RICHMOND REFLECTIONS LUXURY VINYL
INSTALLATION INSTRUCTIONS:
SYNERGY PLANKS / SYNERGY TILES
CLICK HYBRID VINYL PLANK / CLICK HYBRID VINYL TILE

Installation Method: Floating Installation - Angle/Angle Click

Please read instructions completely before commencing installation.

SYNERGY may be installed:
- On, above or below grade - for interior applications only.
- Over radiant heated floors where the surface temperature of the subfloor is within specification. See details below.

Installer Responsibility:
- Inspect all flooring products, in proper lighting, to ensure they are the correct colour, pattern, size and texture, as ordered.
- Inspect related installation materials and tools to ensure that they are correct, in proper working order and that the correct quantity of materials is on hand.
- Inspect all materials for damage. Do not install damaged planks or tiles. When adhesives are used, check the expiration date of the adhesive; do not use adhesive if expired.
- Review warranty of products to ensure that the proper flooring and sundries are being used for intended application, i.e. residential or commercial use, including static and dynamic load expectancy.
- Ensure that the jobsite is ready for the installation of floor covering; look for signs of moisture or alkalinity and other conditions that may prevent successful installation and longer term performance.

NOTE: SYNERGY Planks and Tiles replicate the look of natural products, showing natural variation in colour, texture, and gloss. For optimal visual effect, mix planks or tiles by working from several cartons. Blend tiles into the installation, avoiding the placement of similar decors next to one another.

SYNERGY's hefty and rigid core allows planks or tiles to be installed over existing fixed floors such as concrete, vinyl, linoleum, and even ceramic. See detailed instructions below. SYNERGY looks and feels like wood or stone, yet it is water resistant so it can be installed in moisture prone areas that traditionally have been "off limits" for wood and laminate flooring. SYNERGY is ideal for basements, laundry rooms, foyers and bathrooms. No underlayment is necessary. SYNERGY tiles and planks are quiet and warm under foot. SYNERGY is waterproof, and guaranteed not to delaminate.

Storage and Handling:
- Carry and transport SYNERGY luxury vinyl flat at all times. Do not carry cartons without use of a carry board. Store on a flat and level surface. Stack squarely, no more than 15 cartons high. Do not store or turn on edges.
- Store in a dry, temperature controlled environment out of direct sunlight. Maintain temperatures between 65° F (18° C) and 85° F (29° C) at all times. LVT expands and contracts with changes in temperature. Ensure the flooring temperature is not above 85° F (29° C) or below 65° F (18° C) at the time of installation. Ideally SYNERGY should be installed at the average temperature the room will be kept.

IMPORTANT: Remove flooring and sundries from your vehicle immediately after transporting.

Jobsite Conditions:
- Intended for interior applications only. SYNERGY should not be installed in garages, commercial kitchens, food processing areas, heavy industrial areas or where spiked shoes are worn.
- Do not begin installation or floor preparation before other trades have completed their work.
- All areas should be fully enclosed, weather-tight with permanent HVAC in operation.
- UV Glass and/or Window coverings should be used to prevent excessive heat buildup on the floor.
- Substrates must be clean, dry, sound, smooth and flat, +/- 4mm in 3m radius. (3/16" in 10' radius).

Pre-existing conditions:

WARNING

Do not sand, dry sweep, dry scrape, drill, saw, mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphaltic "cutback" adhesive, or other adhesive. Previously installed products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Unless positively certain that the installed flooring is a non-asbestos-containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content. Refer to the Resilient Floor Covering Institute Website at: http://www.rfci.com/images/pdf/rfcirecommended9-04.pdf. As an alternative to the removal of any in-place resilient floor covering materials, refer to RFCI website: Alternative to Removal of Existing Resilient Floor Coverings.

CAUTION

Mold and Mildew: Prior to removing an existing resilient floor, or installing a new floor, refer to the **RFCI Recommended Work Practices for Removal of Resilient Floor Coverings**. If there are visible indications of mold or mildew, the source of the problem should be identified and corrected before proceeding with the flooring work. Before installing the new resilient flooring, make sure the underlayment and/or subfloor is thoroughly dry and that any residual effect of moisture, mold, or structural damage has been corrected.

