



# HIRAM

## Habitat



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GUIDELINES FOR SCREWING SOLID  
AND ENGINEERED FLOORBOARDS

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# General

## 1 information

### WOOD, A NATURAL PRODUCT

**1.1** Hiram solid or engineered floorboards are genuine natural products and are produced from the best quality raw materials, sourced in our local forests.

As the requirements will be different for every construction project, we recommend using experienced parquet-laying professionals to prepare the underfloor and lay our large-format floorboards.

The most important prerequisite for laying wood floors is an indoor climate which is as constant as possible, whereby small seasonal variations are not a problem. Wood is a hygroscopic, breathing material, which means that if there is increasing humidity in the atmosphere, the wood will absorb water (the wood swells). Correspondingly, when the humidity level sinks, the wood emits the moisture again (the wood shrinks). The floorboards are delivered with a residual moisture content of c. 8 - 10 %, as is standard for wood flooring. Accordingly, the room humidity throughout the year should be between c. 35 – 65 %. If the room humidity varies too much, this will result in too much movement of the wood. This can lead to cracks and severe distortion damage of the floor.

When the room is heated during colder periods, the room humidity sinks and the floorboards emit moisture into the atmosphere. They are trying to counterbalance the low room humidity and as a result gaps may form between the boards, even if they have been correctly laid. As a rule these gaps will close again by summer at the latest, as the wood absorbs the rising moisture in the atmosphere again.

If there are generally any doubts about the constant indoor climate within one's own four walls, it would be worth procuring a hygrometer, to measure moisture and temperature. The readings allow appropriate measures to be taken to ensure better climatic conditions in the room. If significant gaps are to be expected due to the climatic conditions, it could be advisable to lay the floorboards with a small space between them. We are happy to advise you further on this.

# Preparation of the

## 2 construction site

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The building itself should be free of building moisture, and the room humidity and temperature should be within the above-mentioned humidity values. A room temperature between 18 and 25°C is recommended. If these conditions are met, the floorboards can be delivered and stored in the designated room to acclimatise (min. 48 hours).

All other work in the rooms should already be completed, and the surface of the sub-structure or screed should be dry, even and clean. If any other trades-work still has to be carried out, the wood flooring must be protected and covered up.

Particularly in the case of new-builds, it is important to check the residual moisture in the sub-structure (screed, anhydrite screed). Mistakes can often be made when testing the residual moisture, for example through false measurements or insufficient drying-out. This can either push the schedule back by months or damage the floor when it is later laid on top. In both cases this can be very expensive. Take care, therefore, that the screed has had enough time to dry out. If in doubt, and depending on the state of the sub-structure, a moisture barrier in the form of an epoxy resin primer or similar should be applied.

For concrete or cement without underfloor heating the maximum residual moisture should 2 CM (residual moisture measurement using the calcium-carbide method). For concrete or cement with underfloor heating, a maximum of 1.8 CM, for sub-structures of anhydrite with underfloor heating no more than 0.5 CM and for anhydrite with underfloor heating no more than 0.3 CM. Wood based boards (OSB) should have a residual moisture between 8 and 10%, and timber battens or joists max. 10 – 12 %.

It is recommended to lay PE sheet minimum 20mm thick on the screed, after which the substructure can be laid on top.

It is important to measure your rooms very accurately before ordering, especially if you would like to order room-length boards. This is best done with the help of laser measuring instruments. The boards are generally produced in 50 cm increments. On arrival at the construction site the planks should immediately be brought inside. Storing them outside can lead to the planks absorbing a significant amount of moisture.

The sub-structure must be prepared according to DIN 18356. It must among other things be compression- and tension-proof, free of cracks, sufficiently firm on the surface, permanently dry, even, clean and free from release agents, sintered layers, etc. The surface must also be assessed for its porosity and traction. Further areas to check are the moisture content and absorbency of cement (self-levelling) and calcium sulphate (self-levelling) screeds, as well as room temperature, room humidity and sub-structure temperature.

When preparing the sub-structure it is important to ensure that it meets the requirements for laying, as described in the previous section. Depending on the type and condition of the sub-structure, this may involve mechanical preparation (sweeping up, vacuuming, machine-brushing, sanding, milling, or shot-blasting). Any cracks and gaps which are not expansion joints or otherwise related to the construction process should be sealed securely with cast resin and screed anchors.

Holes and indentations can be filled with a stable filler. Apply a suitable compound to make the surface even, non-slip and absorbent. Any discrepancy in evenness should measure no more than maximum 1 mm per 1 m-length with a spirit level. We recommend that the work of measuring and laying should be carried out by a specialist.

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## **Screwing down 3 the floorboards**

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The floorboards should be sorted as far as possible according to colour, grain and knotting, before beginning with the installation. This will ensure a harmonious overall appearance. There should always be a space of 10–15 mm between the last rows of planks and the wall. When laying the floor always use a hammer and 1m-long tamping block.

In principle the floorboards can be laid on all standard wood substructures. We generally recommend separating the structure and floor with timber batons spaced c. 40–60cm apart. If a larger spacing is required, we recommend using thicker, solid floorboards, for example 35mm planks. If laying solid boards of up to 300mm wide, it is possible to conceal the screwing through the tongue. If they are over 300mm, we recommend screwing from above and leaving a 2mm space between each solid plank, due to the increased movement of the wood.

To screw from above, a 15 mm Forstner drill should be used to bore a hole of about 1cm. There should be a space of about 5cm to the edge of the board. Then tighten the screws and fill the holes with a plug and some PVAc adhesive. The plugs can later be sanded down with a belt grinder. We are happy to include suitable screws and plugs for closing the screw-holes in our delivery. Engineered boards are screwed from above and no spacing between the boards is required.

Tensioning straps should also be used at intervals when working with solid wood planks, to keep the floorboards in position.

**3.1** It is perfectly feasible to glue our wood planks on substructures with integrated underfloor heating (warm water), whereby the heating system does generally dry out the wood somewhat more. Occasional cracking in the core area and small gaps between the floorboards may occur as a result of the artificially-generated heat. Depending on the type of thermal insulation, particularly in old buildings, extra radiators should be installed to ensure an even heat throughout the house.

The general rule is: the thicker the floorboard, the longer the warmth takes to penetrate through the wood. Energy input is therefore somewhat higher for solid than for engineered floors. A further aspect is the formation of gaps. A solid floor moves somewhat more due to the artificially-generated heat and therefore forms minimally larger gaps, while an engineered floor has higher construction stability (centre layer and counter layer of spruce). Energy input is however only minimally higher for solid than for less thick floor types.

We recommend that the heating engineer and parquet layer work in close consultation and that prior to installation the moisture content of the screed and the wood are checked.

Prior to laying, the underfloor heating must have been turned off for at least two days or the surface temperature brought down to under 20°C. The underfloor heating can be turned on again after 6 – 7 days. The floor surface temperature must never exceed 29°C. Rapid warming up or cooling down should be avoided, rather one should ensure there is a balanced ambient climate (35- 65% humidity, 18°C - 25°C temperature).