

Installation and instruction manual for wooden floors



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About wooden floors

Standard moisture content for massive floorboards is between 6-9%, that is suitable for living rooms with humidity between 40-60%. Adaption of moisture content of wooden floorboards to the conformity with humidity of surroundings is natural characteristic of wood. This is unfortunately also unavoidable – during the process the gaps show up between boards (moisture content of wood was too high for the surroundings and it shrank during post drying) or the floor rises up (wood was too dry and expanded when absorbing the moisture). Lots of living houses, apartments and offices with modern ventilation- and heating systems have extremely dry air during heating period – sometimes the humidity will decrease even below 35%, that will cause changes in wooden floors immediately. Excessive dryness will cause adverse effects in human bodies also. Therefore humidity should be risen artificially with humidifier to protect the wooden floor and keep healthy environment in the room.

Correctly, carefully dried and installed wooden floorboards will have evenly thin haircracks that are barely noticable and won't distract, but to avoid bigger drying cracks:

- * moisture content of wooden floor must be low enough (6-9%). Cheaper wooden floors have moisture content often 10-12% at the time being purchased, therefore the cracks will show up very easily in rooms with dry air.
- * grooves in bottom side of the floorboard will decrease tension in wood and number of cracks caused by this tension.
- * side chamfered floorboards – upper edges of floorboards will be planed at 45 degree angle so that to the each upper edge of floorboard about 2 mm extra side will appear. If these kind of boards will shrink, then the gap between the boards is not so easy noticable.
- * during the exploitation temperature of the room should not fall below 15 °C and the humidity should stay between 40-60%. This way the stability and durability of the wooden floor is ensured.
- * The easiest way to avoid bigger cracks in the wooden floor is to control the humidity in the room keeping it stable with the humidifier!

Wood with all its advantages and disadvantages is natural building material. Advices given in this manual are first in all to reduce impacts of wood's disadvantages, not to eliminate them. Originality of the wood is caused by its „defects“.

Installation of wooden floors

It is highly recommended to use services of professional installing specialist. In this manual basic installation requirements and advices are given to ensure beautiful and long lasting wooden floor.

1) General conditions

* Bring the floorboards to the room, where You intend to install them, few days before. It is needed for boards to adapt with the surrounding environment. Keep the boards in original packaging horisontally on even surface.

* Temperature of base floor, floorboards and room must be between 18-22°C during the installation and afterwards (during exploitation). Humidity must stay between 40-60%.

* It is recommended to sort the floorboards before installing them to keep colorshades smooth all over the floor. No claims are accepted to the floors already installed!

* Check the conformity to the standards of floorboards before installing. Little variation in appearance of the boards are allowed. Install such boards to less visible areas of the floor.

* Expansion gap ~10-20mm must be left between the floor and the walls or ohter fixed objects. Expansion gaps are covered with baseboards or elastic sealant with appropriate color. In case not having thresold between two rooms, never install floor to next room in one piece through doors. Expansion gap should be left to the door opening and covered with coverboards.

* To begin the installation of floorboards start with precise measuring and planning of room. Use indication line or cord to ensure first line of boards being straight – it is very important to achieve the nice final result!

* Start installing from the furthest side of room placing the first board with groove facing the wall. Place appropriate distance wedges between the floorboards and walls and ohter fixed objects. Boards are usually placed to direction of daylight.

* Use heavy hammer to hit the boards together. To avoid damaging the tongue of board, use hammering block or floor board of same type with length approximately 300 mm. During this stand on part of the floor already installed.

* Special glue, that ensures elastic connection with the base, must be used for glueing the boards. If the base has large absorbtion, then it is recommended to prime the base with primer made for that purpose (according to the glue being used).

* Glue is beared to the floor with suitable glue comb. Glue is usually beared to the area of 20-30 cm next to installed boards (depends on type of glue, absorption of the base, temperature and humidity) – to make it possible to hit the boards together over the glued strip.

* All the floorboards must be pressed carefully to the gluebad to achieve strong adhesion. If the base floor is not even, adhesion ability of glue can reduce significantly!

* While glueing floorboards directly to the base, it is not advised to glue side Tongue&Groove connections, it will cause big individual cracks between the boards at the heating period. Endjoints can be glued, but never the sidejoints!

* It is recommended to put weight (like sandbags or packages of unused flooring) on the floor after glueing.

* If the glue accidentally gets to the surface of the floorboard, it must be removed immediately with moist rag to avoid discoloration of wood.

* After glueing the floor must be left drying for 1-7 days (depends on the glue). Finishing can be started only after drying.

2) Installing to concrete base

* In case of concrete base floor the floorboards are glued to the base.

* Unevenness of base must be within norm ± 2 mm on 1m section.

* In case of new building the concrete must be left drying for 1-2 months or even longer (depends on concrete layer thickness and drying conditions). Moisture content of concrete must be definitely measured! For installing wooden floor the moisture content of concrete must be 6-8% and humidity in the room 40-60%.

* In case of installing massive wooden floor to the concrete, moisture movement through side building constructions (like basement) into the concrete must be excluded.

