

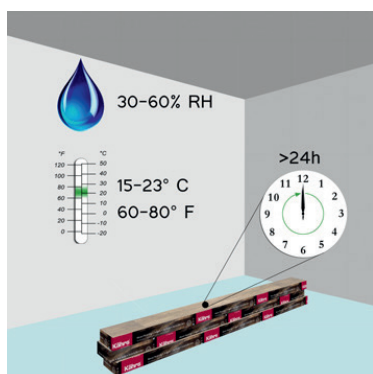
### CONDITIONS FOR INSTALLATION

#### General

Kährs wooden floors are only intended to be installed in a controlled indoor environment. Wood is a hygroscopic material, which means that wood adapts to its ambient humidity. This causes wooden floors to swell when it gets damp and shrinks when it gets dry. It is the relative humidity (RH) that controls how wood-based floor materials are affected. Excessive variations in temperature and humidity can cause permanent damage to the floor. The room and material temperature at the time of installation should have a temperature of 15-23 °C. The humidity in the room should be between 40-60% RH. Note that moisture levels in new build premises often remain relatively high by the time wood floors are installed. In these cases, it is important that the correct RF is ensured before installation can take place. The wooden floor should be installed when all other work is completed, e.g. painting, wallpapering, tiling and when the construction site has the right RF. This is to avoid damage, dirt damage and unnecessary moisture related damage on the floor.

#### Acclimation of the floor bundles

Before installation, wooden floors must be acclimated in the space where the floor is to be installed, for at least 24 hours. Faster temperature rise is obtained if the floor bundles are not laid in a single pile but are divided into several smaller ones. However, do not open the packaging of the floor bundles until the installation is to begin.



#### Fixture and fittings

Furnishings, kitchen islands, wardrobes, walls, etc. must never be attached to the wooden floor. Attachment to the subfloor can take place if holes are drilled through the wooden floor to accommodate, for example, support legs or fastening including distance. The same movement joint that applies to the entire floor surface must then also be around the support legs/attachment. The floor must never be pressed down and locked. Kitchen fittings are attached to the wall to relieve the

weight on the floor. The interior rests in the front edge against the floor with support legs. Alternatively, the kitchen fittings can be mounted on four legs. The wooden floor can be laid under the white goods, with the required drip protection on top. For kitchen fittings with worktops in heavy materials such as stone, stone composite, concrete or other mineral-based materials, the wooden floor must not be installed under the heavier fittings, as this risks locking the floor. If you still want wooden floors under the interior, the wooden floor must be divided and installed as a separate surface with expansion space to the rest of the floor. An alternative to wooden floors under kitchen fittings is a chipboard with a corresponding thickness. Another alternative is to drill holes in the wooden floor so that the support legs rest against the subfloor, do not forget the movement joint around the support legs. If a wood-burning stove is placed on the floor, for example, a chipboard should be laid on a surface that is slightly smaller than what the "spark protection" is. Do not forget the expansion space. The chipboard also takes up the weight from the wood stove. The floor is then installed around the chipboard! In connection with Kährs guarantee commitment, floors are not replaced or repaired under furnishings, kitchen islands, wardrobes, wood-burning stoves, etc.

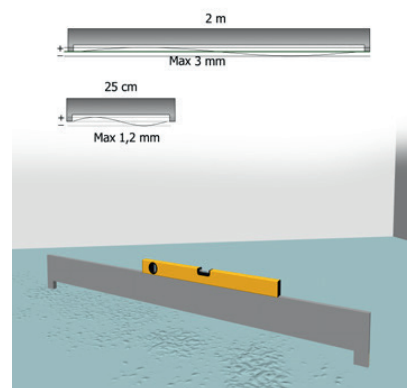
#### Requirements for subfloors

The subfloor must be dry, level, clean and firm. Remove fitted carpets and linoleum carpets. Never leave sawdust or other organic residues on concrete subfloors. This is because the moisture coming from below remains under the vapor barrier and can give rise to unwanted organic growth. Check

that the subfloor is flat and level over measured lengths of 2 m and 0.25 m. If any unevenness exceeds 3 mm over 2 m and 1 mm over 0.2 m, the floor must be levelled first.

Check the relative humidity of the subfloor. The humidity needs to be less than 2% for installation in screed without floor heating, 1.8% in screed with floor heating, 0.5% in anhydrite screed and 10% in multiplex.

The recommended installation circumstances are a temperature between 16°C (61°F) and 21°C (70°F) and an air



humidity between 40% and 60%.

In case the humidity is higher, a vapor barrier of polyethylene foil is not sufficient, but further action is required before installation can begin. On the following subfloors, regardless of age, it is mandatory to have an approved age-resistant vapor barrier, e.g. polyethylene foil. This should always be installed as close to the floor surface as possible. It is important that it is installed according to the supplier's instructions.

