

**BIYORK**

HydroGen PRO

INSTALLATION GUIDE

Always refer to recommended instructions prior to installation.  
Any method indifferent from this document may void your warranty.



# BY INNOVATION. BY DESIGN. BIYORK.

Every aspect of our floors are designed in pursuit of performance ready for the world.

We believe that everything we do is a movement towards an alluring combination of Dynamic Performance and Modern Craftsmanship.

We do this by making every inch of our floors push the boundaries of Innovation forward with Beautiful Designs, Ease of Installation and Our Obsession for the Next Best Thing.

Together, we deliver the foundation that reflects your Personality and create the Ultimate Statement in any space.

This is BIYORK.

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- It is recommended that resilient floor covering installation shall not begin until all other trades are completed. All substrates to receive LVT require proper moisture testing.
- Inspect the product to ensure it meets the order specifications. If the wrong product or colour is installed, BIYORK CANADA will not be responsible for correcting the problem.
- The labels on each carton indicate product style, pattern, colour and run number. Be sure the style, pattern and colour match the specifications for each area of your installation. The lighting to be used by the building occupants must be in service for proper inspection of colour and joints.
- Check to confirm that you have the right quantity and correct installation method. Be sure you have more than enough product for future replacements. Open all cartons to inspect for damaged or defective product. If you find any, please call the store you purchased the flooring from.
- Use only Portland based patching and levelling compounds. Do not install resilient floorcovering over gypsum-based patching and/or levelling compounds. Material should always be visually inspected prior to installation.
- When moving any type of furniture or heavy equipment, protect the floor by covering it with plywood, Masonite, or other hard-shell material to prevent scratching or permanent damage.
- Use appropriate protectors under furniture. These should be felt, or other soft material specifically designed to protect the hard surface from scratches or damage to the wear layer.
- **BIYORK CANADA** recommends using floor protection after installation. **DO NOT** use plastic adhesive-based protection systems
- These installation instructions cover most installation procedures. If you run across a situation that is not addressed in this document or requires more detailed assistance, please call the store you purchased the flooring from.
- Should you encounter any conditions or defects during installation that could jeopardize the installation or affect the installation procedure, you should **STOP** the installation immediately and please call the store you purchased the flooring from.
- The Glue Down LVP/LVT products are warranted in accordance with **BIYORK CANADA** Standard LVT Product Warranty. If you do not have a copy of our Standard LVT Product Warranty and wish to obtain one, please call the store you purchased the flooring from.
- **WARNING: IN THE EVENT THAT ANY ASBESTOS-CONTAINING MATERIALS OR OTHER HAZARDOUS MATERIALS ARE ENCOUNTERED DURING INSTALLATION, YOU SHOULD STOP THE INSTALLATION IMMEDIATELY AND OBTAIN ASSISTANCE FROM A QUALIFIED REMEDIATION CONSULTANT OR CONTRACTOR PRIOR TO PROCEEDING.**



# STORAGE & HANDLING

- Flooring material and adhesive must be acclimated to the installation area a minimum of 48 hours prior to installation.
- Store cartons of plank or tile products flat and squarely on top of one another. Preferably, locate material in the “center” of the installation area (i.e., away from vents, direct sunlight, etc.). Storing cartons in direct sunlight may affect proper acclimation by inducing thermal expansion/contraction.
- When palletizing on a jobsite, vinyl flooring (tile or plank) need to be stacked two (2) rows high side by side with no airspace between and then quarter turned for two (2) rows side by side, not to exceed 12 boxes high. A 5/8” or thicker plywood must also be placed on the pallet first. Do not stack pallets two (2) high unless utilizing a 3/4” thick plywood cap between pallets.

