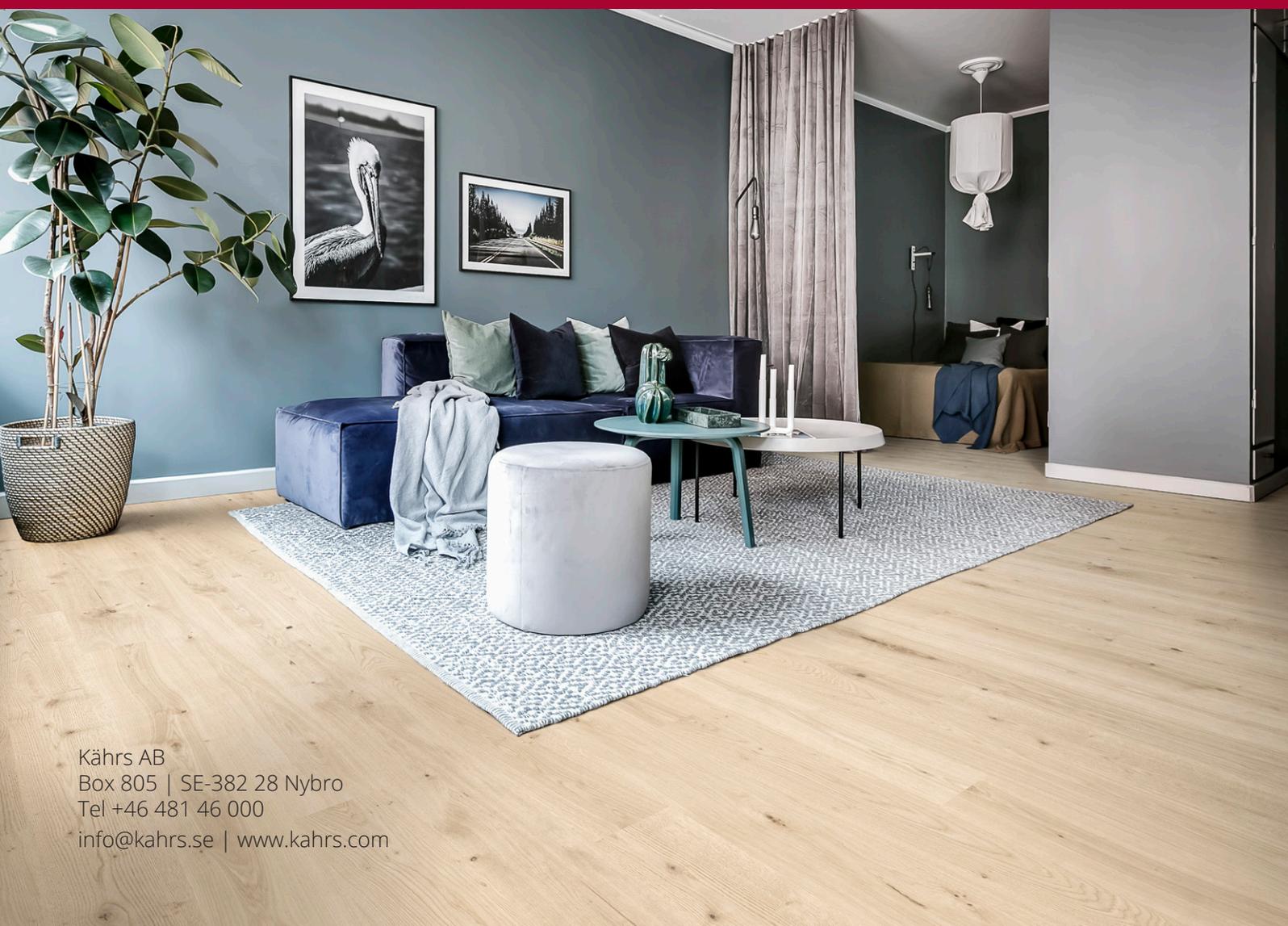


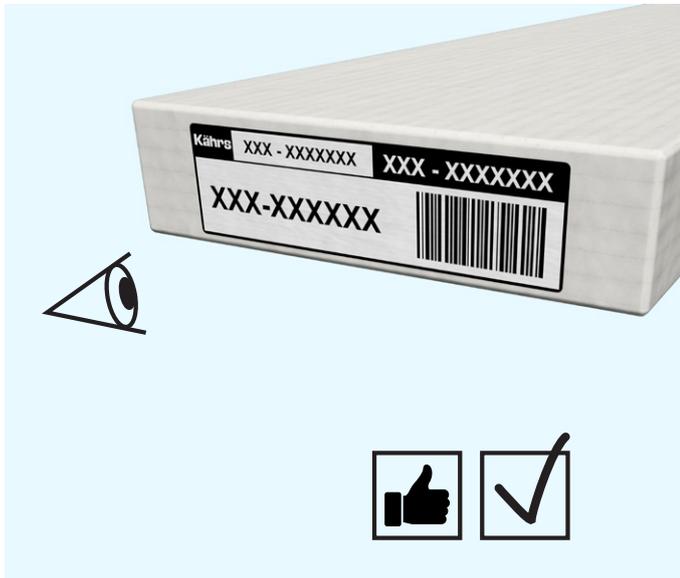
INSTALLATION INSTRUCTION KÄHRS AWARE FLOATING INSTALLATION KÄHRS LT AWARE CLICK



BEFORE AND WHEN THE INSTALLATION STARTS

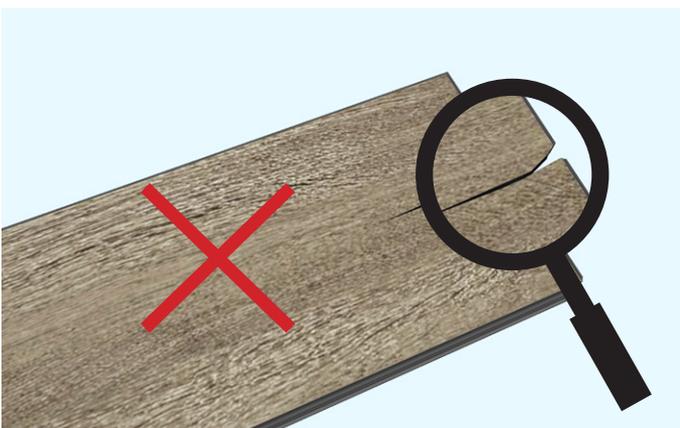
General

Kährs recommend that you follow all given instructions carefully, to obtain a good and lasting result with your new flooring product. Make sure that you are about to install the correct received flooring product. When a floorboard has been installed, regardless of whether you lay it yourself or hire a professional installer, you as a buyer are also considered to have approved it.



Inspection

You shall inspect every floorboard carefully, before installing it to avoid any damaged or faulty boards are being installed. 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 if they have not already been installed. Boards with obvious faults that are detectable before installation must not be used.



Note Some decors may contain elements that may be perceived as deviating for an individual board, but which on an installed floor surface is an approved and conscious design element. Always make sure that inspection and installation takes place with good lighting conditions!

Differences in color, knots, and other design between the boards in the Aware floor can be present and place demands on the installation. Therefore, Kährs recommend opening several packages and mix the floorboards to get a good spread of the floor's design elements over the entire floor surface. Kährs also recommend avoiding, 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.

Tools

Kährs Aware floors are made from mainly bio-based material, such as wood. It is necessary to cut and adapt the floorboards during the installation, to be fitted in the area where the floor is to perform. Kährs also recommend using the original installation kit, as this is developed to match with any Kährs floors when installing. Always wear safety goggles, ear plugs and other necessary equipment to ensure a safe and healthy environment for people on the site of installation.



CONDITIONS FOR INSTALLATION

General

Kährs Aware floors are developed and only intended to be installed in an indoor climate-controlled environment.

Kährs Aware contains hygroscopic wood-based material, which means that it adapts to its ambient humidity. This causes wood-based materials to swell when they get damp and shrink when they get 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 distortions and damage to the floor

The room, subfloor, and material temperature at the time of installation shall have a temperature of +18 - +23° C. The relative humidity (RH) in the room shall be between 30-75% RH. These levels of temperature and RH are also ideal to keep throughout the entire lifetime of the Aware floor.

Note Moisture levels in new build premises often remain relatively high by the time floors are installed. In these cases, it is important that the correct RH is ensured before installation can take place.

The Aware floor shall be installed when all other work is completed, e.g., painting, wallpapering, tiling and when the construction site has the correct RH. This is to avoid damage, dirt damage and unnecessary moisture related damage on the floor.

