

Kährs®

INSTALLATION INSTRUCTION KÄHRS AWARE FLOATING INSTALLATION KÄHRS LT AWARE CLICK



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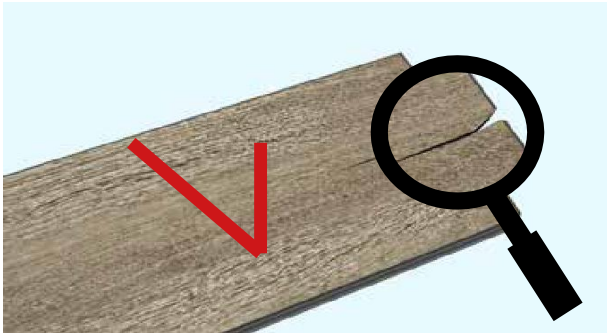
BEFORE AND WHEN THE INSTALLATION STARTS

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 the product received is correct. When a floorboard has been installed, regardless of whether you lay it yourself or hire a professional installer, it is considered to be approved and accepted.



Inspection



You shall inspect every floorboard carefully, before installing it to avoid any damaged or faulty boards 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 boards will only be replaced if they have not been installed.

Boards with obvious faults that are detectable before installation, must not be used.

Note: Some products may contain design elements which may be perceived as a visual imperfection. 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 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 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. Always wear safety goggles, dust masks and other necessary equipment to ensure a safe and healthy environment for people on the site of installation.

CONDITIONS FOR INSTALLATION

Kährs Aware hybrid floors are only intended to be installed in an indoor climate-controlled environment, Installation Methods: only Floating (on, above or below grade). Aware products cannot be glued down.

Acclimation of the floor bundles

Before installation, the Aware floor must be acclimated in the room, where the floor is to be installed, for at least 24 hours. Better acclimation 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.

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 shrink 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 distortions and damage to the floor.



The room, subfloor, and material temperature at the time of installation shall have a temperature of **55° - 85° F**. The relative humidity (RH) in the room shall be between **30-60% RH**. These levels of temperature and RH should be kept throughout the entire lifetime of the Aware floor.

Note: 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 RH is ensured before installation can take place.

Subfloor moisture

You must test concrete subfloors prior to installation.

Using calcium chloride test, concrete subfloors must contain $< 4 \text{ lbs./1000sf}^2$ (ASTMF1869) moisture or $< 85\%$ RH measured with insitu probe (ASTM F2170).

Subfloor must read 4.5 or less with Tramex meter. Moisture content of wood subfloors must be less than 12% MC.

Document and keep ALL test results. Subsequent excessive moisture after pre-installation documented testing is evidence of moisture intrusion and will not be covered under Kährs warranty.

Note: Always check the relative humidity (RH) of the subfloor, if it is above $>85\%$, a vapor barrier of 6 mil thick polyethylene plastic sheeting might not be sufficient, and further action is required before installation can begin.

On ALL mineral-based substrates, such as concrete subfloor, screeds, lightweight concrete floors etc., which also lies directly on the ground (slab on the ground) and flooring over crawl space foundations without an installed vapor barrier, regardless of age, it is mandatory to have an approved age-resistant vapor barrier, e.g., minimum 6 mil thick polyethylene plastic sheeting.

Installation of Kährs Aware floors with Radiant Heating.

An approved vapor barrier (minimum 6 mil thick polyethylene sheet) 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.

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 needed.

The surface temperature of the floor shall never exceed 81°F . This applies both during installation, at start-up of the heating system, and after the installation is completed. This is for safety reasons and to avoid complications with the floor.

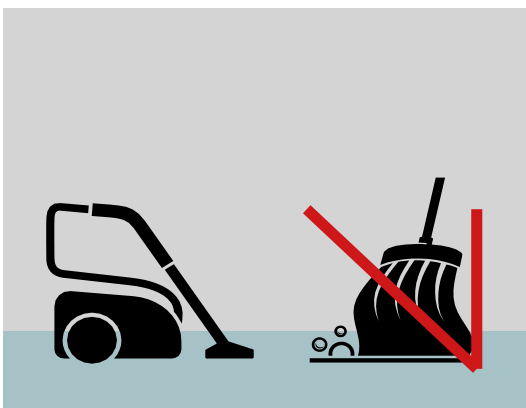
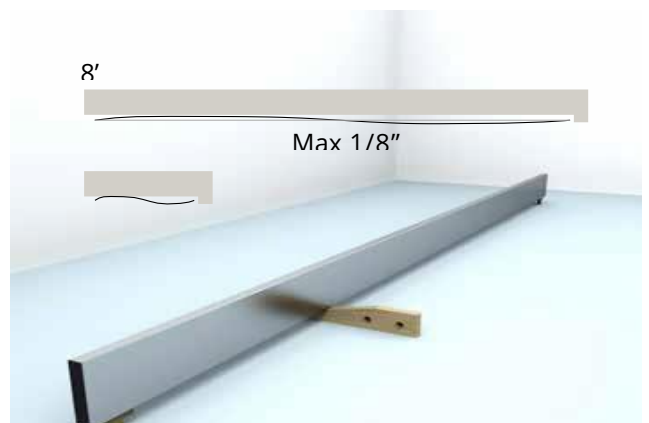
Note: Kährs recommend having continuous monitoring of the RH in combination with any underfloor heating, to ensure correct content of humidity in the surroundings and avoid possible distortions of the floorboards. For more detailed information regarding underfloor heating, visit: www.kahrs.com

