artichouse

Surface treatment instructions for Log Builgings

CONTENTS

GENERAL

Figure 1
UV radiation of the sun disintegrates the surface of the wood. Grey lint layer appears on the wood surface, which weakens the adhesion of surface treatment agents. Swelling of wood due to moisture causes compression stress, which makes the surface crack as it dries. Here is a corner of approximately 50 years old barn.

Facades of a building are exposed to weather strains, such as UV radiation of the sun and humidity. The greatest stress is put on walls facing south. On coastal areas and open regions the stress is greater than in densely populated areas.

Surface treatment protects the wood from humidity and UV radiation. It also prevents the growth of mould and decay fungi. Log surface may be left untreated inside in dry spaces, but the surface will darken in time due to the effect of UV radiation.

Wooden surface will turn beautifully grey in suitable conditions outside, if not surface treated. Greying is caused by weather strains, which rinse everything else away from the surface except cellulose. Natural greying takes place slowly and unevenly. If humidity is constantly too high, decay fungi and lichen will attack the surface.
Surface treatment gives building an individual look helping it blend into the environment. When choosing a colour, it should be taken into account, that in nature, on larger surfaces colours appear paler and brighter than on a small colour sample. Choose one degree darker tone from the colour chart than you were originally thinking. That way you will most probably get near the end result you were hoping for. The final colour also depends on the wood species, porosity of the wood and the number of coats applied. Make a trial application on separate log piece and view it on the building site to be sure.

Figure 2
Light colours are suitable for open and bright sites, such as fields or hilltops, where the open sky forms the background for the building. Darker colours blend in better with nature than light colours, as seen from a distance.

USING THE MANUAL

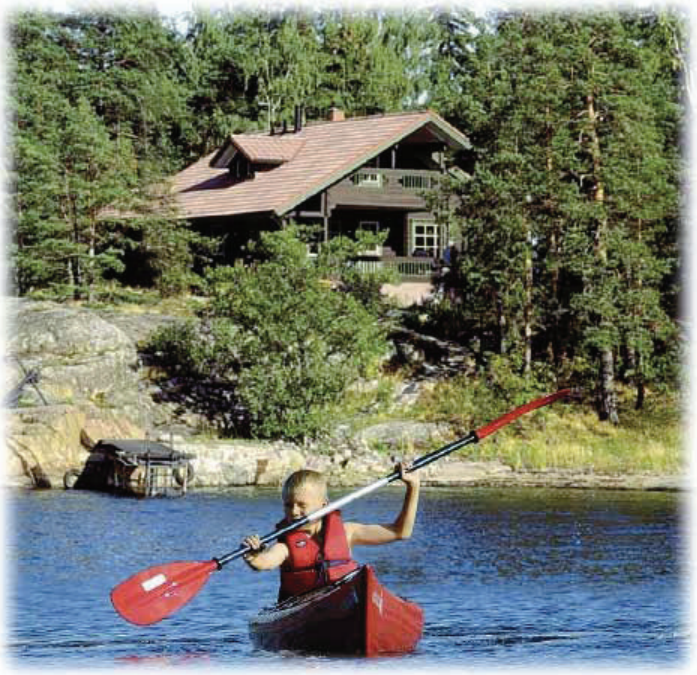

Figure 3
Properly surface treated log building ages beautifully and fits excellently into various landscapes.

The product range of paints and surface treatment agents is broad, which complicates choosing the right products. The purpose of this booklet is to help builders to choose a treatment combination that is suitable for log surfaces, is long-lasting and does not jeopardise the breathability of a log wall. Unsuitable surface treatment does not adhere properly and may even cause decay of the wall.

This manual provides instructions for the first painting work and surface treatment of a new log surface. If you need help with maintenance painting, see “Instructions for log building – Use and Maintenance”. This manual guides you how to choose suitable products for interior and exterior painting of a building. Manual also gives instructions for cleaning the surfaces before painting. By following these instructions the end result of surface treatment will be of uniform quality.
Trade names of paints and other surface treatment agents are not given in this manual. Most paint manufacturers have excellent WWW pages providing good advice on how to select suitable surface treatment combinations for different surfaces. Some paint manufacturers have separate instructions for surface treating the log buildings. If something remains unclear despite these instructions, do not hesitate to contact the customer services of the paint manufacturer.

