Fabulous, functional, forever.

TIER INDOOR FLOORING INSTALLATION GUIDE

SPC 4.0 core, 0.3 mm, 2G with no underlay

Version B1.0 10/07/2023

A PRODUCT BY EVA-LAST
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Introduction

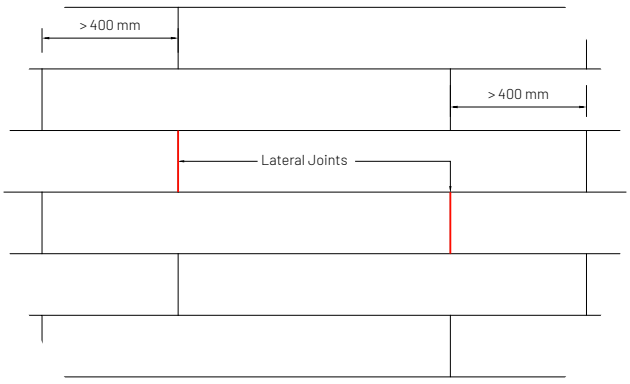
Thank you for selecting TIER indoor flooring. In these guidelines we aim to assist you in successfully completing an installation that will last as long as the TIER products themselves.

The guidelines allow for temperature fluctuations of up to 25 °C from the temperature at the time of installation and an air humidity range of 30 to 60%. For more detailed information, please refer to the TIER Technical Data Sheet (TDS).

Building codes and standards may differ between jurisdictions or counties. Before installing TIER flooring, ensure that the application is rational and complies with local regulations and building codes, or consult a suitably qualified expert. Ensure that the choice of TIER flooring products is suitable for the intended use. It is recommended that TIER flooring is installed by a professional installer to ensure compliance with the installation and warranty requirements.

Critical installation points

- Installation should be carried out in accordance with applicable local regulations.
- Use suitable safety or protective equipment wherever necessary.
- Subfloors must be clean of any substance that can affect the product or the adhesion (when applicable) thereof.
- Subfloors must be debris-free, rigid, level, dry, and structurally sound.
  - Permissible deviations of the subfloor should not exceed 3 mm at any point on a 3 m line. In most instances, a self-leveling screed will be required prior to installation of your TIER product.
  - The moisture content of the subfloor must not exceed 4 % (mass/mass).
  - The installation surface should provide a barrier to moisture and be fully cured before installing TIER flooring.
- Check door and door frame clearances before installation.
- Acclimatise TIER flooring for 24 to 48 hours. prior to installation in the room(s) where the installation will take place.
- Provide an expansion gap of at least 10 mm between TIER flooring edges and all walls, permanent structures, or heavy objects.
  - Expansion gaps must be kept clean of any debris and covered using appropriate skirting, transitions or similar.
  - The skirting, or similar, must not pin down the floorboards but should prevent debris and water from entering the expansion gap.
- The distance between consecutive lateral joints of adjacent boards must be a minimum of 400 mm.
  - Do not cut profiles shorter than 400 mm.



- Do not rip the profiles less than 50 mm wide.
  - To comply with this, sometimes both the first and last boards must be ripped.
- When removing or adjusting a TIER floorboard, carefully raise both boards either side of the joint simultaneously. Avoid bending or damaging the profiled edges of the board.

Pre-installation

Standards

Be sure to comply with applicable standards and manufacturer specifications. Check that your choice of product is suitable for its intended application. For further product specification and information visit www.tierflooring.com.

Safety

Refer to the applicable Material Safety Data Sheet (MSDS) for additional information. Please do not hesitate to contact Eva-Last should you require any additional assistance.

Always wear appropriate Personal Protective Equipment (PPE) for the various activities involved in installing TIER flooring.

Be mindful of the following:

- Cutting of TIER boards may result in fine particulate matter, as a result, ensure to:
  - Work in well-ventilated areas.
  - Wear dust masks during cutting and cleaning.
  - Wear safety goggles whilst cutting.
- Cut boards may have sharp edges. Use appropriate caution when handling cut boards or when using a flooring guillotine, laminate cutter, utility knife, or similar.
- Clean workspace thoroughly. Wet-wipe, mop, or vacuum surfaces. Do not dry sweep as this can disperse dust. Avoid using excessive amounts of water when cleaning. Ensure debris is not left on the subfloor or in any expansion gap. Use of drop sheets may assist.

