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# Interior panelling

# Finished interior panelling

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Ordering  
Transportation and storage  
Installation

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## GUIDELINE

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\* For quality specifications, see the Puidukoda quality specification 'Interior panelling and floorboards AB'

# 1. Ordering

## 1.1. What should be paid attention to when selecting and ordering interior panelling?

### • Type of wood

We offer interior panelling made from spruce and pine. When selecting interior panelling, the different properties of spruce and pine should be kept in mind.

Pine timber is darker and reddish, changes over time and becomes even darker due to UV radiation. This can be compensated for by surface finishing containing UV protection, but not entirely. As pine heartwood is reddish in colour and sapwood is lighter, pine timber is multicoloured by nature with a red-yellow pattern of varying widths. There are less knots than in spruce, but the knots are larger in diameter, often with black knots and bark-ringed knots. Whole black knots and bark-ringed knots are unavoidable in pine solid wood and are not considered defects, only knotholes or dead knots are considered defects. Pine fits well in its natural form (or finished with non-tinted varnish) or with white semi-transparent finishing in larger or bright spaces where this dark tone does not have an oppressive effect. Pine is also suitable for finishing with a topcoat as pine knots are less dense and therefore do not crack during drying and subsequent processing. Consequently, after finishing with the topcoat, the pine panelling has significantly fewer noticeable surface defects.

Spruce wood has a lighter tone and retains its colour for a longer period of time, yellowing only slightly (this can be avoided with surface finishing containing UV protection). Spruce has more knots than pine, but the knots are neutral in tone, smaller and there are very few or no black knots (pearl knots) and bark-ringed knots. Spruce as a light wood fits well in its natural form (or finished with non-tinted varnish) or with white semi-transparent surface finish into small or low light spaces. As drying cracks in knots are a characteristic feature of spruce, spruce panelling is not well suited for finishing with a covering topcoat, as cracks of knots will become more visible under the covering topcoat.

### • Profiles

The shape or profile of the panelling to be ordered should be selected based on the architecture of the building and the application site.

Will the interior panelling be installed on the ceiling or vertically or horizontally on the V2 wall or will they be used to cover half of the height of the wall with a so-called semi-panel? Or will one wall of a room be covered with interior panelling to give the interior a special accent?

If you want a solution as neutral and modest as possible, you can order interior panelling with bevelled edges, where upon assembling two boards a small indentation will remain between them. This profile can be varnished or painted white and then this universal and neutral but at the same time natural finishing is suitable for many interiors.

For example, for saunas, the so-called STP profile with rounded edges works well, where there is a small gap of around 8-10 mm between the two boards, making it is easy to clean the joint.

### • Recommended thicknesses and widths

The thicker the interior panelling, the more consistent its moisture regime (changes in volume caused by humidity are smaller). Thus, surfaces finished with thicker interior panelling are more stable.

According to Nordic standards, the suggested minimum thickness of interior panelling is 14-15 mm, especially in damp rooms. You can also use thinner, cheaper and popular 9-12 mm interior panelling, but you must take into consideration the possible increased risk of problems caused by more frequent and larger volume changes (cracks, varnish and paint damage, cupping, etc.).

We offer interior panelling in widths of 96 mm and 121 mm, some products can also be ordered with a width of 146 mm. The advantage of a narrower board is a smaller risk of bending and cracking during use. The wider the board, the greater the risk that it will bend and split after installation due to changes in the ambient temperature.

### • How to calculate material consumption

Depending on the architectural characteristics of the building, material consumption can be calculated in two ways. The simplest way is to calculate the gross area of the internal space without any deductions for the openings and to order the panelling accordingly.

If the building has many windows or doors, calculate the net area of the internal space (windows and doors deducted) and upon ordering add spare space to the net area of at least 5%, preferably 10%.

Cutting and fitting the panelling results in considerable loss, which should be taken into consideration when ordering because the later acquisition of the additional quantity is troublesome to both the buyer and the seller (especially for manufacturers of industrially painted panelling).

Please note! When calculating the material consumption, attention must be paid to the covering width of the panelling.

## 1.2. Finished interior panelling. Why to order – pros and cons. Which colours and colour shades to choose. What to pay attention to when ordering.

### • Why to order – pros and cons.

Quality. Manufacturing of industrially painted panelling takes place indoors, where a necessary dust-free environment with a constant temperature and humidity has been created. The finishes are applied to the surface according to the manufacturer's instructions, always in two surface layers and with the required layer thicknesses, using the surface finishing systems approved by the paint manufacturers. This guarantees a high-quality, durable and long-lasting end result.

Sanding between two layers is also carried out during the industrial finishing of the interior panelling, which, when compared with manual finishing, ensures a considerably higher surface quality and smoothness.