MOULD

Here is given some basic information on mould fungi and mould prevention, because moulds are the major and instant threat of untreated wood surfaces in favourable conditions.

Growth conditions for mould

The ideal growth temperature for mould is 15–30 C. Water absorption is prevented below 0 C, but freeze does not destroy the mould. Mould is not able to grow in temperatures above 60 C, but spo - res retain their viability. Nearly all organic material, in addition to dirt and dust are suitable nutrition for mould as long as water is available at least occasionally.

Practically the only way to prevent mould growth is to prevent its water gain. Water can be in form of moisture absorbed into the structures by capillary action, or rainwater leaked into the structures. Moisture can also be water, which has condensed into the cold structures. Therefore, the actual moisture damage is not always required for mould appearance. Mould problem may also be caused by condensed humidity due to faulty structures. Condensation of water does not take place in massive log walls.

If the habitat is ideal for mould, in means of suitable proportions of warmth, nutrients and water, the fungus grows at its place and does not produce many spores into the indoor air. The spore concentration of indoor air may be low, although the mould growth is clearly visible. If the habitat starts to dry, mould produces plenty of spores to relocate itself on the more advantageous growth environment.

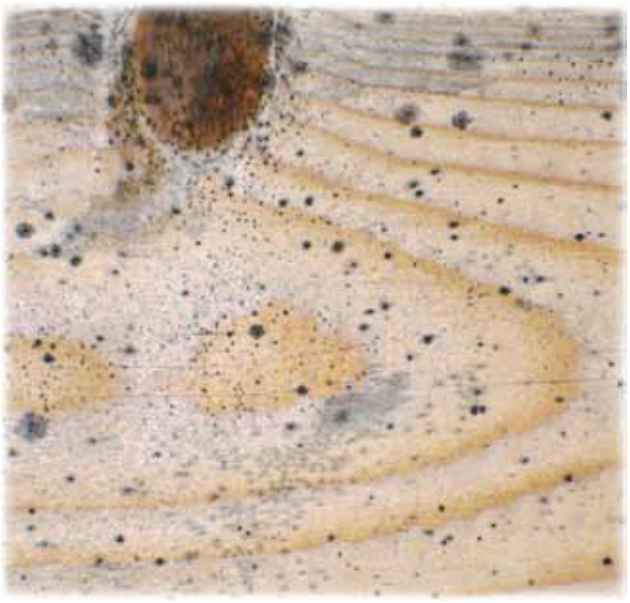

Figure 4
Mould spots on unprotected wood surface and the beginning of blue staining on top edge of the board. Mould can be washed off, but there is not much to do about the blue staining at this stage.

