Tenacity Engineered Stone Flooring
Installation instructions

HOWDENS

DUE TO THE UNIQUE CONSTRUCTION OF THIS PRODUCT
## PLEASE READ INSTRUCTIONS FULLY BEFORE COMMENCING INSTALLATION

General Preparation

- Product must be inspected before installation, as no claims on surface defects will be accepted after installation.
- When fitting the flooring, always work from 3 - 4 boxes at a time to mix the planks/tiles.
- Check if sub-floor/site conditions comply with the specifications described in these instructions below.
- Flooring products can be damaged by rough handling before installation. Take care when handling and transporting these products.
- Store flooring boxes flat and never on the edges.
- Calculate the rooms surface area before starting installation, allowing for an additional 10% extra for cutting & waste.
- Flooring is for indoor use only. Using this flooring outdoors will invalidate any warranty.
- The flooring does not require room acclimatisation and can be fitted immediately subject to room preparation and condition.
- Room temperature should be stable during installation - ranges should be 50 - 90°F (10 - 32°C).
- Kitchen units should not be installed on top of the flooring.

Scan the QR code with your smart device to access a short installation video

Sub-floor Information

- Sub-floor must be clean, flat, permanently dry, securely fastened, structurally sound and level to 3mm over 2m.
- Any sub-floor imperfections should be rectified before installation of the flooring.
- Any grout lines, dips or grooves over 5mm wide or 4mm deep must be filled.
- Excessive sub-floor moisture can cause issues which will damage the flooring, please ensure the correct moisture barrier is used.

2m — Max 3mm
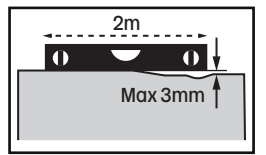
Wooden sub-floors
- Loose boards should be secured before installation of the flooring.
- Sub-floors should always be dry and be structurally sound.
- New flooring should always be laid crossways to existing tiles/boards.

DO NOT INSTALL THE FLOOR ON..
- Any type of carpet
- Cushion backed vinyl
- Floating floors
- Hardwood flooring
Do not use additional underlay

Concrete Sub-floors
- Existing concrete sub-floors should be fully cured and be at least 60 days old to ensure set and stable.
- The concrete should be clean and free from dust or other particles.
- A DPM must be used as a moisture barrier between the concrete and the new flooring.

MAX 27°C
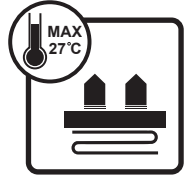
Underfloor heating
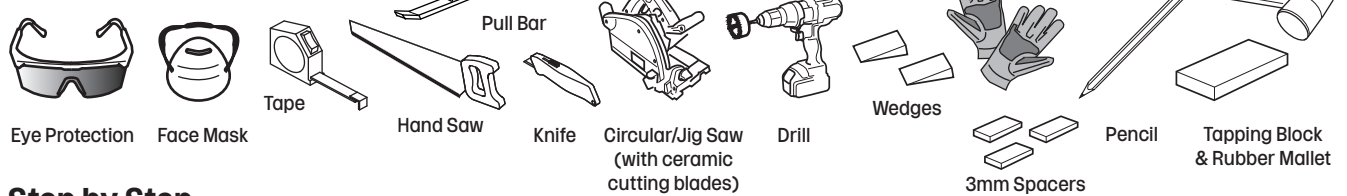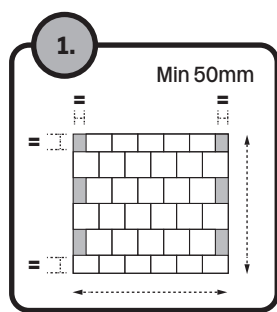- Maximum operating surface temperature should never exceed 81°F (27°C).
- Underfloor heating should be turned off 24hrs prior to installing the flooring and not used 24hrs after installation.
- Always refer to the manufacturers instructions for underfloor heating installation and operation.
- All underfloor heating systems must be embedded in at least 12mm of screed, thermostat sensor should be in the screed.
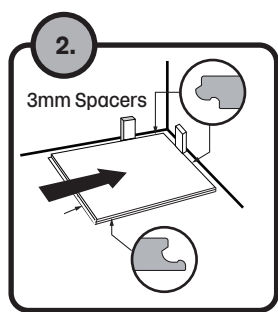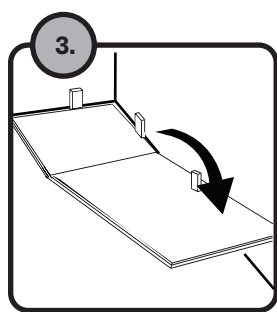
Tools Required