Acclimation of the floor bundles

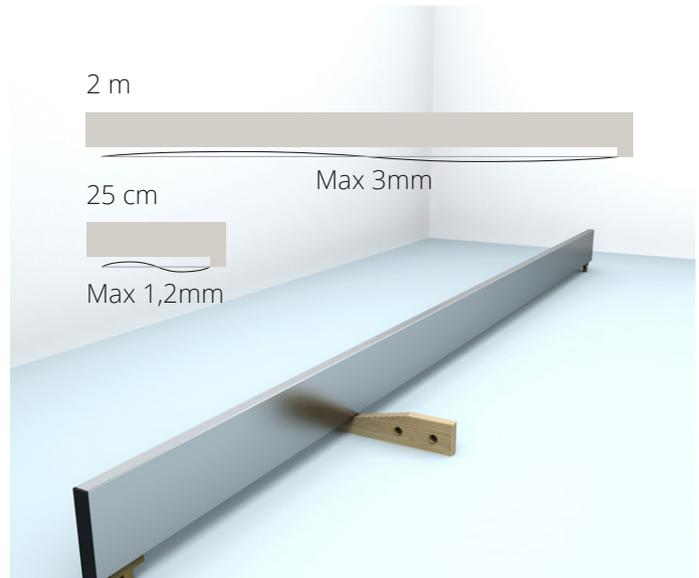
Before installation, the Aware floor must be acclimatized in the room, where the floor is to be installed, for at least 24 hours. Better acclimatization and temperature rise is obtained, if the floor bundles are not laid in a single pile but are divided into several smaller ones. However, do not open the packaging of the floor bundles until the installation is to begin.

Note If the floor bundles have been stored in a deviating environment for a longer period, it might be necessary to extend the acclimatization time.



Requirements for subfloors

The substrate must be clean, permanently dry, level, and resistant to tension and compression. Remove small, protruding unevenness, such as paint drops and plaster residues. Unsuitable underlays, fitted carpets, needle felt and linoleum carpets, etc. shall be removed due to the possible softness which may lead to damages of the Aware floor or its click joints.



Without exception check that the subfloor is flat and level over measured lengths of 2m and 0.25m. If any unevenness exceeds +/- 3mm over 2m and +/- 1.2mm over 0.25m, the floor must be levelled prior to installation of the Aware floor. Kährs also accepts a measuring length of 1 m. The tolerance in this case is +/- 2mm.

Note Never leave sawdust, cardboard or other organic residues on subfloors which is mineral based (concrete, screed, etc.). This is due to the moisture rising from below may remain under the vapor barrier and can give rise to unwanted organic growth.

Always vacuum-clean the subfloor before installing any underlay and or floorboards, to remove any debris on the surface.



Subfloor moisture

Before installation, a moisture measurement of the substrate shall be done and protocolled.

The permissible screed moisture contents:

According to the CM method:

Cement-based subfloor:

General < 2.0% CM / Floor heating < 1.5 %CM.

Calcium sulfate-based screeds/anhydrite screed:

General < 0.5% CM / Floor heating < 0.3 %CM.

According to relative humidity (RH) with probe:

Cement-based subfloor:

General < 85% RH / Floor heating < 70% RH.

Calcium sulfate-based screeds/anhydrite screed:

General < 60% RH / Floor heating < 50% RH.

Note Always check the relative humidity (RH) of the sub-floor, if this is above >85%, a vapor barrier of 0,20 mm thick polyethylene foil might not be sufficient, but further action is required before installation can begin.

On the following substrates, regardless of age, it is mandatory to have an approved age-resistant vapor barrier, e.g., minimum 0,20 mm thick polyethylene foil. This shall always be installed as close to the floor surface as possible and or in direct contact with the Aware floorboards' underneath. It is important that it is installed according to the supplier's instructions.

- All mineral based substrates, such as concrete subfloor, screeds, lightweight concrete floors etc., which also lies directly on the ground (slab on the ground)
- When installing the Aware floor in a room above a hot or humid room (e.g., boiler room or laundry room)
- Flooring over crawl space foundations without an installed vapor barrier

Installation of Kährs Aware floors on underfloor heating

An approved vapor barrier (minimum 0,20 mm thick polyethylene foil) is also mandatory to install in the construction when installing the Aware floor on top of underfloor heating. The vapor barrier shall be installed as close to the floor construction surface as possible and or in direct contact with the Aware floorboards' underneath.