Storage and handling

- Take care when lifting, placing, or removing boxes from pallets or other surfaces.
- Ensure the mass handled does not exceed safe limits as defined by applicable local legislation.
- Dropping the boards (and any high impact load in general) can result in damage to the profile or surface of the boards.
- During transportation use corner protectors where strapping is required.
- All boxes of TIER product should be stored completely under cover, protected from heat and/or exposure to direct sunlight as this may cause damage to the product.
- All boxes should be securely stored, avoiding over-stacking and/or eccentric stacking.
- When storing boards, a pallet or flat surface should be used to support the full length of each box.
- No product should be exposed to water or a high moisture content environment.
- Retain excess boards in the event of unforeseen accidents. Store these boards internally in a cool, dry area. Ensure the boards are laid flat, fully supported and off the ground.
- Before installation, visually inspect all materials in optimal lighting conditions to confirm the product is the correct design, colour, pattern, and is free from defects.

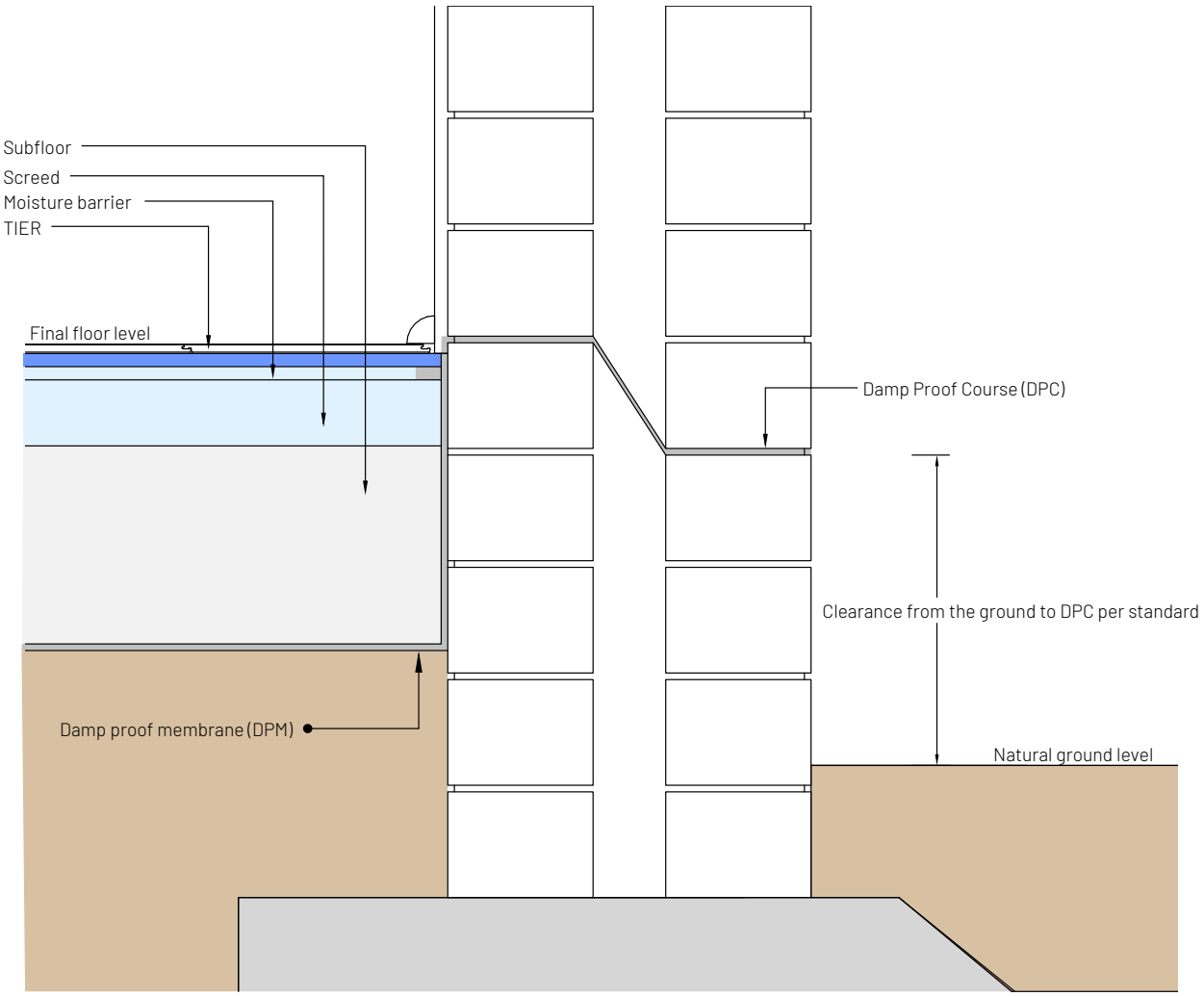
Subfloor

- Overlaying an existing floor covering with another must be avoided. Wherever possible, the existing floor covering must be removed, and the subfloor restored to a condition that is acceptable for the laying of TIER.
- Subfloors should be constructed to ensure the protection of TIER from moisture or vapour from the ground. Where structures do not provide adequate moisture protection, moisture barriers must be used.
  - **For concrete subfloors:**
    - Excess water in the base (above any membrane) must be allowed to evaporate. New bases take time to cure, typically 28 days for every 25 mm of base thickness.
    - The flooring should not be laid until the moisture content of the base is less than 4 % (mass/mass).
      - The preferred non-destructive test for assessing floor moisture is the insulated hygrometer test procedure as described by Annex B of SANS 10070. This test effectively measures the moisture leaving the floor, from which the moisture content of the floor can be estimated. Resistance type moisture meters are not recommended for the estimation of floor moisture.