Eye Protection Face Mask Tape Hand Saw Knife Circular/Jig Saw (with ceramic cutting blades) Drill Wedges Gloves 3mm Spacers Pencil Tapping Block & Rubber Mallet Pull Bar

Step by Step

1. Min 50mm
Measure area to install
Perimeter rows should be same width. Adjust as required.

2. 3mm Spacers
Fit first row
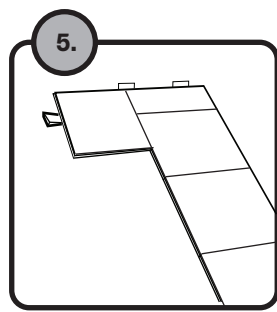Begin laying in the left hand corner. Use spacers.

3.
Fit the second tile
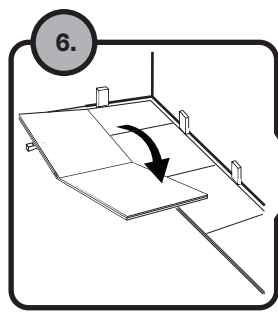Insert section at an angle. Ensure aligned.
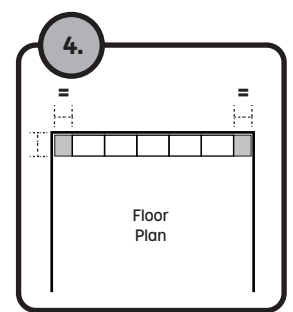
4. Floor Plan
Last tile of first row
At the end of the row leave a 3mm gap. The last tile should be the same size as the first.

**Note: After the first row, this product MUST be installed in FULL ROWS, not piece-by-piece.**

5.
Second row, first tile
Click the tile into place and position wedges underneath.

6.
Second row - lay each tile but do not fold down
Place the tongue of the second tile at an angle against the groove side of the previously installed tile and fold down.
Slide down tongue side of the board into the locking groove of the adjacent tile in the previous row (do not fold down until the full row is laid).
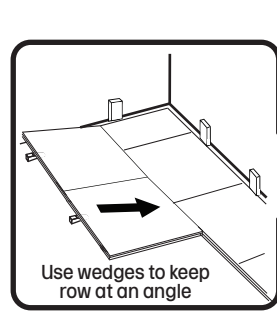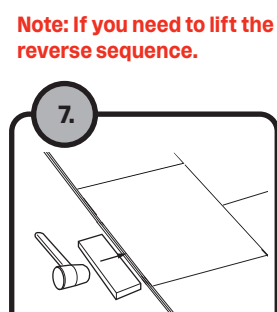
Use wedges to keep row at an angle
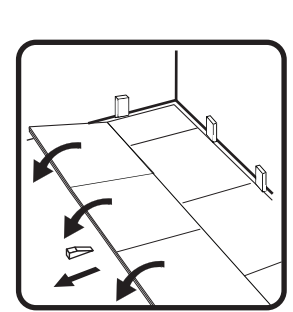
Fold down the full row
When the whole row is complete, remove the wedges and fold the row down.

Note: If you need to lift the tiles once laid, lift them as a full row (supporting with wedges) and then remove one by one following the reverse sequence.

