PRIOR TO INSTALLATION
Contactor/Installer Open one box or two to verify that customer accepts the color and grade. An installed Floor is an accepted floor. It is important to call your dealer and ask questions if you think there is an installation issue. After installation, only clean flooring by sweeping or vacuuming and then using a Bona cleaner.

Homeowner If you decide to contract out the installation be sure to approve the product prior to installation and review expectations and layout with the contractor. In addition, be clear on the care and maintenance expected during and after the installation. In addition, it is important to understand where solid wood flooring can be installed. Improper use of solid wood flooring will void the warranty. Installation procedures not recommended ie solids over radiant heat and in basements will not be covered under the warranty.

LIMITED WARRANTY
The Appalachian hardwood flooring products are covered by a limited warranty. Consult our detailed warranty sheet available on the website. A 5% margin for error and imperfection is an accepted industry standard.

PREPARATIONS
Always make sure that the plastering, cement work and painting are completed and well dried. Unload in Dry Weather only, never unload in rain, sleet or snow. The flooring should be stored in a Climate-controlled well ventilated building. Ensure that the heating system or air conditioning system has been installed and that it is operational and running at 20C. It is essential to acclimatize the wood for a minimum of 48 hours at a normal relative humidity (40% - 50%). The relative humidity can be verified with a Thermo-Hygrometer. Please be aware that some Humidity readings on central air systems are inaccurate and that you must be cautious. Shrinkage and expansion is normal and will not harm your floor as long as humidity is kept at a normalized level (between 40% and 60%). Cracks and width variation cause by low relative humidity (less than 40%) are not covered under the warranty. In addition, if the relative humidity is out of the 40-60% you run the risk of cupping, which is not a manufacturing defect. If necessary use a humidification or dehumidification system to obtain the correct relative humidity. Most regions in Canada and North Eastern US will require humidification systems in the winter.

<table>
<thead>
<tr>
<th>Solid</th>
<th>Engineered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Grade</td>
<td>NO</td>
</tr>
<tr>
<td>Glue down install</td>
<td>NO</td>
</tr>
<tr>
<td>Over Radiant Heat</td>
<td>NO</td>
</tr>
</tbody>
</table>

Appalachian Flooring Ltd. 454 de la Rivière, Cowansville, Quebec Canada J2K 3G6
Tel. / Phone: 450 266-3999 Fax: 450 266-5343 Toll Free: 1 866 213-1110
Email: info@appalachianflooring.com website: www.appalachianflooring.com
EXISTING WOOD FLOOR
• Sand off old finish and high spots on existing wood floor and prep to clean, dry, sound, flat subfloor. Repair, re-nail or replace loose flooring products.

MAINTENANCE
Please read the care and maintenance guide for more detail.
Never use a damped mop or wet cloth to clean your hardwood flooring. Water can seriously damage any kind of wood. Never use wax on your prefinished hardwood flooring. Never allow direct contact between the legs of pieces of furniture and the flooring. Use felt protectors under the legs in order to prevent scratches. Use a dry mop or vacuum cleaner frequently to eliminate solid particles which might scratch your hardwood flooring.
Please remember that water, sand, salt and dust are not compatible with hardwood flooring. If there is a spill it is important to not waste time and to absorb water or liquid spills with a dry cloth as soon as possible. If there is a door leading outside from the room where you have installed your hardwood flooring, use a door mat to catch the dirt and absorb the humidity. Never use a rubber mat, with a foam or plastic backing. Some foams may damage your floor, therefore they are not recommended for use on hardwood flooring.

BASEMENTS AND CRAWL SPACES
Basements and crawl spaces must be dry. Crawl space should be a minimum of 18" (457mm) from ground to underside of joists. An earthen crawl space (or thin concrete slab) should be covered on 100 percent of its surface area by a vapour retarder of black polyethylene (minimum 6 mil) or any recommended C-class, puncture-resistant membrane, meeting ASTM D-1745.
If it is a new construction please ensure that the basement has cured and is not emitting high levels of moisture this can be checked with a hygrometer to see the relative humidity in the air.

