



## Engineered Hardwood Flooring Installation Guide

*BEFORE STARTING THE INSTALLATION - Please take the time to read and ensure that you understand the information contained in this document. Please NOTE that IMPROPER INSTALLATION CAN VOID WARRANTIES.*

## Section 1 Installer & Owner Responsibilities

- Carefully inspect all material prior to installation, please note that it is the responsibility of the installer to identify and remove individual pieces with visible defects. Installed flooring with visible defects are not covered under the *Innovata* flooring Warranty.
- Wood is a natural product with an appearance that varies from plank to plank, *Innovata* flooring does not warranty against these natural variations, please note that if you are not satisfied with your flooring **prior to installation**, please contact your dealer. **Do not install flooring deemed to be unacceptable.** Acceptance or rejection of flooring must be made on the full shipment of flooring received and not on a carton-by-carton or plank-by-plank basis.
- *Innovata* Floors are manufactured in accordance with Industry Accepted Standards which permit a defect tolerance not to exceed 5%, note that the defects may be of a manufacturing or natural type.
- Before beginning the installation the Installer must determine that the environment of the jobsite and the condition of the sub-floor involved is acceptable. Please refer to the guidelines provided in this document.
- *Innovata* cannot accept responsibility for any claim resulting from or associated with the installation over an inappropriate or improperly prepared subfloor.
- Please allow for a range of 5 – 10% waste factor, the actual amount will vary from site to site and is dependent on the room layout.
- The use of stains, filler or putty sticks for the correction of defects during installation should be accepted as normal procedure.

## Section 2

### Job Site Conditions & Acclimation

*NOTE: It is the Owner's and/or Installer's responsibility to ensure that the jobsite conditions and jobsite subfloor are environmentally and structurally acceptable prior to the installation of any Hardwood Flooring.*

- In new construction the industry norm is that Hardwood Flooring is one of the last items to be installed. Please ensure the Harwood Flooring is installed after the following "wet trades" which include:
  - Plumbing
  - Dry Wall Installation
  - Painting
  - Other Wall Finishes requiring water borne surface treatments
- Heating and Air Conditioning Systems must be fully functional and capable of maintaining the following ambient conditions for a minimum of 5 days prior to installation:
  - Room Temperature = 15 – 25 °C
  - Relative Humidity = 35 – 65%
- Concrete subfloors & plaster walls must be cured for a minimum of 60 days, it is important to check the relative humidity in the basement of new construction, high relative humidity in the basement (> 65%) may lead to a "wet deck", a condition where the subfloor moisture content rises above the maximum allowed (> 12%). Often this causes cupped floors, *Innovata* will not accept responsible for cupping due to a wet deck.
- Flooring should be delivered to the job site a minimum of 48 hours prior to installation. Please ensure the flooring is stored lying flat, when using bunkers it is imperative that the distance between bunkers is no more than 0.8 meters. The *Innovata* box length is a minimum of 1.9 or 2.1 meters meaning that at least 3 bunkers (one at each end and one in the middle) must be used for any *Innovata* Flooring. *Innovata* will not accept responsibility for flooring deformation due to improper storage.
- Do not store directly over "On-Grade" concrete or next to exterior walls.

