STAYBULLFLOORING.COM™

Staybull Flooring™ - Andiroba Mahogany

Staybull Flooring™ - Santos Mahogany

Staybull Flooring™ - American Walnut

Major Staybull Flooring™ Benefits

Staybull Flooring™ Table of Contents

All Sections Are **COLOR CODED** For Easy Navigation

Product Features:

Made Using Recycled Materials

MADE IN THE USA

Prefinished With: ECO-SHIELD Hardwood Floor Finish

STAYBULL FLOORING™ INSTALLATION GUIDE

ABOVE GROUND LEVEL - *YES*

Staybull Flooring™ can be installed in most above ground level applications.
- Glued over aged concrete slab.*
- Glued or nailed over plywood subfloor.

** Most Species of Staybull Flooring™ can be installed over an aged concrete slab. Contact us for more info.*

GROUND LEVEL - *YES*

Staybull Flooring™ can be installed in most ground level applications.
- Glued over aged concrete slab.*
- Glued or nailed over plywood subfloor.

** Most Species of Staybull Flooring™ can be installed over an aged concrete slab. Contact us for more info.*

BASEMENT - *NOT RECOMMENDED*

Although we do not recommend *Staybull Flooring™ in* below grade applications we have had many successful installations. Due to moisture issues in below grade installations we can not warranty any below grade applications.

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Staybull Flooring™ Manufacturing Process

Staybull Flooring™ is environmentally responsible hardwood flooring that is also beautiful. By manufacturing flooring that utilizes wood by-products, we are revolutionizing the way people think about recycled flooring.

Staybull Flooring™ is an edge glued product that is available in a wide variety of domestic and imported hardwood species. This allows for a wide array of color choices and strength that traditional flooring can not match.

The construction of Staybull Flooring™ reduces the natural stresses that are found in standard solid wood flooring planks. This process results in an outstanding manufactured product that is strong, dimensionally stable, and will not cup like traditional solid wood flooring. The versatility of Staybull Flooring™ is unlike any other hardwood flooring product. Not only can it be nailed to a plywood subfloor it can also be glued to an aged concrete slab! The combination of dedication to the environment and its incredible versatility makes Staybull Flooring™ the perfect flooring product for almost any job.

This photo was taken at a lumber mill in Brazil. This lumber mill was in the process of disposing of nearly a 10 acre pile of lumber rips. We are preventing and drastically reducing these wasteful practices by recycling these materials into Staybull Flooring™.

Step 1: Staybull Flooring™ begins as narrow strips of hardwood lumber that are typically discarded by traditional flooring manufacturers. We reclaim these strips from lumber mills where they are typically burnt as waste or ground up into sawdust.

Step 2: Using these reclaimed strips outlined in step one we are able to create Staybull Flooring™. Our exclusive manufacturing process starts by taking the narrow strips of hardwood lumber and edge gluing them into solid hardwood boards. Part of what makes our gluing process superior is our Radio Frequency Gluing Machine. This machine flash cures the glue joints by conducting radio frequency electrical current throughout the wood. The current activates the adhesive and creates a bond that is stronger than those found in the natural wood resins, forever fusing the strips together within seconds.

Step 3: The boards from step two are then milled into edge glued hardwood flooring planks. These milled flooring planks are constructed similarly to vertical glued bamboo flooring with the added benefit of being available in a variety of species. Unlike bamboo, engineered, and other flooring products, no formaldehyde based adhesives are used. Staybull Flooring™ only uses eco-friendly adhesives which eliminate outgassing in our finished product.

