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## Warranty

The warranty applies solely to original purchaser purchasing through an authorized dealer where product have been paid for in full.

Oakel City warrants its pre-finished engineered hardwood flooring to be free from defects in the structure, machining, and final dimension under normal residential usage for a period of 25 years from the date of purchase.

We also warrant that its UV Cured aluminum oxide finish with residential application, used under normal residential conditions, with recommended maintenance procedures will not wear through or separate from the hardwood flooring.

Oakel City is not responsible for any issues resulting from excessive moisture such as but not limited to cupping, warping, shrinkage, twisting or buckling, splits and checks, any issues resulting from sub-floor inadequacies or failure to follow maintenance procedures.

The warranty does not cover installation of defective boards, installation denotes acceptance. It is the installer's responsibility to examine the products prior to installation and cull out unacceptable boards. Any issue resulting from fire, intentional abuse, and damage caused by flooding, plumbing and appliance leak, water spillage, water leakage through sliding glass door, vacuum cleaner beater bar, improper caster wheels, and cutting from sharp objects, and any exterior application, is not covered by this warranty. Damage caused by pets, spiked heels, negligence, insects, wet moping, water, or use of non-recommended maintenance procedures are also not covered by this warranty.

Variation of color, shade, or texture of the flooring delivered from those shown on samples or photographs are not considered a defect. Discoloring from heat or sunlight, and gloss and color reduction is not also considered a defect. Those are not covered by this warranty. Slight color and tone variations may occur. This is to be expected and accepted when matching old with new flooring.

The warranty does NOT cover any loss of time, inconvenience, incidental expenses, such as, but not limited to cost and labor incurred in the removal or re-installation of the defected or affected materials, and any other incidental or consequential damages or costs.



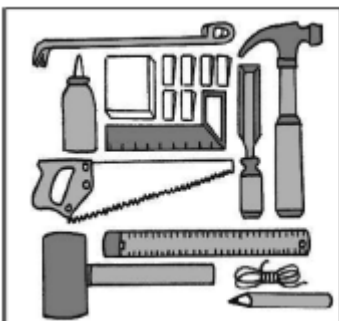
## Pre-installation

It is a high recommendation for all installers to read through installation instructions thoroughly before commencing the job.

- All Oakel City Floor products are made from natural wood; each board will carry a unique characteristic of wood grain appearance, knots, and variation in color tone. All showroom sample is intended as a color reference only. It is too small to accurately reproduce all-natural wood characteristics occurring on a large floor area.
- **Do not proceed to installation** if the product is not satisfying with colors or quality. Once a product has been installed, it is considered products are deemed to be accepted by customers. It is highly recommended that homeowners or project managers to open several boxes to see if there' s any problem.
- All Oakel City Floor products are manufactured to meet practical industry standards with a maximum of 5% of defects as milling tolerance.
- It is the responsibility of the installer or customer to ensure all job site condition requirements are reached prior to commencing installation.

Manufacture takes no responsibility for defects causing by improper job site preparation and installation procedures. Oakel City is not responsible for any costs associated with the installation of non-conforming products.

## 1. INSTALLATION TOOLS



- |              |                           |                      |
|--------------|---------------------------|----------------------|
| 1. Saw       | 8. Grinder                | 15. Moisture Meter   |
| 2. Hammer    | 9. Broom                  | 16. Leveler          |
| 3. Mitre Saw | 10. Cutter                | 17. Pneumatic Nailer |
| 4. Table Saw | 11. Trowel                | 18. Chalk Line Reel  |
| 5. Glue      | 12. Pencil                | 19. Measure Tape     |
| 6. Spacer    | 13. Sliding T-bevel Gauge | 20. Tapping Block    |
| 7. Pull Bar  | 14. Square Gauge Ruler    |                      |

### Installation condition

- The panels should be stored unopened in the center of a room at a room temperature of 15°C (59°F) - 28° C. (82.4°F) and a relative humidity of 30% - 50% for a minimum storage time of 48 hours.



- **Never store boxes on their sides.**
- Oakel City Floor products can be installed below, on and above grade. Engineered collection are primarily composed of wood. Continual and repetitive exposure to dampness causes irreparable damage to the hardwood flooring. Engineered collection should never be installed **in bathrooms or laundry rooms (in door use only).**

#### **A. Evenness**

The subfloor conditions must be met:

- Maximum +/- 0.1" per 6.6' (2.5mm per 2m) radius span.
- Maximum +/- 3/16" per 10' (4.7mm per 3m) radius span.
- Sand down any irregularities, fill any uneven spot with NWFA approved leveling compound.
- No crack or deflection is allowed.