ACCEPTABLE MOISTURE BARRIERS
Installation of a vapour retarder reduces the potential for moisture or vapour related problems, but does not guarantee elimination of moisture or vapour related problems. Installation of a vapour barrier is recommended by Appalachian flooring.
• An acceptable vapour retarder for wood subfloors is a vapour resistant material, membrane or covering with a vapour perm rating of greater than or equal to .7 and less than or equal to 50 when tested in accordance with ASTM E-96 Method A.
• Over-lap seams a minimum of 4 inches.
• Over a wood subfloor, do not use an impermeable vapour retarder material with a perm rating of .7 or less, such as some 6 mil polyethylene film or other polymer materials, as it may trap moisture on or in the wood subfloor.
• Do not use common red rosin or building paper, which is not asphalt saturated.

INSTALLING OVER EXISTING FLOORS
VINYL • Nail-down applications may be successful over existing sheet vinyl or vinyl tile if fastener penetration is not significantly diminished and the subfloor meets minimum requirements. Fasteners must penetrate a proper subfloor by at least 5/8". Please be cautious with vinyl flooring as some flooring (prior to approximately 1972) contained Asbestos and must be removed by a professional who understands the risk involved. Contact you state or province Department of Health.

EXISTING WOOD FLOOR
• When installing new wood flooring parallel to an existing solid nail-down floor, add a minimum of 3/8" underlayment over the existing floor to increase stability.
• When installing new wood flooring at a 45- to 90-degree angle to an existing solid nail-down floor, additional underlayment is not required.
• The flooring must not show signs of cupping or it may transfer to the new flooring.

PARTICLE BOARD Particle board is not an acceptable underlayment due to lack of stability.

ACOUSTIC PERFORMANCE
There are several sound dampening products on the market and product choice heavily depends on the required building code by region and given application. Most applications require a minimum of 50 IIC and 50 STC value. The Higher the STC or the IIC number the better the sound attenuation performance. The STC refers to the evaluation method used to quantify the transmission of airborne sound (voices, music etc) through building elements (walls, windows doors, floors etc). The IIC refers to the evaluation method used to quantify the transmission of impact noise (footsteps, dropped articles etc) through a floor/ceiling system. Appalachian flooring does not recommend a specific sound barrier but recommends that all technical specifications from the sound barrier are reviewed and are approved by the required building/condo code.

SUBFLOOR PREPARATION
1. Ensure that all heating and ventilation ducts are insulated properly.
2. It is the builder’s or general contractor’s responsibility to provide the wood-flooring contractor with a subfloor that conforms to the necessary standards. Inspect the subfloor carefully. If there are movements or squeaks in the subfloor, refasten the subfloor to the joists in problem areas.
3. The floor must be level. Level is within 3/16" in 10‘ (5mm in 3m) and/or 1/8” in 6’ (3mm in 2m)
4. Ensure that no creaking, loose edges, sags exist. Repair them as Necessary before starting installation. Sand joints to ensure flooring is level.
5. The panels can be laid on the diagonal or perpendicular with the joists, with an expansion space of 1/8” between panels. If the subjacent subfloor panels are not tongue-and-grooved and if there is not sufficient expansion space, use a circular saw to create the specified space. Do not saw through joints on T&G subfloors.
6. Fasten panels down at least every 6” to form a minimum grid pattern. Walk across the floor to check for squeaks and add additional screw if necessary.
7. Ensure that there are no protruding fasteners.
8. OSB must be APA rated and maintained in a controlled environment. However OSB is not warranted for squeaky floors.
9. Wood subfloors should not exceed 12% and there should result in less than a 4% humidity difference between the flooring and the wood sub flooring material. If the subfloor has excessive moisture content, postpone installation find the moisture source and correct by raising the heat and increasing ventilation until proper conditions are 

Installation Guide
¾” Prefinished solid hardwood

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### Installation Guide

**¾” Prefinished solid hardwood**

met or apply a suitable moisture retardant or use an underlayment that also acts as a vapour retardant. It important that the subfloor moisture is correct or the flooring is at risk for cupping which is not a manufacturing defect.

10. Make sure the subfloor is free of debris before beginning installation.

#### FASTENER SCHEDULE

<table>
<thead>
<tr>
<th>MINIMUM REQUIREMENT</th>
<th>8 inch centers with a max of 3” from the end of every board</th>
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</thead>
<tbody>
<tr>
<td><strong>WOOD FLOORING TYPE</strong></td>
<td><strong>FASTENER TO BE USED</strong></td>
</tr>
<tr>
<td>¾” thick less than 3” width</td>
<td>1 ½” -2” fastener</td>
</tr>
<tr>
<td>¾” thick more than 3” width</td>
<td>1 ½” -2” fastener</td>
</tr>
</tbody>
</table>