Subfloors & Underlayment:

The installer should take care to ensure that the subfloor and substrate are properly prepared to receive the new flooring. Adequate and careful attention to this will help prevent issues related to expansion and contraction, separation of joints, discoloration, and damage associated with alkali deposits, mold and mildew. Subfloors must be clean, dry, level and firm.

Definitions:

- *Subfloor* is defined as being a part of the structural support of the building.
- *Cementious underlayment* is poured or troweled over a subfloor, over an existing floor covering or over an underlayment to ensure a smooth surface.
- *Acoustical underlayment* is an added component to the overall flooring system. It is laid on top of the substrate to reduce the transmission rate of impact sound.
- *Wood underlayment* is laid over the top of the subfloor and becomes the substrate on which the vinyl plank or tile is installed, normally to provide a smooth surface.

Wood Subfloors:

- Must be structurally sound with minimal movement and deflection. Minimum allowable thickness is ¾" (19mm).
- Moisture content should not exceed 13%.
- Wood subfloors over a crawlspace must have a minimum of 18" of ventilated air space below. Crawlspace floors must be covered with a suitable vapour barrier.

Wood Underlayment:

- All underlayment panels must be smooth, clean and dry with a minimum thickness of ¼" (6.35mm).
- Moisture content should not exceed 13%.

The table below is intended only as a guide. Performance for the underlayment rests with the underlayment manufacturer and is not warranted by the flooring manufacturer. Follow the underlayment manufacturer's recommendations. The criteria below are intended to prevent upward staining or unhealthy living environments.

Type of Wood Substrate	Notes
Composite Underlayment	Recommended, see your Richmond Reflections representative.
Plywood - APA rated - smooth face, exterior exposure classification	Recommended.
Plywood - Poplar or Birch smooth face with exterior rated glue	No, not healthy for indoor living environments.
Plywood – Treated, Lauan or Hardboard	Recommended.
Particleboard	Recommended.
OSB	Recommended.

Concrete Subfloors:

- Follow all guidelines listed in the most recent ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring", and the American Concrete Institutes ACI 302.1R-08 "Guide for Floor and Slab Construction". It is the installer's responsibility to determine whether the subfloor is suitable for installation of vinyl tiles or planks. If site conditions are not appropriate, do not install the flooring. Inform the general contractor and do not proceed until remedial actions to correct improper subfloor conditions have been completed. For all installations where the subfloor is below or on grade, determine if there is a physical vapor barrier in place that will prevent the continuing release of moisture through the concrete slab.

The following tests must be completed to ensure a proper installation.

- Moisture or Relative Humidity Testing:
  - Residential Space - Requirement Minimum: Moisture testing according to the most recent ASTM F1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride." Results must not exceed (3 lbs/1000 sq. ft / 24 hours).
  - Commercial Space - Requirement Minimum: ASTM F 2170-02 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. Internal Relative Humidity levels must not exceed 80%.
- 72-hour bond test must be performed when using products that are directly adhered to substrate. A 72-hour test determines whether resilient flooring can be adhered to the subfloor with the recommended adhesive. The test determines whether the adhesive is compatible with the subfloor. It can also detect the presence of moisture. Bond testing determines the compatibility of adhesive with sealers, curing agents and other foreign matter and determines the necessity of their removal.
- Alkalinity test to measure PH of concrete according to ASTM F710.

Neither the manufacturer, distributor, or dealer is responsible for any floor installation failures associated with unaddressed site conditions such as, but not limited to: vapour transmission, moisture permeation, improper PH levels, and contaminated concrete or damaged subfloors. SYNERGY is waterproof, but is not a vapour barrier. SYNERGY is not warranted against damage caused by standing water.

The following table is intended only as a general guide. The ultimate responsibility for subfloor acceptability and compatibility resides with the architect, designer, contractor and installer. Note that tests done prior to installation of flooring do not guarantee the long term performance of the substrate. Avoid long term exposure to moisture by installing proper vapor barriers, and channeling water away from building.