- **For timber subfloors:**
  - Timber subfloors need careful assessment to determine whether they are acceptable for TIER flooring.
  - Timber subfloors that have a moisture content exceeding 18 % at any point shall not be covered.
  - A timber subfloor susceptible to rising moisture (e.g., floors at ground level) shall not be covered with TIER flooring. A suspended timber subfloor at ground level can only be covered if the ventilation of the space below the floor complies with SANS 10043.

In the case of new installations, the timber subfloor must comply with SANS 10082. Before a timber subfloor is installed, the moisture content of the substrate shall be equal to the moisture content it will eventually attain in normal service.

- The surface onto which TIER is installed must be a rigid and level surface. In most instances, a self-leveling screed will be required prior to installation of your TIER product. Adequate drying time must be allowed for.
- TIER floorboards are suitable for Grade 1 (as defined by SANS 10155) or similar floors; permissible deviations should not exceed 3 mm at any point on a 3 m line.
- Small imperfections in certain surfaces can be corrected with patching compounds or by sanding.
- Larger imperfections in the surface need to be corrected using a standard or self-leveling screed.
- Never leave any debris on the subfloor prior to the installation of TIER flooring.



Moisture/Vapour barriers

- Where structures do not provide adequate moisture protection, suitable moisture/vapour barriers must be employed.
- Various barrier types are commercially available ranging from polyolefin sheeting to liquid/fluid-applied solutions. When using fluid/liquid solutions, such as X-Shield VaporStop HB, the manufacturer's guidelines must be adhered to. The type and thickness of polyolefin sheeting will depend on the conditions of the subfloor and should be determined by a suitably qualified competent person according to SANS 10021 and SANS 10190. In general, a 200-micron (virgin) polyethylene sheet is suitable for typical scenarios.
- Joints of the sheeting should be minimised. Where joints are required, ensure the overlap of the adjacent sheets is a minimum of 200 mm. The overlapping seams should be continuously taped over with a suitable tape. The sheets should also run a minimum of 50 mm up the walls, behind the skirting (this can influence the choice of skirting).

Underlay

- The IXPE underlay (available on the TIER Element and TIER Classic Commercial options) provides additional sound and thermal insulation.
- Separate/additional underlays should not be utilised with any of the TIER flooring options.