## Section 2 *(continued)*

### Job Site Conditions & Acclimation

- All subfloors and subfloor systems must be structurally sound and must be installed following their manufacturer's recommendations. Whenever possible install the planks at 90° or perpendicular to the floor joists for maximum stability. *Innovata* cannot accept responsibility for problems caused by inadequate substructures or improper installation of said substructures.
  - Test wood substructures and wood flooring for moisture content using a Pin Type Moisture Meter, take a minimum of 5 subfloor readings per room (4 corners + the middle), please ensure a minimum of 20 readings per 1000 ft<sup>2</sup> (100 m<sup>2</sup>). Calculate the average and ensure the average sub floor moisture content is 12% or less. Take readings of the flooring and verify the delta (the gradient) between the Engineered Wood Floor and the average moisture content of the subfloor is less than 4 %.
  - Test concrete subfloors using the "Calcium Chloride Moisture Test", do not install flooring if the Moisture Vapor Emission Rate exceeds 3 lbs. per 1000 ft<sup>2</sup>. NOTE this test is not suitable for testing the Moisture Content of Light Weight Concrete, also known as Gypcrete or Gypsum Floor Underlayment. For Gypsum Floor Underlayment it is recommended to measure the MC of subfloor via relative humidity testing using "in situ" probes. Contact *Innovata* for details on this testing method.
  - Crawl spaces must be dry. Use of a 6-mil black polyethylene film is required to cover 100% of the crawl space earth. Crawl space clearance from the ground to the underside of the earth must be 18" (450 mm); in addition the perimeter vent capacity should be equal to 1.5% of the total square footage of the crawl space area. This is designed to provide adequate cross ventilation.
  - Wooden, Concrete and Gypsum Floor Underlayment's must be flat with a maximum deviation of 1/8" over 6' and 1/4" over 10'.
- In the situation where the subfloor is not level take the following steps to bring the subfloor into tolerance:
    - Grind or sand (in the case of a wooden subfloor) the high spots
    - Level the low spots with high strength cement based self-leveling underlayment such as Mapai Novaplan 2; ensure that the leveling material has a minimum compressive strength of 3000 psi.
    - *(continued)* Leveling compounds must be allowed to fully cure, please follow the instructions given by the manufacturer of the leveling compound for guidance on cure rates.
  - Subfloors must be clean and free of dirt, curing compounds, sealers, drywall mud, paint, wax grease or any other materials that may affect the integrity of the flooring material or the adhesives used to install the floor.

*Innovata declines to accept any claims that are deemed to be the result of Improper Jobsite Conditions or Failure to properly acclimate the flooring.*

# Section 3

## Approved Subfloor Types

### Wooden Subfloors Guidelines

- Suitable installation methods include Nail Down, Glue Down and Floating.
- Subfloor panels should conform to:
  - U.S. Voluntary Product Standard PS 1-95 Construction and Industrial Plywood and/or
  - US Voluntary Product Standard PS 2-04 and/or
  - Canadian Performance Standard CAN/CSA 0325.0-92 – Construction Sheathing
  - Other CSA standards also apply
- Solid board subflooring should be nominal 1" x 6" ( $\frac{3}{4}$ " x  $5\frac{1}{2}$ " ), Group 1 Dense Softwoods, #2 Common kiln dried to a maximum of 12% MC, Mechanically fastened or glue down installation is not recommended over Solid Board Subflooring.

*NOTE: Both CD Exposure 1 plywood & OSB Exposure 1 subfloor panels are appropriate subfloor materials, the proper thickness of the materials are determined by the factors listed below:*

- **On Truss/Joist spacing of 16" (406 mm) on center or less**, the industry standard for single panel subflooring is nominal  $\frac{3}{8}$ " (15.1 mm) CD Exposure 1 Plywood or  $\frac{3}{4}$ " (19 mm) OSB Exposure 1 subfloor panels.
- **On Truss/Joist spacing of more than 16" up to 19.2" (488mm) on center**, the industry standard for single panel subflooring is nominal  $\frac{3}{4}$ " T&G CD Exposure 1 Plywood glued & mechanically fastened or nominal  $\frac{3}{4}$ " OSB Exposure 1 subfloor panels glued & mechanically fastened.
- **Truss/Joist systems of more than 19.2" on center up to a maximum of 24" (610 mm)** the industry standard for single panel subflooring is nominal  $\frac{7}{8}$ " T&G CD Exposure 1 Plywood subfloor panels glued & mechanically fastened or nominal 1" OSB Exposure 1 subfloor panels glued & mechanically fastened.

*NOTE: All panels are 4' x 8' sheets.*

- For existing wood floors, install new flooring at right angles to the existing flooring.
- Do not glue, staple or nail down hardwood flooring over particle board, floating applications are acceptable.

- Do not install over existing glue down hardwood floors.

### Concrete Subfloor Guidelines

- Suitable installation methods include Glue Down and Floating.
- Concrete slabs should be of high compressive strength, minimum 3000 psi, and engineered to prevent ground water permeation. *Innovata* Engineered Hardwood Flooring can be installed on, above or below grade. Additionally, the product can be installed over suspended concrete floors with a minimum thickness of 50 mm; the construction must be structurally sound.
- Gypsum Floor Underlayment/subfloors (Light Weight Concrete) are suitable for floating installations only, do not attempt to glue down *Innovata* Engineered Wood Flooring over Light Weight Concrete.