Considerations for Concrete	Specification	If out of specification, look for these problems;
Moisture Content	Commercial Applications: RH in situ probes – not to exceed 75% in sleeve Residential Applications: Calcium Chloride 3 lbs/1000 sq. ft / 24 hours and diminishing	Slab too new – hasn't cured, 60 days minimum. Physical Moisture Vapour Retarder is compromised or missing. Refer back to architect and contractor.
Alkalinity	PH between 7-10	Slab too new – hasn't cured. Ongoing water or vapor source can carry alkali into the slab.
Compressive Strength Minimums	3500 psi or more	Refer back to architect and contractor.
Hydrostatic Pressure	None should exist	Physical Moisture Vapor Retarder is compromised or missing. Refer back to architect and contractor.
Bond Test	Securely bonded after 72 hours	Curing agents used, especially those with wax, silicone or soap, etc. will prevent bond. Dirt, debris or other foreign materials present. Moisture levels too high.

Other Recommended Subfloor Standards:

- Existing Resilient Floors:
  - Installation over existing resilient flooring is approved provided existing flooring is adequately adhered to the subfloor and that it is firm and has no deflection. Do not install SYNERGY over cushion flooring. Use embossing leveler or premium cementitious patch to fill depressions, cracks and voids to meet substrate levelness guidelines.
- Acoustical Underlayment:
  - Acoustical underlayments are not required, but may be specified on a project by project basis. Underlayments must be designed specifically for LVT flooring and approved in advance of installation. Do not use acoustical underlayment where heavy static or dynamic loads are present.
- Ceramic or Quarry Tile, Terrazzo and Marble:
  - Approved providing that the tile is well bonded to a structurally sound subfloor. Use patching compound to fill depressions, cracks, voids and grout lines. Fill until all areas are smooth and flat to meet subfloor guidelines.
- Residual Cut Back Adhesive:
  - First review safety regulations for the removal of adhesives – see RFCI website.
  - Where required, use a product rated for the encapsulation of cutback adhesive.
- Radiant Heated Subfloors:
  - Floor surface temperature not to exceed 85° F (29° C).
  - IMPORTANT: Due to the speed of sudden temperature changes, which has potential to negatively affect vinyl flooring construction, it is not recommended to install over electrical radiant heating systems in direct contact with the flooring. This will not be covered by the manufacturer's warranty. Only Hydronic (water-based) radiant heating systems, or electric cable systems embedded in the subfloor are acceptable.
  - Newly installed concrete floors with radiant heat shall have been operational for a period which is sufficient to dry and cure the slab so that accurate relative humidity, moisture, pH and bond tests may be performed.
  - The manufacturer of the radiant heat must warrant that the system is compatible with luxury vinyl tile.
- Static or Dynamic Loads:
  - To help prevent damage from heavy static loads such as pool tables, exercise equipment, etc., or heavy dynamic (rolling) loads, use coasters and rollers/casters that dissipate concentrated weight loads. It is the furniture, appliance or equipment manufacturer's responsibility to warrant the suitability of their device or products against any damage that may occur to the flooring due to the use of their equipment.

PLANNING, LAYOUT, AND INSTALLATION:

Acclimation:

Condition flooring and associated sundries to the proper room temperature between 65° F (18° C) and 85° F (29° C), 48 hours before, during and thereafter. Ideally SYNERGY flooring should be installed at the average temperature that the room will be set year-round.

Installation Materials:

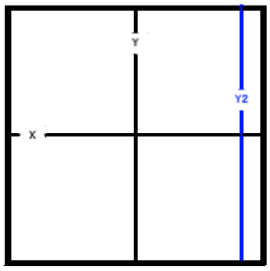
- Tape measure.
- Chalk line.
- SYNERGY coordinated transitions.
- Cross-cut saw with 40 tooth blade.
- 3/8" spacers.
- PVA click joint adhesive (where required).
- Tapping block, hammer and pull bar (where required).

Layout:

Mark your layout directly onto the underlayment. Precise and careful measurements are very important. Plan your layout so that the edges of the flooring tiles or planks do not sit directly over the top of underlayment joints. Install flooring after cabinets are in place. The placement of cabinets or other very heavy objects may interfere with the floating installation system.

- Begin by squaring off and finding the center point in the room.
    - Snap chalk lines on X (horizontal) & Y (vertical) planes.
- Measure out from centre in both directions to determine if planks that are closest to walls will be at least 8" in length and half the width of the plank. This will determine if you need to cut planks or tiles to partial widths at the perimeter of the installation and determine the placement of your starter row. That is, you may need to rip the first row to a more narrow width to ensure that the last row is not too narrow. If the starting wall is not straight, you may need to scribe cut the first row of planks or tiles to match the contour of the wall. Ensure to leave the proper perimeter expansion space.
- Using this information, measure from the original Y plane, a distance from the wall that is equal to the width of one full plank plus the width of the partial plank size you determined in the previous step. Include the proper perimeter expansion space of 3/8". Large rooms may require a larger expansion space. Snap a chalk line (Y2) at this measurement.
- Determine if the beginning plank should be cut in length. Retain the piece if larger than 8" because you can use it to start or end another row of planks.