Regardless of the choice of floor heating system, it must be ensured that the surface remains flat, stable, and resistant to tension and compression, even over time, to avoid e.g., noise, squeaking and possible damages to the floorboards or in the click joints. Always follow installation instructions from the supplier.

When installing on underfloor heating in grooved subfloors (e.g., chipboard, XPS or EPS) with heat distribution plates, the Aware floor must be installed on top of a stiff enough board material installed between the substrate and the Aware floor. If the heating coils are embedded in the substrate, no extra board material is normally needed.

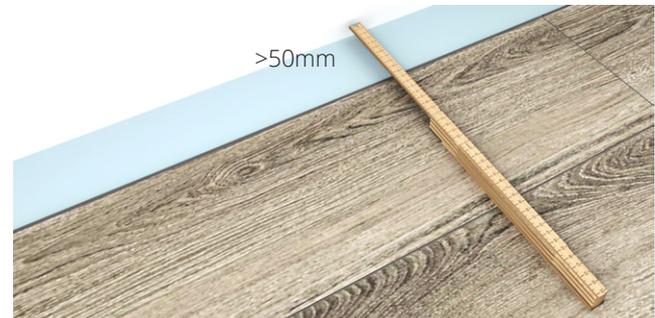
The surface temperature of the floor shall never exceed 27° C. This applies both during installation, at start-up of the heating system, and after the installation is completed. This is for safety reasons, the health of the residents and to avoid complications with the floor.

Note Kährs recommend having continuous monitoring of the RH in combination with any underfloor heating, to ensure correct content of humidity in the surroundings and by

that avoid possible distortions of the floorboards. For more detailed information regarding underfloor heating, visit: www.kahrs.com

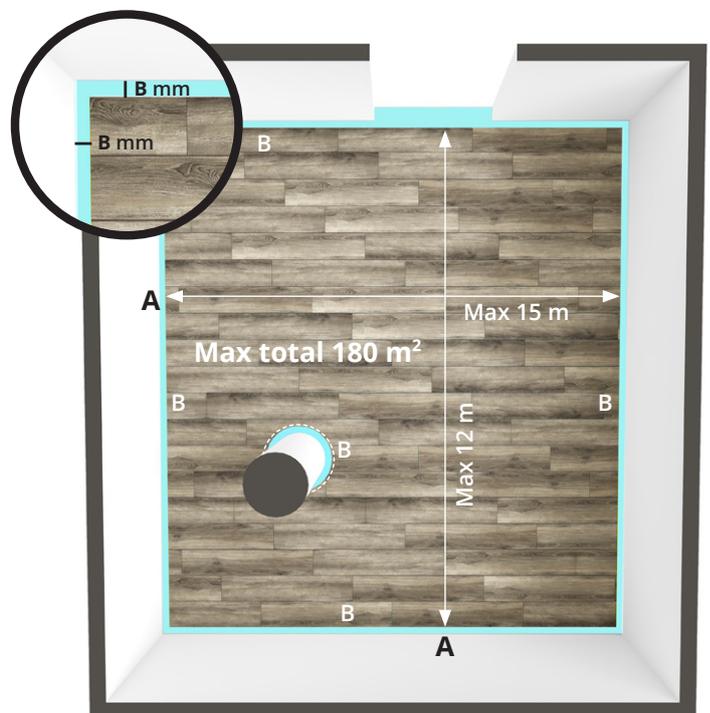
Installation planning

Measure the width of the room and calculate how wide the last row of boards will be. If it is less than 50 mm wide, you should also saw the first row of boards, so that the first and last rows of boards are about the same width. Do not forget to count in the movement joint (B mm)!



When installing the Aware floor, it is easier if the installation is started at the long side that has the most doors. If there are doors on the short sides of the room, it is also easiest to start a new row of boards from that side. The boards can be laid both from the left and right and backwards. If the floor width and length exceed the specified maximum joint dimensions, the floor must be divided by an expansion joint.