#### **B. Subfloor Conditions**

- Old, fixed carpets, Needle felt carpets are unhygienic and too soft for installing hardwood flooring over and must be removed. An installation on PVC and linoleum-coating can only be done if the existing flooring is glued down and has no loose areas and if there is no underfloor heating.
- Before installing hardwood flooring, the subfloor must be clean and free of any debris or microorganisms.
- Installation on concrete: the concrete subfloor must be tested for moisture content using the CM (Calcium Carbide Method) test method and must return a reading of no more than 2.5% as moisture content of the substrate.
- Installation on wood subfloors:
  1. Plywood subfloor moisture content must not exceed 12%, and the variance in moisture content between the subfloor and the flooring panels must not exceed 3.5%.
  2. All squeaking noise coming from the substrate should be fixed before the installation of new flooring.

#### **C. Moisture Conditions**

- The temperature range of the flooring material should be the same as the installation location. Do not place planks on the installation site if temperature conditions are not met. If temperature conditions are achieved, acclimatize the planks on the installation site for at least **48 hours**. The room temperature **should be 15°C (59°F)-28°C (82.4°F)**, with relative humidity between **30%–50%**. These environmental conditions must be maintained for the life of the product. (Before, during, and after the installation)

#### **D. Installation Over a Radiant Heat Systems**

- Oakel City Floor can be installed over hydronic radiant heat system only. All hydronic pipes must be covered and isolated with minimum 3/8" (9.5mm) thick concrete or plywood.
- Ensure that the system is in full working order and has been fully tested and running for a minimum of two weeks before installation. The system should be turned off for 24hours prior to installation in the install zone.
- It is highly recommended to attach heat sensors onto the subfloor every 200sf of areas.
- **Any dramatic temperature will cause damage to flooring.** Never allowed the surface temperature of flooring go above 28°C (82°F), Always adjust the thermostat gradually in 4°C to 6°C increases.

#### **E. Panel Mixing**

- Prepare at least four packs of flooring. Mix panels from different packs during installation.
- For the best performance in installing Oakel City products, we recommend installing four panels of different packs alternately throughout the installation area



## Installation Instruction

### Tools and Fasteners requirement:

Tools and Fasteners (For Major Installation)					
Pneumatic Tools	Fasteners		Application	Nailing Schedule	Products
	Cleat	Staple			
Pneumatic Blind Nailer	16 Gauge Length: 2"	15 1/2" gauge Length: 2"	Refer to the detailed installation instruction paragraph.	4" - 5"	Engineered Collection
Pneumatic Blind Nailer	18 Gauge Length: 1-3/4"	Not recommended		4" - 5"	Engineered Collection

Tools and Fasteners (For Starting and Finishing Rows Only)						
Pneumatic Tools	Fasteners		Application	Purpose	Nailing Schedule	Products
	Brad Nails	Blind Nails				
Pneumatic Brad Nailer	18 Gauge Length: 1-1/2"	N/A	For top nailing of <b>the first and the last row only.</b>	Giving security strength when aligning the starting row' s set up.	12" -14"	Engineered Collection
Pneumatic Finish Nailer	N/A	16 Gauge Length: 1-3/4"	Nailing at a 45° angle to the tongue at starting and finishing few rows, <b>when space allowed</b> , use blind nailer (cleat/staple) instead.	same as above	4" -5"	

\*\*All fasteners must be 1" -2" from the short end joints.



#### **Glue Assistance Required:**

In addition to cleats/staples, the use of glue assistance method is recommended for products between 5" (125mm) to 6" (152.4mm) in width. Oakel City Floor Engineered Collection Plank Width: 7 ½"(189mm). And it's mandatory for products wider than 6" (152.4mm) in width.

\*\*Full spread glue-down installation at the start and last three rows are NOT APPROVED while using the nail-down method as the primary installation method. \*\*Apply glue onto the underside of the floor plank, NOT direct onto the substrate.

**Plywood subfloor required:** 5/8" (15.875mm) thick plywood or 7/10" (17.78mm) OSB construction subfloor is required for staple installation.

**Expansion Space:** Expansion Space: 1/2" (12mm) expansion space is required throughout the whole perimeter of installation areas.

**Underlayment required:** Approved vapor underlayment or wax paper is required and should be laid down with 2" to 4" overlap with every previous run.

**Obtaining the suitable compressor output pressure:** Obtaining the suitable compressor output pressure: Set compressor from 80psi and adjust the pressure until fasteners are properly set to the tongue of boards. Failure of this step may cause squeaks noise. Refer to notes below for a proper way of securing fasteners.

**Installation over radiant heat system:** Nail down installation **IS NOT APPROVED** over any radiant heat system.

**Proper penetration of the staples:** Staples should be 45 degrees penetrating through the tongue and flush with the nail pocket.