#### SOLID INSTALL ON SLEEPERS/SCREEDS

1. Check slab for flatness, fill low areas and grind down high areas
2. Use flat, dry, pressure-treated screeds 2” X 4” (15cm x 10cm). Leave ¾” inch space between walls and screeds
3. With treated screeds, stainless steel fasteners are required
4. Use nominal ¾” (23/32”, 18.3mm ) exposure 1, or 5/8” (19/32”, 15.1mm) exposure 1 CDZ plywood or nominal ¾” (23/32 x 18,3mm) OSB plywood subfloor panels. The ½” plywood should be offset by ½ panel in each direction to the existing subflooring. The panels may also be laid as the installer will be working along the subfloor panels, glued and mechanically fastened.
5. Lay plywood on top of the screeds and place 3/4” plywood under the door frame. The bottom of the doors might need slight adjustments. The sub-floor must be well swept and very clean. Always follow the security instructions for all use of air-driven or electric tools.

#### TOOLS AND ACCESSORIES

Check stapler /nailer prior to starting installation as the installer will be responsible for damage caused by nailer/stapler and never place nailer directly on the hardwood as it may dent or scratch the flooring. Check the plate on the nailer before and during installation to avoid scratches. Ensure that the base sits flat on the floor and the top of the tongue. Check the base plate condition and verify proper hose and air compressor for the model is used. When using a pneumatic gun set and check air pressure regularly ensuring the nail/staple enters at a 45 degree angle, and that the nail or staple is flush with the flooring as if not properly set it can cause dimples if pressure is too low in flooring or break the tongue if pressure is to high.

Do not use a another piece of wood to tap wood into place as it can cause damage to the finish, use a rubber tapping block

<table>
<thead>
<tr>
<th>tool</th>
<th>tool</th>
<th>tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>measuring tape</td>
<td>flooring nails</td>
<td>rubber mallet</td>
</tr>
<tr>
<td>square</td>
<td>finishing nails</td>
<td>mitre saw</td>
</tr>
<tr>
<td>chalk line</td>
<td>touch up pencil</td>
<td>handsaw</td>
</tr>
<tr>
<td>hammer</td>
<td>shank nails</td>
<td>vacuum cleaner</td>
</tr>
<tr>
<td>nail punch</td>
<td>broom</td>
<td>stapler</td>
</tr>
<tr>
<td>protective eyewear</td>
<td>Rubber tapping block</td>
<td>brad nailer (optional)</td>
</tr>
</tbody>
</table>

#### INSTALL YOUR VAPOUR BARRIER

Over-lap seams a minimum of 4 inches.

#### SNAP CHALK LINE

The first row of strips must be absolutely straight from one end of the room to the other. Use a chalk line to mark a line parallel to the wall that you are starting from. The line should be 3” (76 mm) away from the wall, for strips of 2” (57 mm) and if you are using strips that are 3 1/4” (83 mm) wide, it should be at 4” (102 mm) away from the wall.

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The guide line must make a 90° angle with the adjacent wall. It is very important to start laying the wood strips at a right angle.

Open a few boxes and choose some strips to lay down on the floor. Choose only perfectly straight strips for the first two rows, as you will install manually.

Always select strips with care. Strips with imperfections should be cut to eliminate the flaw or installed in less visible areas (in closets and under electrical appliances). It is essential to select the strips. This allows for more uniform variations of color. Wood is a natural product. It is possible to find defects and variations of color.

A cutting loss of 3 to 5% is acceptable for the industry. Always handle your flooring strips with care in order not to damage them during the installation.

**DRILL HOLES IN STARTING ROW**

Install the first of strips by drilling holes 3/32” (2 mm) at 1” (25 mm) from the edge of each strip at intervals of 12” (30 cm). Do not use glue to secure these rows as it will void the warranty and will cause the expansion space to not function properly.

Use a hammer and nail punch to drive in finishing nails. Mask the holes with a touch up pencil. **Use this method of face nailing for the first and last row.**

Measure and saw a strip to complete the first row. Choose a strip that is long enough so that the remaining piece can be used to start the next row.

Leave a space of 1/4” (6 mm) between the wall and the end of each row of flooring.

**INSTALL SECOND ROW**

Start the second row with a strip at least 6” (15 cm) longer than the adjacent strip to avoid adjoining joints.

Install the first and the second row of strips by drilling holes 3/32” (2 mm) at a 45° angle in the tongue of each strip at intervals of 8”-10” (20-25 cm).