# PRE-INSTALLATION

- New concrete needs at least 90 days to dry under ideal conditions. Lightweight concrete and concrete poured above grade in metal pans take a considerably longer time to dry. Installation cannot begin until it is fully dried and in compliance with moisture and alkalinity requirements.
- If there are cracks in the concrete, there may be moisture escaping it, especially in the basement. That will cause the glue to lose the adhesive function.
- It is the installer's responsibility to determine if the subfloor is dry and flat within standards to begin with the installation.
- Areas to receive resilient flooring should be adequately illuminated during all phases of the installation process.
- Controlled environments are critical. Fully functional HVAC systems are the best way to ensure temperature and humidity control.
- DO NOT install resilient flooring products until the work area can be temperature controlled.
- The permanent HVAC system must be operational and functional and set to a minimum of 65°F (18.5°C) or a maximum of 85°F (29°C) for a minimum of 7 days prior to, during, and after installation. Once the installation is complete, the temperature should not exceed 85°F (29°C).

Before installing, all concrete floors, regardless of age, must comply with the moisture and pH requirements stated below, and must otherwise be suitable for LVT installation as set forth herein. The moisture conditions of the concrete should be determined by use of the In Situ probe relative humidity (RH) test method. See chart for specific requirements. BIYORK allows for installation under a variety of conditions depending on the type of slab and the moisture and pH test results at time of installation.

LVT products are best installed on subfloors with moisture levels below 95% relative humidity (RH) per ASTM F2170 and up to 4% with ASTM F2659.

Surface PH Limits - Alkalinity - Must test surface alkalinity (ASTM F710). A 7.0 to 9.0 pH is acceptable.

Moisture Limits - Moisture Testing: Perform either the preferred In-situ Relative Humidity (RH) Test (ASTM F2170) or the acceptable Moisture Vapor Emission Rate (MVER) Test (ASTM F1869). For acceptable moisture limits please refer to the specifications of the adhesive of instruction.

Concrete substrate should have a working vapour barrier. Concrete compromised by ground water intrusion and/or Hydrostatic Pressure are not acceptable substrates. There should be no visible signs of water or water marking.

**NOTE:** Moisture and pH tests reflect only the conditions of the concrete at the time of testing. Stated moisture and pH limitations must be maintained before, during and always following installation to avoid installation and product failures and to preserve warranty coverage. If the concrete moisture and/or pH test, results are outside of the stated allowable limits, STOP and DO NOT PROCEED with the installation. Seek further advice from BIYORK before proceeding.

## Preparing the Subfloor

- All substrates to receive resilient flooring shall be dry, clean, smooth, and structurally sound. They shall be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, curing, sealing, hardening/parting compounds, alkaline salts, excessive carbonation/laitance, mold, mildew, and other foreign materials.

## Preparing the Subfloor (Concrete)

- Substrates shall be smooth, structurally sound, dry, clean, and free of all foreign material such as dust, wax, solvents, paint, grease, oils, old adhesive residue, curing/hardening compounds, sealers, and other foreign material.
- On or below grade slabs must have an effective vapor barrier under the slab.
- Concrete floors shall be flat and smooth within 1/8" in 6 feet or 3/16" in 10 feet. F-number System: Overall values of FF 36/FL 20 may be appropriate for resilient floorcoverings.
- Expansion and isolation joints in concrete are designed to allow for the expansion and contraction of the concrete. Resilient flooring products should never be installed over expansion joints. Expansion joint covers designed for use with resilient floor coverings should be used. Control joints (saw cuts) may be patched and covered with resilient once the concrete is thoroughly cured, dry and acclimated.
- New and existing concrete subfloors should meet the guidelines of the latest edition of ACI 302 and ASTM F710, 'Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring' available from The American Society for Testing and Materials, 171 Nepean Road, Suite 400, Ottawa, ON, K2P 0B4, 613.751.3409 / 100 Harbor Drive, Conshohocken, PA, 19428, 610.832.9585 - <http://www.ASTM.org>.