Price. In terms of price, industrially finished boards are less expensive than do-it-yourself finishes because manufacturers use industrial paints which, due to the large purchase quantity, are significantly cheaper than DIY paints and labour unit costs are significantly lower due to efficient and mechanised production (painting chambers).

One disadvantage to point out is the optimal quantity to be industrially painted. In the case of industrial painting, the economically reasonable quantity both in the sense of colour tinting as well as machine tuning is to finish approx. 50 to 100 m<sup>2</sup> with one colour shade. Below this quantity, industrial painting for the manufacturer is irrational and troublesome and therefore the price is higher.

As delivery times for industrial painting mostly can be as long as 14 days, this is not a major drawback compared with doing it yourself. Doing it yourself means that you need to acquire the material, paints and tools, set up a workplace and let the material dry between the surface layers and, ultimately, doing it yourself means that the panelling may not be completed any faster.

By contrast, a major disadvantage of preparing the boards yourself, apart from the price (if you sum up all the costs, including your own time), is that painting on site cannot guarantee a uniform paint layer thickness and drying.

The lifespan of a board manually coated in an indoor environment is not guaranteed, as, besides a suitable work environment, the uniform thickness of the paint layer must be ensured, something which is hard to achieve using a hand paintbrush or roller. When the drying time between applying different paint layers is too short, there is also a risk that the lower layer is not sufficiently dry and thus the top

layer does not stick sufficiently to the surface and will sooner or later just flake off.

### • Which colours and colour shades to choose

We use waterborne professional external finishing paints made by the Finnish manufacturer Teknos OY, which has 70 years of experience in manufacturing internal and external finishing paints. In interior finishing, we use Teknos semigloss, waterborne, acrylate paint as a topcoat. In addition to the colour shades on the Teknos colour chart, we can also tint colours according to other covering paint colour charts (RAL, NCS, Tikkurila, Caparoli, etc.).

For glaze paint or oil stain or translucent (grinning) tinted wood preservative, we use Teknos alkyd-acryl-based oil stain. The glaze paint does not require prior priming and is applied directly on the board according to the customer's request either in one or two layers (the colour with the highest resemblance to the colour chart is achieved by applying two layers). In addition to the colour shades on the Teknos colour chart, we can tint the colours according to the customer's wish on the basis of other stain or glaze paint colour charts (Tikkurila, Vivacolor, etc.).

It is also possible to order products finished with varnish. Varnished surfaces are more resistant to wear, they are easier to clean and the varnish ensures more efficient protection from UV radiation. Varnished products can be ordered as a slightly shiny transparent coating or as a varnish tinted with colour shades selected from the glaze colour charts. For interior finishing we use Teknos varnish.

### • What else (besides the points in 1.1) should be borne in mind when ordering?

Take your time to carefully consider the colour shade. You must consider that the colour shade shown on the colour chart will always differ more or less from the final result, since the colour chart is still simply ink printed on paper, whose glossing and refraction properties differ from the same parameters of real paint applied on timber. Thus, if you hesitate regarding the chosen colour shade or want to get a 100% exact colour shade, consider a longer delivery time and order sample pieces with real paint on real timber. The risk of getting a different colour shade than that on the colour chart is higher when the colour shade is not chosen from the colour catalogue of the paint manufacturer (Teknose).

When in doubt about the selected colour or between two colour shades, you can order a finish with one topcoat layer. If necessary, you can improve the colour shade with another layer after installation on the wall (easier to darken, complicated to lighten).

## 2. Transportation and storage

### 2.1. Transport

The production of Puidukoda is packed in packaging meant to be side-loaded with a forklift. When loading from the rear, there is a big risk of damage to the package and the goods. When transporting the goods in Puidukoda original packaging, use a forklift to avoid damage. If you load goods with a crane with slings, a special set-up meant for lifting timber packages must be used. When lifting with slings, a rigid metal channel iron or wooden strip must be placed between the slings and the package. This is to avoid slings grooving in the corners of the package and damaging the timber package and cladding, especially breaking the tongues and grooves due to pressure applied by the slings. Although the original packaging is covered with weatherproof film, transport vehicles with closed cargo areas should still be used. The more frequently goods are lifted and transported before final installation, the higher the risk of transport damage.

### 2.2. Storage

Before storing material on the construction site, inspect the film layer covering the timber package and ensure that there are no holes or other damage, which may have occurred during the storage, loading or transport of timber packages. If the package film is broken, it must be repaired or replaced with a new one. When storing timber in external conditions, the top of the package and all four sides should be covered to avoid moisture pen-

etration from the top and sides and the material should be protected against UV rays.

