installed. After the formwork has been built and reinforcement has been bound, the entire prepared structure is poured in concrete.

The major difference between a strip foundation and slab foundation is that the floor of a slab foundation is cast together with the foundation part, but for a strip foundation the floor structure stands separately from the foundation.

• PILE FOUNDATION

A pile foundation can also be built on unstable surfaces. Piles or poles are sunk (or a hole is dug and poles are cast from concrete) so deep in the ground that a sufficient load-bearing capacity to build a house on them is ensured. One of the advantages of a pile foundation is its low cost.

Foundation joists

The foundation joists of the house are installed on the foundation. Later the walls are installed on the foundation joists. Usually the beams of the foundation joists are impregnated with a wood preservative. Impregnated foundation joists are not installed directly on the concrete but on bituminous material (not included in the delivery). This prevents penetration of moisture in wood.

In some cases, a wall beam is installed directly on the foundation without foundation joists. In such a case, it is recommended to impregnate the lower row of logs with a wood preservative.

POSSIBLE CROSS-SECTIONS OF FLOOR JOISTS:

- 45 x 70 mm
- 60 x 80 mm
- 45 x 95 mm
- 45 x 145 mm
- 45 x 195 mm
- In special cases, glue-laminated timber may also be used.

Insulation of the foundation/floor – Depending on the height of the floor joists, insulation can be installed between the floor joists (under the floor boards), if the foundation has not already been insulated.

Floor

Log houses can be provided with any type of floor (floor tiles, boarding, etc.). Palmako delivers its houses with a wooden floor, in which case there are several installation options depending on the type of the foundation. In a standard delivery, Palmako houses are provided with floor joists with a height of 80 mm suitable to be used both with a slab or strip foundation. One can choose between two board thicknesses: 19 mm and 28 mm.

WALLS

A wall can be made from square milled logs or glue-laminated logs, which differ from each other in quality, measures and appearance. A glue-laminated log is an element in which max. three layers of timber are bonded together. Palmako log houses are available in 2 quality classes: summer house quality (houses with a wall thickness of 44 and 70 mm) and living house quality (houses with a wall thickness of 70+ mm). 70mm buildings can also be upgraded to living house quality.

• SOLID TIMBER

Solid timber log house is used mostly as a garden house, summer cottage, sauna or home office. If the client wishes to use the house all year round, then they may want to look at opting for one of our insulation kit options. The length of a milled log should not exceed 5,800 mm, minimum 300 mm should remain next to the openings up to the tenon. Minimum 200 mm must remain between the openings. One can choose between two wall thicknesses:

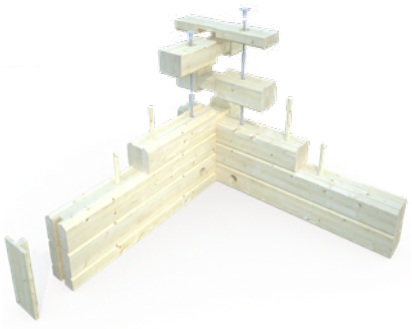
- 44 mm (with a lifting height of 114 mm)
- 70 mm (with a lifting height of 135 mm)

• GLUE-LAMINATED TIMBER

Compared to the nature of solid timber, glue laminated timber is much more resistant (does not expand or shrink) and it has better visual appearance (thicker log, higher quality timber which does not split). However, the manufacturing process of glue-laminated log houses is more complex, the material loss is larger and thus the house is more expensive. As the walls are thicker, it is possible to build houses with longer spans and a more open layout. One can choose between six wall thicknesses:

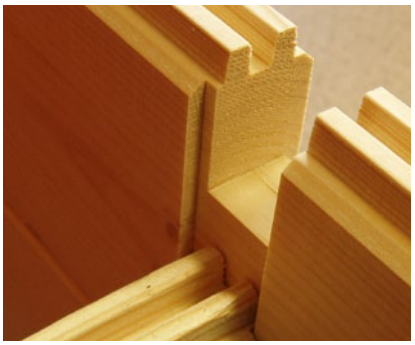
- 88 mm
- 114 mm
- 134 mm
- 165 mm
- 180 mm
- 202 mm

In Palmako it is possible to manufacture wall logs with a max. length of 13 metres. Very often it is not reasonable to manufacture such long wall logs (because of transportation considerations). In such a case, the log can be interrupted above the tenon. An **INTERRUPTED LOG IS CONNECTED** with a metal plate and connection pins.



In the case of solid timber and glue-laminated timber, holes for **TIE RODS** and **HIDDEN PEGS**, also for electrical wiring, if needed, are drilled. **A HIDDEN PEG** is a vertical peg inserted through two or more logs the function of which is to make the wall more stable. **A TIE ROD** is a threaded metal bar used to make logs more rigid.

