Instructions for installing ESCO wood flooring

1. Introduction

If the floor is not laid correctly or the laying instructions are not followed, ESCO CZ PRODUCTION s.r.o. and ESCO PODLAHY s.r.o. ("Esco") cannot be held responsible for damages and additional costs associated with the installation of the floor. These installation instructions are based on ČSN 49 2120 (Wooden floors - installation and assessment requirements). Consider whether you plan to install your floor yourself or entrust the job to a professional.

2. Steps before installation

Storage

- Store the flooring on a level surface in a completely dry environment that is protected from moisture (recommended ambient relative humidity in the range of 40-60%) to prevent the parts distorting.
- Temper the room to a temperature of 20 +/- 3 °C.
- Temper the substrate to a temperature of 15–26 °C.

Acclimatization

- Store the individual packages for at least 24 hours in the case of engineered flooring and at least 48 hours in the case of a solid flooring before installation in the room where the floor will be laid.
- If there is no longer any risk of damage to the floor due to dust, etc., we recommend removing the protective film from the individual flooring packages, but do not cut the straps, as this could cause the parts to bend.

Important NOTICE!

If the above climatic conditions (humidity and temperature) are not observed, do not start laying the floors or place the flooring in the room until you are able to ensure these conditions (for example, using a humidity controller). Laying the floor must be the final work on the site, i.e. after all the other work (painting, wallpapering, etc...) is finished.

3. Substrate preparation

The substrate must meet the following characteristics:

- It must be dry and clean (no dust, other debris, dirt).
- The substrate's flatness deviation must be max. 2 mm /2 m.
- The surface of the substrate must be sufficiently strong, tensile strength of at least 1 MPa.
- The substrate must not be damaged, for example with large cracks.

Recommendations:

If these conditions are not met, the substrate may be strengthened by applying a deep penetrating solution or a levelling screed (the drying time of the standard levelling material is approx. 48 hours for a thickness of 3 mm and 24 h for each additional 1 mm depending on the climate - humidity up to 50%, temperature min. 20 °C, see ČSN 49 2120).

Note: the suitability of the type and type of reinforcing agent and levelling materials should be consulted with a professional company, depending on the type of adhesive used for full-surface glueing and the type of substrate material.

Possible types of laying surfaces:

Concrete screed

- Maximum moisture content of 2.5 % (by weight), 1.25 (CM value).
- With underfloor heating, a maximum of 2% (by weight), 0.85 (CM value).

Anhydrite

- Maximum moisture content of 0.5 % (by weight), 0.5 (CM method).
- With underfloor heating, a maximum of 0.4 % (by weight), 0.4 (CM method).

Existing tiles

- Make sure that the tiles are firmly connected to the substrate; they must not be loose.
- Thoroughly degrease the surface of the tiles.
- Check the flatness (max. 2 mm/2 m).
- Roughen the surface of the tiles and then vacuum clean.

Existing wood flooring

- The moisture content of the existing wood flooring may be max. 10 %.
- Sand to remove any old coatings from the flooring.
- Check the flatness (max. 2 mm/2 m).

Dry floor structures (system boards, gypsum fibre boards, cement fibre boards, etc.)

- Three-layer ESCO flooring may be glued directly to various types of dry floor structures.
- For specific laying options and preparation of the dry floor structure substrate, consult a technician specialising in the material onto which you are going to lay or glue the ESCO flooring.
- Another option is to consult with a professional flooring company with experience with the given technology.

Note: detailed requirements for rough sub-floors can be found in the ČSN 74 4505 standard. Contact a professional company if you are uncertain or have any doubts.

4. Inspecting the delivered flooring

Important NOTICE! Thoroughly inspect the delivered flooring prior to installation. Defects that could have been identified prior to laying will not be considered after the flooring has been installed. A laid floor is considered a floor without defects.

- Check that the delivered flooring matches the flooring you ordered (type, shade, quality, etc.).
- Check that the delivered quantity of flooring matches the quantity you ordered.
- Take a random measurement to check the moisture content of the individual delivered parts (see the Esco Technical Specifications for values).
- Check the quality of the surface finish and for any physical damage to the parts.