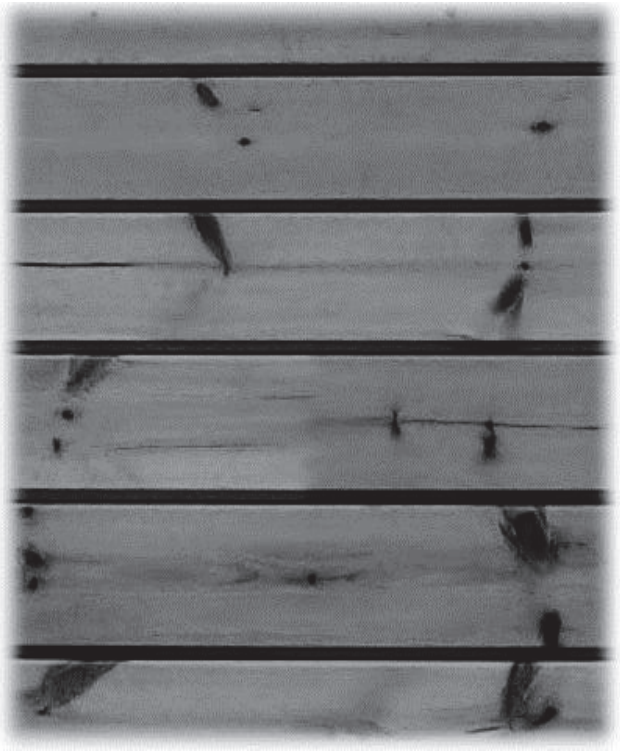

Figure 5
In cold and dry climate the surface of a tree dries when it dies. Deadwood does not need surface treatment, and in suitable conditions it lasts unchangeable for decades. Deadwood will decay as well, if it is continuously exposed to moisture, for example coming from the ground or building's foundations. Here is a wooden surface, which is artificially greyed by ferrous sulphide treatment.

Recognising mould

At first, when untreated wood is outdoors, dark dot-like spots appear on the surface. The spots are rapidly growing mould, which usually does not penetrate beneath the surface. Mould growth indicates that the wood is too moist, and if the conditions do not change, more dangerous decay fungi will start to grow.

Visible dark spots on the log surface may sometimes be corroding iron particles, which have penetrated the log surface due to use of angle grinder near the wall.

Mould growth can be distinguished from blue stain fungi by scratching the log surface. If spots can be removed by scratching, they quite certainly are mould. Mould can be removed by cleaning the wood without damaging it. Blue stain fungi intrudes deeper into the wood, thus colour defect it causes cannot be removed by any other means but removing the wood itself. Mere blue stains do not weaken the strength or firmness of the wood, nor have an effect on adhesion of the surface treatment agents. Blue stained wall can be painted with darker coloured or opaque wood protective agents.

Mould prevention

Exterior wood surfaces shall be treated with mould preventive agent as soon as possible. Mould appears on untreated wood surface in a couple of days on a rainy summer, even if the wood is not directly exposed to rain. Round logs are treated with light mould preventive treatment at the factory, which prevents mould growth during temporary storage and frame construction. If the construction process is delayed, log surfaces shall be regularly monitored. If mould spots appear, the log surfaces must be immediately treated with wood protective liquid. Mould that has already appeared must be washed off before the protective treatment. Colourless primer is usually used for protecting the wood surface from mould. It does not protect the wood from UV radiation of the sun, thus the surface must be treated with translucent or opaque paints or surface treatment agents soon after priming.

PREPARING LOG SURFACE FOR SURFACE TREATMENT

Figure 6
Newly assembled, clean log frame is ready for surface treatment.

Figure 7
In sunshine resin is released in drops on the knot surface. It also appears on the inner roughs and cracks of the wood. Remove loose resin by scraping with a steel scraper.

Figure 8
Footmarks of the installation crew on a log wall. Their ignorance causes extra work for painters. Marks can be removed by rubbing with an eraser or by sanding. Cleaning is quite laborious though.

Make the surface treatment for newly assembled log wall as soon as possible after assembly, when the wall is still clean and dry. Check the seams between logs and remove all possible wood shavings and other waste. Check also the log joint corners and cut off all possible wood sticks and processing waste with a sharp knife.

Knots

Remove resin from knots and elsewhere it possibly appears. Resin can be easily removed by scratching with a steel scraper. Follow the instructions given by the paint manufacturer when preparing the knotted areas.

Metal parts

Remove all extra nails and screws from the walls, which were possibly left there during the assembly, as the scaffold and support structures were built.

Artichouse does not deliver untreated corroding steel components to be used in the structures. If they were added for some reason, corroding steel parts must be carefully cleaned and coated twice with rust preventive paint. Tape with masking tape all the visible steel parts, which you want to keep in original appearance.

Washing and mould removal

Wash the dirty surface with pure water. Pressure washer may be used, but the nozzle must not be taken too close to the painted surface, so that it will not break. Wash from top to down and direct the nozzle so that water will not enter the seams. Normal mud and dust are easily removed by washing without washing agents. Footmarks left by black rubber boots or boots with crude rubber soles can be removed by sanding or by rubbing with an eraser.