Be careful with the planning so that the maximum floor width and floor length (A) do not exceed the maximum width and length of your floor, see illustration with figures below:



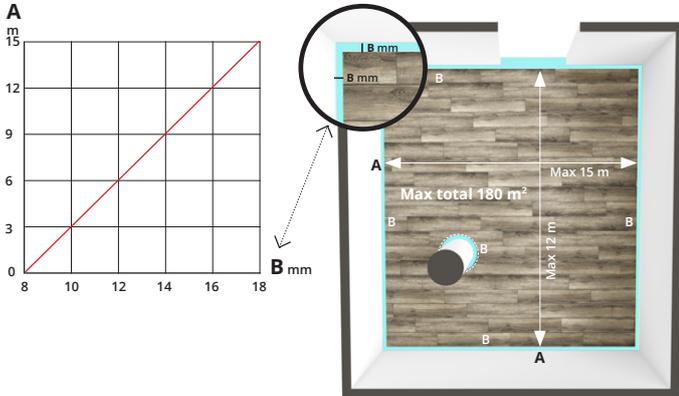
Choice of installation direction

Kährs recommend installing in the longitudinal direction of the room. In the case of long narrow spaces, such as hallways, the floor shall be installed in the longitudinal direction.

Movements joints

Natural seasonal variations (RH) through the year cause a certain amount of movement (expansion and contraction) in the Aware floors.

Therefore, the floors must never be installed close to adjacent walls or other fixed building parts. A movement joint according to the table below must therefore be left around all sides of the continuous floor surface.



The size of the movement joint in mm is calculated using the formula: $2\text{mm} \times 3\text{-meter floor area}$. The size of the movement joint should never be less than 8mm. Remember to remove the spacers after installation is done and complete.

Note Never block or fixate the Aware floor with nails, screws, glue, silicone, or other similar products. Either to the subfloor, skirtings, thresholds, etc. This is valid throughout the entire lifetime of the Aware floor.

The floor must be able to expand at, for example, thresholds, door frames, heat pipes, columns, stairs, tiled floors, and other connecting floors. It is important to ensure that even the indoor climate variations, as low RH cause shrinkage of the floor in heating season, is covered by the skirtings and moldings.

The maximum width of the floor is based on a rectangular floor surface with normal furnishing. For a more challenging room design and possible placing heavy objects on top of the floating floor, it may be necessary to contact the seller, dealer, or Kährs Technical support to go through any specific conditions.

Note Extra labor or material costs related to, for example, skirting, moldings, or door casing, which are painted or overpainted and cannot be removed without affecting these or wall surface, are not reimbursed by Kährs in the event of a warranty measure on the floor.

Movement or control joints predefined in the substrate of the building (for example, control joints in screeds, concrete etc., or between different subfloors rooms touching each other) shall be taken into consideration and therefore the floating floor shall be divided into separate areas with suitable molding or profile, in such situations.

Fixture and fittings

Furnishings, kitchen islands, wardrobes, walls, stairs, etc. shall never be attached to the floating Aware floor. Attachment directly to the subfloor can take place if holes are drilled through the Aware floor to accommodate, for example, support legs or fastening including distance. The same movement joint that applies to the entire floor surface shall then also be ensured around the support legs or attachments. The floor must never be pressed down and locked, apply spacers fitted directly to the subfloor, to obtain the free moving of the floating Aware floor if needed.

Kitchen interiors are normally attached to the wall to relieve the weight on the subfloor. The interior rests in the front edge against the subfloor on support legs. Alternatively, the kitchen fittings can be mounted on four legs standing directly on the subfloor. The Aware floor can be laid under the white goods, with the required drip protection on top.

For kitchen interiors with worktops in heavy materials such as stone, stone composite, concrete or other mineral-based materials, the Aware floor shall not be installed under the heavier fittings, as this risk blocking the floor from free moving. If you still want the Aware floor under the interior, the Aware floor must be divided and installed as a separate surface with expansion joint with space to the rest of the floor. An alternative to the Aware floor under the kitchen interiors is a chipboard or similar with a corresponding thickness. Another alternative is to drill holes in the Aware floor so that the support legs rest against the subfloor, do not forget the movement joint around the support legs.

If a fireplace (wood-burning stove or similar) is being installed, it shall be placed directly on the subfloor. As an alternative, a chipboard or similar board could be installed directly onto the subfloor, which may be slightly smaller than the "foot" of the fireplace, or what the "spark protection" is. By this the weight of the fireplace is distributed directly to the subfloor. Always follow the instructions given by the supplier of the fireplace.

Note Do not forget the expansion joint with space when installing the Aware floor around the chipboard!

The floating installed Aware floor shall never be blocked by the fireplace, the kitchen interiors, stairs or by others building parts and objects. This is valid throughout the entire lifetime of the Aware floor.