* It is advised to slightly grind the concrete before installing the floorboards. It will help to remove „concrete milk“ and significantly improve adhesion of glue to the concrete.

3) Installing to the wooden base floor (flooring, plywood, OSB or chipboard)

* In case of wooden base floor the boards will be glued and fixed with screws.

* If underneath the base floor is concrete, then it is highly advisable to cover the concrete with plastic film, this way the concrete moisture will not affect the wooden base and floor itself. Moisture will find its way out from expansion gaps next to the walls.

* Joists of base floor must be solid and stiff. The distance between joists must be in accordance with thickness of base floor. Most common dimension for joists is 50x100 with moisture content highest 12% and installed flatways. Optimal distance from the centers of joists is 40 cm – it makes distance between joists 30 cm.

* If the base floor is on wooden joists, the base flooring or –boards must be fixed to the joists with screws. Chipboards moisture resistance is lower than plywoods and OSB's. While installing the base boards expansion gaps 3-5mm are left between the boards.

- * Check the unevenness of basefloor, it must be within the norm of ± 2 mm on 1m section. If the unevenness is bigger, it must be fixed with grinding the base floor or filling the dips.
- * Also check stability of basefloor – it shouldn't sag nowhere!
- * Base floor must be cleaned before glueing – use moist rag and cleaning detergent.
- * In case of wooden base floor screws are used in addition to the glue. Floor boards should be screwed to the base floor from upper side of tongue at 45° angle with base. It is advisable to drill the holes for screws.

4) Installing to wooden joists

- * If underneath the floor is concrete, then it is highly advisable to cover the concrete with plastic film, this way the concrete moisture will not affect the wooden floor. Moisture will find its way out from expansion gaps next to the walls.
- * Joists of floor must be solid and stiff. The distance between joists must be in accordance with thickness of floorboards. Most common dimension for joists is 50x100 with moisture content highest 12% and installed flatways. Optimal distance from the centers of joists is 40 cm – it makes distance between joists 30 cm.
- * For fixing the floorboards to the joists it is recommended to use screws 3x45..4,2x55 mm instead of nails. Boards are screwed from upper side of tongue at 45° angle with the joists side. Screws are better for reducing snapping and squeaking sounds and they make it easier to uninstall the floor if needed. Screwholes and- sockets for screwheads are advised to be drilled before.
- * Side joints can not be glued, but glueing endjoints makes them denser and thicker.
- * In the floor where floorboards are fixed with screws, each board is drying and expanding by its own. Therefore it is normal to have gaps between the boards at heating period, they will disappear in summer time, when the humidity level rises.
- * It is always better choice to install floor boards on 12 mm plywood or OSB – see: 3) Installing to the wooden base floor (flooring, plywood, OSB or chipboard)

5) Rooms with floor heating

Installation of massive wooden floorboards to the heated floors has very big risk for wood starting to bend and showing bigger cracks. General recommendation is to use 2-layer flooring (base usually moisture resistant birch plywood), which is also known as engineered flooring. Such boards will remain more stable on heated floors. These boards can be either glued or installed with floating method (if Tongue&Groove connection has locking system).

While installing to the heated floors few basic recommendations should be followed:

* Floor heating must distribute the heat all over the floor surface, but temperature of surface (even underneath the furniture and carpets) should never exceed +27 °C. If the floor is installed to concrete base then the surface temperature of concrete base should never exceed +27 °C.

* For next rapid regulation of floor heating must be avoided. It is recommended to change the temperature max 3 °C in one day.

* Some cracks can show up at heating period. To take cracking to the minimum, humidity in the room must be 40-60% and air temperature between 18-22 °C.

* Parquet primer lacquer should be used to avoid strong lacquer's glueing effect between the boards on heated floors.

6) Glues

* Waterbased dispersion glues must be avoided for glueing floorboards!

* For glueing to the wooden baseboards solvent based-, polyurethane-, polymerglues (like Schönox MSElastic ja Shönox Parkett-Elastic and hybridglues (like UZIN MK 100 hybrid) are suitable.

* For glueing to the concrete polyurethane-, polymerglues (like Schönox MSElastic ja Shönox Parkett-Elastic and hybridglues (like UZIN MK 100 hybrid) are suitable.

Finishing of wooden floors

* For finishing all of the floor surface will be covered with oil or lacquer layer. As the oil or lacquer is the last top layer of floor that must resist continuous load and wear, resistance and durability of these products must be checked. Mostly it is possible to choose also coloured oils and lacquers..

* Sometimes waxing or soaping finishing is also used. But the floor must be definately maintained regularly: firstly to cover the oil and laqcer with first layer, that takes first load, and then it should be renewed regularly according to usage frequency. Using methods like these prolongs the lifespan of flooring ca 30% and keeps outlook of the floor new.

* If the floor will not be finished right after installation, it should be covered carefully with cardboard or similar material. Check that no holes will stay in covering material, otherwise the sunlight might change wood color through these holes. It is important for avoiding damage to the floor during other building/finishing works in the room.