Use strips and leave a sufficient aeration gap under the timber package. The material should not be in direct contact with the ground. The recommended air gap is approx. 150 mm.

The heat-shrinking film used by Puidukoda is micro-perforated to ensure optimum moisture regime in small packages. Thus the heat-shrinking film is not water-resistant and the small packages packed in heat-shrinking film must always be covered with package film. If you notice that moisture or water has somehow penetrated the small package packed in heat-shrinking film, the film packages must be opened immediately to ensure sufficient aeration and avoid bluing and mould.

To avoid drying or excessive moisture-induced cracking and volume changes after installation (cracks, cupping, drying cracks between the boards), the moisture content and temperature of the interior panelling must be adapted to the indoor humidity and temperature before installation. This is why, prior to installation, the panelling must stand in the room in which the material is planned to be installed for a minimum of two weeks, so that it can adjust to the indoor climate before installation. The moisture content of the interior panelling during production is 16% ( $\pm 2\%$ ), while in heated living quarters the moisture content is usually 6-7%.

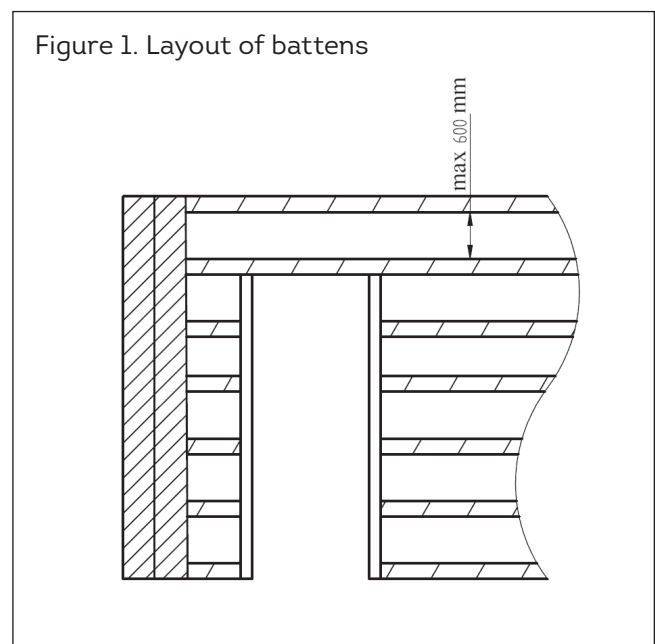
## 3. Installation

### 3.1. Aeration gap. Base batten. Base batten pitch, thickness.

Upon installation of the interior panelling, the humidity in the room, the moisture emitted from the wall and the ventilation in the room as well as the type of material of the underlying wall and the smoothness of the underlying wall must be considered. For example, in the case of a smooth surface and levelled wooden frame wall located in a dry and well-ventilated space, the interior panelling may be installed directly on the underlying wall. In the case of an underlying wall made of stone, concrete and other materials, battens must be installed under the interior panelling, to which boards can be installed (Figure 1).

In the case of a dry and well-ventilated room, battens can be installed in one piece, meaning that at the ends of the sarking, no aeration gaps are needed. In damp rooms, such as bathrooms and sau-

Figure 1. Layout of battens



nas, the battens should be installed from strips, which would be spaced apart at the ends to ensure more efficient air movement between the walls (Figure 2).

**3.2. Fastening fixtures and fastening**

Suitable fasteners are galvanised nails, stainless screws or special clamps for fastening the paneling, which are suitable for installing only tongue-and-groove profiles. If you want to reduce the bending risk of panelling, we recommend using nails with better hooking properties (for instance, rectangular or riffled). The length of a fastening fixture should be such that it extends into the base batten by at least 1.5 times the thickness of the board (Figure 3).

During fastening, be careful not to damage the paint coating. In order to avoid cleaves, do not fasten boards too close to the end - a safe distance is 7-10 cm. If you need to fasten close to the end,