Note In connection with Kährs warranty commitment, the flooring is not replaced or repaired under furnishings, kitchen islands, wardrobes, fireplaces, etc.

Door openings

When installing through doorways or narrow passages, e.g., vaults, the floor must be divided by an expansion joint, which is then covered by a threshold or moldings.

The threshold can also be removed, then refitted, when the floor has been installed with an expansion joint under the thresholds position. Remember to put necessary spacer between the threshold and the subfloor, to ensure the free movement gap of the floating installed floor. If the threshold is too high, the door can be trimmed accordingly.

End joints

A proper staggering, of 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. Minimum distance between end joints is ≥ 300 mm.



Gluing joints

Adhesive should not normally be used on boards with click joints. However, in connection with doorjambes or radiators, installation with the use of adhesive is necessary and must be applied to the cut edges.



Gluing to the subfloor

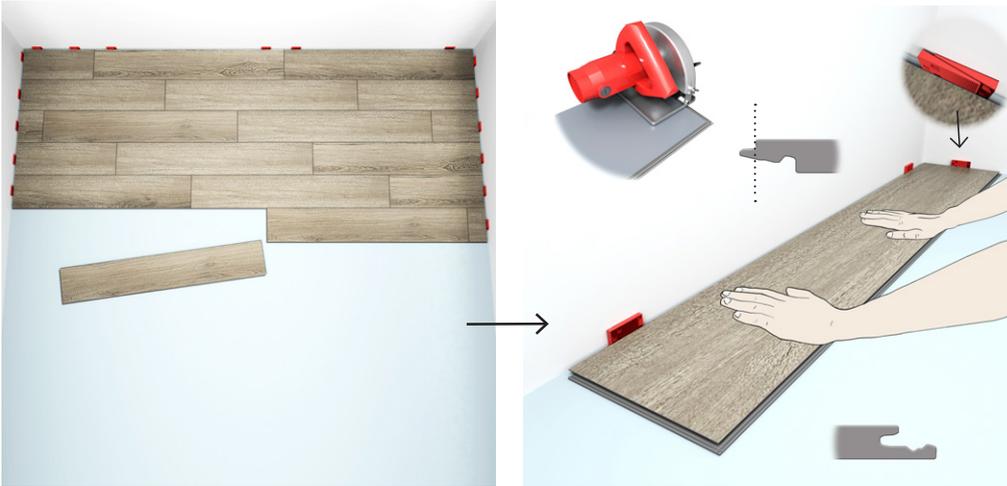
This is not allowed and or recommended, due to the possible delamination of the floorboards.

Underlays

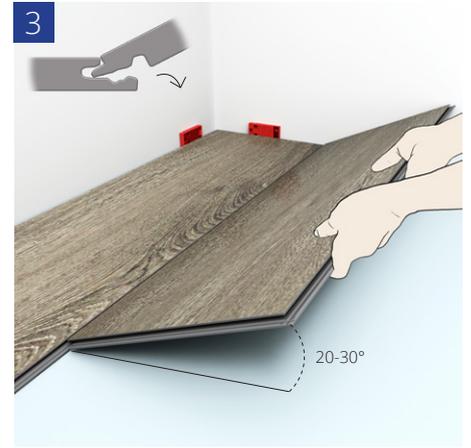
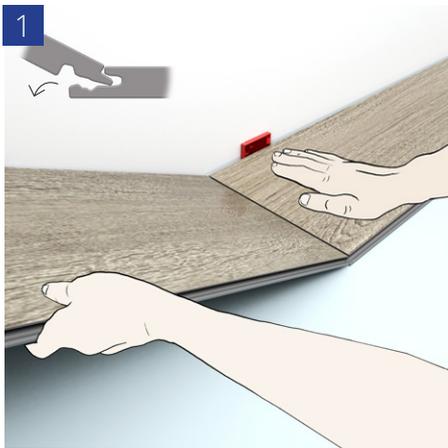
Kährs Aware floors are equipped with a pre-attached underlay made of cork material; therefore, it is normally not necessary to install additionally underlays. Should you nevertheless decide to make an additional improvement, the chosen underlay must meet a minimum CS value requirement (compression strength) of ≥ 400 kPa and shall be suitable as underlay for such floors (ask for the manufacturer 's technical data sheet).