- Concrete floor that lies directly on the ground (slab on the ground)
- Over a hot or humid room (e.g. boiler room or laundry room)
- Flooring over crawl space foundations
- Lightweight concrete floors
- Over floor heating systems

An underlay with minimum density 60 kPa and up to 3mm thickness should be installed on top of the vapor barrier to reduce the impact sound and increase walking comfort. Kährs has various underlay in the accessory range, see [www.kahrs.com](http://www.kahrs.com). The range includes combination underlays that act as both vapor barrier and underlay.

Also, in climates with higher humidity or when there is a humidity risk for the walls, we recommend folding the underlay 5 cm and laying it against and up the wall. This will prevent moisture from damaging the flooring.

### Installation planning

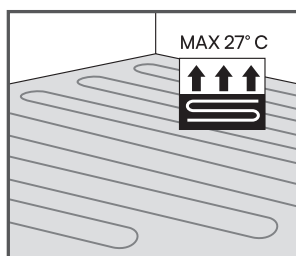
In order to get a nice visual effect, our recommendation is to choose the direction for the installation based on the following criteria:

1. The tip of the herringbone pattern should preferably be set in the same direction with the longest wall
2. If you have a square room, the tip of the herringbone pattern should be aligned with the main entrance
3. In case there are more entrances into the room, the tip of the herringbone pattern should run towards the side that includes the window which is the main source of light

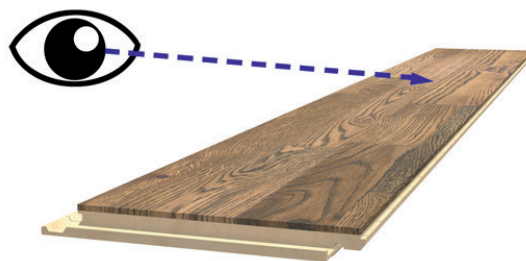
Be careful with the planning so that the maximum floor width and floor length do not exceeds the maximum width and length of your floor.

### Installation of Kährs wood floors on underfloor heating

Approved vapor barrier is mandatory in the construction when installing on underfloor heating. The vapor barrier should be placed as close to the floor as possible. Regardless of the choice of floor heating system, it must be ensured that the surface remains flat and stable, even over time, to avoid e.g. noise and flex. The floor can be installed on both water based wet and dry systems. ( inserted into concrete



or polystyrene foam frames ). When installing on underfloor heating in grooved subfloors (e.g. chipboard or EPS with minimum density 400 kPa ) with heat distribution plates, the wooden floor must be installed perpendicular to the loops of the underfloor heating. If this is not possible, it is necessary to first cover the subfloor with a board material. If the heating coils are embedded in the substrate, no extra consideration needs to be given to the installation direction. The surface temperature of the floor must never exceed 27 ° C. This applies both during installation, at start-up of the heating system, and after the installation is completed



### Inspection

It is always easier to rectify faults if they are discovered early. It is important to always inspect the product during installation. If faulty products are discovered regarding, for example, appearance or other design elements that do not correspond to what is described in the product sheet, it is important that a complaint is made before you install the floor. Defective products are of course replaced, advice they have not already been installed. Boards with obvious faults that are detectable before installation must not be used.

The veneer flooring is a natural product, no planks are identical, some minor variations in color and structure are considered normal. Our advice for you is to use planks from the same production batch in the room, so that you can have a nice esthetic and uniform result.

Note, that some floors may contain elements that may be perceived as deviating for an individual board, but which on an installed floor surface are an approved and conscious design element. Always make sure that inspection and installation takes place with good lighting! Differences in color, knots and other design between the boards in 1-strip floor can be large and place higher demands on the installation. Therefore, open several packages and mix the floorboards to get a good spread of the floor's design elements over the entire floor surface. Avoid, for example, placing boards with a large color difference next to each other. However, never leave bundles open if you make a break in the installation. When a floorboard has been laid, regardless of whether you lay it yourself or hire a floor layer, you as a buyer are also considered to have approved it.

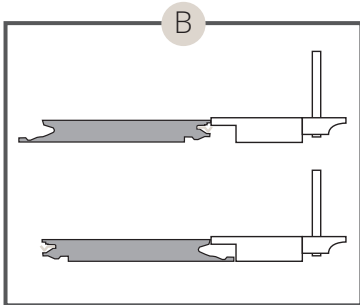
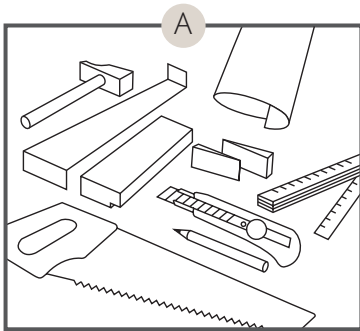
Our recommendation is to mix planks from different packages during the installation so that you get a more uniform appearance.