## Preparing the Subfloor (Wood)

- Wood subfloors must be structurally sound and in compliance with local building codes
- It is recommended that your chosen APA underlayment grade panels be designed for installation under resilient flooring and carries a written warranty covering replacement of the entire flooring system.
- Double-layered APA rated plywood subfloors should be a minimum 1" total thickness with at least 18" well-ventilated airspace beneath. Insulate and protect crawl spaces with a vapor retarder covering the ground.
- Particleboard, chipboard, flakeboard, OSB, hardboard or similar are not recommended subfloor materials and require the additional layer of ¼" APA approved underlayment. DO NOT install over sleeper construction subfloors or wooden subfloors applied directly over concrete.

## Preparing the Subfloor (Wood) continued

- Underlayment panels can only correct minor deflection deficiencies in the subfloor while providing a smooth, sound surface on which to adhere the resilient flooring. Any failures in the performance of the underlayment panel rest solely with the panel manufacturer and not with BIYORK.
- BIYORK modular resilient flooring is not recommended directly over fire-retardant treated plywood or preservative treated plywood.
- The materials used to treat this plywood may cause problems with adhesive bonding. An additional layer of APA rated ¼" thick underlayment should be installed.

## Preparing the Subfloor (Strip-Plank Wood)

- Due to expansion/contraction of individual board during seasonal changes, a ¼" or thicker APA underlayment panel must be installed over these types of subfloors.

## Preparing the Subfloor (Existing Resilient Floorcoverings)

Do not install this flooring over sheet vinyl. The sheet vinyl must be removed with a scraper. Any existing adhesive remaining on subfloor should be removed by grinding/scraping and residue encapsulated. Once removed, follow instructions for subfloor found under the sheet vinyl.

- Must be single layered, non-cushion backed, fully adhered and smooth.
- Show no signs of moisture or alkalinity.
- Waxes, polishes, grease, grime, and oil must be removed.
- Cuts, cracks, gouges, dents, and other irregularities in the existing floor covering must be repaired or replaced.
- Embossing leveler recommended to aid in proper bonding and to prevent telegraphing.

**NOTE:** The responsibility of determining if the existing flooring is suitable to be installed over top of with resilient, rests solely with installer/ flooring contractor on site. If there is any doubt as to its suitability, the existing flooring should be removed, or an acceptable underlayment installed over it. Installations over existing resilient flooring may be more susceptible to indentation.

## Preparing the Subfloor (Tile and Poured Floors)

Existing quarry tile, terrazo, ceramic tile, poured floors (epoxy, polymeric, seamless):

- Must be totally cured and well bonded to the concrete.
- Must be free of any residual solvents and petroleum derivatives.
- Show no signs of moisture or alkalinity.
- Waxes, polishes, grease, grime, and oil must be removed.
- Cuts, cracks, gouges, dents, and other irregularities in the existing floor covering must be repaired or replaced.
- Fill any low spots, holes, chips, and seams that may telegraph through the new flooring.
- Grind any highly polished or irregular/smooth surfaces
- Tile grout joints and textured surfaces must be filled with an embossing leveler or substrate manufacturer approved material.

## Old Adhesive Residue

Adhesive residue must be dealt with in one of two ways:

- It may be mechanically removed by methods such as: sanding, grinding, bead blasting or scarifying. Encapsulate the residual with Titebond 675 or similar product specifically designed for adhesive encapsulation.
- A self-levelling Portland based underlayment may be applied over it. Check with a substrate manufacturer for suitability, application instructions, and warranties.

**NOTE:** Never use solvents or citrus adhesive removers to remove old adhesive residue. Solvent residue left in/on the substrate may affect the new adhesive and floor covering



## Establishing the Starting Point

Install using conventional square and plank or tile installation techniques. Plank or tile must be staggered to a minimum of the plank width from the closest seam on the adjacent row. Carefully determine where to begin square or plank or tile installation based on your centerline of the main room. It is customary to center the rooms and hallways, so borders are not less than half a square or plank or tile.

Perimeter expansion gap and at all vertical obstructions must be  $\frac{1}{4}$ " to  $\frac{1}{2}$ ". Cover the expansion gap with suitable moldings.

