

“Hardwood flooring brings elegance to a home. Comparing different types of hardwood flooring should never be underestimated prior to choosing and installing. Know your hardwood flooring product”.

Important Steps to Ensure That Your Wood Flooring Installation Does Not Become Your Worst Nightmare!

One of the hottest design trends for residential architecture in 2018 includes the generous use of wood flooring throughout the home. Interior designers as well as homebuyers have re-discovered the warmth wood flooring brings to the interior of a home. It creates a sense of balance and synergy. Residential builders have found that newer products such as engineered hardwood flooring, are simpler and more cost-efficient to install than traditional hardwood flooring.

While these products provide amazing alternatives to other types of flooring, they do not come free from potential challenges. Depending on the type of hardwood flooring you incorporate into a project, there are critical steps that should be carefully followed...no matter the type of sub-floor surface that is in place.

The challenge...deciding what type of wood flooring product to use.

We need to look at what is available. Is there a problem with installing hardwood floors on a concrete slab? Is solid hardwood the best choice or does engineered hardwood provide a better solution? Are you wanting to incorporate radiant heat? And of course, the cost! What role does cost play into the equation? It is a lot of information to consider!

Which hardwood style is best?

The short answer? *It depends.* Both solid hardwood and engineered hardwood have their pros and cons. You should analyze both solid hardwood and engineered hardwood to decide which product best fits your needs.

What are the advantages of solid hardwood...

- Solid hardwood is (*no pun intended*) solid all the way through. Typically, it is about $\frac{3}{4}$ " in thickness.
- Solid hardwood will last longer than engineered hardwood.
- Solid hardwood has the look and feel that of elegance...luxury.
- Solid hardwood is easier than other hardwood surfaces to repair. If you are remodeling a room or making a repair on the floor, it can be easy for a flooring professional to

match the wood. The solution is fairly straightforward. Make the repair. Sand down the entire room and refinish to match.

- Solid hardwood can be sanded and re-finished multiple times. In contrast, the highest grade of engineered hardwood(s) can be sanded and re-finished only a few times.*
- Solid hardwoods can be sanded and finished to a point that joints are nearly impervious to dust and dirt. Your housekeeper will appreciate that!
- Solid hardwood is usually installed by nailing into a wood sub-surface.

Are there disadvantages of using solid hardwood?

- Solid hardwood has the potential to expand and contract due to any change within the ambient conditions of a room.
- Regular solid hardwood should not be installed over radiant heat. However, there is a process of using rifted and quarter-sawn wood that can provide a solution for this challenge.*
- Solid hardwood should not be installed directly onto a concrete slab. If you wish to install solid hardwood over a concrete slab, a vapor barrier along with a ¾" plywood sub-floor should be installed first. According to the National Wood Flooring Association, there are two ways to accomplish this process. However, they come with a caveat...it will raise the height of the floor and increase the cost.¹
- Solid hardwood flooring is not suitable to install on floors that are below ground level due to moisture concerns.
- It should never be installed in an area of a home that might encounter moisture. Rooms such as the kitchen, bathrooms or laundry area should never have solid wood flooring.

Is engineered hardwood the flooring of choice...

What are the advantages?

- Engineered hardwood is manufactured by a layering process. This process typically consists of 5-7 layers of material being glued together between the top and bottom layers.
- The top layer is composed of a hardwood veneer that can vary in thickness. Premium brands are usually thicker than lesser expensive varieties.
- Each individual layer is positioned perpendicular to the other layer, similar to plywood. This crossing pattern creates strength. Because of this design, it is usually stronger than solid hardwood.
- It does not require any type of plywood subfloor, so you can install it directly on a concrete slab.
- It can be installed below the ground level*.
- It can be less expensive.*
- Engineered hardwood flooring can be installed over radiant heating systems. A floating floor may be the most appropriate consideration...

- Engineered hardwood can be installed by stapling or gluing it in place, or by creating a floating floor.