PARTITION WALLS OR INTERIOR WALLS are made from the same logs as used in building the external walls.



All corner tenons of logs (connecting elements of the corners of the log) are provided with a **WIND TENON,** which reduces the penetration of wind and rain through the corners of the house.

All our logs are provided with a **DOUBLE TONGUE AND GROOVE** (a tongue is a narrow and high part protruding from the log which fits in a groove – a thin and deep slot).

INSULATION

To increase insulation quality, the external wall of a log house may be insulated inside and outside. The thickness of an insulation layer depends on the width of the internal cladding battens. Palmako offers insulation battens in width of 45, 95 and 145 mm. The insulation battens are fastened to the wall with metal sliding brackets. The insulation battens will be covered with internal cladding or other finishing material.

LOG SEALANTS

Gaps between the logs (more precisely between the tongue and groove) can be filled with a sealant that prevents the penetration of wind and water.

INSERTED CEILING

A floor is a structure that functions as a ceiling for one floor and as a floor for another. The function of floors is to receive loads caused by people, furniture, equipment, etc. To ensure the stability and rigidness of a building, floors must be anchored to the load-bearing walls. In addition, a floor is used to bind the walls with each other in case the house does not have interior walls. The cross-section of the beams of a floor is determined by a technologist according to the house design.

Depending on the type of the house and requirements of the client, Palmako can design ceilings of various appearance and sound resistance. Only 1 layer of boards is placed on floor beams on a simple sleeping floor; in this case, the floor should be covered by several layers to provide bigger sound resistance.

HOW MANY FLOORS?

Palmako manufactures houses with max. 1.5 floors, which means that it is not possible to build a full first floor on the ground floor.

ROOF

As a roof structure, Palmako uses two types of elements – roof purlins and roof rafters. **ROOF PURLINS** are beams resting on short walls, whereas in case of 44 and 70 mm houses, the length of a purlin span should not exceed 6.000 mm. **ROOF RAFTERS** rest on the side walls of the house with one end and on the ridge with the top. Both rafters and purlins can be covered with roof boards (Palmako offers boards with a cross-section of 19 and 28 mm) or construction boards (for example OSB), which the client must buy separately. This is covered by roofing – bitumen shingle, cardboard or similar). If the client wishes to install a stone roof (stone readiness) or sheet metal roofing, scantling is added to the rafters or purlins, on which stone tiles can be fixed. In such a case, there is no need to install roof boards.

ROOF PURLINS

ROOF RAFTERS

EAVES VENTILATION

To facilitate ventilation of a roof ceiling, a ventilation gap (usually with a height of approx. 25 mm) is left under the eaves between the external cladding and roofing. In the case of inclined roof ceilings, a ventilation gap with a min. height of 45 mm is left between the insulation layer and roofing underlayer. Free space is left at the ridge of a gable roof, which can be ventilated via gable ends. For ridges that are over 10 m long, ventilation pipes are installed to improve ventilation.

CEILING BOARDS

Boards that are fastened on the inner side of a roof or ceiling structure. Palmako offers ceiling boards with a cross-section of 16 and 19 mm.

Roofing options

A GABLE ROOF is a type of a roof with two slopes and vertical fascia boards. **A FLAT ROOF** is a roof the slope of which is up to 10°. The load-bearing element of a flat roof is a horizontal or slightly sloping base frame.

ROOFING OPTIONS – for log houses shingles, roofing felt, steel sheet or stone roof is used.

ROOFING FELT

GABLE ROOF+SHINGLES

FLAT ROOF + STEEL SHEET

OPENINGS

The choice of doors and windows includes summer house quality (for houses with a wall thickness of 44 and 70 mm) and living house quality (for houses with a wall thickness of 70+ mm). 70 mm buildings can also be upgraded to living house quality. Regarding openings of a summer house quality, our own products may be used or there is a possibility to order openings from Palmako cooperation partners (in most cases it is decided by a technologist according to the specification of the house). The openings of a living house quality are ordered from our cooperation partners.

Windows

WINDOWS OPENING INWARDS OR OUTWARDS – openings of living house quality and summer house quality can be specified as opening inwards (German type) or outwards (Danish type). All windows are **DOUBLE** or **TRIPLE GLAZED**.