5. Installation material

We recommend using the following material and equipment to install the floor on an already prepared substrate:

- Adhesive and matching notched trowel
- Adhesive cleaning wipes
- Wooden or silicone stop plate
- Demarcation wedges for expansion joints
- Rubber mallet and tapping hammer
- Tensioning straps (1 per 1mb)
- Tape measure
- Pencil
- Laser
- Mitre saw
- Jig saw
- Table saw or plunge saw with guide track
- Hand saw or electric saw for undercutting the lining
- Vacuum cleaner
- Hot glue gun and trim stapler
- Sealant and adhesive guns

6. Installation/laying

Owing to the natural characteristics of wood, we recommend unpacking at least a third of the area of the room to be laid in advance and dividing the boards appropriately so that the colour deviations and differences in the structure of the wood are evenly distributed throughout the room.

Choose a direction to lay the floor. We recommend placing the individual pieces in the direction of the light or in the direction of the longest wall. You can also lay in another direction at your own discretion. When laying a chevron or tree pattern, always start laying along the center axis of the room.

6a. Full-surface glueing

- The choice of adhesive depends on the type of substrate (concrete, anhydrite, wood, gypsum fibre boards, cement fibre boards) and the type of floor (solid wood or engineered). Check with the manufacturer of this adhesive to make sure the adhesive you use is compatible with the prepared substrate.
- First, measure the room and check the wall corner angles for any deviations.
- Start by defining an expansion joint, which you set using the expansion wedges. The expansion joint should be 1-1.5 mm per 1 m of room length (the larger the expansion joint, the lower the risk of the floor panels distorting). This expansion joint is sufficient so long as you maintain the recommended relative humidity of 40 to 60%.
- Apply the adhesive evenly over the entire surface using a notched trowel. The recommended amount of adhesive is usually 900-1250 g/m2 depending on the type of adhesive used and the size of the notched trowel. A trowel with an application rate of 1000 g/m2 for engineered floors and 1250 g/m2 for solid floors is usually used. Always apply the adhesive to an area of no more than 2-3 rows and always to the substrate and not to the floor piece.

Note: do not exceed the time interval between the application of the adhesive and the laying of the floor piece (this interval is indicated in the technical sheet of the adhesive used).

Important NOTICE!
ONLY APPLY ADHESIVE TO THE SUBSTRATE, NOT THE TONGUE AND GROOVE JOINT.

- Cut off the tongue from the pieces in the first row.
- Always place the first row with this part towards the wall.
- After completing a row, use the rest of the cut board to start the next row. Continue in this way for the other rows.
- Make sure that the short joints of the boards do not connect to each other in adjacent rows, but are always staggered by at least 30 cm.
- Always tap the individual rows so that the pieces are closely connected to each other and that there are no gaps. Be careful not to damage the parts when tapping them. Use a piece of scrap flooring as protection when tapping. **Note**: you can also use tensioning straps to pull the parts tight (pull gently).
- Always place heavy objects on the laid rows to prevent them from coming up (be careful not to damage the floor).
- Cut the pieces of the last row to the desired width, not forgetting the space for the expansion joint.
- Let the adhesive dry for the right amount of time (specified by the adhesive manufacturer) before stepping on your floor.

Important NOTICE!
The expansion joint must be around the entire perimeter of the floor, even if there is a built-in element in the room (such as a column). We also recommend an expansion joint between the doors of individual rooms.

- For a block of laid floor in the direction of the width of the planks < 10 m for engineered flooring or < 8 m for solid wood flooring = **only use an expansion joint around the perimeter of the room**
- For a block of laid flooring in the direction of the width of the planks ≥ 10 m for engineered flooring or ≥ 8 m for solid wood flooring = use an expansion joint around the perimeter of the room **and an additional expansion joint** for every 10 m of engineered flooring, and every 8 m of solid wood flooring.

6b. Floating method for tongue & groove joint

- Remove any dirt and debris from the substrate using a vacuum cleaner or a broom.
- Use a suitable mat for floating floors as the substrate under a wood floor. Do not forget to distinguish between underfloor heating pads. Unroll the mat on the floor and tape it together. Leave 10 mm for expansion on the pad.

Note: you MUST use a suitable vapour barrier under the mat (membrane) and ensure there are no holes in the vapour barrier. Overlap the material by 20 cm and secure with a vapour-impermeable tape. Leave approximately 5 cm extra at the walls, which will be trimmed to floor height once the floor is installed.

- Measure the room and check the wall corner angles for any deviations.
- Start by defining an expansion joint, which you set using the expansion wedges. The expansion joint should be 1-1.5 mm per 1 m of room length (the larger the expansion joint, the lower the risk of the floor panels distorting). This expansion joint is sufficient so long as you maintain the recommended relative humidity of 40 to 60%.
- Cut off the tongue from the pieces in the first row and apply adhesive into the groove (use a narrow adapter to apply the adhesive).