*NOTE: if you can deeply scratch the surface of the concrete subfloor with a nail, it should be deemed a "Light Weight Concrete" sub-floor.*

## Other Subfloor Guidelines

- Ceramic Tile or Terrazzo:
  - Suitable installation methods include Glue Down or Floating.
  - All wax & sealers must be removed with an appropriate stripper (usually a solvent), Ceramic Tile & Terrazzo should be abraded to allow for proper adhesion. Please ensure you consult with your adhesive supplier to ensure that the proper adhesive is being used to bond the Engineered Wood Flooring to the Ceramic or Terrazzo surface.
  - Check for loose tiles by tapping, remove any loose tiles and fill the hole with high strength cement based self-leveling underlayment.
  - Fill grout lines with high strength cement based self-leveling underlayment.
  - Do not attempt to employ any type of mechanical fastener to install *Innovata* Engineered Wood Flooring over Ceramic Tile or Terrazzo.
- Existing Hardwood Flooring
  - Suitable installation methods include Glue Down, Nail Down or Floating.
  - When installing any new hardwood flooring over directly over old wood or strip floors, sand any high spots. Re-nail the old floor to reduce any squeaks or loose boards.
  - For Floating or Glue Down installations the orientation of the floor can be the same as the original wood floor. When nailing down the new floor the orientation of the planks should be at 90° to the old floor. The moisture content of the old floor should not exceed 12%.
  - When installing new hardwood over old hardwood, *Innovata* recommends the use of a water vapor retarder such as Aquabar “B”, which has a “vapor permeance” rate of 1 or less.
- Resilient Tile, Resilient Sheet Vinyl
  - Suitable installation methods include Glue Down, Nail Down (Over Wooden Subfloors) or Floating.
  - Ensure that the Resilient Tile or Sheet Vinyl is well bonded to the subfloor, remove any loose tiles or cut out any sections where the adhesion of the Sheet Vinyl to the subfloor is compromised.
- Resilient Tile, Resilient Sheet Vinyl (*continued*)
  - ...that In the Case of Glue Down Installations of hardwood over Resilient Tiles or Resilient Sheet Vinyl; ***Innovata cannot accept responsibility for delamination of the Resilient Tile or Resilient Sheet Vinyl from the subfloor. When in doubt concerning the integrity or nature of the existing resilient floor, use a floating installation.***
  - Do not install over more than 1 layer or over any resilient substrate that exceeds 1/8” thickness.
  - Clean the flooring to ensure there is no contaminant on the surface that will interfere with the bonding. Please consult with your adhesive supplier to ensure that the proper adhesive is being used to bond to the resilient surface in question.
- Acoustic Cork Underlayment
  - Suitable installation methods include Glue Down and Floating.
  - Ensure that the Cork Underlayment has been installed according to the manufacturer’s instructions.
  - For “Double Stick” applications the Cork Underlay must be installed with “full spread” adhesive.
  - The Cork Underlayment should have density range of 11.4 lbs./ft<sup>3</sup> to 13 lbs./ft<sup>3</sup>