SUMMER HOUSE

GERMAN TYPE (opening inwards)


Windows open inwards and are provided with a tilt & turn system which can be opened using **TWO HANDS.**

DANISH TYPE (opening outwards)

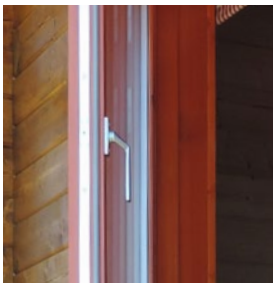

Windows open outwards and opened windows can be fixed with **WINDOW STAY.**

LIVING HOUSE

GERMAN TYPE (opening inwards)


Windows open inwards and are provided with a tilt & turn system which can be opened using **ONE HAND.**

DANISH TYPE (opening outwards)

Windows open outwards and opened windows can be fixed with window **HANDLE.**


STRAIGHT/ARCHED – there is a choice of windows with a straight or arched upper edge.
WINDOW BARS – windows can be provided with window bars. The bars are installed in the factory and the necessity of these must be decided at the moment of ordering.



WINDOW SHUTTERS – windows can be ordered with shutters. The need of shutters must be specified when ordering the house. They fit only inwards-opening windows.

WATER GUTTERS – our summer and living quality windows are equipped with aluminium water gutters.

Doors


interior door sample


external door sample


external door sample

THE INTERIOR DOORS of Palmako houses are usually provided with a **DOOR BOARD** and **EXTERNAL DOORS** with **BOARDING**. We also offer plywood doors that can be with covered with boards. All the doors can be provided with **DOUBLE GLAZED GLASS**.


summer house quality


living house quality

LOCK – for summer house quality we use cylinder locks and for living house quality locks with thumbturn inside.


summer house quality


living house quality

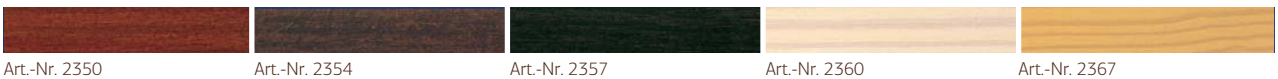
DOOR SILL – door sills of summer house quality are covered with stainless steel, door sills of living house quality are from hardwood.

Windows + doors

SEALED UNITS - for our window and door glasses we are using 17 mm thick sealed units.

SEALS – our windows and doors are equipped with rubber seals.

PAINT FINISHING OPTIONS - the doors/windows of a living house can be delivered from the factory with paint finishing, and the colour shade can be chosen from a colour palette.


Art.-Nr. 2350 Art.-Nr. 2354 Art.-Nr. 2357 Art.-Nr. 2360 Art.-Nr. 2367


Art.-Nr. 2351 Art.-Nr. 2355 Art.-Nr. 2358 Art.-Nr. 2361 Art.-Nr. 2352


Art.-Nr. 2356 Art.-Nr. 2359 Art.-Nr. 2363

NB! Pictures are illustrative only! Colors as shown in the catalogue may vary from the actual colors.

OTHER ACCESSORIES

STAIRS – options include a ladder, stairs and cockle-stairs

BOUNDARIES (RAILINGS) – made from the logs of the same size as used in walls (closed or open railings) or from strips.

SLEEPING FLOOR – a low, semi-full intermediate floor located partially on the rooms, suits well to be used as a sleeping area.

TERRACE – made from 28 x 120 mm terrace boards, green pressure treated.

ADDITIONAL INFORMATION

Palmako log houses do not include:

- **FINISHING** (impregnation, paint finishing);
- **DESIGNING SPECIAL PARTS** (heating, ventilation, water, sewerage);
- **UTILITY SYSTEMS** (electricity*, piping)

* It is possible to pre-drill holes for the power cable provided information regarding the location of sockets is already available in the design phase.

Maintenance

Wood is a natural material, growing and adapting depending on weather conditions. Large and small cracks, colour tone differences and changes, as well as a changing structure of wood are not errors, but a result of wood growing and a peculiarity of wood as a natural material.

Unprocessed wood (except for foundation joists) becomes greyish after having been left untouched for a while, and can be turn blue and become mouldy. To protect the wooden details of your log house, you must immediately treat them with a wood preservative.

We recommend that you cover the floor boards in advance with a colourless wood impregnation agent, especially the bottom sides of the boards, to which you will no longer have access when the house is assembled. Only this will prevent moisture penetration.

We definitely recommend that you also process the doors and windows with a wood impregnation agent, and do that namely both inside and outside! Otherwise the doors and windows can become twisted.

After the house assembly is completed, we recommend for the conclusive finishing a weather protection paint that will protect wood from moisture and UV radiation.

When painting, use high quality tools and paints, follow the paint application manual and manufacturer's safety and usage instructions. Never paint a surface in strong sunlight or rainy weather. Consult a specialist regarding paints suitable for unprocessed softwood and follow the paint manufacturer's instructions.

Having been properly painted, your house's lifetime will increase substantially. We recommend that you inspect the house thoroughly once every six months.

Delivery time: the delivery time of Palmako custom designed houses is 5-10 weeks from the date of ordering.

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