Planning and site preparation

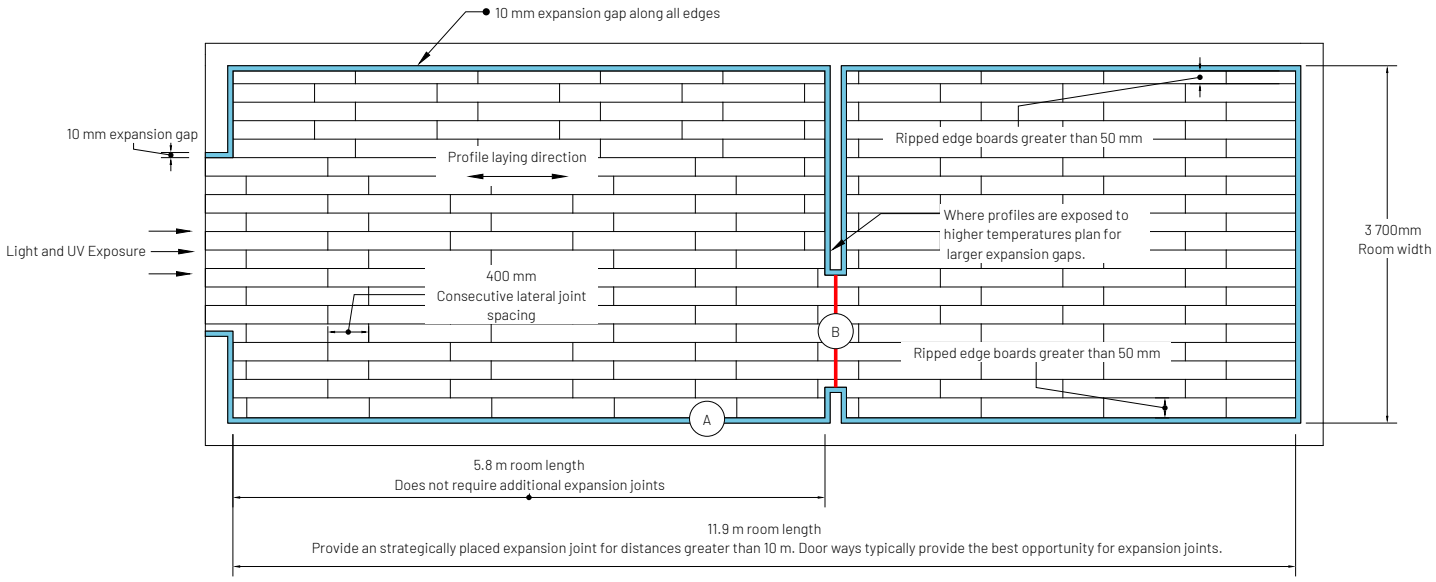
General notes

- Preparation and installation of the flooring should ideally not begin until all other trades have completed their work to avoid damage to the flooring or any necessary subfloor preparation. If this is not possible, heavy duty drop sheets can assist in protecting the subfloor and/or flooring.
- For runs longer than 10 m or rooms larger than 10 x 10 m (100 m^2), it is necessary to install the flooring in smaller sections interspersed with expansion joints.
  - Expansion joints should be placed at intervals of 10 m, or less.
- It is often useful to install expansion joints at doors, or similar, intersections to avoid unsightly transitions within the rooms. Check door and door frame clearances before installation.
- Attempt to pass TIER flooring beneath door frames where possible, ensuring there is space between the frame and the floor to prevent the floor from being pinned down. If this is not possible, cut around the doorframe and install skirting, as one would with intersections of the floorboards and walls. Ensure there are suitable expansion gaps where necessary.
- Install permanent fixtures prior to installation of TIER flooring, providing for requisite expansion joints and similar.
- Avoid placing heavy objects on top of floating installations of TIER flooring, as this will result in pinning the floor down, which can cause product issues or failures.

Site planning

- Measure the room carefully to determine if the room is square. If it is not, the outer (particularly the last) floorboards will need to be cut to match the edges of the room. In some instances, it may be necessary (or more aesthetically pleasing) to cut both the first and last boards.
- Measure the width of the room and calculate the width of the last row of boards. If it is less than 50 mm, cut both the first and last rows of boards to equalize the widths of the first and last rows.
- Remember to allow for expansion gaps in these calculations.
- Decide which side of the room will have the last line of floorboards, it may improve the final appearance to have this line at the outer edge of the room, away from adjacent rooms.
- When installing multiple connected rooms, it is best to start in a passage or in the center of the connecting rooms and work towards the outside of the rooms.
- Plan your board laying direction. It is common practice to install TIER flooring in the direction that natural light enters the room, this is typically perpendicular to a window.

Below is an example of planning a floor laying pattern.



Calculating board ripping requirements

Step 1: Effective room width = Room width – 2 x Expansion gap (10 mm minimum) (A)

Step 2: Number of boards (Round down) = Effective room width ÷ Board width (B)

Step 3: Determine the last board width = A - (B x Board width)

Example:

Step 1: Room width = 3 700 - (10 x 2) = 3 680 mm

Step 2: Number of boards required = 3 680 / 181 = 20.33 boards

Round down to 20 Boards

Step 3: Last board width = 3 680 - (20 x 181) = 60 mm

Is the last profile width wider than 50 mm? Yes, therefore, only the last requires ripping.