Note: use an adhesive suitable for use on floating floors, for example D3 dispersion adhesive.

- Always place the first row with the tongue side towards the wall.
- After completing a row, use the rest of the cut board to start the next row. Continue in this way for the other rows.
- Make sure that the short joints of the boards do not connect to each other in adjacent rows, but are always staggered by at least 30 cm.
- Always tap the individual rows so that the pieces are closely connected to each other and that there are no gaps. Be careful not to damage the parts when tapping them. Use a piece of scrap flooring as protection when tapping. **Note**: you can also use tensioning straps to pull the parts tight (pull gently).
- Cut the pieces of the last row to the desired width, not forgetting the space for the expansion joint.

Important NOTICE!

The expansion joint must be around the entire perimeter of the floor, even if there is a built-in element in the room (such as a column). **An area larger than 30 m2 using the floating method may not be laid without an expansion joint.**

6c. Assembly of solid planks by mechanically fastening them to a wooden sub-floor

- Always place the first row with the groove side towards the wall.
- Drive nails, screws, or clips at an angle of 45° to the surface of the part into the upper edge of the tongue (toward the base of the tongue).
- If using screws, pre-drill the hole including the recess for the screw head.
- Always place the fasteners at the beginning and at the end of the part and then approx. every 30 cm along the length of the tongue.
- Continue (laying direction, expansion joints, undercuts) in the same way as for full-surface glueing, see 6a.

6d. Installation of a floor with underfloor heating

Important NOTICE!

Always use full-surface glueing for installation on underfloor heating. The flooring is compatible with underfloor hot water and electric heating that is cast into the substrate. Always check with a professional company to ensure that the system you have chosen is suitable before installing the underfloor heating itself.

- The thermal resistance and thermal conductivity of individual structures can be found at our website.
- See Chapter 3 on flooring types for the moisture content of the substrate.
- A heating test must be performed before installation; contact the professional company that installed the underfloor heating, requesting a written record, or conduct the heating test yourself using the heating diagram in the ČSN 492120 standard.
- When installing flooring on underfloor heating, lay the flooring (laying direction, expansion joints, undercuts) in the same way as for full-surface glueing, see 6a.

Important NOTICE!

The surface temperature of the wood flooring must not exceed 28 °C. Do not cover the flooring with a rug or any other insulating material.

Underfloor cooling of oak floors

- Underfloor heating can be used as underfloor cooling; however regulation of cooling process is necessary.
- The temperature of the floor surface must be lower for max 5°C than current temperature in the room.
- The temperature of the cooling media must be lower for max 7°C than current temperature in the room.
- Decrease of the temperature of the cooling media and the temperature of the floor must be fluent and gradual.
- The range of the temperatures of cooling media must be between 18-24°C.

RECOMMENDATIONS

We recommend automated control with sensors in the room and in the cooling circuit for easier monitoring of the prescribed minimum and maximum temperatures. Failure to comply with these values may result in condensation on the floor surface or at the contact between the subfloor and the floor. This condensed liquid water can significantly endanger the appearance and durability of the floor and reduce the safety of its use. In this case, the floor loses the manufacturer´s warranty.

Important NOTICE!

- Only ESCO floors that have been approved for underfloor heating and have a total thermal resistance of less than 0.15 m2K/W can be installed for underfloor cooling. These are floors up to a maximum thickness of 15 mm. The thermal resistances of individual floor types can be found on the product data sheets available on our website.
- You should always consult a professional underfloor heating contractor about the suitability of using installed underfloor heating as underfloor cooling.

- Cooling is not suitable for floors installed in floating installation.

7. Completion

Cover the gap (expansion joint) around the edge with floor trim.

Floor trim mounting options:
- Glue to the wall (use construction adhesive in a tube or a professional hot melt adhesive applied with a hot glue gun).
- Stapling to the wall (or glueing to plasterboard walls).
- For hot water piping entering the floor, cover the opening with a wood plug, but do not forget the need for an expansion joint around all the pipes and other rigid structures.

Notice: Never glue or secure trim to the flooring, only to the wall.

Esco CZ Production s.r.o.
Blatenská 267, 387 31 Radomyšl, Czech Republic
www.escoflooring.com