If mould has appeared on the surface, use off-the-shelf mould removal products for mould removal. Carefully follow the dosage instructions given by the manufacturer. Apply the solution with a sponge or soft brush or on large surfaces with a backpack sprayer. If you use sprayer, cover yourself, plants, glass surfaces and other sensitive objects from splashes. Let the solution affect for the time given in the instructions (usually ca. ½ an hour). Rinse the surface carefully with pure water from top to bottom, and let the surface dry. After mould removal the surface must always be treated with mould preventive primer before surface treatment.

Sanding

Grime and deeper grown mould are sometimes so tightly attached on the surface, that they cannot be removed by washing. Hyphae of the blue stain fungus permeate so deep, that they cannot be removed even by sanding. Blue staining does not, however, weaken the wood quality, thus it can be painted as the fungus is first destroyed with mould removal detergent and mould preventive treatment. Severely stained surface must be painted with dark coloured glazing paints or opaque paints for visual reasons. Test the opacity of the paint before making the final choice.

Use abrasive block or sandpaper with appropriate grit size for sanding. Start by trying out sandpapers with different grit sizes and choose sandpaper, which has as small grit size as possible, yet cleaning the surface. Too coarse sandpaper damages the wood surface, and sanded sections will be clearly visible on the painted surface due to differing light reflection properties. If the surface must be sanded with coarse sandpaper, proceed gradually from rough to smoother grit size and finalise the surface with fine sandpaper.

If you use hand grinder for sanding, use preferably belt grinder with sandpaper moving back-and-forth. Marks left by rotating sanding disc are much more visible on the finished surface. Always finalise the sanding process by sanding the surface in direction parallel to wood grains. Vacuum-clean or wash the surface from sanding dust before the surface treatment. In surfaces to be treated with translucent treatment the sanded areas may stand out from the non-sanded areas, because they absorb surface treatment agents differently. These surfaces usually have to be sanded throughout or opaque wood protective paints have to be used.

Figure 9
In over a hundred years old log wall texture the cracks are an essential part of the wall. In the old days, spoons and knives were licked clean after eating and were stuck from the shanks into the cracks awaiting for the next meal.

Cracks

Cracking is an essential and natural characteristic of a log wall. Cracks on the exterior walls must not be caulked, because the crack width varies with the seasons and wall humidity. Interior cracks are usually not caulked either.

If caulking is necessary for some reason, to caulk any cracks and dents in the facade, use only elastic alkyd and oil putties, which include mould preventive agents and are suitable for exterior use. Caulking must be done after prime coat application.

SURFACE TREATMENT FOR EXTERIOR LOG SURFACES

Exterior log wall is constantly exposed to strains of altering weather conditions and microbial attacks. Purpose of the surface treatment is to protect wood from these strains. Fluctuations of temperature and humidity, direct sunlight, moulds, fungi and algae put heavy stress on the wall coating.

Exterior log walls tend to crack as they dry. Log walls crack less outdoors than indoors, and width of the cracks may vary according to air humidity.

Due to cracking, opaque surface treatment is not recommended immediately after assembly. A good way is to treat the log walls with wood protective liquid immediately after construction and leave the painting work for the following summer, when most of the cracking has already occurred.

Wood protective treatment and the first coat of translucent treatment can be applied right away after construction and the second coat on the next summer. In wall surface, which is treated with translucent treatment, the cracks blend in better into the texture of the wood surface.

Figure 10
Suitable products are provided by various manufacturers. If choosing is difficult, ask an expert for advice.

Choosing the product for log surfaces
By the selection of surface treatment method it is possible to greatly affect on the wall condition and the need for maintenance painting. Correctly chosen surface treatment agents and suitable conditions under which the surface treatment is made ensure long-lasting and good-looking wall surface in addition to good microbe protection.

Choose a product suitable for exterior painting. Instructions and guidance you will find from the paint shop and from the WWW pages of paint manufacturers. It is always better to ask for help, if uncertain. Wrong paint or poor painting conditions may lead to loosening and peeling paint even within a year. Wrong paint may even cause a log wall to decay. The most important feature of exterior wall paint is the water vapour permeability.

Translucent wood protective agents are very suitable for log walls. They are available in both water-and solvent dilutable forms. The use of translucent wood protective agents is especially recommended for massive log walls. Translucent wood protective agents do not form film on the log surface, which would slow down the drying process.