There are packages with left handed planks and packages with right handed planks.

One the short side we are using an the Unifit X® system which allows an easy and fast floating installation without using glue, nails or screws. The click tongue-and-groove system is offering a strong connection between boards.

The veneered floors are real wood floors and it is mandatory to leave sufficient expansion gaps along the walls, around any pipes or in the door frames.

The expansion gap should be of min. 10 mm, or 1,5 mm per running meter. The expansion gaps can be covered with skirtings which should be attached to the walls, but never to the floor. For floors that are longer or wider than 10 m, an additional expansion gap must be provided using a T-profile moulding. The fixed objects or heavy pieces of furniture require also the minimum expansion gap around.



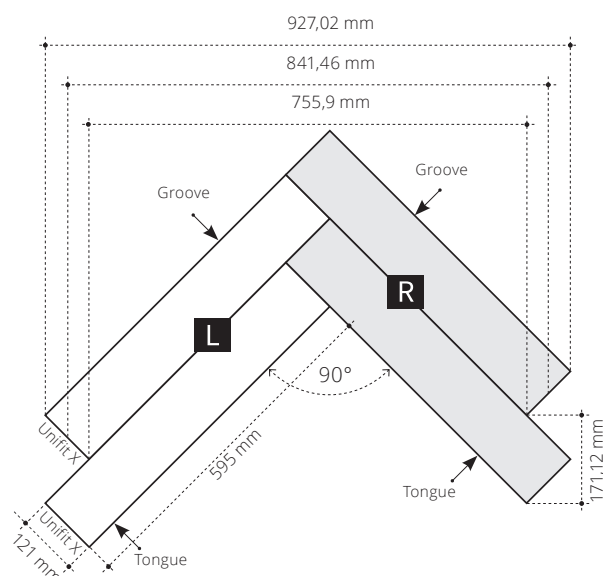
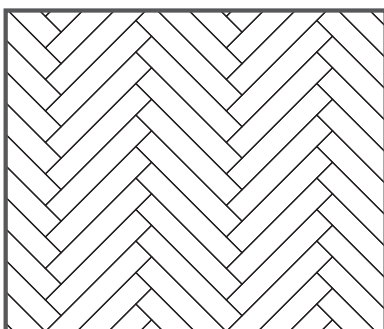
## INSTALLATION MATERIALS A

- Kährs Installation kit
- Polyethylene membrane ( in case of higher RH% values in the subfloor ) + adhesive tape
- Underlay
- Measuring tape, pencil, saw, hammer, pencil, saw, cutter

You should always use the tapping block to protect the edges of the planks, never hit the planks with a hammer.

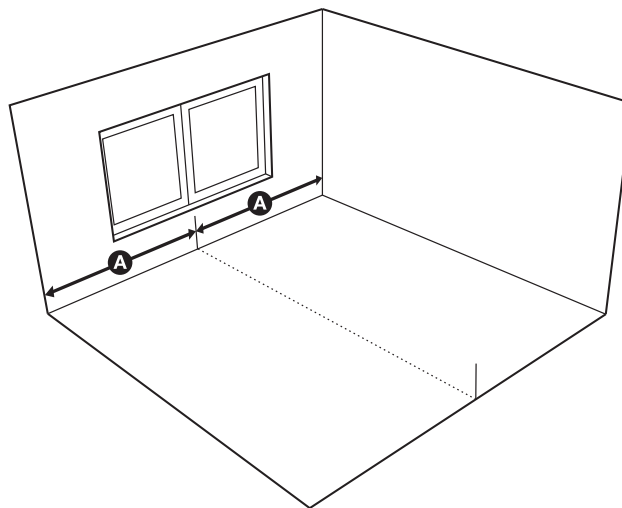
Remember, you don't have to use glue, screws or nails during a floating installation. B