The disadvantages of engineered hardwood

- Engineered hardwood has the potential to capture dust in the joints due to the nature of the design.
- Engineered hardwood is more difficult to repair than solid hardwood flooring. It is very challenging to match the finish. If there is water damage, or you move a kitchen cabinet while remodeling and find that a piece is missing...you may have to replace the entire floor.
- If your remodeling requires that you install a ¾" plywood sub-floor, you could encounter clearance issues with doors and trim. If you have a metal exterior door...this could really become a problem.
- Sanding and refinishing can be a problem. Never attempt this without consulting the manufacturer.
- Floating engineered hardwood floors cannot be sanded and re-finished. In order for engineered hardwood flooring to be sanded and re-finished, it must be completely secured to the sub-floor. Attempting to sand a floating floor can produce disastrous results.
- Floating engineered floors can sound "fake" when you walk on them...similar to the older style of laminate flooring.

After your flooring products have been delivered, it is highly advisable to maintain serviceable conditions within the building for up to five days. This means maintaining the ambient temperature between 60'-80' Fahrenheit...and the humidity levels between 30%-50%.* Prior to installation, wood flooring needs to acclimate. The wood acclimates by being allowed to breathe within this controlled environment. This helps to minimize moisture-related warping as well as expansion and contraction.

When installing either solid or engineered hardwood, it is critical that you understand and follow the manufacturer's instructions. Different products have different tolerance levels. Be sure not to make this dangerous assumption...that one manufacturer's guidelines for preparing the surface and installing the product will be the same for another manufacturer's products. Be proactive...always ask questions. If you are new to this process, engage the assistance of a flooring expert.

**While comparing the advantages and disadvantages of these flooring products are important...
We need to briefly zero in on one key area...moisture!**

Picture this...you are a custom home builder. *It is one of those chaotic Monday mornings!* You remember finishing a new custom home for a client 8 months ago...

The sub-surface was a concrete slab. You waited the customary 60 days for the concrete to dry. You had your timelines dialed in for your project manager. All the interior finishes were beautifully completed. The custom home was completed in time. You just received an email from your client stating that the engineered hardwood flooring, installed in the gathering room, has begun to warp. After some exhaustive research, you discover that the concrete slab was not tested properly for relative humidity. *You wonder to yourself...what would have been the best way to prevent this problem?*

At Xxxxxx Xxxxxx, we are big on Benjamin Franklin's axiom that..."an ounce of prevention is worth a pound of cure".

According to the American Society for Testing and Materials, "excessive moisture permeating from floor slabs after installation can cause floor covering system failures such as debonding and deterioration of finish flooring and coating and microbial growth."²

What does this mean to you?

It is important to properly test the moisture levels of the sub-surface, as well as the wood flooring products you intend to install. It does not matter whether this sub-surface is wood or concrete.

Consult the manufacturer's specifications regarding moisture level tolerances of the flooring products as well as the subsurface. These specifications can provide you with guidelines to help ensure that you have long-term hardwood flooring success.

What testing method provides the most accurate picture of moisture levels within the concrete slab?

ASTM F2170 guidelines are quite clear on the definitive choice for moisture testing of concrete slabs. "The *in-situ* method of testing (ASTM F2170) provides "relative humidity (RH) measurements at 40% of the slab's depth*, a position proven to more accurately portray the final RH levels of the slab if it were to be sealed at that point in time and the slab moisture allowed to fully equilibrate. In this way, *in situ* measurement provides a composite picture of overall slab moisture levels and provides the data necessary to make business decisions regarding flooring installations".²

Is your flooring professional using the *in-situ* method to test the moisture level in the concrete slab, prior to installation? If not, then tell them to contact Xxxxxx Xxxxxx today.

Always striving for excellence, Xxxxxx Xxxxxx continues to raise the bar. Xxxxxx Xxxxxx...an industry leader in providing cutting-edge testing solutions to assess moisture levels in wood and concrete. Click here to learn more.

**Always check with the manufacturer and a flooring professional.*

Author's note: Hardwood flooring manufacturers have a variety of installation protocols and suggestions for their products. Following their best practices will provide the best roadmap for your flooring project.

References:

1 - <http://www.hardwoodinfo.com/specifying-professionals/project-support/flooring-guides/installing-hardwood-floor-concrete-slab-2/>

2 - <http://www.f2170.org/>