Figure 2. Battens in damp rooms

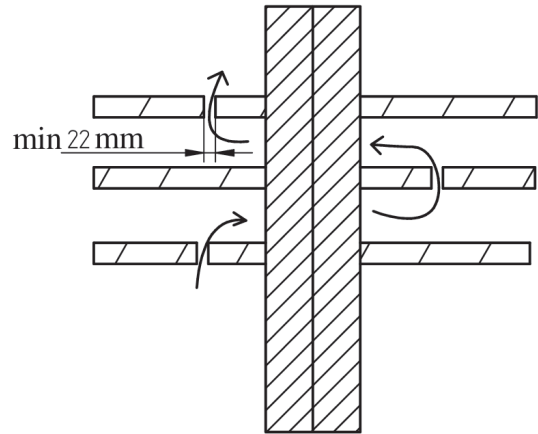


Figure 3. Fastening fixtures and fastening

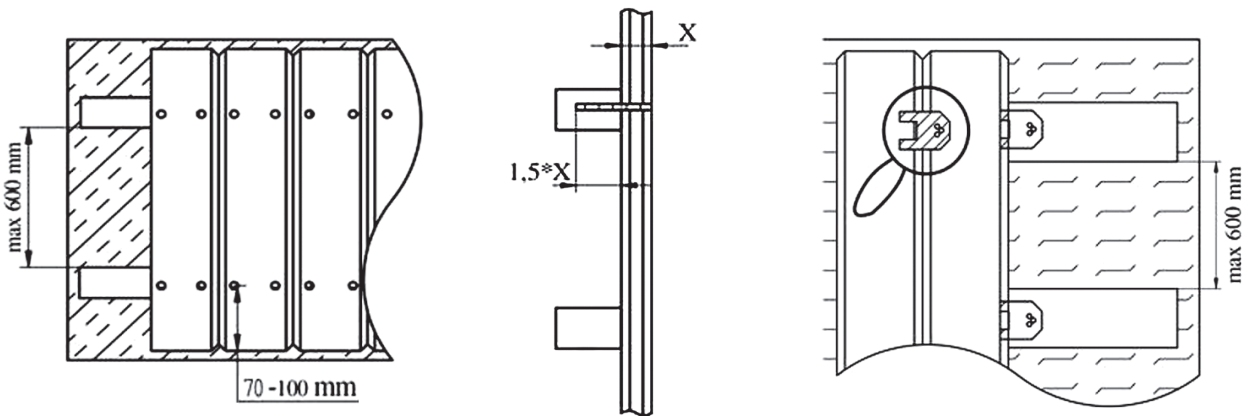
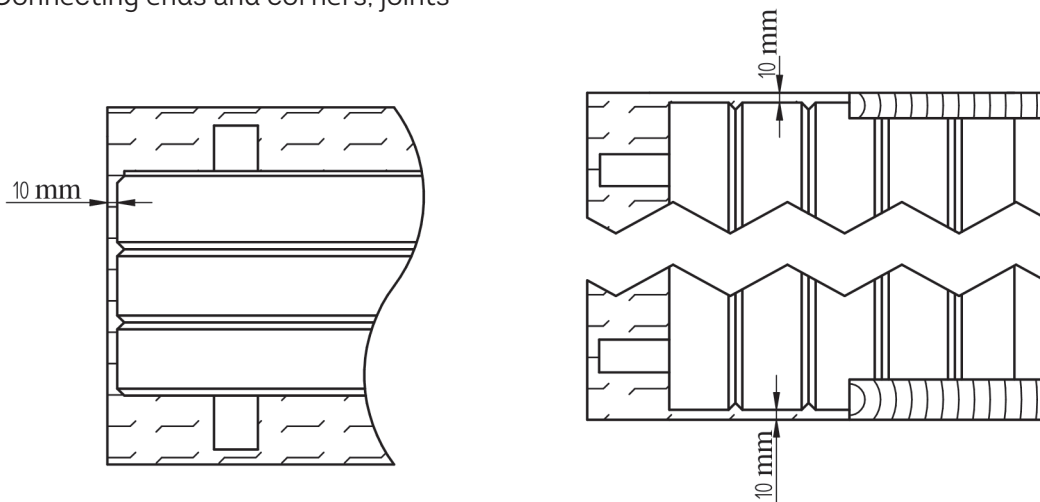


Figure 4. Connecting ends and corners; joints



the holes must be pre-drilled. Profile boards should not be fastened from closing, but from each nailing spot with two nails from the top side of the board (from the top of the profile to avoid breaking the tongue and groove). This is done to prevent the panelling from bending.

### 3.3. Wall

When installing panelling vertically, start in the outer corner; if there is no outer corner, from the inner corner. When installing panelling horizontally, start with the tongue upwards and groove downward. Install from the floor towards the ceiling.

### 3.4. Ceiling

When interior panelling is installed on the ceiling and on the wall at the same time, ceiling coverage

should be done first. On an old, straight surface, where there is adequate ventilation and low humidity, interior panelling can be mounted directly. On damp, uneven ceiling surfaces, concrete ceilings or plaster finished surfaces and similar ceilings, panelling must be installed by means of battens. The distance between the battens should not exceed 600 mm. In damp rooms, there must be space for ventilation between the joints of the battens (see Figure 2).

### 3.5. End connections and joints

The joints of the panelling (ends and edges) must be 10 mm away from the adjacent wall, ceiling or corner; later, the remaining gaps should be covered with ceiling, corner and floor skirting boards (Figure 4. Connecting ends and corners; joints).

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