7.
Tapping Block
(Off-cut of flooring can be used)
After the installation of each row, use a mallet & tapping block to tighten the joints.
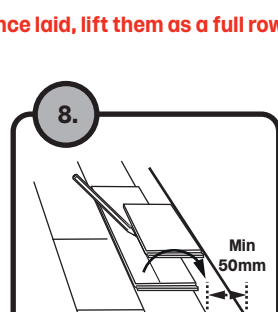
8. Min 50mm
Last Row
Use a board to mark the width of the board to be cut.
The last row should be at least 50mm wide. The spacers can then be removed. Note: Use a pull bar to ensure last row is in place.
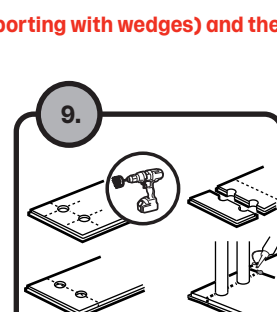
9.
Holes for pipes
Measure the diameter of the pipe and drill a hole that is 6mm larger.
Saw the board removing the piece, lay the board, then re-fit the sawn piece.
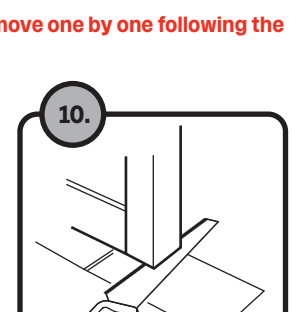
10.
Door frames
Lay a board (with the decorative side down) next to the door molding and saw as shown.
Slide the tile under the moulding.

Bathrooms

- If a watertight installation is required, apply a silicone bead across the bottom of the tongue on both long and short side prior to installing the floor board. Wipe off any excess silicone immediately.
- Apply a low-modulus silicone sealant to the perimeter of the installation. Do not use acrylic sealant.
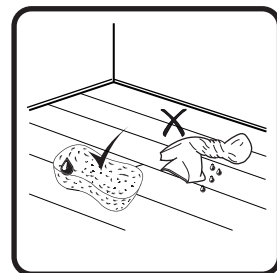
Finishing

- Nail mouldings to the wall surface, **NEVER** through the flooring. At doorways and at other areas where the flooring tiles may meet other flooring surfaces, it is preferable to use a threshold strips (or similar), to cover the exposed edge.

Sweep or vacuum daily using soft bristle attachments.

Clean up spills and excessive liquids immediately.

Do not use excessive water when cleaning, use cleaners recommended for laminate flooring.
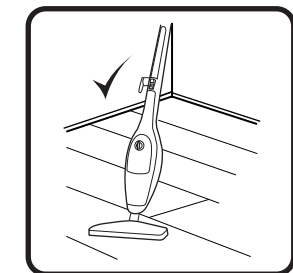
The use of residential steam mops on this product is allowed. Use at lowest power with a suitable soft pad.
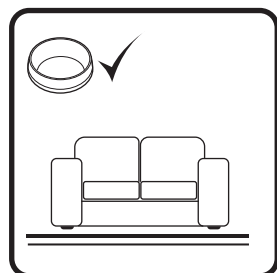
Use floor protection devices such as felt protectors under furniture.
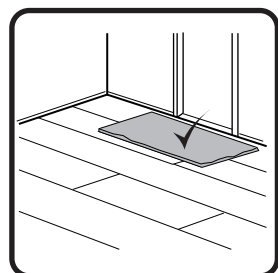
Use an entrance mat to help prevent grit scratching the floor. Do not use mats with latex or rubber backing.

Do not use abrasive cleaners, bleach or wax to maintain the floor

Do not drag or slide heavy objects across the floor.

Kgs
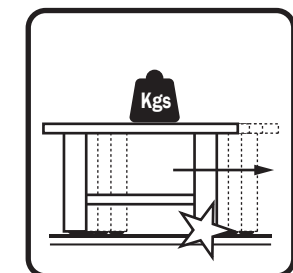
Please check below for more detailed instructions

www.howdens.com

TENACITY® INSTALLATION GUIDE

Thank you for choosing our flooring. When properly installed and cared for, your new flooring will be easy to maintain and will keep its great look for years. Please read all the instructions before you begin the installation. Improper installation will void the warranty.