## SINGLE HERRINGBONE LAYING PATTERN

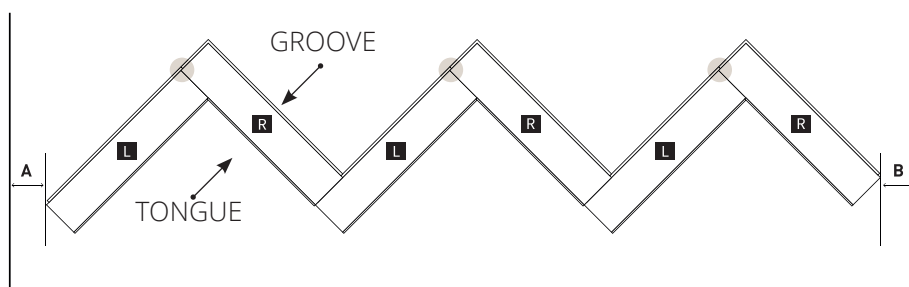


## START WITH THE FIRST ROW

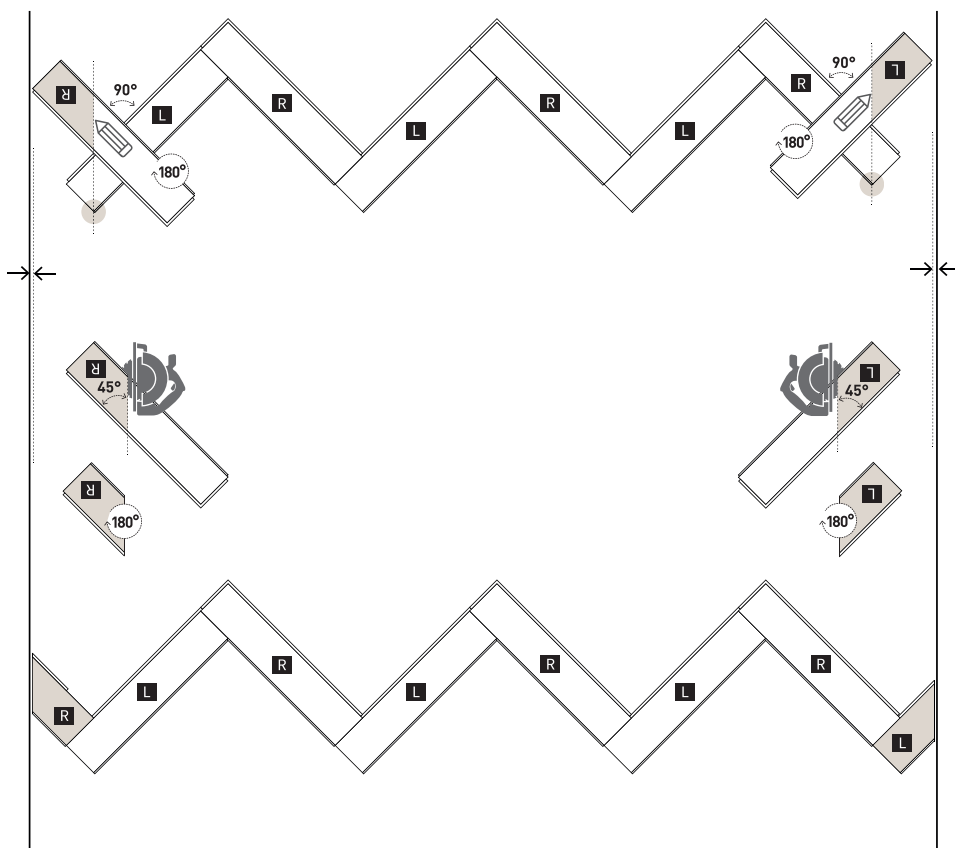
**1.** Measure the job site carefully, define and mark out the center line, which divides the installation area equally into two.



**2.** When laying the first row, pay attention so that the sides of the planks are perfectly aligned. Place the first row right in the center of the room, so that the distance from A and B is identical.



**3.** Finish the first row and put it up to the wall. Remember to leave an expansion gap of min 10 mm along the walls on both sides.



**4.** Rotate a right-side plank 180°, then mark and saw it at a 45° angle. Then, rotate the piece which was sawn-off 180° and click it into the left-side plank.

Next step. rotate the left-side plank 180°, then mark it and saw it at a 45° angle. Rotate the sawn-off piece 180° and click it into the right-side plank.