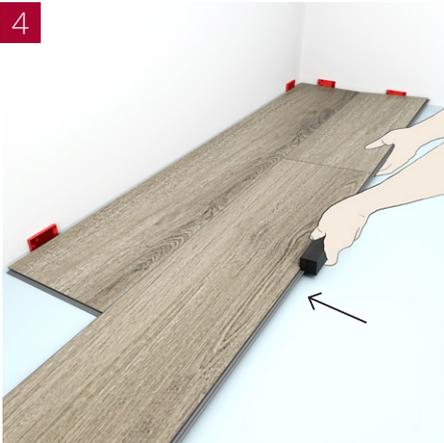
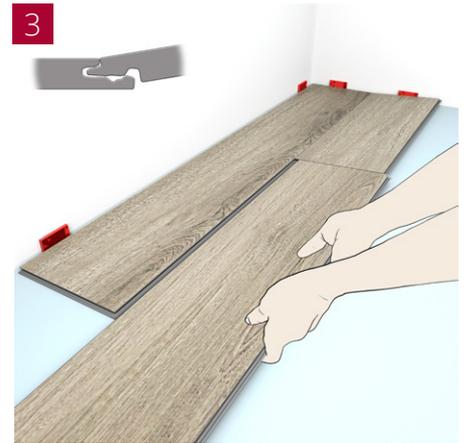
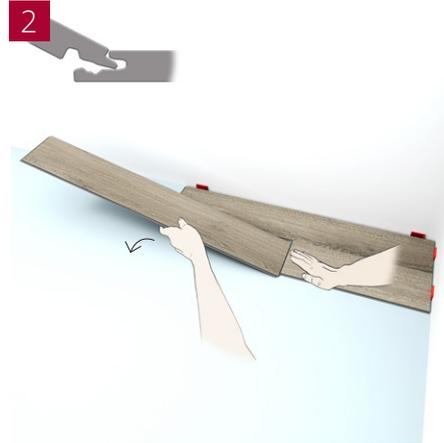
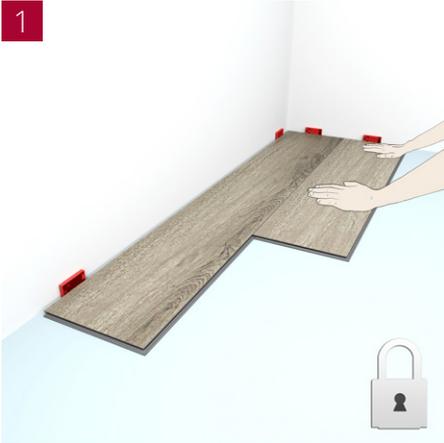
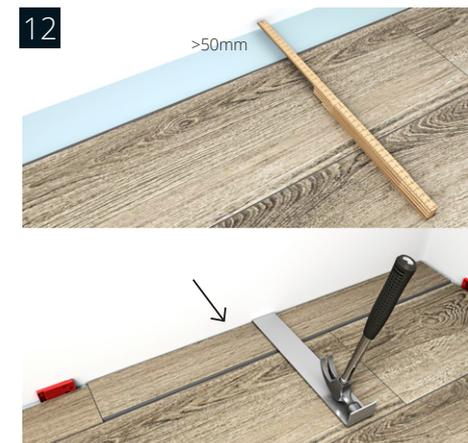
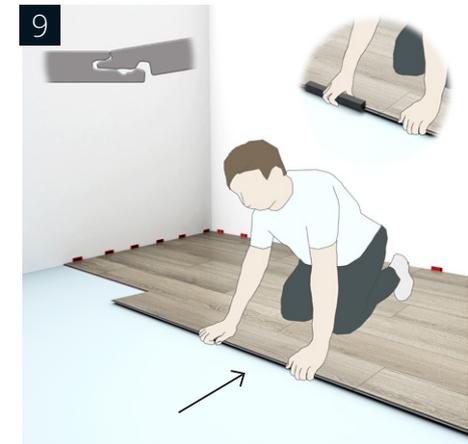
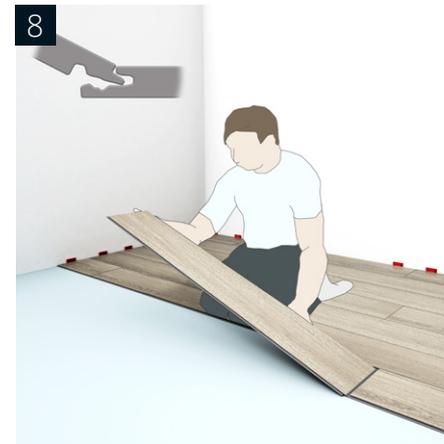
Note If Kährs Aware is installed on top of too soft underlay and or in combination with uneven subfloor, damages to either the floorboard or to the click joints may occur, it can also lead to squeaking sound.