I.   GENERAL PREPARATIONS

- Prior to installation, inspect material in daylight for visible faults/damage, including defects or discrepancies in color or gloss; check the edges of the flooring for straightness and any damage. No claims on surface defects will be accepted after installation.
- It is preferable to lay tiles perpendicular to the window, following the direction of the main source of light. For the best result, make sure to always work from 3 to 4 cartons at a time, mixing the tiles during the installation.
- Check if subfloor/site conditions comply with the specifications described in these instructions. If you are not satisfied, do not install, and contact your supplier.
- Flooring products can be damaged by rough handling before installation. Exercise care when handling and transporting these products. Store, transport and handle the cartons in a manner to prevent any damage. Store cartons flat, never on edge.
- Flooring products can be heavy and bulky. Always use proper lifting techniques when handling these products. Whenever possible, make use of material-handling equipment such as dollies or material carts. Never lift more than you can safely handle; get assistance.
- Calculate the room surface prior to installation and plan an extra 5-10% of flooring for cutting waste.
- The flooring is intended to be installed in interior locations only. It is not to be installed in areas that are exposed to the elements such as outdoor areas, semi-covered / "alfresco" outdoor areas, porches etc.
- This product does not require acclimation.
- Flooring should only be installed in temperature ranges between 10-32°C, it is necessary to maintain a constant temperature during the installation. Portable heaters are not recommended as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
- Do not install heavy fixed objects such as kitchen cabinets directly over the floor planks. The floating installation requires that the planks can move freely.
- After installation, make sure that the flooring is not exposed to temperatures less than -40°C or greater than 65°C.
- For floor surfaces exceeding 1000 m^2 and/or lengths exceeding 32 m, use threshold leaving of min. 3 mm gaps.

II.   SUBFLOOR INFORMATION

- The flooring can be installed over most existing hard surface floor coverings, provided that the existing floor surface is clean, flat, dry, securely fastened, structurally sound and level to 3 mm within 2 m.
- The product can be installed on substrates with grouts or grooves if these are less than 5 mm in width and 4 mm in depth. Depressions, deep grooves, expansion joints and other subfloor imperfections that do not meet this requirement must be filled with patching & leveling compound prior to installation.
- Substrates must be free from excessive moisture or alkali. Remove dirt, paint, varnish, wax, oils, solvents, any foreign matter and contaminates.
- Do not use products containing petroleum, solvents or citrus oils to prepare substrates as they might impact bonding strength in case of glue down installation.
- Although this floor is waterproof, it is not to be used as a moisture barrier, excessive subfloor moisture can be a breeding ground for mold, mildew and fungus – all of which can contribute to an unhealthy indoor environment.
- The subfloor must be dry. Comply with Mc requirements and tested as per one of below methods:
  o Concrete moisture vapor emissions should not exceed 3.63 kg MVER (moisture vapor emission rate) per 100 m^2 per 24 hours. This can be measured with the calcium chloride test (ASTM F1869).
  o 90 % RH (ASTM F2170) with a PH limit of 9.
  o Max. 2.5 % moisture content (CM method / ASTM F2659).
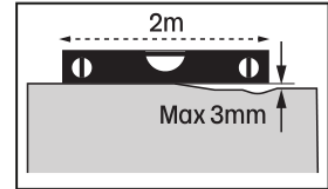
Note: It may not be the floor covering installer's responsibility to conduct these tests. It is, however, the floor covering installer's responsibility to make sure these tests have been conducted, and that the results are acceptable prior to installing the floor covering. When moisture tests are conducted, it indicates the conditions only at the time of the test. The floor should not be installed on subfloor with excessive moisture emission.

WOOD SUBFLOORS

- If this flooring is intended to be installed over an existing wood floor, it is recommended to repair any loose boards or squeaks before you begin the installation.
- Timber subfloors must have no more than 12% Mc (moisture vapor content).
- Nail or screw every 15 cm along joints to avoid squeaking.
- Bitumen moisture barrier paper must be used over timber subfloor.
- Lay the flooring crossways to the existing tiles.
- All other subfloors - Plywood, OSB, particleboard, chipboard, wafer board, etc. must be structurally sound and must be installed following their manufacturer's recommendations.

- Double-layered APA rated plywood subfloors should be a minimum 25 mm total thickness, with at least 45 cm well ventilated air space beneath.

CONCRETE SUBFLOORS

- Existing concrete subfloors must be fully cured, at least 60 days old, smooth, permanently dry, clean, and free of all foreign material such as dust, wax, solvents, paint, grease, oils, and old adhesive residue.
- The subfloor must be dry. Comply with Mc requirements and tested as per one of below methods:
    - Concrete moisture vapor emissions should not exceed 3.63 kg MVER (moisture vapor emission rate) per 100 m² per 24 hours. This can be measured with the calcium chloride test (ASTM F1869).
    - 90 % RH (ASTM F2170) with a PH limit of 9.
- Max. 2.5 % moisture content (CM method / ASTM F2659). A minimum 0.15 mm poly-film as a DPM must be used between the concrete subfloor and the flooring.