## Installing a Subfloor over Concrete

- Floating Subfloor – Instructions:
  - For “on” grade or “below” grade applications it is recommended to install a vapor retarding membrane or concrete sealant before installing the subfloor.
  - *Innovata* recommends the use of 2 layers of minimum  $\frac{3}{8}$ " (10 mm) CD Exposure 1 Plywood.
  - Place the first plywood layer edges parallel to the wall, do not fasten to concrete subfloor; allow a  $\frac{3}{4}$ " (19 mm) gap between the edge of the plywood and the wall.
  - Allow for a  $\frac{1}{8}$ " gap between panels.
  - Lay the second layer of plywood perpendicular to the first layer, as was the case with the first layer allow  $\frac{1}{8}$ " (4mm) gaps between panels and ensure a minimum of  $\frac{3}{4}$ " gaps vs. all vertical obstructions.
  - Staple or Staple & Glue (using a Urethane Construction Adhesive  $\frac{3}{8}$ " bead application in a 12" x 12" grid pattern) the first layer to the second layer.
- Glue Down Subfloor – Instructions:
  - NOTE the manufacturer’s instructions regarding the adhesive spread rate and notch size of the trowel; follow these instructions closely.
  - For “on” or “below” grade installations, it is recommended to use a vapor retarding membrane or concrete sealant before installing the subfloor.
  - *Innovata* recommends the use of nominal  $\frac{3}{4}$ " (19 mm) CD Exposure 1 plywood subfloor panels.
  - Rip the 4' x 8" plywood panels in half to make the installation easier, for optimized adhesive performance and to allow the board to follow the contours of the concrete it is advisable to score the back of the panels  $\frac{1}{2}$  the thickness in 12" x 12 (300 mm x 300 mm) grid pattern.
  - Apply the adhesive recommended by the Plywood Manufacturer for this application (usually a Urethane Mastic)
  - Lay the sections in a staggered joint pattern, allow  $\frac{1}{8}$ " gaps between sheets and  $\frac{3}{4}$ " gap at vertical surfaces.
- Mechanically Fastened Subfloor – Instructions:
  - For “on” or “below” grade installations, it is recommended to use a vapor retarding membrane or concrete sealant before installing the subfloor.
  - *Innovata* recommends the use of  $\frac{3}{4}$ " (19 mm) CD Exposure 1 plywood subfloor panels.
  - Stagger the joints allowing approximately  $\frac{1}{8}$ " expansion space around the perimeter of the panels, this will prevent the problem of “edge peaking” which occurs if the panel swells. Allow a minimum  $\frac{3}{4}$ " expansion gap at the vertical surfaces.
  - Fasten 2" (50 mm) from the edge with a spacing of 6" - 8" along the perimeter of the sheet, and 1 fastener every 12" (25 cm) in the interior section of the panel, for 6" (150 mm) centers on the perimeter, you will need approximately 67 fasteners per 4' x 8' sheet, NOTE it best practice to start in the center to reduce any bowing problems.

## Section 4

# Pre-Installation Preparation

### Inspect the Flooring

- Inspect the material for color grade, milling and finishing; cull any pieces that may not be acceptable once installed.

Please *NOTE*: *Innovata* cannot accept responsibility for any costs incurred when planks with visible defects are permanently installed.

### Pre-Existing Wood Subfloor Preparation

- When installing new hardwood over a pre-existing wooden subfloor it is important to identify the type of subfloor:
  - Do not install over Particle Board.
  - For Plywood Subfloors, identify the thickness of the sheets used; refer to the guide in Section 3 to determine if the sheet thickness and truss/joist center to center spreads are within acceptable guidelines. Inspect the existing Plywood sheets, verify their integrity and replace any that appear to have suffered water damage. Sand down any high spots and tighten the plywood connection to the Joists using 2" (50 mm) #8 screws. The moisture content of the plywood should not exceed 12%.
  - For OSB Subfloors, identify the thickness of the sheets used: refer to the guide in Section 3 to determine if the sheet thickness and truss/joist center to center spreads are within acceptable guidelines. Inspect the existing OSB sheets, verify their integrity and replace any that appear to have suffered water damage. Sand down any high spots and tighten the OSB connection to the joists using 2" (50 mm) #8 screws. The moisture content of the OSB should not exceed 12%.
  - For Solid Board Subfloors, re-nail the subfloor to reduce any squeaks or loose boards, sand any high spots. *Innovata* recommends a floating installation when installing our typical wide plank flooring over pre-existing Solid Board Subfloors.

### Undercut the Door Casing

- Undercut all door casings 1/16" higher than the thickness of the flooring being installed. Using a piece of flooring, determine the height, then cut the Jamb with a handsaw or a powered Jamb Saw.

### Blending the Cartons

- To achieve uniform appearance across the entire surface of the floor *Innovata* recommends that you open several cartons at a time and lay out the flooring. Ensure you mix the planks from the various opened cartons. This process will optimize the aesthetic appearance of the flooring. It is important to have proper lighting conditions to verify that the color is consistent and any visual defect can be seen.

### Match Transition Moldings

- For the best appearance compare the transitions moldings and flooring before installation, identify the moldings that best match the flooring for color and grain, set them aside then install them as needed.

### Racking the Floor

- This process is essential to achieve a "random" appearance. Start by cutting several planks to create "Random Length Starters", ensure that the plank lengths differ by at least 18" (450 mm). With wide plank flooring it is important that the distance between end joints is at least equivalent to twice the width of the flooring. Install the Random Length Starters using different lengths; avoid a patterned appearance.

### Remove Existing Moldings

- Remove any existing wall base, shoe molding, quarter round or doorway thresholds.