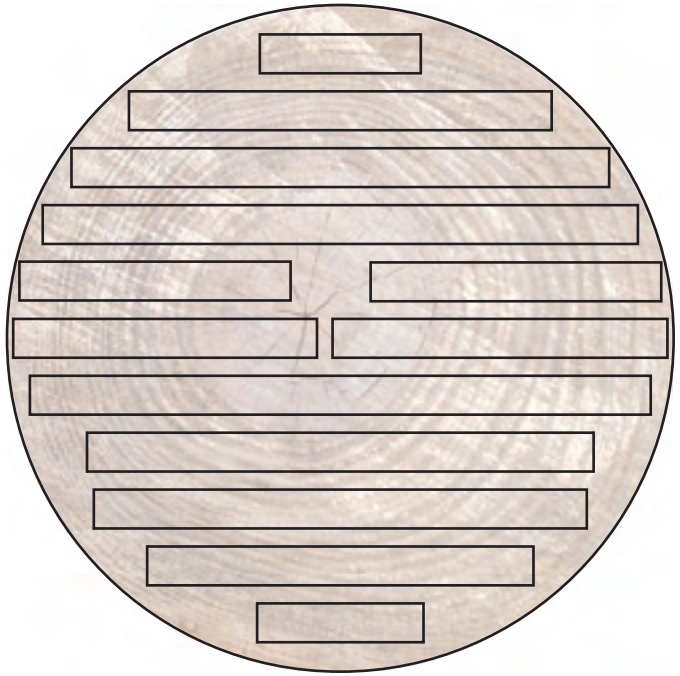
Step 4: Lastly we apply our eco-friendly Eco-Shield™ finish which is UV cured during the application process. This process makes our finish much harder and more durable than other flooring finished on the job site. Our Eco-Shield™ finish provides a tough, scratch resistant barrier that will last for many years.

Where Do Staybull Flooring™ Strips Come From?

Standard wood flooring companies take random width boards and rip them into solid wood flooring planks. This wasteful method is the world wide standard for producing solid wood flooring. Staybull Flooring™ utilizes these leftover strips to produce a stronger and more stable product. In the production of Staybull Flooring™ nearly 98% of the raw material is utilized to create the final flooring planks.

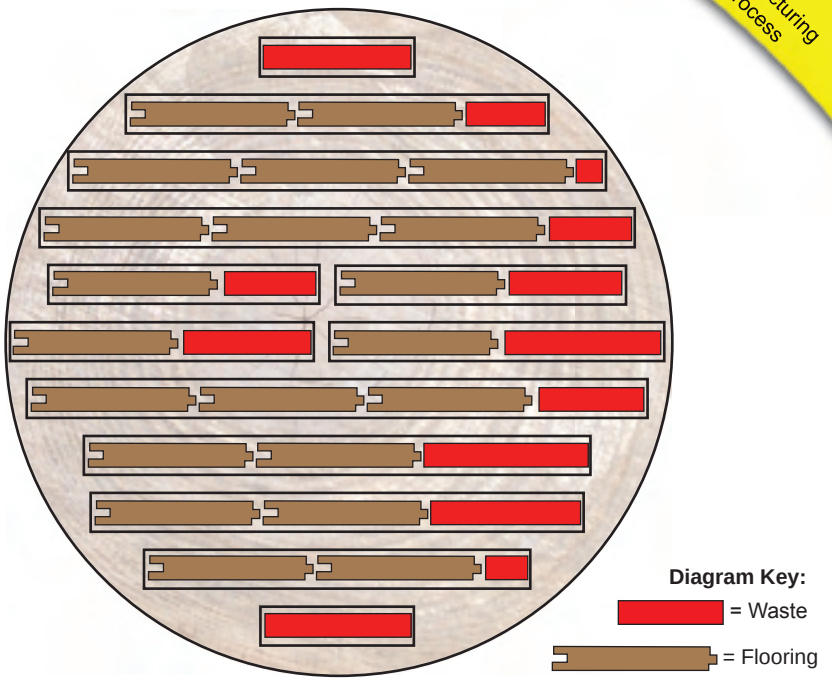
The industry waste produced from traditional solid wood flooring manufacturing is typically ground into sawdust (carelessly consuming a large amount of electricity in the process) and is then dumped into already overcrowded landfills. The alternative disposal method of these strips is to burn them which releases harmful carcinogens into our atmosphere contributing to air pollution and global warming. Staybull Flooring™ is the first product on the market to CHALLENGE these wasteful, centuries old practices used in the traditional lumber industry. We have developed our product line by utilizing these strips to create a superior flooring product with better physical stability and visual aesthetics while maintaining a strong dedication to the environment.