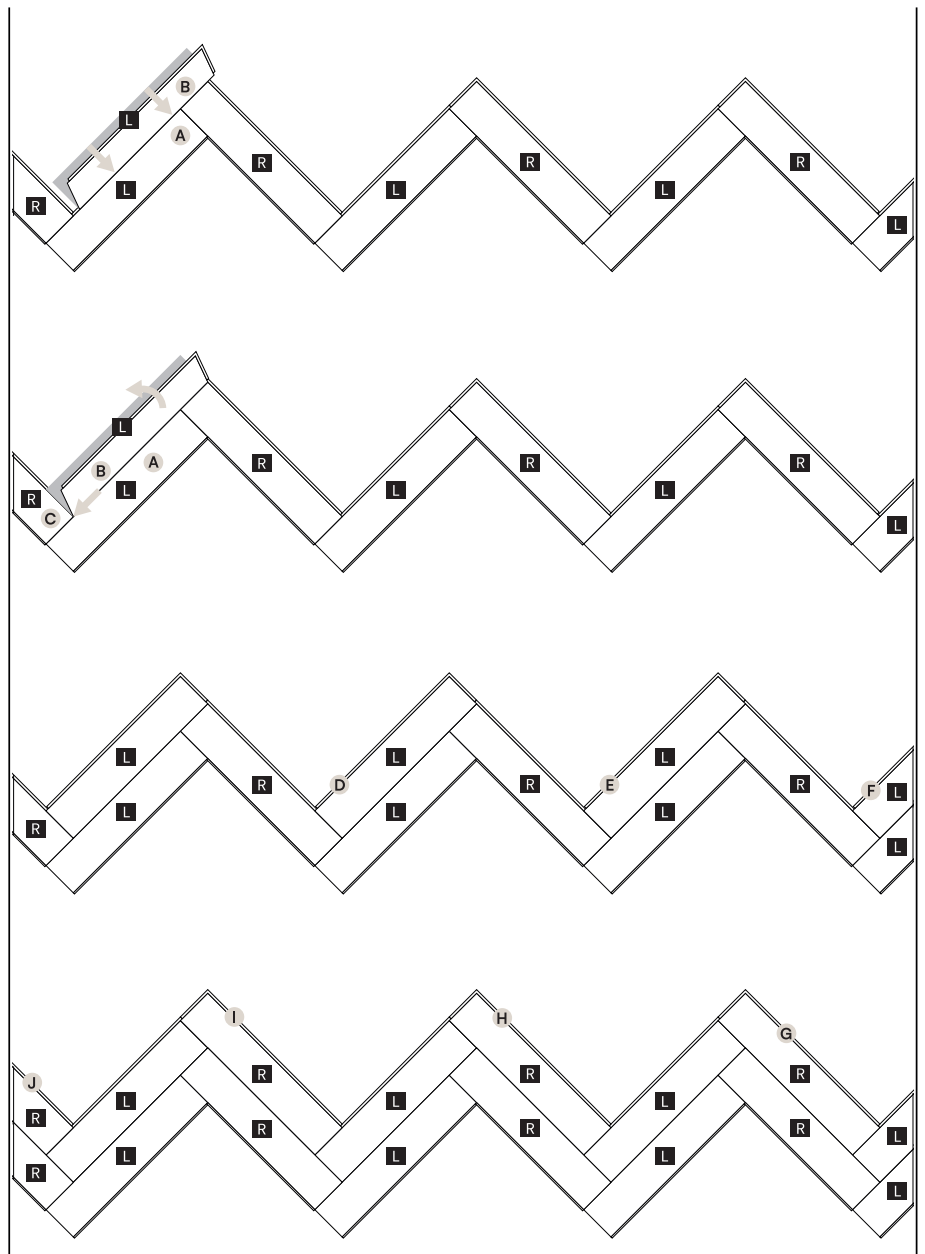
## LAYING THE SECOND ROW

**5.** Connect the next plank B by the longside ( left-side plank ) to the first row plank A

**6.** Slide plank B right up against the plank C, and push the plank B down.

**7.** Continue to lay all left-hand planks in the same way (D, E, F) .

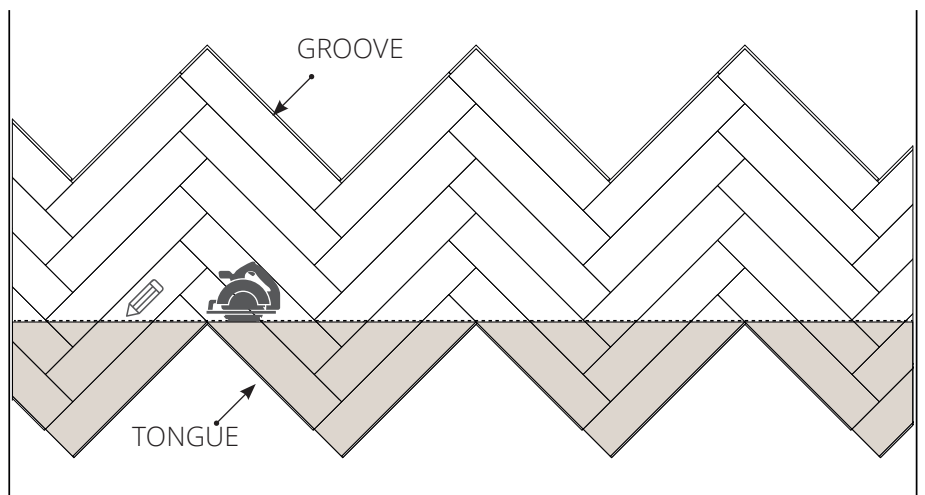
**8.** Lay in the same way all the right-hand planks (G, H, I, J).