DO NOT INSTALL OVER

- Any type of carpet.
- Existing cushion-backed vinyl flooring.
- Any type of floating floor.
- Hardwood flooring / wood subfloors that lay directly on concrete or over dimensional lumber or plywood used over concrete.
- If the floor has a pre-attached underlayment, the use of an additional underlayment could damage the locking mechanism and will void warranty.

IMPORTANT NOTICE

- In-floor Radiant Heat: due to the speed of sudden temperature changes, which has the potential to negatively affect flooring construction, it is not recommended to install over any electrical radiant heating system. Installation over electrical radiant heating systems will not be covered by the manufacturer's warranty. Below instructions are for radiant heating systems using water.
- Your new flooring can be installed over 12 mm embedded water based radiant heat using the floating method.
- Maximum operating temperature should never exceed 27°C. Use of an in-floor temperature sensor, thermostat sensor should be in the screed to avoid overheating.
- Turn the heat off for 24 hours before, during and 24 hours after installation when installing over radiant heated subfloors.
- Operate the system at maximum capacity for 48 hours to force any residual moisture from the cementitious topping of the radiant heat system at least 4 days before installation.

- Make sure that the temperature in the room is maintained consistent between 10-32°C before and during the installation.
- 24 hours after floor fitting, the heating system should be turned on at the ambient temperature and increased gradually 5-degree increments per day as required, but DO NOT exceed a floor surface temperature of 27°C.
- Refer to the radiant heat system's manufacturer recommendations for additional guidance.

Tip: The best idea to maximize the results of your heating system is to have "ON" times with a comfort temperature and "OFF" times with setback temperatures which are normally 4°C lower than your comfort temperature. The setback temperatures are particularly important as these won't let the temperature of your room drop too much, meaning it is much quicker to heat your room back to comfort levels when it's needed.

III.   INSTALLATION

TOOLS AND SUPPLIES REQUIRED: Spacers / Saw / Adhesive Tape / moisture barrier (0.15 mm or thicker Poly-film DPM for mineral subfloors/ bitumen moisture barrier paper over timber subfloor) / Ruler / Pencil / Tape Measure / Pull Bar / Constructions Adhesive / Wedges / Tapping Block / Rubber Mallet.
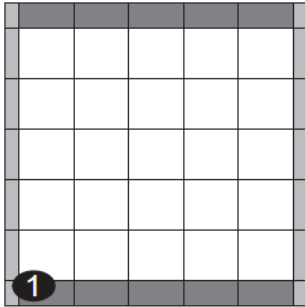
- **For straight cuts:** Electrical hand saw, circular saw, miter saw, or table saw with a carbide-tipped wood combination blade or a continuous or segmented diamond blade
- **For rounded cuts:** Bi-metal or tungsten carbide jigsaw.

Important: When cutting this product please use a dust mask or other safeguards for personal protection, it is advised to cut in a well-ventilated area.
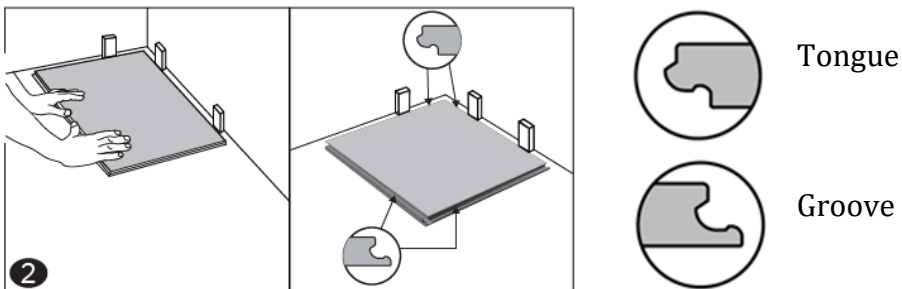
- Remove baseboard, quarter-round moldings, wall base, appliances and furniture from room. For best results, door trim should be under-cut to allow flooring to move freely without being pinched. After preparation work, sweep and vacuum the entire work area to remove all dust and debris.
- Whenever possible, plan the layout so that the joints in the tiles do not fall on top of joints or seams in the existing substrate. The end joints of the tiles should be staggered a minimum of 20 cm apart. Do not install over expansion joints. Avoid installing pieces shorter than 30 cm at beginning or end of rows.
- **Measure the area to be installed:** The board width of the last row shall not be less than 50 mm. If so, adjust the width of the first row to be installed. In narrow hallways, it is recommended to install the floor parallel to the length of the hall.
- **Cutting the tiles:** If cutting with a jigsaw, the floor surface should be turned down. Otherwise always cut with the tile facing up.
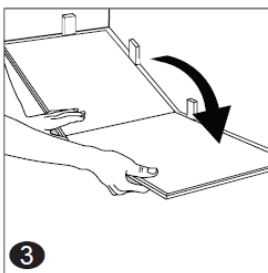
MONOLITHIC / LINEAR PATTERN
Recommended for square tiles