### Install or Apply a Vapor Retarder

- Wide plank flooring (5" or 125 mm +) is sensitive to subfloor moisture transmission, therefore for nail down or floating installations *Innovata* requires the use of a "Semi-Permeable" vapor retarder with a maximum permeance of 1.0. Products such as Aquabar "B" are suitable for this application.
- For glue down installations in on-grade or below grade applications *Innovata* requires the use of a Urethane Mastic with Moisture Control Properties such as Titebond 771 Step or a Moisture Vapor Barrier Coating such as Bostick's D-261.
- Use of these products to control vapor transmission is essential to ensure your flooring will remain flat.
- For floating floors *Innovata* recommends the use of a 3 in one system with a dense foam, select the system based on your sound abatement requirements, ensure the system includes a vapor retarder such as a 6 mil Polyethylene Sheet.

## Expansion Space

- Expansion space around the perimeter is essential and should be equal to the thickness of the flooring. For wide plank (5" or 125 mm +) floating installations, please allow a minimum of ¾" (19 mm) around the entire perimeter. It may be necessary to undercut the wall in order to provide enough space for expansion.

## Section 5 Installation Guidelines

### Nail Down or Staple Down Installation Guidelines

*NOTE: Innovata Products are not warrantied against squeaking, popping or cackling when using nail/staple down installations.*

- NOTE that minor noises within the flooring are inherent to all staple/nail down installations and can change as environmental changes occur. This is not a manufacturing defect and therefore it is not covered under our warranties (see warranty brochure for complete warranty coverage). It is possible to reduce the potential for squeaking, popping and crackling by ensuring that the subfloor is structurally sound, this includes ensuring the deck is tightly fastened to the joists and ensuring the joists are placed securely.
- It is also important to ensure that the Flooring Installer has set up the stapler/nailer to properly fasten the flooring. Signs of improper set up include:
  - Damaged boards
  - Finish Chipping
  - Dimpling (small depression where the nail was set)
  - Squeaking, Popping & Crackling
- The nailing schedule and position of the engaged nail is of critical importance, *Innovata* recommends the following parameters:
  - Nails should be set so as to seat in the bottom of the nailing groove on the tongue side. Adjust the air pressure on the nailer to achieve this goal, increasing the pressure if the nail is not fully seated and reducing the pressure if the nail is driven too deep. Normally an air pressure of 70 – 80 psi is required to properly set the nails, please verify the position of the nail in the nailing groove before proceeding to install the flooring.

- *Innovata* recommends the use of 1.5" cleats for our 15 mm thick products and a 2" cleat for our 19 mm thick products.
- Nails/cleats should be set between 1" (25 mm) and 2" (50 mm) from the ends.
- Nails/cleats should be set every 4" (100 mm) – 6" (150 mm) between the ends.

- Once the installer has ensured that he is using the proper fasteners and he/she has determined that the nailer is properly set up, it is possible to proceed with installation.
- Ensure that the Semi Permeable Vapor Retarder is installed (See Section 4 for details on the acceptable Vapor Retarders) and that the floor is clean and free of any construction debris.
- Select a starter wall, the longest outside wall is best as it is most likely to be straight and square with the room. Measure out from this wall at each end, using the overall width of the plank including the tongue plus the required expansion gap. Install the flooring parallel to the longest wall.
- Snap a chalk line from these points, parallel to the selected wall.
- Install the first row of starter planks along the chalk line and secure into position with the tongue facing away from the starter wall.
- Secure by drilling "pilot holes" through the face of every plank at 6" (150 mm) intervals at a distance of 1" (25 mm) away from the wall side edge, use 1.5" (40 mm) finishing nails to fasten the boards in place. Countersink the nails and use a color matched wood filler to hide the nail heads. Remove excess wood filler.
- Blind Nail at an angle of 45 – 50 degrees, 1" – 2" from the end and every 4" – 6" between the ends.
  - NOTE – pre-drilling the holes for the Blind Nails will make this process easier.
  - NOTE – the use of construction adhesive in conjunction with the mechanical fasteners is recommended for the starter rows. Wide planks (5" or 125mm +) should have a full spread adhesive application. See Guidelines for Glue Down Applications for details.
  - NOTE – proper alignment is critical, misaligned starter rows can cause side and end gaps to appear in the proceeding rows of flooring.