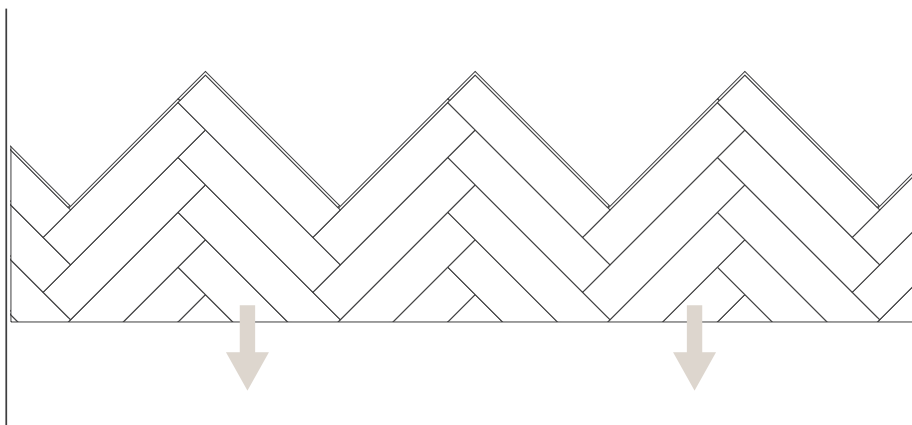
## LAYING THE NEXT ROWS

**9.** Continue building the floor, one row at a time. Start by laying the left-side planks, followed by the right-side planks. Work your way across the sides row by row.

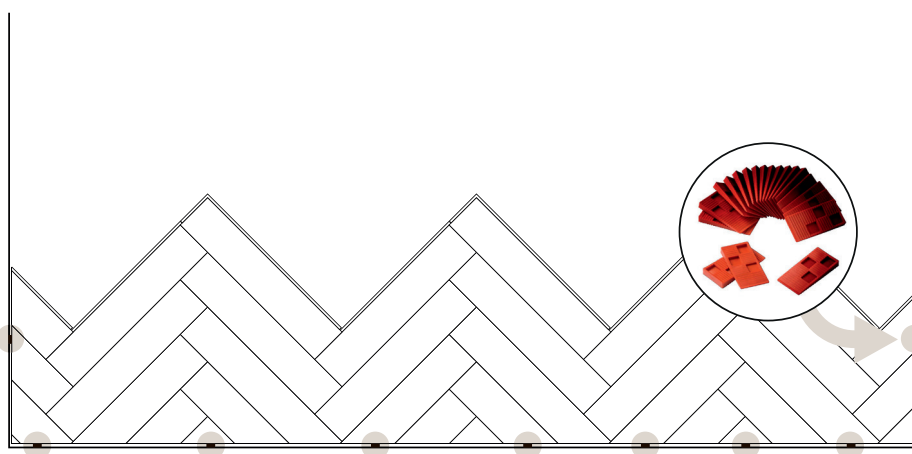
Once you've completed several rows, trim the ends of the planks (colored triangles). Set the cut pieces aside to reuse them on the opposite side of the room.