Use a nail punch to drive finishing nails in completely.

The drilled holes must be slightly smaller or of the same diameter as the finishing nails to ensure a tight fit and to avoid cracks. Each piece must be held by a minimum of two (2) nails.

Install all other rows in the same manner, using only a hardwood hammer.

**TEST NAILER**

Use a scrap or defective strip to determine the amount of strength required to nail properly.

**INSTALLING THE REMAINING FLOORING**

Continue with hardwood nailer mallet and rubber tapping block to install the rest of the flooring by nailing. **8 inch centers with a max of 3” from the end of every board.**

**STAGGER JOINTS**

To enhance the appearance of the flooring, avoid placing joints next to each other by choosing strips of different lengths. Staggering the joints makes them less noticeable.

**INSTALL LAST TWO ROWS**

Install the last three or four rows in the same manner as the first two, because the nearby wall will make it difficult to use the hardwood hammer.

**MOLDINGS**

After the strips have been installed, install the baseboards, quarter rounds and doorsills. The baseboards and quarter rounds must be nailed to the walls and not to the floor.

**AFTER THE INSTALLATION**

- If you must move heavy pieces of furniture (refrigerator, piano, love seat, etc.) never slide them directly on the flooring. Instead, place a piece of carpet face down between the furniture legs and the flooring and pull on the carpet to move the furniture. By doing so, you will avoid damaging your flooring.
- Empty cardboard boxes can protect your floor throughout the installation; however, ensure that the floor is clean prior to placing them.

**BOARD REPLACEMENT**

Wood is a natural product and repairs during and after installation are normal. Using a touch up marker, wax filler, or putty filler to fix imperfections in the flooring is standard practice. In addition for the larger repairs a board replacement is a normal procedure during and after installation.

**STEP ONE BOARD REPLACEMENT SELECTION**
Individual wood flooring boards can be repaired /replaced in solid, products without affecting adjoining boards. Always check the species to insure a proper match,(i.e. red oak, white oak, etc).

**STEP TWO REMOVING DAMAGED BOARD**

- Make sure you have a replacement board. Set a circular saw to the depth of the thickness of the board to be removed.
- Make one cut inset 1/2” from groove side running from end to end on the board to be removed.
- Make a second cut inset 1/2” from tongue side running from end to end on the board to be removed.
- Make a third cut across the center of the board at a 30-45 degree angle from first long cut to second long cut.
- With a chisel cut completely through both ends at cut lines and lift out center of the board. The groove side piece can now be easily removed.
- Carefully remove nails or staples and side tongue piece. Avoid damage to adjoining boards.

**Alternate method on wood subfloors only**

- Drill a series of large holes across center and against grain of board to be removed. Avoid drilling too far into subfloor.
- Using a sharp chisel cut off the tongue of the board being replaced. Avoid damaging adjoining boards.
- Remove the board and trim the edges of the opening.
- Clean all debris from the area.

**STEP THREE BOARD REPLACEMENT**

- Measure the opening and cut replacement board to size. Carefully test the new board against the opening for precise fit.
- From the back side of the replacement board, chisel off or cut lower half of its groove side and end match so that it will fit over the tongue of the adjoining boards in the replacement area.
- Carefully dry fit the replacement board. Coat tongue and groove with glue. Use flooring glue such as Mapel 990, Sika T-55 or Bostik’s Best. Construction adhesives are not valid glues for this purpose. You can also use a fast setting epoxy to coat the back of the board to avoid the use of nails (described below) in the repair.
- Insert tongue and then drive it into place, using a wood block and mallet. If adhesive has not been used to secure the board (as described above) to the subfloor drill pilot holes for nails at each end of board and along sides of long boards. Make holes smaller than the size of the cement coated nails.
- Sink nail heads with a nail set. Use color putty to fill holes and joints.

**SPECIAL CASES AND QUESTIONS**

If you have any **additional questions** about the use of certain products or the general care and maintenance procedures applicable for hardwood floors do not hesitate to ask your local Authorised Appalachian Flooring Dealer or visit our web site at [www.appalachianflooring.com](http://www.appalachianflooring.com)
You can also refer to the National Wood Flooring Association **Installation guidelines and Methods**. They are available for purchase at [www.nwfa.org](http://www.nwfa.org) or by phoning 1-800-422-4556 ~ USA
1-800-848-8824 ~ Canada