1. **IMPORTANT:** Measure the area to be installed, perimeter rows of opposing walls should be the same width. Adjust the width and the length of the first tile to be installed accordingly.

2. **First row, first tile:** After adjusting the measurements of the first tile as described above, begin laying at the left-hand corner of the longest wall and proceed from the wall with the tongue sides facing walls and the grooves facing outward (groove sides are marked with arrows on the back of each tile), away from the walls. Use spacers between the wall and the tile to create min. 3 mm expansion gap and to keep a straight line parallel to the abutting wall.
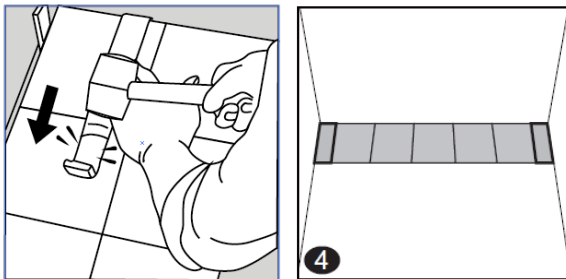

Tongue

Groove

3. **First row, second tile:** Insert the end tongue on the short side of the second tile into the end groove of the first one and rotate downward to assemble. Make sure both tiles are perfectly aligned.
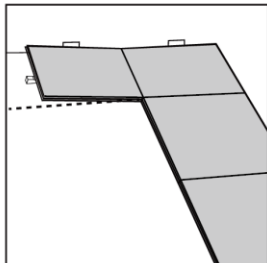
NOTE: If you notice both tiles aren't at the same height or are not well locked together, please follow the disassembling instructions at the bottom of the page, disassemble and check if any debris stuck inside the lock is obstructing.
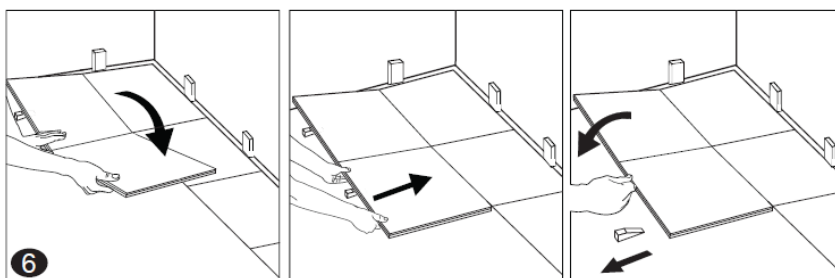
4. **At the end of the first row:** At the end of the first row, leave a gap of min. 3 mm to the wall to avoid any damage while installing your floor and measure the length of the last tile to fit, the last tile should be the same length and width as the first tile. Insert the short side and tap it closed, using a pull bar.