**\*\*\* Failure of any of the above precautions will void the warranty\*\*\***

#### **Starting the installation:**

Layout your vapor barrier layer and make it parallel to the direction of the flooring layout. Start your first row with the tongue side of boards facing away from the wall (if starting along a wall) to maintain a proper expansion gap (\*For best result, mark a chalk line as reference for appropriate straight line up) Top nail boards of the first row with pneumatic brad nailer every 12" -14" , and maximum 2 inches away from each end of every board. Then use pneumatic finish nailer to snap nails at a 45 degrees angle to the tongue of boards. (Refer to nails spacing chart above). Laser or chalk guideline to inspect a proper straight layout of the first row is recommended before continue on Proper stagger boards for the subsequent rows (\*Refer to the stagger guild lines above), and use a pneumatic nail or staple gun whenever enough space is allowed for the nailer to sit on. Maintain proper expansion space along all walls and ANY VERTICAL OBJECT ANY VERTICAL OBJECT and nailing schedule throughout the whole installation process. (\*always inspect boards for defects during installation) Use multiple lengths of boards at the beginning of every row to create a random, natural staggered patterns. When installing the last few rows, there might not be enough space for a nail/staple nailer to be used, use the same installation tools and method as the starting rows. Fill all top nail holes at starting row and last row with color matching wood fillers. \*\* The laying direction must be perpendicular to the subfloor joints.



## A. Floating Installation

### Underlayment requirement:

- The vapor barrier is required for installations over concrete subfloors. (Minimum 6 mil polyethylene film)
- Addition layer of vapor barrier may be used when proceeding floating installations below ground level.

### Tapes used during installation:

- Only 3M Scotch-Blue tape is allowed for security tightening of joints during installation, and all tapes must be removed within 24 hours.
- Slowly remove tapes at a 35° - 45° angle.

### Installation over radiant heat:

- A dramatic change of temperature on the floor surface after installation must be avoided.
- Refer to the temperature control paragraph from the pre-installation section.
- Turn off the heating system and wait for 24 hours to turn on after installation.

## 1. Space for expansion & maximum size without expansion gap

- Engineered Hardwood flooring will expand and contract with changes in temperature and humidity. To allow for this, during installation, leaving a 1/2" (12mm) expansion space around the entire perimeter of the floor between the flooring and the walls, and all vertical/fixed objects (e.g., door structures, fireplace). Undercutting vertical structures might be an option by ensuring no damage to the structural function of the objects.
- **No fixing with the subfloor.**
- Under no circumstances must the panels be glued, nailed, or otherwise fixed to the subfloor.
- **Do not exceed 26 linear ft radius span** without an expansion gap and transition molding.
- All rooms need to be isolated from the hallway or adjacent rooms with a T cap transition to allow for expansion space.
- Do not place or fix any heavy object, such as kitchen island, fireplace, cabinets to floating installed flooring area.

## 2. Laying of underlayment (underlayment types with moisture barrier film attached)

- Roll out the underlayment in a perpendicular direction to the flooring, with the vapor barrier side facing downward, laying the next row in the same direction as the first row with overlapping the second row on top of the (vapor barrier overlapping edge) of the first row. Peel off the adhesive strip on the edge of 2nd row and attach it to the poly film portion of the 1st row. Moreover, make sure the underlayments tightly joint together, but without overlapping each other. At the junction of the short sides, moisture-proof mask tape needs to be used.
- Start the first two rows of flooring with the groove side of boards facing the wall. Apply adhesive at all short side grooves of each board and joint boards. Apply adhesive at all long side and short side grooves of each board from 2nd row. Joint boards to the long side of 1st row while short jointing sides of the second row. (Keep in mind, 1/2" expansion gap must be maintained) Ensure all boards are jointed tightly by using a professional tapping block. • Use laser or chalk guidelines to ensure the first two rows are perfectly straight



before continuing. 3M Scotch Blue tape is required to secure boards in place after straightening of boards have been obtained. Clean up any excess adhesive with a damp cloth.

- • **\*\*STOP\*\*** and wait for a minimum of 30 minutes before continuing the rest of the rows.
- Continue the rest of rows with the same skills as the 1st two rows. There' re a few things that need to keep in mind throughout the entire installation:
- 1/2" (12mm) expansion gaps must be maintained throughout the whole installation area. No object should be mounted on top of flooring with a floating installation (for example, cabinet, sliding door assembly)
- Rules of stagger patterns
- Cleanup of excess adhesive
- inspection of boards for defects before install
- If installed on a radiant heat system, bring the temperature up gradually after a minimum of 12 hours, when the adhesive is completely dry out.

## **B. GLUE DOWN INSTALLATION**

- Urethane based adhesive with moisture control.
- Choose the right type of adhesive under the Bostik brand according to different job site conditions.

### **Trowel used:**

- Use a metal trowel only.
- Use trowel styles recommended by adhesive manufacturers only.
- Replace any trowel that has worn teeth.