Oil-based opaque paints are also suitable for log walls. They are not, however, recommended for cracking walls. It is better to use water-dilutable opaque wood protective agents for painting. Always make sure, that the wood protecting agent that you choose does not form film on the log surface.

Figure 11
Use high quality products of well-known manufacturer.

Figure 12
Suitable weather for painting work is cloudy weather without rain.

Other wooden surfaces

All other wooden surfaces outdoors can be treated by same methods as the log surfaces. Other wooden surfaces, such as architraves for windows, are painted separately. Panel surfaces and architraves can also be painted with water-dilutable paints containing acrylate adhesives, which are not recommended for log surfaces. Translucent and opaque wood protective agents are, however, best options also for other wooden surfaces.

Translucent or opaque wood protective agents are also the best choice for painting doors and windows. Choose rather tinted than clear wood protective agent. Non-tinted wood protective agents do not protect the log surface from UV radiation of the sun.

Especially structures without a roof above them must be protected with wood protective agents, which do not form film on the log surface. After several painting times, thick paint coat may form vapour-proof film, even if the paint itself is not film-forming. In these cases, the old paint must be removed completely after three times of painting. Film formation may lead to situation, where seemingly good-looking and unharmed fence pole is completely rotten from inside and falls down at some point.

Conditions for surface treatment

The best weather for exterior painting is cloudy weather without rain. The most suitable period for painting is the spring, in May and June, before the insect season. Temperature during painting must be at least 10 C and stay at more than 5 degrees when the paint dries. The relative humidity of air should be below 80 %. The humidity of the wood surface to be painted must not be more than 20 %. If the requirements for surface treatment conditions are given in the product manufacturer's instructions, follow them firstly.

Direct sunshine causes water or solvent to evaporate too quickly, and the adhesion of the paint to the surface remains weak. On sunny weather you can paint the house from the shadowy side. Strong wind may also be harmful for the surface treatment work. Wind dries the surface and may bring dust on the wet surface.

After rain or washing the log wall should be allowed to dry for approximately 24 hours before applying the surface treatment. On windy weather and in the sunshine the surface dries faster. If you do not have moisture meter, rather let the wall dry too much than too little.

Priming

It is important to treat the log surface with protective treatment as soon as possible, that is when the house is protected from weather conditions and the underlayer for roof is at least installed. At least priming with wood protective agent must be done before winter, or as soon as the weather conditions allow.

Always use wood protective primers for priming. For example, linseed oil based wood protective agent penetrates well into wood, repels water and slows down the growth of mould-, decay- and blue stain fungi. The primer can be tinted with similar colour as the final surface treatment will be, or you can use transparent primer, if you are going to do the surface treatment later and you have not decided the final colour yet.

Let the log ends absorb the primer properly. The deeper the wood protective agent penetrates the better protection against water absorption it gives. Prime also the ends of the architraves and the lower surface of the bottom log, where it protrudes over the footing.

Figure 13
A Log wall painted with water-dilutable translucent wood protective agent. Translucent wood protective agents are recommended especially for massive log walls.

Figure 14
A laminated log wall painted with water-dilutable opaque wood protective agent. Paints are not recommended for cracking logs.

Translucent treatments

Tintable translucent wood protective paints are found in various trade names. Choose a product, which does not form film on the wood surface. The chosen glaze should preferably include UV protection as well.

The final hue of translucent products on wood surface depends greatly on the surface structure of the wood, the product and the applied quantities. If possible, test the chosen colour hue on some unnoticeable area on the wall or separate log piece before purchasing the total quantity. Ready-mixed paints cannot usually be returned to the paint shop.

In addition to primer, apply two thin coats of translucent treatment agent by carefully stroking. Hue of the translucent treatment agent deepens and darkens with each applied coat.

Paints

Paints are not recommended for massive round and rectangular log surfaces, because of their tendency to crack. They can be painted, however, with opaque wood protective agents. Laminated log walls can be painted with non-film-forming paints meant for exterior painting. Too thick paint coat may form film even if the paint itself is water vapour permeable. Make sure form the paint manufacturer that the paint is suitable for the exterior painting of a log house.