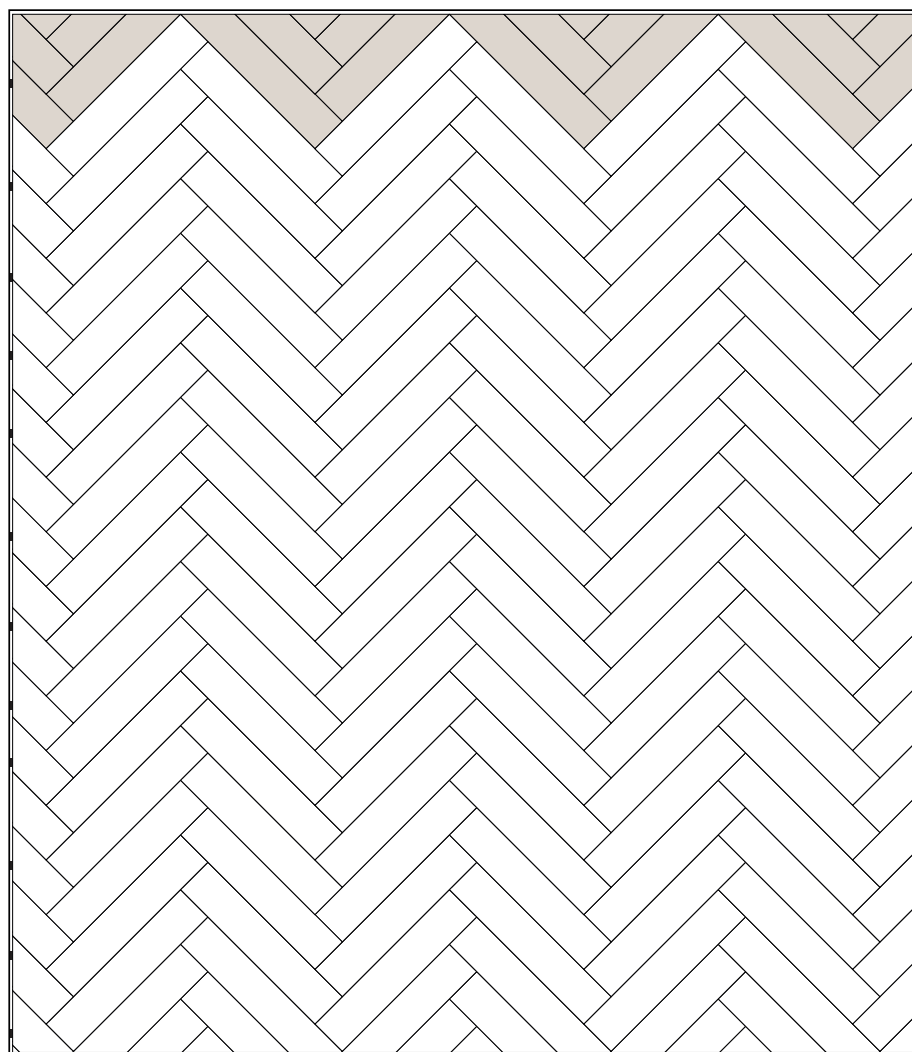
**10.** Push the trimmed floor planks toward the wall, ensuring there's a 10 mm gap between the planks and the wall.



**11.** Place the plastic wedges between the wall and the floor. Continue the installation.

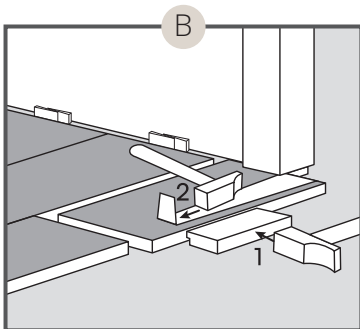
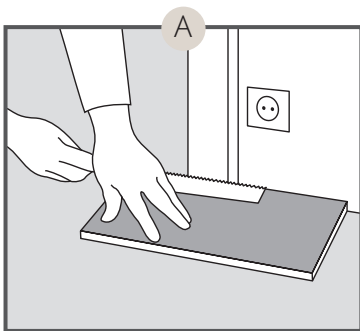


**12.** Use the saved, cut pieces to finish the installation on the opposite side of the room ( the colored triangles from 9. ).



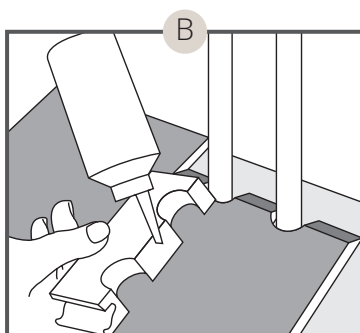
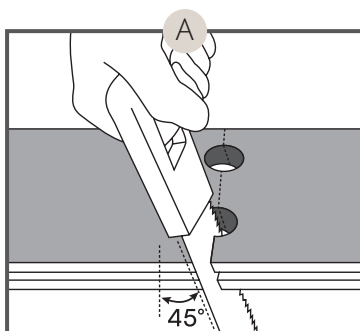
## END JOINTS

A proper staggering of 300 mm between the end joints in adjacent rows, must be present to keep the floor flat during climate variations. Even small areas must be installed staggered, i.e. all floor areas must have end joints in every row. In long narrow areas, such as halls, it is particularly important.



## DOORFRAMES

Cut the planks, ensuring a 10 mm expansion gap. If you're unable to click the plank into place, use a pull bar to fit it securely. **A B**



## HEATING PIPES

Carefully examine the drawing to figure out the best way to cut the plank when installing it around a heating pipe. Following these instructions is crucial for achieving a clean, professional result. Once the installation is complete, seal the flooring with silicone and use a pipe ferule to cover the gap. This ensures the expansion gap is properly closed, preventing moisture from reaching your floor. **A B**

## GLUING TO SUBFLOOR

In cases where you want to glue the wooden floor to the subfloor, it is important that the requirements for subfloors are met and that the right glue for the purpose is used. Note, that there may be different regulations around what applies to gluing down to the subfloor in different countries. Consult your glue supplier so that you get the right glue and spatula which is suitable for gluing wooden floors. It is often the properties of the subfloor that determine which glue you should use. Follow the glue supplier's instructions carefully. Before gluing can begin, it is important to ensure the quality and moisture of the subfloor, the type of glue and the amount applied glue per m<sup>2</sup>. Before you start to glue down you have to do the pre-cut for the starting rows.