Requirements for subfloors

The subfloor must be clean, permanently dry, flat, 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 8 feet. If any unevenness exceeds $\pm 1/8''$ over 8 feet, the floor must be levelled prior to installation of the Aware floor.

Also, please see our "Subfloor Prep Guide" on www.kahrs.com



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

The Aware floor should 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 scratches, dirt damage and unnecessary moisture related damage on the floor.

Installation planning

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.

Measure the width of the room and calculate how wide the last row of boards will be. If it is less than 2" 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 (C)!

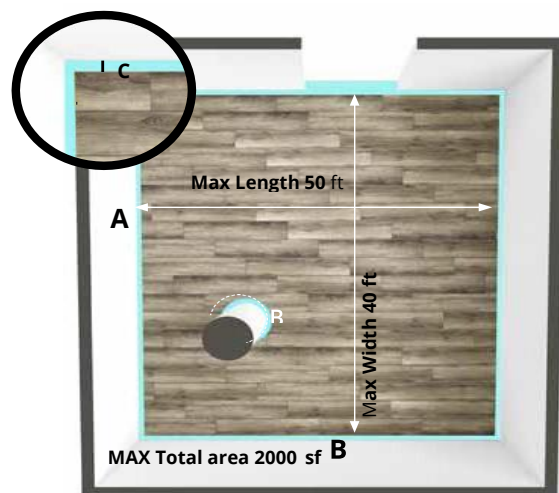
When installing Aware floor with Click, it is easier if the installation is started at the long side that has the most doors. If there are doors on the short sides of the room, it is also easiest to start a new row of boards from that side. The boards can be laid both from the left and right and backwards.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

Movements joints

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

The size of the movement joint (C) should never be less than **3/8"**. The size of the movement joint in inches is calculated by adding $1/16" \times 10$ -feet floor area to initial $3/8"$. Be careful with the planning so that the maximum floor width (B) and floor length (A) do not exceed the maximum width and length of your floor, see illustration with figures below.

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.



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 should be attached to the wall to relieve the weight on the subfloor. 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. 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.

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. Do not forget the expansion joint with space when installing the Aware floor around the chipboard! The floating Aware floor can 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. Extra labor or material costs related to, for example, baseboards, 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.

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.

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.