Instructions for surface treatment

Begin by reading the instructions on the paint container label and follow them carefully. Purchase all the paint you need at once to make sure you will get uniform colour hue on the entire wall surface. Stir the paint throughout carefully before painting and also after each break. When the paint is about to run out (1/3 is left), add paint from the next container to avoid colour differences.

If the seals for windows and doors have been delivered separately, do not install them before you have finished painting the windows and doors. The external metal sills for windows are also installed after painting.

Figure15
Paint with even horizontal strokes. If the paint tends to run, apply thinner coat. After wetting the paintbrush, stroke paint on larger area. Remove running paint by stroking horizontally with the brush before the paint dries out.

Protect windows. Protect also terrace floor, stairs and footing from paint splashes. Protect electricity outlets and lighting fixtures with masking tape. Use only appropriate and high quality tools for painting. With poor quality tools you cannot get good end result, no matter how excellent paint you use. Paintbrush is the best tool for painting log walls. If you, nevertheless, prefer using a roller for painting the wide logs, finalise the surface with horizontal paintbrush strokes, as you paint the seams. Using a brush makes the paint adhere better.

Start the painting work from the upmost logs. Wipe off all paint splashes from unpainted surfaces as they are still wet. This is important especially with translucent surface treatment products, because splashes will remain visible, if they manage to dry on the log surface before painted over. Paint few logs at the time with horizontal strokes. Stroke as many times as required to even out the paint, to stop it from running and to ensure the paint is spread evenly on the entire surface. It is better to apply two thin coats than one thick. Let the first coat of paint dry according to the manufacturer's instructions before applying the second coat.

Figure 16
Soak paint on the log ends by patting with a paintbrush. Plenty of paint may be absorbed.

Paint so that the edges of the painted areas are in the log joints and on the edges of the openings. Paint edge will remain visible in the middle of the wall, especially on surfaces treated with translucent products. Evenness of the first coat is crucial to the final outcome. Each person has a personal handwriting also when painting. Therefore, one person should paint one surface from start to finish.

Always close the paint container lid during breaks. If the paint is left in the container for a long time before the next use, turn the container upside down for a while to seal the lid airproof with the paint.

Build or purchase proper scaffoldings. Using sufficient time for installing them pays off multiply as the painting goes off without delay. Moreover, painting quality and especially work safety are better when painting can be done in the correct position without the need to stretch out.

SURFACE TREATMENT FOR INTERIOR LOG SURFACES

Other wooden surfaces inside the house can be surface treated in the same way as log walls. Therefore, separate instructions for those are not given in this manual. These instructions are applicable as such also for log panel surfaces. Note that other wood surfaces and log panel surfaces are treated separately before assembly, if possible. This way untreated wood will not come in sight when drying.

Figure 17
Over 60 years old interior log wall. From time to time the log wall has been covered with knot pulp cardboard. This wall has never been surface treated. Time, cleaning and grease of the indoor air have patinated the wall into beautiful surface.

Logs tend to crack as they dry. Cracking may be disturbingly visible on painted surfaces. Cracks formed after painting stand out clearly from the painted surface when the untreated wood and shadow inside the crack become visible.

Light coloured surface treatment highlights the cracks whereas dark fades them out.

For cracking log walls it is better to use translucent surface treatment which leaves the surface structures visible than opaque paints. In surface which is treated with translucent surface treatment agent the cracks blend in better to the surface texture of the wood.

The final hue of translucent products on wood surface depends greatly on the surface structure of the wood, on the product and the applied quantities. If possible, test the chosen colour hue on some unnoticeable area on the wall or separate log piece before purchasing the total quantity. Ready-mixed paints cannot usually be returned to the paint shop.

Choosing the product

This instruction does not present paints by trade names used by the manufacturers. The trade names change and there are many different manufacturers. This manual presents the suitability of different surface treatment methods for interior log surfaces. Suitability of the product for surface treatment must always be checked from the paint manufacturer.