1. Measure to determine the center point and mark. Snap a chalk line.



2. Measure 8' (243.8 cm) out from your center point along the chalk line.



3. Measure 6' (182.9 cm) from your center point at a right angle to your chalk line and make a mark.



4. Measure the distance between your marks. It should be exactly 10' (304.8 cm).

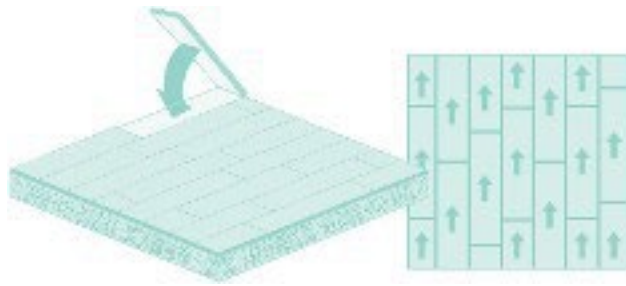


**NOTE:** If the room is too small for the above measurements, reduce it by half. Measure 4' vertically and 3' horizontally. The measurement between your marks should be exactly 5'.

Approved installation methods vary by product and are printed on box labels. An arrow is printed on the back of each tile to indicate direction.

## Ashlar Installation

Offset the front and back joints. A variable drop or half-drop ashlar installation can be used for planks. Half-drop ashlar is recommended for tile



## Herringbone Installation

Lay planks in an L pattern.



**NOTE:** BIYORK assumes no liability for issues related to or resulting from installation out of specification, including, but not limited to, recommended installation method.

## Installation Tips

- For best practice, working with at least 3 boxes at the same time during installation and mixing the planks or tiles up to ensure the best visual quality.
- Make sure cut edges are always against the wall.
- To properly cut the plank or tile, score the top side of the material with a utility knife. Bend the product and finish the cut through the backside. This will ensure the cleanest cut. It may be necessary to use a heat gun to cut around vertical obstructions. Allow the heated plank or tile to return to room temperature before installation.
- Cutting the product into a fine point may lead to delamination. Use an ethyl cyanoacrylate based super glue to help fuse the plank or tile point together. Be sure to clean all glue from the decorative surface immediately. Alcohol based super glues may cause the vinyl to swell.
- Floor outlets are usually wired after the planks or tiles have been installed. Consequently, you should install the flooring directly over floor outlets and mark the location with tape. This way, it will be easy to see which tiles need to be lifted for cut-outs later.
- The layout should allow trench headers to be centered under a row. Secure on either side of trench headers with adhesive. This will prevent the installation from shifting while servicing trench header.

## Adhesive Installation

Use the adhesive that is recommended for your subfloor conditions. See Concrete Moisture and Alkalinity Testing section for details or you can refer to the installation instructions of the glue to be used. Follow the manufacturer's guidelines for use. When installing, allow adhesive to set according to adhesive manufacturer's specifications prior to installation.

Roll the tiles with a three-section coated 100lb. roller. Re-roll the entire glued floor area with the 100lb. roller within the working time of the adhesive. Continue to roll the floor throughout the working day to ensure proper bond.

NOTE: In applications where the surface temperature is over 85 degrees Fahrenheit (29 degrees Celsius), we recommend the use of permanent adhesive.

IMPORTANT: DO NOT use any adhesive that is not intended to be used with resilient flooring. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive. Perform bond testing to determine compatibility of adhesive to substrate. A primer can always be used to promote better adhesion.

## Installation in Bathrooms

1. Make sure the floor is clean, smooth, and dry
2. Use the adhesive that is recommended for your subfloor conditions, following the adhesive manufacturer's guidelines.
3. Once adhesive has flashed off, position the first plank or tile
4. Add a small bead of solvent-based vinyl seam sealer to the base of the plank or tile, ensuring the sealer bead is also in contact with the subfloor
5. Lay in the second plank or tile, pressing it into place.
6. Use a clean wet rag to remove any excess sealer that may have transferred to the surface
7. Continue in this manner, adding seam sealer along the joints (head seams, butt seams, and/or side seams) prior to installing adjacent planks or tiles, and using a clean wet rag to remove any excess sealer from the surface of the flooring.
8. Once bathroom installation is complete, apply a bead of silicone caulking around perimeter seams and plumbing fixtures where the planks or tiles end.