Layout plan for click planks or tiles.



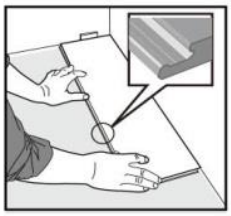
Plank and Tile Installation:

When cutting and fitting SYNERGY planks or tiles into the overall layout of the room, use pieces no smaller than 8" in length and no less than half the width of the plank or tile. For SYNERGY PLANK installations, you can use the cut-off end of one row to begin the next row. If the cut off end is less than 8" in length, discard it and cut a new plank to ensure there is at least 8" between end-joints in adjacent rows. For SYNERGY TILE installations, always begin each row with a full tile or half tile so that joints are consistently staggered in a 'brick-work' pattern. Do not install corner to corner. Always begin each row from the same side of the room.

- SYNERGY Planks or Tiles should be cut using a 40 tooth carbide blade or equivalent.
- Maintain a 3/8" (10mm) expansion zone at all walls and other vertical obstacles. Undercut door jambs where applicable. Installations where rooms are very large may require a larger perimeter expansion zone, or expansion joints through the field. The maximum distance to install without an expansion zone (transition) is 15m (48 feet). It is recommended to include an expansion joint (transition) at all doorways. When installing transitions or mouldings, do not interfere with the free movement of the flooring. Do not pin flooring with transitions or wall base.
- For optimal visual effect, mix planks or tiles by working from several cartons. Blend tiles into the installation, avoiding the placement of similar plank or tile decors next to one another. This important step will assure a random and natural appearance. For decors that have a wide variety of visual character, the installer should do a rough layout to achieve best visual appearance prior to clicking the floor together.
- When clicking tiles or planks together, make certain that no debris is present in the groove, as this will prevent the flooring from locking correctly.
- Install planks or tiles, starting in the left corner and begin by building two starter rows that will serve as the foundation for the entire installation. The starting rows must be perfectly straight. The construction and placement of the two starter rows is imperative: Each joint in these rows should be squarely aligned to all adjacent planks or tiles.
- For difficult spaces, or to cut around vertical obstructions such as pipes or posts, make a cardboard pattern or scribe directly onto a plank. Convert patterns to the planks or tiles and cut to fit. Always maintain a minimum 10mm expansion zone around vertical obstructions.
- If installing on a landing or on a stair tread, flooring must be glued directly to the stair tread with a permanent hard-set LVT adhesive.
- Areas that receive direct sunlight should be glued in place to minimize the risk of expansion due to excessive temperature. Alternately, glue the end-joints in areas that receive direct sunlight. This minimizes the risk of end-gapping associated with expansion and contraction caused by excessive temperatures. Use floating floor tongue and groove PVA adhesive.

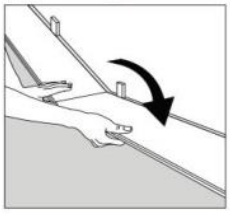
1. Begin laying in the left-hand corner. Place the floorboard 6mm from the left wall. Use spacers between the wall and the floorboard.

1



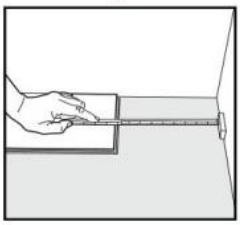
2. Insert the end section of the next floorboard at an angle to the first one, then lay down. Complete the first row in the same manner.

2



3. Measure the length of the last plank section, leaving a 6mm space against the end wall. Hint: Place the final plank in the row face- down and mark where to cut.

3



4. Start the second row with the leftover section of the previous row. The left- over section should measure at least 20cm (8”). Otherwise use a new plank and cut so that end joints are staggered properly with joints in the adjacent row.