**\*\*Only professional hardwood flooring installers should be performing glue down installations.**

### **Installation over radiant heat:**

- Make sure the flooring product is approved for direct glue down over a radiant heat system.
- Refer to the temperature control paragraph from the pre-installation section.
- Radiant heat systems must be tested appropriately and operating for a minimum of two weeks before installation.
- Radiant heat system must be completely turn off at the installation zone for a minimum of 24 hours before installation.
- After installation, wait for 24 hours to turn on the radiant heat system.
- A dramatic change of temperature on the floor surface after installation must be avoided. A maximum of 4°C (39.2° F) increments per 10 hours.

**\*\*Any damage caused by the radiant heat system will not be covered by the product warranty.**

### **Starting your installation:**

- Chose a starter point to set the starting row. The main exterior wall should be used as a reference wall to start.
- Set two chalk line reference points by measuring the same distance from each end of the reference wall, then snap your chalk line.
- Start spreading adhesive to the subfloor along the chalk line but not to cover it.
- Lay down the first row of boards along the chalk line and continue with the second row of boards.





- After the first two rows of boards been set, alignment procedure must be done by using a straight laser line or chalk line to ensure the starting rows are perfectly straight and parallel to the reference wall.
- Then use approved adhesive tapes (3m scotch blue) to secure joints of boards to secure the starting rows in place. If installed on a plywood subfloor, top nailing of the first row of boards is recommended. If installed on a concrete subfloor, adjustable spacers are recommended.
- It is recommended to leave the first two starting rows overnight and get the adhesive full cured before continuing.
- Remove adhesive tapes within 24 hours and pull off tapes at a 45 degrees slow manner. • Continue the installation by spreading approximately 3 feet span area along the starting row with adhesive. (Avoid spreading too much adhesive at a time).
- Install boards while ensuring every board is pressed and attached to the adhesive.
- As installation continues, avoid working directly on top of newly installed areas.
- Always have your adhesive remover and damp dry cloth ready. Any excess adhesive left on the flooring surface or hands of the installer must be clean off asap.
- Maintain proper expansion space throughout the whole installation zone.
- As the remainder of the floor has been installed, go back to the starting rows, and finish up the remaining area behind the starting row.
- Touch up all nail holes with color matching wood paste and install transition moldings.
- Remove and tapes being left on top of the floor within 24 hours and wait for a minimum of 24 hours before regular traffic is allowed. If installation with a radiant heat system, do not turn on the heat until adhesive gets fully cured (24 hours of the wait time is recommended).
- Wait for a minimum of 24 hours before moving furniture onto the installation zone.



## Maintenance

### A. CLEANING

- Under no circumstances should the floor be cleaned with a wet cloth or mop or be soaked with liquid. Do not use steam cleaners.
- Sweep the floor regularly to keep it free of dust, grit, and other abrasive materials.
- Sweep the floor with a damp cloth towel along with the cleaner. Apply cleaner to the towel, not directly on the floor.
- Hardened glue-residue can be removed with acetone or a special glue solvent, or usual household cleaners may be used, please avoid scouring agents, wax, or polish.
- For regular cleaning and preservation. Larger soiling and persistent stains like color, glue, nail varnish, or oil can easily be removed using acetone or any other alcohol-containing solvents.
- If a vacuum is used, make sure a soft texture nozzle is attached to avoid scratching marks being left on the surface.

### B: PROTECTION

- Use a heavy-duty floor protection membrane (e.g., Floor Guard heavy-duty floor protection) to cover all areas.
- Avoid taping protection membrane directly to the surface of the floor by overlapping each run of the membrane while taping different run together.
- Tape the end run of the membrane along baseboard or shoe base with extreme low adhesive tape.
- An extra layer of plywood, MDF board, might be used along the hallway or high traffic areas where furniture and appliances will be transferred into the premises.
- Putting felt pads on all furniture' s legs are highly recommended.
- Keep in mind, the use of area rugs will create an uneven color variation due to the uneven exposure to sunlight.
- Rollable furniture should have soft rubber rollers (type W) in accordance with DIN 12529.
- Use a protective mat to protect areas around office chairs.

### C. MAINTENCE

- At all times, a temperature ranges of 15°C(59°F) to 28°C(82.4°F), and a humidity range of 30% to 50% must be maintained.
- Do not drag heavy objects or furniture across the floor. When moving appliances or furniture, lay a protective item such as cardboard and walk the heavy item across carefully.
- Place dirt absorbing mats at exterior doors to reduce dirt and sand comes on the floor.

ENSURE THE PROJECT MANAGER OR HOMEOWNER OBTAINS A COPY OF THE MAINTENANCE INSTRUCTION AND THE WARRANTY GUIDELINE. MAKE NOTES ON THE FOLLOWING PAGE, IF NECESSARY.