HYDROGEN PRO is approved to be installed over radiant heated subfloors. The heating system either "hydronic or electric" must be tested and fully operational at normal living temperatures. Please allow for cement/mortar cure times to ensure proper installation of heating system if applicable.

HYDROGEN PRO is compatible with a concrete subfloor with an in-floor (embedded) radiant heating system. There must be a minimum of 1.25cm (1/2") separation between vinyl and radiant in-floor heat system.

- Before installing, make sure the heating system has been pressure tested and set to maximum heat (81°F) to force out any residual moisture and to make sure the system is working properly.
- Shut down the heating system at least 48 hours before, during, and after installation.
- Keep room temperature between 68°F and 77°F during the installation.
- After flooring is installed, the temperature of the radiant heat floor may be increased gradually 48 hours after installation, in increments of 5°F, but the surface temperature should never exceed 80°F. Contact the radiant heating manufacturer for further recommendations.
- Radiant Heat Systems must have fail-safe capabilities to ensure surface temperatures **DO NOT EXCEED 26.6 degrees Celsius or 80 degrees Fahrenheit.**



All concrete floors, old and new, should be tested for alkalinity using an approved pH test kit. The approved pH test kit should include pH test strips capable of measuring a range of 0-14 along with deionized or distilled water. The area to be tested must be weather-tight and conditioned, via the building's HVAC system, to a temperature range of 65° - 80°F (18° - 26°C) and a relative humidity range of 40% - 60%. These temperature and humidity ranges must be maintained for at least 48 hours prior to commencing the test, and always during the test. The concrete surface temperature should not be less than 65°F (18°C).

All adhesives, coatings, finishes, dirt, curing compounds, sealants and other substances should be removed from the area to be tested. Non- chemical methods, such as sanding, grinding, or bead blasting should be used to remove these substances to achieve an appropriate state for testing. Any cleaning should take place a minimum of 48 hours before testing. Once the above conditions have been met:

1. Abrade the surface using 100 grit sandpaper to a minimum depth of 1/32" but no more than 1/8".
2. Apply a small amount (approximately 1" in diameter) of de-ionized or distilled water.
3. Allow the de-ionized/distilled water to stand for 60 seconds.
4. Dip the 0-14 pH test strip into the puddle and remove.
5. Allow the test strip to stand for 15 seconds.
6. Compare it to the pH chart in the test kit to determine pH level.
7. At least three pH tests must be performed for the first 1,000 square feet of space. One additional test should be performed for each additional 1,000 square feet thereafter.

NOTE: Results obtained by this method reflect only the conditions of the concrete at the time of testing. Stated pH limitation must be maintained to avoid installation and product failures and to preserve warranty coverage

All floor coverings require some care to look their best; many problems can be prevented before they occur. The type and frequency of traffic on your floor covering will determine the frequency of maintenance needed. The type of flooring and even the colour will also have some bearing on how much care may be necessary. For example, solid colour floorings will show scuffs, scratches, dirt, and general wear to a greater degree than multi-colour chips or patterns. Of course, white, or light colours will show staining to a greater degree than darker colours. For this reason, solid colour and white flooring should receive special attention concerning preventative maintenance and the amount of care provided. Proper selection when choosing the type and style of flooring will help prevent maintenance related problems after installation.

First time for optimal maintenance. Best within 24 hours of installation.