5. **Second row, first tile:** Click the side with the tongue of the tile into the previous row and place an installation wedge under the board (respect the min. 3 mm expansion gap next to the wall).
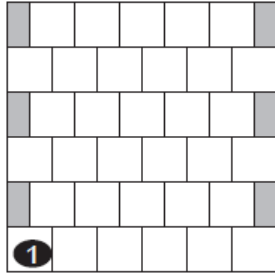

6. **Second row, second tile:** Place the tongue of the second tile at an angle against the grove side of the previously installed tile and fold down. Slide down tongue side of the board into the locking groove of the adjacent tile in the previous row. Use wedges to angle the entire row when engaging with the previous row, when the whole row is complete, remove the wedges and fold the row down use a tapping block or a cutoff to gently tap along the long side until the joint is closed tightly. DO NOT force tiles into position, resistance indicates joints not fully engaged.
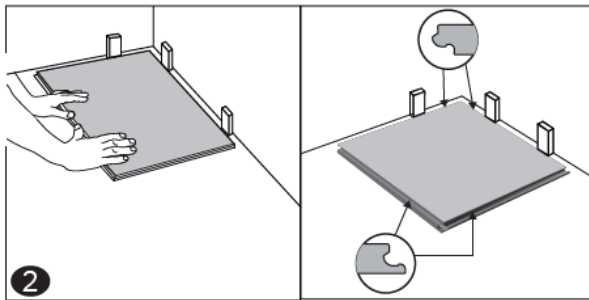
BRICK PATTERN
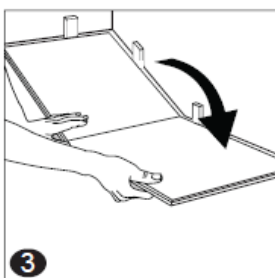**Recommended for rectangular tiles**

1. **IMPORTANT:** Measure the area to be installed, perimeter rows of opposing walls should be the same width. Adjust the width and the length of the first tile to be installed accordingly.

2. **First row, first tile:** After adjusting the measurements of the first tile as described above, begin laying at the left-hand corner of the longest wall and proceed from the wall with the tongue sides facing walls and the grooves facing outward (groove sides are marked with arrows on the back of each tile), away from the walls. Use spacers between the wall and the tile to create min. 3 mm expansion gap and to keep a straight line parallel to the abutting wall.

Tongue

Groove

3. **First row, second tile:** Insert the end tongue on the short side of the second tile into the end groove of the first one and rotate downward to assemble. Make sure both tiles are perfectly aligned.
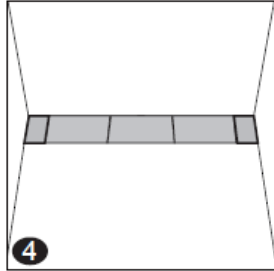   **NOTE:** If you notice both tiles aren't at the same height or are not well locked together, please follow the disassembling instructions at the bottom of the page, disassemble and check if any debris stuck inside the lock is obstructing.
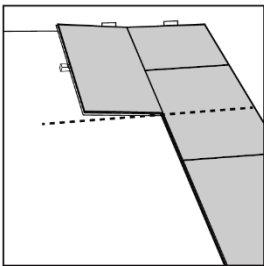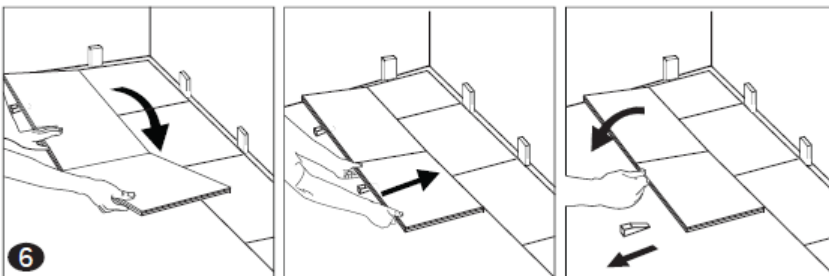
4. **At the end of the first row:** At the end of the first row, leave a gap of min. 3 mm to the wall to avoid any damage while installing your floor and measure the length of the last tile to fit, the last tile should be the same length and width as the first tile. Insert the short side and tap it closed, using a pull bar.

5. **Second row, first tile:** Before starting the second row, mark the center of the second tile in the first row and draw a chalk line / place a string at a 90° angle to the first row following the central line to the opposite wall. Click the side with the tongue of the tile into the previous row and place an installation wedge under the board (respect the min. 3 mm expansion gap next to the wall).