Breathability of surface treatment

Moisture content of indoor air is not constant. It fluctuates according to the moisture production taking place in the room. Fluctuation is usually paced in 24 hour periods, which in turn depends on the corresponding human activity falling into periods. New research results of VTT (Technical Research Centre of Finland) show that the 24 hour short-term fluctuation of indoor air humidity can be modified with moisture-binding hygroscopic building materials, such as wood, wood fibre and linen insulation. According to the results, building materials have even greater moderating effect than ventilation. This has many positive effects on the indoor air quality. The term “breathable structure” used by the general public can be related to a structure, which has the ability to receive and return humidity effectively to and from the indoor air. (25.8.2002 Erkki Kokko, VTT, Technical Research Centre of Finland)

Breathability of wood surface can be prevented by wrongly made surface treatment. In order to ensure the free movement of humidity from air to wood and back, also the surface treatment must permeate water vapour effectively. This applies to panel surfaces as well.

Figure 18
Symbol of the emission classification for building materials on side of a paint container. The symbol cannot always be found, but the emission class is mentioned in the user's guide.

Always make sure that the surface treatment agents you use are M1 emission classified. M1 classification is not usually required for primers. M1 class is reserved for materials emitting as low levels of volatile detrimental compounds to the atmosphere as possible. Log house is an ecological product, thus it is worthwhile choosing ecological products received from the nature as surface treatment agents as well.
Choose the right product. Instructions and guidance you will get from the paint shop and from the WWW pages of paint manufacturers. The product selection is essentially influenced by the degree of stress that will be directed on the surface to be painted. The painted surface is objected to greater stress and wearing in wet spaces, kitchen and other spaces where the surfaces must be cleaned more often.

Conditions for surface treatment
Suitable temperature for interior painting is 15–20 C and the relative humidity of air between 50–80 %. Humidity affects to the drying time of the paint. The end result of surface treatment may be uneven in too dry conditions, because the edge of the already painted surface dries so quickly. Border area gets then double paint coat as the surface treatment is continued.

Clean the room floor from dust before surface treating the walls. Make sure that activities causing or lifting dust do not take place in the room until the painted surface is dust dry.

Make sure that ventilation of the room is sufficient during and after the painting work. Use dust mask, if it is recommended in the instructions of the paint manufacturer.

Figure 19
Translucent treatment leaves the natural surface structure of the wood visible. Here is a dark brown-tinted waxing on the floor surface.

Translucent treatments
The natural structure of wood, including knots and grains, remain dimly visible in surfaces treated with translucent surface treatment agents. By translucent treatment it is possible to change colour and emphasize the inner structure of the wood. Treatment is suitable for new, untreated wood surface and for the most wood species. Translucent surface treatment agents do not cover possible defects of the wood. If translucent treatment is wanted on old wood surface, the previous paint must be completely removed. Treatment protects the surface from getting dirty and prevents water from infiltrating into the wood. The UV protection, provided by the surface treatment, slows down the darkening of wood surface.

The most common translucent treatment options for log surfaces are ***varnish, waxing*** or ***oil treatment.***

Figure 20
A log wall treated with colourless matt varnish. The surface treatment does not differ much from untreated wood.

Varnish can be glossy, matt or something in between. The matt surface expresses peace and harmony. The glossy surface is more dynamic making the colours glow. Varnished surface is easy to take care of and dirt does not attach to it too tightly. Varnish can be mineral oil dilutable or water-dilutable. It can also be tinted. The water vapour permeability of varnished surface varies greatly depending on the varnish and the solvent. It is advisable to use water vapour permeable surface treatment also for the interior log surfaces.

Figure 21
White-tinted waxed log wall.

Waxing gives the surface silk-and-shiny tone. Waxing also highlights the wood's own natural surface. Wax is usually a mixture of beeswax and carnauba wax. Mere beeswax would remain too soft and mere carnauba wax too hard. Waxes meant for surface treatment often contain vegetable oils as well. Wax fills the open pores on the wood surface, but it does not prevent the wood from breathing. Wax surface repels water and is highly resistant to colouring substances, such as juice, cola drinks, coffee, tea, beer and wine. Usually wax is used as oil-mixture and it can also be tinted.

Figure 22
Red-tinted oiled log wall.