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## WHAT TO CONSIDER AFTER INSTALLATION

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### Temperature and relative humidity in the room

The temperature in the room where the floor is installed should be between 15-23 C °. The humidity (RH) should always be between 30-60% to avoid unwanted climate-related damage and movements in the wooden floor, e.g. cracks, gaps, noise, cupping etc. In summer you may therefore need to dehumidify the air, while in winter it may instead be necessary to increase the humidity in the air. At a too high or too low relative humidity, permanent shape changes of the wooden floor can occur. It is important that even in empty and uninhabited spaces, ensure that the temperature and humidity are correct. This is especially important when installing in connection with e.g. new constructions or major renovations. When installing floors in so-called module production, it is important that the above criteria are ensured both immediately after installation, as during storage and assembly of the modules. It is not only wooden floors that thrive best, but also us humans gets a better indoor air with a relative humidity inside this interval.

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### SKIRTING

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Note that the dimensions of the skirting must never control the size of the movement joints. In the case of large floor areas, therefore, the skirting must be chosen on the basis of the required size of the movement joints and not the other way around. One solution for a situation that requires a large skirting board: In new buildings, a simple way of permitting additional floor movement is to “stop” wall panels immediately above the floor surface. If the wall panel is 13 mm plasterboard, for example, this provides an additional 13 mm movement allowance. This allows a thinner skirting board to be used than would otherwise be necessary. To get nice endings and connections, there are skirting and mouldings of various kinds to use (see [www.kahrs.com](http://www.kahrs.com)).

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### PROTECTIVE COVERING

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If further work is to be carried out in the room where the floor has been installed, the floor must be protected with a moisture permeable material (e.g. paper). Make sure it does not discolor the floor. Note that some commonly used types of papers do not allow moisture to pass through and have a wax coating that may be transferred to the wood floor. This causes undesirable gloss variations. Kährs Protection Paper is intended for use on all floors, both lacquered and oiled surfaces. White goods generally do not have large enough “wheels” to avoid damage if they are pulled over the floor. In these cases, a harder board material is usually needed as protection to avoid damage to the parquet surface. Under wheeled furniture, such as office chairs, permanent protection against point load is needed, for example a transparent plastic mat or the like, which is commonly used for this purpose.



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## TAPE

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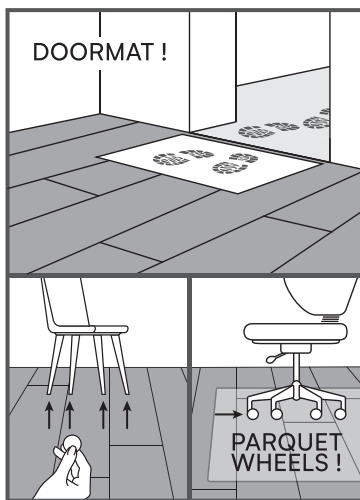
Never tape to the floor surface, skirting or moldings, but only to the protective cover. Many tapes adhere so tightly to the floor surface that the varnish releases when the tape is removed. The longer the tape is allowed to be attached, the greater the risk that it adheres harder to the varnish.

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## COLOR CHANGE

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Wood is a natural material that gradually matures to its natural color, this change occurs fastest at first. To avoid an uneven color change, carpets should not be laid on the floor during the first months after installation of the parquet floor.



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## MAINTENANCE AND PROTECTION

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To maintain a Kährs veneered floor, use the Kährs Cleaner. It effectively removes dirt without damaging the coating, leaving your floor looking great. For stubborn spots, consult your dealer for advice.



For optimal protection of your floor, consider the following:

- Place a doormat if the floor is installed at the entrance.
- Attach felt pads under the legs of chairs.
- Use parquet wheels under office chairs and place a protective mat underneath the chair for added protection.

### End of Use

#### Packaging material:

Please recycle the packaging materials responsibly, in accordance with local regulations and available recycling options.

- Cardboard wrapping consists of paper, recycle as paper.
- Foil wrapping consists of plastic, recycle as plastic.



### End of Use

#### Floors/ Underlays:

At the end-of-life cycle of the product (floor or underlay), dispose of them in accordance with local waste regulations. Some materials may be recyclable - please check local regulations and available options.



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If you have any questions, don't hesitate to contact your local dealer or the head office in Sweden.

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