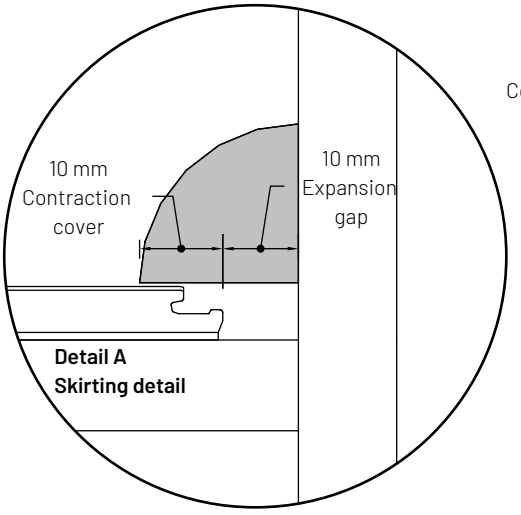
Expansion and contraction

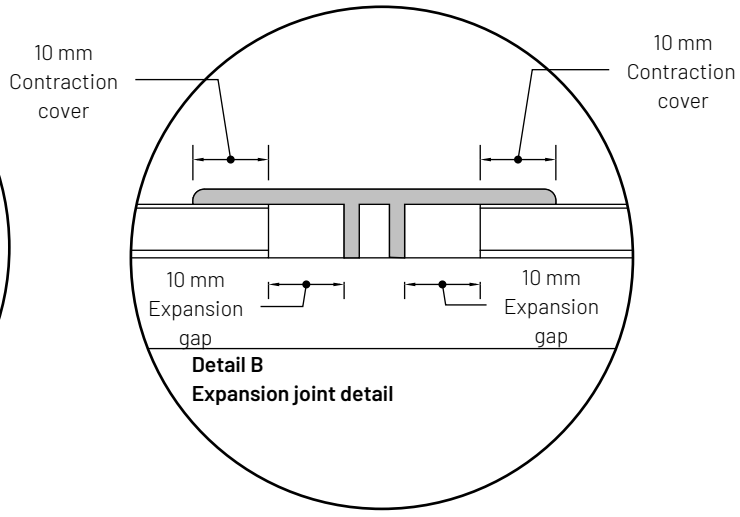
General guidelines for TIER expansion gaps

- Ensure there is a minimum of a 10 mm expansion gap around the entire perimeter of the room as well as at any intersections with permanent structures or heavy objects. This gap allows the flooring to expand and contract with temperature fluctuations. The allowance is based on a typical change in temperature of 25 °C from the installation temperature and the maximum size of a room (10 m x 10 m). Different expansions gaps can be determined for the specific conditions of an environment or application.
- It is recommended to have a larger gap in areas with temperature fluctuations of more than 25 °C or high sunlight exposure (through windows and doors).
- Place spacers around the perimeter of the flooring area during installation of the flooring (remove during the installation of the skirting). Make allowances for expansion gaps whenever the floorboards meet an obstruction. This can include items such as pipes, columns, fireplaces, doorjambs, etc. Doorjambs can be undercut to provide a seamless finish between the frame and the boards whilst maintaining an expansion gap below the frame. Floors should be adequately protected in the vicinity of open fireplaces.
- This product is not suited to use in saunas or similar applications.

Skirting (or similar)

- Use skirting, transitions, trims or similar to cover the gaps around the edges of the floor or at doorways and similar intersections. This helps create a clean and finished look while accommodating for the necessary expansion and contraction.
- Ensure that the skirting is wide enough to cover the expansion gap whilst still providing adequate space for the floorboards to contract.
  - To allow for a 25 °C temperature change in either expansion or contraction from the temperature at the time of installation, a minimum of a 21 mm wide skirting (or similar) is required, based on a maximum room length of 10 m.
  - Skirting (or similar) must not be nailed or fixed to the floor. The skirting (or similar) must not pin down the floorboards but should prevent debris and water from entering the expansion gap.