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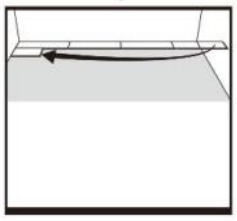
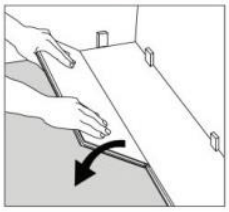


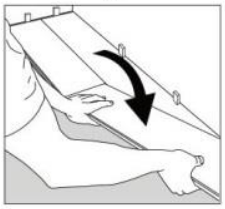
5. Place the floorboard at an angle against the floorboard in the previous row, press forward and fold down at the same time.

5



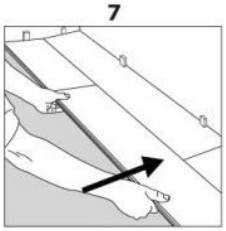
6. Place the short end of the floorboard at an angle against the previous installed floorboard and fold down. Ensure that the board is positioned in the integral locking strip of the floorboard in the previous row.

6



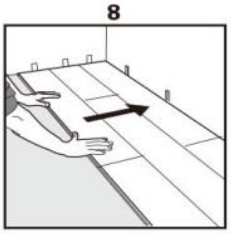
7. Lift both the current as well as the previous plank from this row, push to slide the current plank against the row in front so it aligns with the previous plank. The current and previous plank can now be folded completely down to horizontal position.

7



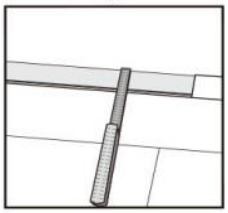
8. After 2-3 rows: adjust the distance to the front wall by placing spacers of 6mm. Keep the spacers in position during the entire time of installation and remove once the installation is completed.

8

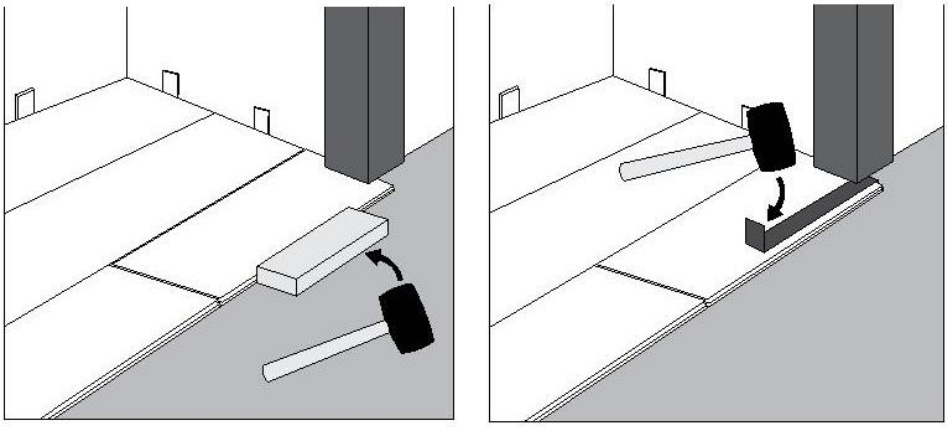


9. If the wall is uneven, the floorboards must be adapted to its contours. Mark the floorboards with the contour of the wall. Do not forget to leave 6mm of gap from the wall. This procedure shall be used also for the first row if necessary.

9



INSTALLING UNDER DOOR JAMBS:



AFTER INSTALLATION:

- In bathrooms or other areas where moisture could reach the subfloor by migrating to the perimeter of the installation: caulk around the perimeter of the installation with silicone (or equivalent) caulking. Be careful to not caulk above the flooring height as it may impede the installation of wall base.
- Install specified transition strips where applicable.
- Never slide appliances or other heavy items across the floor. Use plywood and a hand dolly or an approved air-ride moving device.
- To control grit, use walk-off mats with backings that will not stain the floor.
- Use furniture glides and protectors to prevent scratching and indentations.
- Read and understand all maintenance and warranty information.

CARE & MAINTENANCE / PRODUCT WARRANTY

Follow a regular maintenance routine. For complete CARE & MAINTENANCE instructions and PRODUCT WARRANTY for your Richmond Reflections Luxury Vinyl Floor please visit www.richmondreflections.ca. PLEASE NOTE: FAILURE TO FOLLOW THE MANUFACTURER'S CARE & MAINTENANCE INSTRUCTIONS MAY VOID THE PRODUCT WARRANTY.