6. **Second row, second tile:** Place the tongue of the second tile at an angle against the grove side of the previously installed tile and fold down. Slide down tongue side of the board into the locking groove of the adjacent tile in the previous row. Use wedges to angle the entire row when engaging with the previous row, when the whole row is complete, remove the wedges and fold the row down use a tapping block or a cutoff to gently tap along the long side until the joint is closed tightly. DO NOT force tiles into position, resistance indicates joints not fully engaged.

7. **Tip:** After finishing the installation of every row. Use a tapping block or cutoff and a rubber mallet to gently tap the tiles into the click of the previous row to make sure they are tightly clicked together and make sure there is no gap between the long sides of the tiles installed. Any gapping can compromise the whole installation.
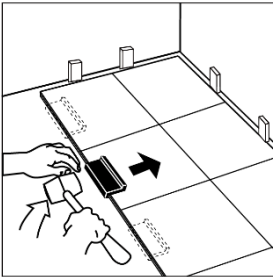
8. **To lay the last row:** Position a loose board exactly on top of the last row laid. Place another board on top, with the tongue side touching the wall. Draw a line along the edge of this tiles, to mark the first board. Cut along the edge of this board to mark the first board. Cut along this line to obtain of the required width. the last row should be at least 50 mm wide. Using a pull bar and hammer, work evenly along the length of the tile and lightly tap the joint closed. The spacers can then be removed.
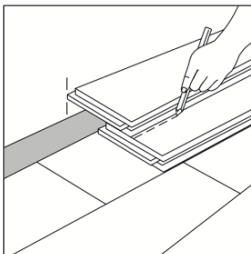
9. **Holes for pipes:** Measure the diameter of the pipe and drill a hole that is 6 mm larger. Saw off a piece as shown in the figure and lay the board in place on the floor. Then lay the sawed-off piece in place.

![Tenacity logo]
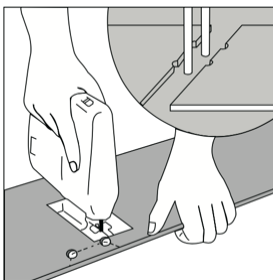
10. **Door molding and skirtings:** Lay a board (with the decorative side down) next to the door molding and saw as shown in the figure. Then slide the tile under the molding.

BATHROOM INSTALLATIONS

Fill the expansion spaces with a 3 mm compressible PE foam backer rod and cover with a flexible 100% silicone sealant to the entire perimeter of the installation. Do not use an acrylic sealant.

• Prior to installing moldings, apply silicone sealant to the portion of the molding or transition that will contact directly with the flooring surface.

• Install moldings and immediately wipe away any excess silicone sealant.

• Apply silicone sealant at connections to doorframes or any other fixed objects.

• Branded and generic silicone tubes are available in any local home center or hardware location.

• If a watertight installation is required, apply a silicone bead across the bottom of the tongue on both long and short side prior to installing the floorboard. Wipe off any excess silicone immediately.

IV.   FINISHING THE INSTALLATION

Replace molding or wall base. Nail the molding to the wall surface, not through the flooring. In areas where the flooring tiles may meet other flooring surfaces, the use of a threshold is required to cover the exposed edge but do not pinch the tiles. Leave a min. 3 mm gap between the tiles and the adjoining surface.

V.   MAINTENANCE

• Sweep or vacuum daily using soft bristle attachments.
• Clean up spills and excessive liquids immediately.
• Damp mop as needed and use cleaners recommended and approved for laminate flooring.

- The use of residential steam mops on this product is allowed. Use at lowest power with a suitable soft pad, and do not hold a steam mop on one spot for an extended period of time (longer than 5 minutes). Refer to the steam mop's manufacturer instructions for proper usage.
- Use proper floor protection devices such as felt protectors under furniture.
- Place a walk-off mat at outside entrances to reduce the amount of dirt brought into your home. Do not use mats with a latex or rubber backing since these backings can cause permanent discoloration. We recommend to use: non-slip mats made from felt (incl. recycled felt), natural bio-based materials (e.g. soy-based polymers), colorfast woven mats.
- Do not use abrasive cleaners, bleach or wax to maintain the floor.
- Do not drag or slide heavy objects across the floor.

VI.   DISASSEMBLY

Separate the whole row by lifting it up delicately at an angle. To separate individual tile end-joints within a row, rotate the tile upward to disassemble.