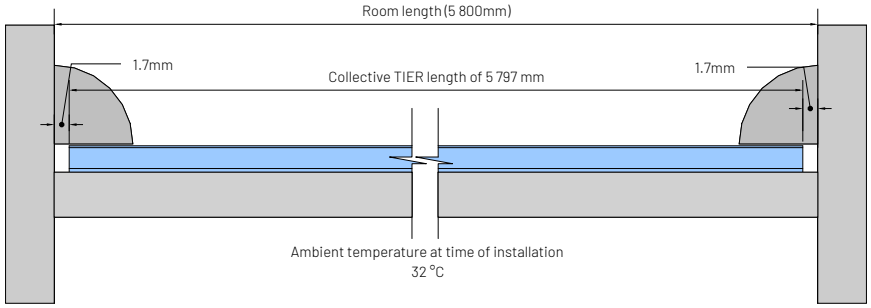


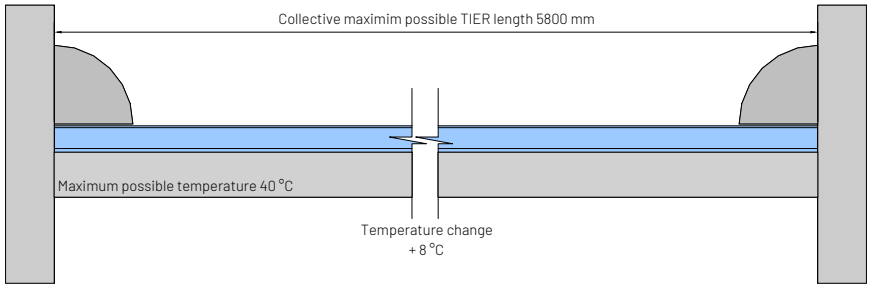
Excessive temperature fluctuations

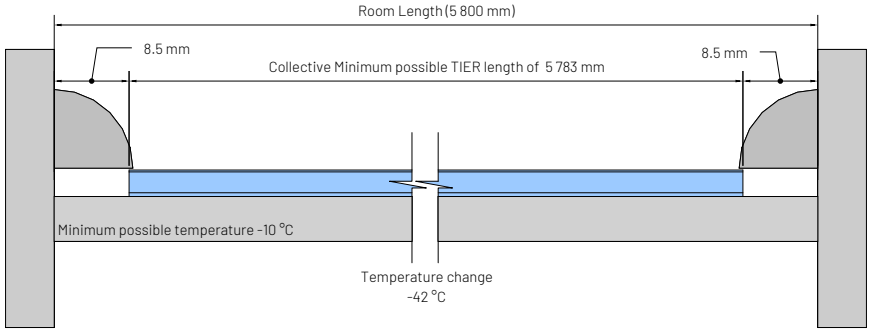
The general guidelines above offer practical installation parameters based of typical conditions. However, for applications outside of these conditions it may be necessary to calculate specific requirements based on actual expected temperature ranges.

Using previously provided example conditions:
Room length is 5800 mm I
Installation temperature is 32 °C, with an expected maximum of 40 °C and minimum temperature of -10 °C.

A 4 mm expansion gap is sufficient given the room's proximity to the expected maximum temperature.
A 17 mm contraction gap is required due to the low minimum temperature anticipated.
Both calculations are for the total gap for the room and would typically be shared across both sides of the room.







To estimate movement expected:

- To allow for an appropriate expansion gap (ΔL) for a room length, multiply the length of the room in meters (L) by a coefficient of 0.07 (α) and by the maximum difference in temperature between the maximum and minimum temperature and the acclimatised installation temperature of the boards (ΔT):

  $\Delta L = L \times \alpha \times \Delta T$

- Use the same method to estimate maximum contraction size (when boards are fully contracted).
- To determine the width/coverage of the skirting, add the expansion and contraction estimates together.

Use of adhesives summary

When installing the TIER Classic residential product range (which does not have an IXPE underlay) in areas which may be exposed to excessive temperature fluctuations (e.g., glass frontages in North facing buildings), the floor may be glued down with an appropriate floor adhesive to reduce movement. The entire room, up to the nearest expansion gap, must utilise the same installation type (i.e., glue or floating). The installation methods should not be mixed. The general guidelines outlined in this document still apply. In addition, ensure the adhesive is suitable for both the board and the subfloor. Typical SPC adhesives are suitable for TIER flooring, please refer to the applicable manufacturer's guidelines for further information. Liquid/fluid-applied moisture/vapour barriers are required as polyolefin sheeting is not suitable. Underlays are also not suitable. Also ensure that TIER flooring and the subfloor are both clean and dry. . The use of skirting to hide cut edges, etc. is still advisable.

Please clean any adhesive spilt on TIER flooring immediately. Please do not hesitate to contact Eva-Last for further information.