- Regular cleaning is a proven way to help keep your vinyl flooring in top shape.
- Establishing a regular maintenance regime will keep your floors looking beautiful for years to come.
- Sweep/Vacuuming: Sweep at least once a week to remove any dusty loose dirt, small pebbles. Before vacuuming, be sure to check the condition of the beater bars.
- Mop: Never use abrasive cleaners. Only use recommended/approved vinyl floor cleaners along with a microfiber cloth.
- Harsh Chemicals: Do not use vinegar or one step cleaners/polishing agents or oil soaps on Hydrogen Products. These products can leave a film or residue, change the sheen level, and affect the wear layer over time.
- **Never use a steam cleaner on Hydrogen.** The hot steam is doing more harm than good to your vinyl flooring. The excessive heat together with the moisture that seeps in the joining edges can weaken the adhesive bonds and layers of the floors structure. It will also cause irreversible damage like warping edge cupping, bending, and bubbling of the plank or tile.
- Spills: Clean up any spillage instantly by simply wiping it off with a damp cloth. The plank edges does not prevent liquids from seeping under. Wipe away any liquids spilled as soon as possible. Be sure to wipe the area dry once you are done. (The longer the spills are left unattended the more likely they are to permanently stain the flooring). However, some stubborn stains are more difficult to remove. Common stains like juices, red wine, food and grease, marker pens, paint, or lipstick. Apply mineral spirits to a clean cloth to slowly release the stain. Once the stain has been lifted use another damp cloth with water to clean up the stain, this also helps dilute the mineral spirits off the surface. Dry off when complete.

- **Minimize dirt:** Invest in a good quality rug, non-stain or non-rubber backed doormat in front of all entrances to prevent any sand, loose soil, grit, dust, and other dirt being carried into the house. It is best to place a doormat at every entry point.
- **No Shoes:** One of the most effective ways to reduce dirt: simply adopt the 'no shoes' policy. This can further eliminate possible dirt from outdoors and maintain floor hygiene at the same time. Adopting the no shoe policy will cut down the chances of scratches caused by stones and sand that are carried along when you have your shoes on. Stiletto shoes should not be worn on the flooring as they can cause permanent damage.
- **Heavy Protection:** Protect your flooring with quarter-inch plywood, or cardboard when moving furniture or changing out appliances. This will help prevent scratches and scuff marks.
- **Damage from Dryer/Washing Machine on top of a floating floor is not warranted.**
- **Any colour changes from chemical reactions from rubber area rugs or surface contaminants are not warranted.**
- **Pets:** If you are a pet lover, do watch out as animals' nails will also leave scuff marks on your floor. Trimming the nails and claws of your pet regularly will help minimize potential scratches.
- **Future Protection:** Another way to avoid unwanted scratches and scuff marks is to install felt pad protectors underneath tables, chairs, desks, couches, etc. As most furniture items in the home are constantly moving and sliding on the flooring, felt pad protectors will help eliminate and protect the flooring from surface scratching. They should be checked and replaced when required. Check the condition of all casters or rollers on the furniture before placing the furniture on the floor.
- **Sunlight and Excessive Heat:** Prolonged exposure of direct / extreme sunlight may cause your flooring to fade, become dull or discolour. Hydrogen floors must be protected from direct sunlight. We recommend the use of blinds or curtains on all windows that allow direct or extreme sun exposure. This will also help limit uncontrollable heat. Flooring exposed to excessive heat can be affected by thermal expansion, which can cause the floor to bend or undulate.
- **BIYORK CANADA** is not responsible for any damaged or defects caused from the effects of the sun.

To maintain the **BIYORK CANADA** warranty, the homeowner is responsible for the following tasks:

- Please ensure the colour and appearance of materials are accurate prior to installation.
- Please read the installation and warranty document prior to the installation of the Hydrogen flooring.
- Follow our cleaning and maintenance guidelines to properly maintain your investment.
- In the case of any repairs required to the flooring in the future, we recommend homeowners have 1 extra carton of material stored in a cool dry area.
- Final inspection of the installation rests with the homeowner or the installer
- **BIYORK CANADA** is not responsible for any damaged or scratched pieces of flooring that have been installed.
- It is the installers responsibility to set aside any material in question during the installation process.
- For further information, please visit [www.biyorkcanada.com/pages/resource-library](http://www.biyorkcanada.com/pages/resource-library)