INSTALLATION OPTION 1+2

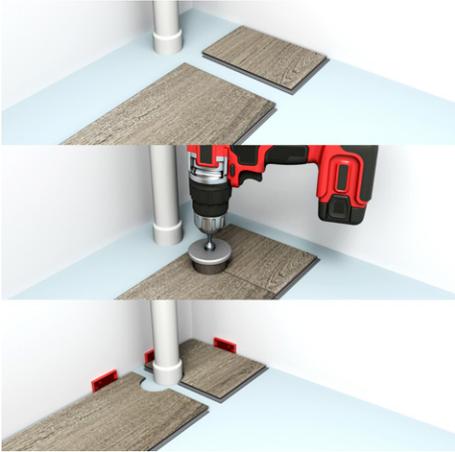


INSTALLATION OPTION 1

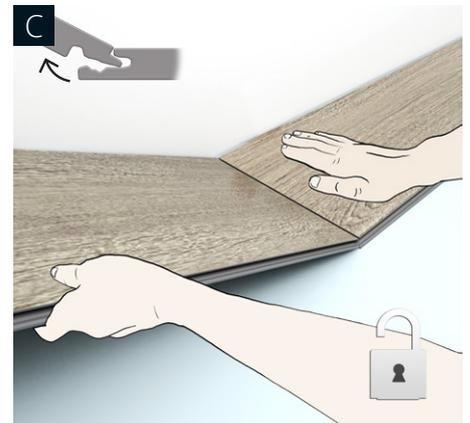


INSTALLATION OPTION 2**INSTALLATION OPTION 1+2**

SPECIAL INSTALLATION DETAIL



DISASSEMBLING



WHAT TO CONSIDER AFTER INSTALLATION?

Temperature and relative humidity in the room

The temperature in the room where the floor is installed is recommended to keep be between 15-23 C °.

The humidity (RH) should always be between 30-60% to avoid unwanted climate-related damage and movements in the 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 too high or too low relative humidity conditions, permanent shape changes or distortions of the Aware 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.

Note It is not only floors that thrive best, but also humans gets a better indoor air quality and environment with a relative humidity condition as described.

Skirting

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 based on the required size of the movement joints and not the other way around.

One solution for a situation that doesn't require 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 13mm plasterboard, for example, this provides an additional 13mm 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 moldings of various kinds to use, visit: www.kahrs.com.

Installation of skirting

The skirting must not be pressed down hard against the Aware floor, as the floor can then be locked. Skirting is suitably fastened with nails, screws, appropriate glue or with Kährs clip system for concealed attachment to the wall. Never fasten skirtings directly to or through the Aware floor.

Protective covering

If further work is to be carried out in the room where the floor has been installed, the floor is recommended to be protected with a moisture permeable material (e.g., Kährs protection 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 Aware floor. This may cause undesirable gloss variations. Kährs Protection Paper is intended for use on all floors.

White goods, grand piano, and other similar objects generally do not have large enough "wheels" to avoid damage if they are pulled over the floor. In these cases, Kährs recommend laying a hard board material as protection to avoid damage to the Aware floor surface.

Under wheeled furniture, such as office chairs, permanent protection against point load and wear is recommended, for example a transparent plastic mat or similar, which is commonly used for this purpose. Kährs recommend to only use soft chair and furniture castors (type W).

Tape

Never put tape directly on to the floors surface, skirting or moldings, only to the protective covering if this is used. Many tapes adhere so tightly to the floor surface that the coating may receive marks or damage when the tape is removed. The longer the tape is allowed to be attached, the greater the risk that it adheres harder to the coating.

Color change

Long lasting extreme sunlight, which is repeating over time, can lead to color changes of the material.

Cleaning & maintenance

Kährs Aware floors shall be vacuumed and may be cleaned with a damp cloth or mop, moisturized with a water solution with Kährs Cleaner after installation.

For more detailed information on care and maintenance, visit: www.kahrs.com.