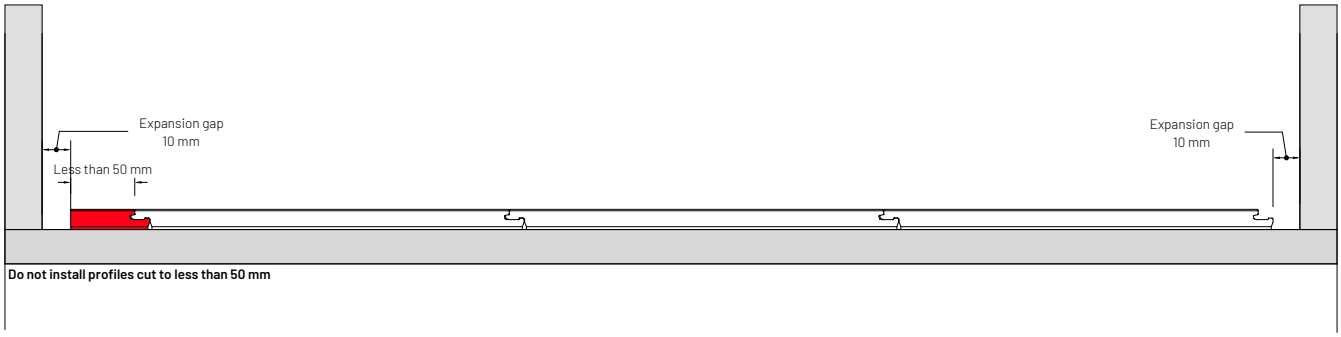
Working with TIER Flooring

Tools

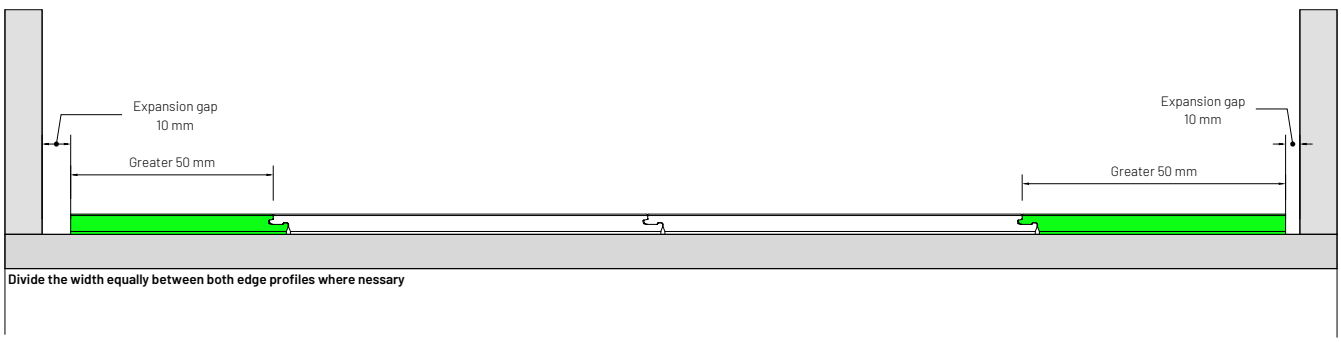
For a successful installation, the following tools will be necessary – pencil, utility knife, flooring guillotine or laminate cutter, tape measure, ruler/straight edge, carpenter's square, table saw, spacers, hand roller (for glue-down applications), pull bar, and rubber mallet, tapping block, hole saw.

Cutting

- To cut a TIER floorboard, use an indoor flooring guillotine, laminate cutter, or utility knife.
- Use appropriate caution when cutting TIER floorboards, as parts are sharp.
- Do not use boards cut shorter than 400 mm.
- Estimate the width of the last floorboard, if this is less than 50 mm, start the first line of floorboards by cutting them in along the length so that the last line of floorboards will be wider than 50 mm.



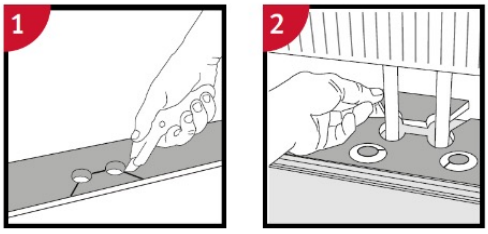
Do not install profiles cut to less than 50 mm



Divide the width equally between both edge profiles where nessary

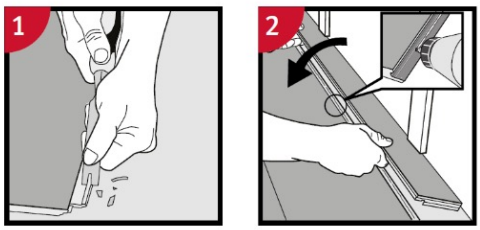
Installation around radiators and heating pipes

Drill holes twice the size of the pipe's diameter, remove a piece of the panel, slot the board into place and attach the small panel piece with an appropriate adhesive.

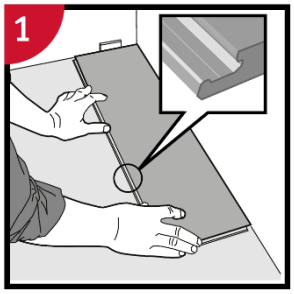
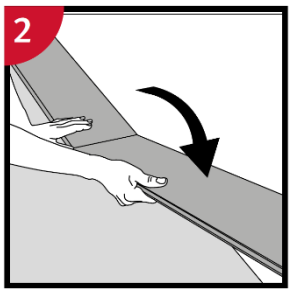
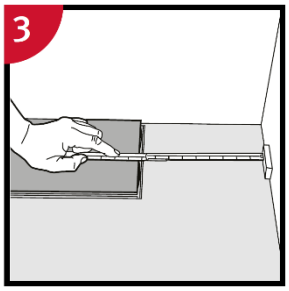
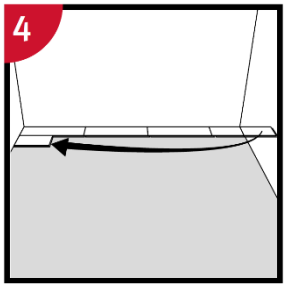