- NOTE – To protect the face of the boards, always saw with the teeth cutting into the face of the board. This is important for both cross cutting & ripping.
- You will need to install enough starter rows to provide the space required to operate the flooring nailer unimpeded by the starter wall.
- Continue to install the flooring making sure the required nailing schedule is followed, additionally follow the recommendations for “Racking “ the floor to ensure the end joints have sufficient distances and that there are no discernable repeating patterns.
- If needed use a tapping block to ensure the planks are properly engaged, there should be no gaps between the long sides of the planks nor any gaps at the ends of the planks.

*NOTE – Never use a rubber mallet or a hammer directly on the flooring to engage the planks, this may damage the finish and or the flooring.*

- As you approach the end wall it may be necessary to rip the width of the last row, ensure that you measure to allow for the prescribed expansion gap.
- The last few rows will need to be fastened the same way as the starter rows using blind nails/face nails (countersunk and hidden with wood putty) and adhesive.
- Ensure any adhesive on the surface of the planks is removed with an appropriate cleaner. See Adhesive manufacturer’s instructions for details.

### **Glue Down Installation Guidelines**

*NOTE: Innovata recommends the use of a V-Notch Trowel 1/2” x 15/32” for the installation of Innovata Engineered Wood Floors with a full spread glue down application.*

*NOTE: Innovata requires the use of a water free Urethane Mastic with moisture control properties or a conventional water free Urethane Mastic plus a concrete sealer for applications over on-grade or below grade concrete. For above grade installations a conventional water free Urethane Mastic is appropriate.*

- Verify that the floor is level, see Section 2 – Job Site Conditions and Acclimation for details.
- Select a starter wall; the longest outside wall is best as it is most likely to be straight and square with the room. Measure out from this wall at each end, using the overall width of the plank including the tongue

plus the required expansion gap. Install the flooring parallel to the longest wall.

- Snap a chalk line from these points, parallel to the selected wall.
- Install the first row of starter planks along the chalk line and secure into position with the tongue facing away from the starter wall.
  - NOTE - when installing flooring milled with a Valinge 5G click system, you should reverse the plank and install with the tongue facing the wall, in this case the installation will start on the left hand side of the room (as you face the starter wall) and go from left to right. Innovata Canada recommends the use of flooring milled with the Valinge 5G system for glue down applications; this ensures excellent engagement of sides and ends with no gaps possible.
  - NOTE - the proper alignment is critical, misaligned starter rows can cause side & end gaps to appear with flooring milled with a T&G.
  - NOTE – to protect the face of the boards, always saw with the teeth cutting into the face of the board. This is important for both cross cutting and ripping.
- Using 5/8” spacers between the wall and the first row, proceed to spread the adhesive and install the first row.

*NOTE – Using the proper notched trowel held at a 45° degree angle, apply pressure to allow the trowel to leave ridges of adhesive on the substrate. Urethane mastics are sensitive to ambient humidity, as the humidity rises the open time is reduced.*

- Continue installing floor from left to right (as you face the wall), spread only enough adhesive to install what can be set within the open time prescribed by the Adhesive manufacturer.
  - NOTE – many Urethane mastics “tack up” with time as the co-solvents flash off, this provides good grip and holding power, please refer to the Adhesive manufacturer’s Technical Data Sheet to learn about the working parameters of the adhesive. Do not exceed the open time.
  - NOTE – If the adhesive skins over, do not install the flooring, remove the adhesive and reapply. If the adhesive loses its tack and fails to fully wet out the flooring when you lay it then the adhesive has skinned over and the open time has been exceeded.