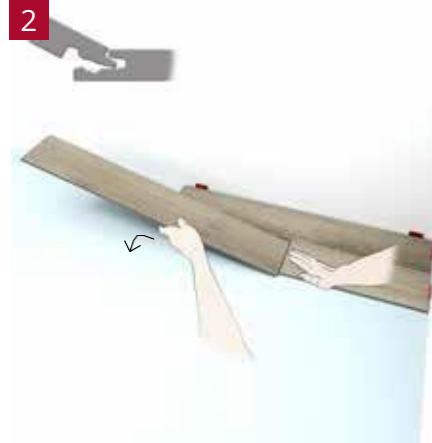
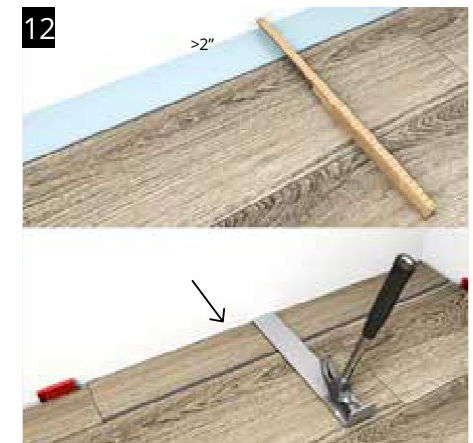
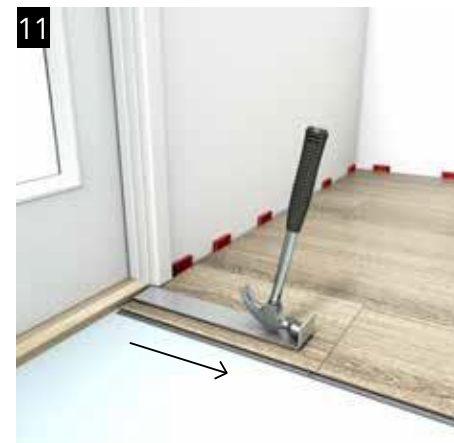
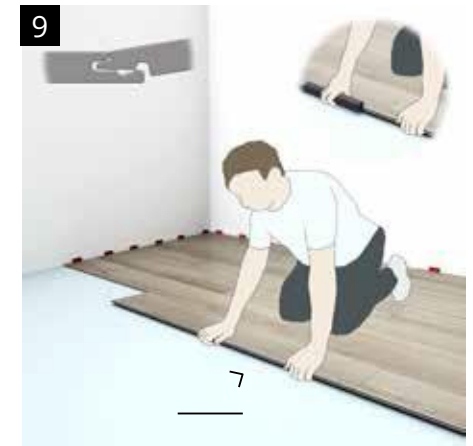
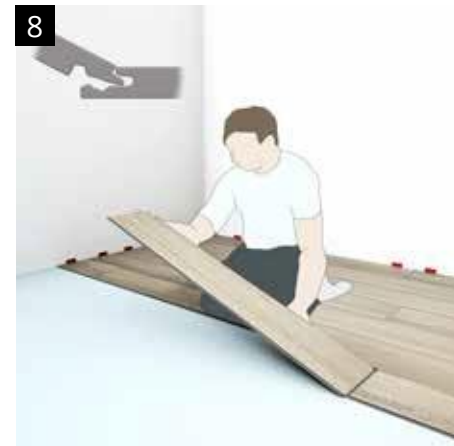
Minimum distance between end joints is ≥ 12 inches.



Underlayments

Kährs Aware floors are manufactured with an attached cork underlay; therefore, it is not necessary to install an additional underlayment. If there is a need for additional improvement, the chosen underlayment must meet a minimum CS (compression strength) value requirement of ≥ 400 kPa and shall be suitable for such installation.

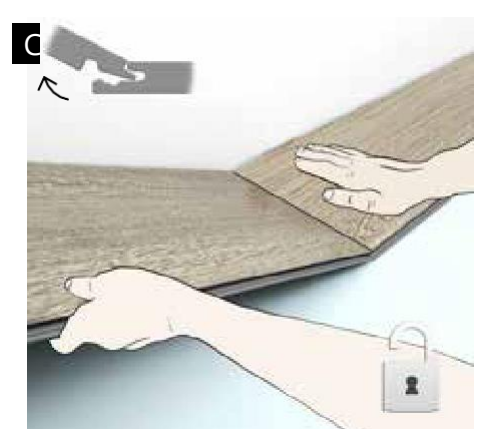
Note: If Kährs Aware is installed on top of multiple layers of underlayment or over an uneven subfloor, damages to either the floorboard or to the click joints may occur. It can also cause squeaking joints.

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 **55-85 F °**.

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 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.

Note: It is not only wood floors that thrive best, but also humans get a better indoor air quality and environment when relative humidity conditions are as described.

Moldings

Note that the dimensions of the moldings must never dictate the size of the movement joints. In the case of large floor areas, therefore, the base moldings must be chosen based on the required size of the movement joints and not the other way around.

In new buildings, a simple way of permitting additional floor movement is to "stop" drywall panels immediately above the floor surface. If the wall panel is ½" plasterboard, for example, this provides an additional ½" movement allowance. This allows a thinner baseboard to be used than would otherwise be necessary.

For a complete look using Kährs moldings, visit: www.kahrs.com

Installation of moldings

The baseboard moldings must not be pressed down hard against the Aware floor, as the floor can then be locked. Never fasten moldings 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, it is recommended to protect the floor with a moisture permeable material. Make sure it does not discolor the floor. Note that some commonly used types of paper do not allow moisture to pass through and have a wax coating that may be transferred onto the Aware floor. This may cause undesirable gloss variations.

Appliances, grand piano, and other similar objects generally do not have large enough “wheels” to avoid damage if they are pulled over the floor. Kährs recommends laying a hard board material as protection to avoid damage to the Aware floor surface.

For furniture on wheels, such as office chairs, a 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 recommends using only soft chair and furniture castors (type W).

Tape

Never put tape directly on to the floors surface, 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 left 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.

Warranty, Cleaning, Maintenance documents

Kährs Aware floors should be vacuumed and cleaned with a damp cloth or mop, moisturized with Kährs Cleaner.

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

For Warranty documents, visit www.kahrs.com