Oil treatment deepens the natural colour of the wood. In interior spaces usually only solvent-free vegetable oils are used. Oil products may also contain wax. Oil infiltrates into the wood, thus protecting the wood and preventing the dirt and moisture from absorbing into the wood pores. Vegetable oil is nourishment, which can become mouldy in suitable conditions. Always treat already oiled surface with oil. Oiled surface requires long drying time. Even if the surface is touch dry in 1–3 days, the drying process continues for several weeks. For example, oiled floor can be taken in use after one week from the treatment at the earliest. Wood oil can also be tinted. Oil treatment may complicate the maintenance paintings taking place later.

Paints

For interior painting nowadays almost solely the water-dilutable products are used. Solvent dilutable products are used primarily for prime coat application or on surfaces which provide poor adhesion for water-dilutable paints. Water-dilutable products are very suitable on wooden surfaces. Paints are not recommended for cracking log wall surfaces, such as massive round or rectangular log surfaces. Instead on laminated log surfaces painting suits well.

There are several degrees of matt and gloss in paints. Matt paints are usually used for interior decoration. Glossy paint suits well in spaces where the surfaces are objected to more stress, such as wet spaces and kitchen. Glossy paint emphasizes the colour shades of the paint.

Instructions for surface treatment

Always purchase all the paint you need at once to make sure you will get uniform colour hue on the entire surface. Stir the paint carefully before the painting and after each break. When the paint is about to run out (1/3 is left), add paint from the next paint container to avoid colour differences.

Untreated wood surface must always be primed or be treated with wood protective agent. Always choose the same coloured prime coat and top coat. Prime the mouldings and panels before fastening them. Use diluted paint for priming panels to ensure the compatibility of tongues and grooves after painting. Diluting also enhances the absorption and adhesion of the product.

Figure 23
Start from the upper part of the wall and paint one log at a time. Apply paint with smooth horizontal strokes. Wipe off dripping paint immediately.

Cover all the border areas with masking tape. Use good quality tape, because poor quality tape may tear off the paint underneath when removed. Protect the electricity outlets and lightning fixtures with masking tape as well. If the floor cover has already been assembled, protect the floor widely enough from paint splashes. Remove the tapes as soon as possible, because paper-based masking tape adheres very tightly as it dries.

Use only appropriate and high quality tools for painting. With poor quality tools you cannot get good end result, no matter how excellent paint you use. Always read first the instructions on the paint container label and follow them carefully.

A paintbrush is the best tool for painting log walls. If you, nevertheless, prefer using a roller for painting the wide logs, finalise the surface with horizontal paintbrush strokes, as you paint the seams. Start the painting work from the upmost logs. Wipe off all paint splashes from unpainted surfaces as they are still wet. This is important at least with translucent surface treatment agents, because the splashes will remain visible, if they dry on the log surface before painted over.

Figure 24
Seams can be painted only with a paintbrush.

Always paint the whole log from one end to another when using translucent paints to achieve smooth and even end result. Evenness of the first coat is crucial to the final outcome with translucent treatment. Each person has a personal handwriting also when painting. Therefore, one person should paint a surface from start to finish.

Follow the instructions given by the paint manufacturer on the number of applied coats and drying times. Always close the paint container lid during breaks. If the paint is left in the container for a long time before the next use, turn the container upside down for a while to seal it airproof.

Paint consumption is calculated as follows: 1,5 x the area of a round log wall, take into account the double consumption in the log ends.

Resin removal
Resin must be removed mechanically by scraping with scraper or with a knife blade. Be extra careful and do not damage the log surface. The best time for resin removal is, when it stops running from inside the wood and the resin starts to dry.

If necessary, the actual surface treatment can then be made again to obtain log surface as good as new.

Solvents should not be used for resin removal, because they can react harmfully with the surface treatment of the wood.

OTHER COATINGS

Steel parts
Concealed steel parts have been coated with rust preventive agent, thus they do not require treatment. Visible steel parts have been protected against rust mainly by yellow passivation. They can be painted at the building site with wanted colour tone before assembly. Steel parts must be cleaned from grease before painti