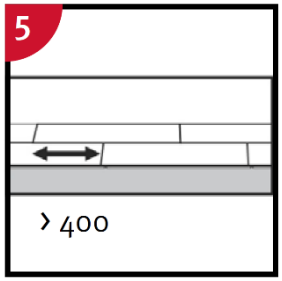
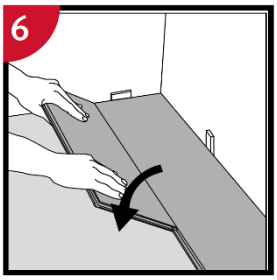
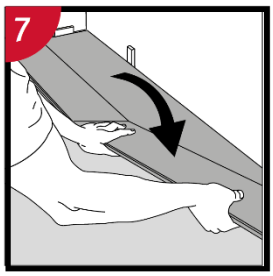
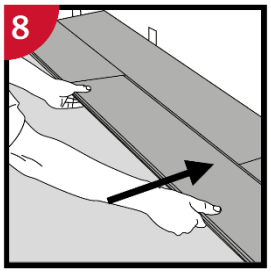
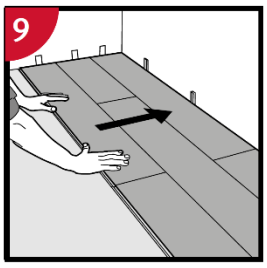
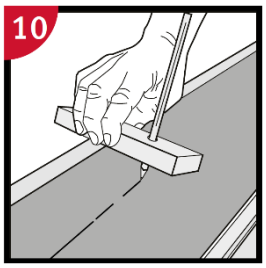
When angling the profile is not possible

Remove the vertical locking strip with a chisel, apply an appropriate adhesive to the strip and, push panels together horizontally, placing spacers between the last board and the wall.

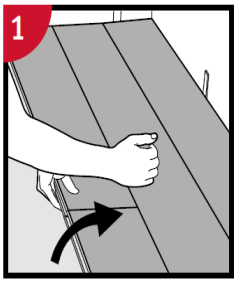


Installation process

Step 1	Step 2
For the first plank of the first row, insert a spacer of the recommended thickness on the left and align the panel with the wall. Use a spacer for every three complete rows to assist with positioning.	For the second plank of the first row, angle the short end against the previous plank and then fold it down. Continue this method to complete the first row.
	
Step 3	**Step 4**
At the end of the first row, place a spacer against the wall and measure the length of the last panel to ensure it fits.	For the second row, ensure the first panel is at least 400 mm in length and place a spacer against the left wall.
	

Step 5	Step 6
Maintain a minimum distance of 400 mm between consecutive lateral joints of adjacent boards, and avoid cutting profiles shorter than 400 mm.	When placing the plank, angle it against the plank in the previous row, applying forward pressure while folding it down simultaneously. As the planks begin to lock, leave the plank somewhat up angled, and consider using a wedge with an appropriate angle under the plank near the short side joint for support.
	
Step 7	**Step 8**
For the second plank of the second row, position the short end of the plank at an angle against the already installed plank and fold it down completely.	Push and slide the plank to align it with the first one in the row ahead, angling the board to ensure a snug fit. Once aligned, fold the first/ previous plank down to a horizontal position. If you are using a wedge for support, you can move it to the next short end joint.
	
Step 9	**Step 10**
After completing rows two and three, adjust the distance to the front wall by placing spacers. Maintain these spacers in position throughout the entire installation process and remove them once the installation is finished.	For the last row (and possibly the first row), ensure a minimum width of 50 mm. Begin by placing a spacer against the wall before taking measurements. Create a simple drawing tool (a piece of wood with a hole), use it to mark the panel along the wall, and then cut the panels lengthwise accordingly.
	

Dismantling panels

Step 1	Step 2
To separate the entire row, gently lift and release the entire row. Fold up the row and release the entire long side.	Disassemble the panels by angling the short sides vertically upwards.
	

Cleaning and maintenance summary

- Regularly sweep or vacuum to remove loose debris.
- TIER flooring is suitable for use with robotic vacuum cleaners and robotic mops.
- Avoid using polishes and waxes as they have no effect on TIER flooring.
- Use a soft cloth or a nylon bristle brush with a small amount of regular dish soap to clean your floors and remove stains. Wipe away any excess water.
- For stubborn stains, clean with a low-concentration mixture of white vinegar and water. Wipe away any excess water.
- While TIER flooring is highly water-resistant, promptly clean up spills.
- Pay extra attention to high-traffic areas by keeping them free of dirt and debris.
- Use felt pads under furniture legs to prevent scratches, although TIER is scratch-resistant.
- When moving heavy furniture, lift it rather than dragging it.
- Refer to Tier's Technical Data Sheets (TDS) for chemical compatibility information.
- Following these guidelines will help maintain the beauty and durability of your TIER flooring.

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While most data have been compiled from research, case histories, experience and testing, small changes in the environment can produce marked differences in performance. The decision to use a material, and in what manner, is made at your own risk. The use of a material and method may therefore need to be modified to its intended end use and environment.

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