- Measure the size you need to complete the first row and cut to length. The balance of the piece you cut may be used to start the next row; the length of the next starter should be a minimum of 18" (450 mm) or 3 times the width of the flooring being installed.
  - *NOTE – please refer to the instructions on “Racking the Floor” in Section 4 for guidance on end joint spacing.*
- Remove the adhesive from the surface of the floor as you work, this will greatly reduce the amount of time needed to clean the floor, cured Urethane Mastics are difficult to remove and the solvents required to soften them may also soften and thus damage the factory finish. *Innovata* will not warranty floor finishes damaged by Urethane adhesive removal.
- Most often the entire last row will need to be ripped so that it is narrow enough to fit in the remaining space, when this happens please ensure you rip the boards with the necessary expansion gap included.
- *Innovata* recommends rolling the floor with a 100 – 150 lb. roller, this process helps ensure full wet out of both surfaces; the bottom of the Engineered Flooring and the subfloor.
- Consult the Adhesive manufactures guidelines regarding cure rates before walking on the installed flooring.
- Use ¼" spacers to ensure expansion space is maintained between the wall and the flooring around the entire perimeter of the floor. You may need to undercut the dry wall to create the full ¼" expansion gap. This can be done with Jamb Saw.
- Install the starter row of planks from left to right as you face the starter wall, the tongue should be facing the spacer in front of the wall.
  - *NOTE - the proper alignment is critical, misaligned starter rows created a “skewed” installation, the 5G-W technology ensures tight joints when fully engaged, thus it is not possible to correct a misalignment by leaving gaps at the ends or sides.*
  - *NOTE - the 5G + Wedge end lock system is activated when the next row is installed, once activated the vertical T&G is locked with a mechanical fastener (the “Wedge Lock”) that prevents the end from lifting. To remove an installed plank with an activated Wedge Lock, you must unclick the entire row and side slide the two pieces to separate them. To reinstall simply reposition the wedge lock system. NOTE you can verify the correct position of the Wedge Lock by observing the end hinge of an uninstalled plank.*
- Measure the size you need to complete the first row and cut to length. The balance of the piece you cut may be used to start the next row; the length of the next starter should be a minimum of 18" (450 mm) or 3 times the width of the flooring being installed.

## Floating Installation Guidelines

*NOTE: Innovata supplies Engineered Wood Flooring milled with the patented Valinge 5GW Locking System, which locks both the long sides, and the short ends. No adhesive is required.*

- Verify that the floor is level, see Section 2 – Job Site Conditions and Acclimation for details.
- Select a starter wall; the longest outside wall is best as it is most likely to be straight and square with the room. Plan to install the flooring parallel to the longest wall in the room.
- Measure the width of the room, assuming the first row starts ¾" out from the wall, determine the width of the last plank, allowing for a ¼" gap. If it is less than ½ the width of the flooring being installed you should plan on ripping both the starter and finish rows to improve the aesthetics of the Wide Plank flooring.
  - *NOTE – please refer to the instructions on “Racking the Floor” in Section 4 for guidance on end joint spacing.*
  - *NOTE – when engaging the Valinge Locking side locking system do not use a hammer or rubber mallet, this may damage the planks, if the plank does not engage with hand pressure, check to see if there is some debris in the cavity of lower lip.*
  - *NOTE – to protect the face of the boards, always saw with the teeth cutting into the face of the board. This is important for both cross cutting and ripping.*
- At the threshold of interior doors or when joining one room to another; *Innovata* recommends the use of a “T mold” transition molding with a floating installation.
  - *NOTE - Floating “Flow through Installations” have been known to cause problems of floor buckling as it is difficult to ensure the floating floor does not bind against a door jam or wall.*

- *NOTE – Do not install cabinets or walls on top of the flooring when the floating installation method is used.*

## Section 6

# Installation Of Hardwood Flooring Over Radiant Heating

*NOTE – Innovata recommends the use of our Engineered Floating wood floors for use over Radiant Heated Subfloors, fastening the flooring with nails or staples on sleepers is not recommended or warranted. Gluing the floor down is not recommended or warranted.*

- Radiant Heating Systems used must be designed and controlled specifically for Hardwood Flooring by the system manufacturer and include Outside Temperature Probes and Surface Temperature Controls.
- **The maximum surface temperature allowed is 85 F.**
- Newly installed water type radiant heated flooring systems should be in operational mode with the temperature set between 16° - 22° C (60° - 72° F), for a minimum of 3 weeks to ensure that all subfloor moisture has properly dried.
- Always check wooden subfloors to ensure that the moisture content is less than 12% using an accurate pin type moisture meter.
- Concrete subfloors must register “dry” using a reliable concrete moisture meter; the PH of the concrete subfloor must be in the range of 6 – 9.
- Regulate the job site to insure that the relative humidity is between 35% – 65% and that the ambient temperature is between 16° - 22° C (60° - 72° F).
- Deliver and acclimate the engineered flooring for a minimum of 48 hours prior to installation.
- After completing the installation, do not change the radiant heat settings for a minimum of 48 hours.
- Throughout the life of the installation, the system should be set up to raise the temperature by increments of no more than 4° C (6° F) in a single day.
- *Innovata* requires the use of heat tapes applied to the bottom of the flooring for all installations over radiant heat.