Typical Board Production From a Log



Solid wood boards that are cut from a log are typically random width. The above illustration shows how rough lumber boards are cut from a log. The next step in standard flooring production is to take these random width boards and rip them into single width flooring boards.

Typical Solid Wood Flooring Production Waste Breakdown



In traditional solid wood flooring production when you compare the amount of flooring to the amount of waste, you can see just how much waste exists. The above graph illustrates just how much waste is accumulated from just one log. In the above example, the brown Tongue & Groove pieces represent usable flooring planks cut out of each random width board and the red bars represent the unusable “waste” in the flooring production. Since flooring planks all have to be the same width in standard flooring the leftover waste is very substantial. When you add it all up, the numbers are astonishing. In this typical example there is in excess of 40% waste when compared to usable flooring pieces.

Solid Wood Flooring vs. Staybull Flooring™ - Raw Material Utilized

Item	Raw Material Usage (in percentage)
percentage	0% 25% 50% 75% 100%
Solid Wood Flooring	50-60%
Staybull Flooring™	up to 98%

The proof is in the numbers... **98% (utilization of raw material) for Staybull Flooring™ vs. 60% (utilization of raw material) for traditional solid wood flooring**.

Staybull Flooring™ Product Benefits

• *100% Solid Hardwood Construction* - Our standard Staybull Flooring™ product is 3/4" x 5" and is thicker than many engineered flooring products. Our random length flooring is typically on average between 5' to 6' long. This far exceeds the industry norm of a 2.5' per plank. Our longer lengths install faster and produce an elegant look to the finished floor.

• *Unmatched Quality* - All Staybull Flooring™ products are inspected several times and graded far above the industry standards. Our manufacturing process allows us to further distance ourselves from the competition because there are very few short pieces in any of the flooring that we produce.

• *Fast, Easy Installation* - Staybull Flooring™ planks stay straight in the box because the edge glued pieces allow for equalization of the typical stresses that cause solid boards to crook, bend, and twist. Installation is a breeze because each piece comes out of the box straight and true to size. There is no fighting with warped planks when installing Staybull Flooring™.

• *Long Lasting Beauty* - We purposely mill Staybull Flooring™ at a lower speed than typical hardwood flooring manufacturers. This reduces defects and minimizes tolerances. To meet our extremely high standard of quality, all milling is done on the finest European equipment to give a fit and tolerance that is far superior to the industry standards.

• *Superior Finish* - Our Eco-Shield™ finish provides an abrasion resistance that is nearly double the industry standard. This high abrasion resistance translates into a long life for the finish.

• *Increased Stability* - Resists cupping & twisting which often occurs in traditional solid wide plank flooring. This added stability is a result of gluing multiple narrow pieces of wood together, eliminating the tension normally found in wide, solid pieces of lumber.

• *Designer Look* - Unique "one of a kind" beauty. Staybull Flooring™ planks give a very unique look that has been openly praised by industry professionals, architects and designers.

• *Expanded Installation Options* - Staybull Flooring™ is an innovative hardwood flooring product that can be either nailed to a traditional wood subfloor or glued to an aged concrete slab.

• *Long Lasting Beauty* - Unlike engineered flooring which has just a thin "wear" layer, Staybull Flooring™ can be sanded & refinished if needed, giving it a very long life cycle.

• *Long Lengths* - Our advanced manufacturing process yields a much longer average length than the flooring industry standard. With Staybull Flooring™ you do not have to deal with the abundance of 1' to 2' pieces that are commonly shipped with traditional flooring.

• *Truly Green* - Some "environmentally friendly" flooring is not what it appears to be. For instance, a large percentage of the so-called "eco-friendly bamboo" flooring is cut and manufactured before it has matured. While bamboo may reach a harvestable height by 3 to 6 months it is not fully mature and truly ready to be cut until 6 years of age. Many companies harvest bamboo when it is young thus creating a product that is very soft and will dent and warp with ease. Many bamboo companies also manufacture their products with formaldehyde glues which can emit toxins into our environment and throughout your home. Our Staybull Flooring™ products are free of any harmful glues and toxins.

• *Innovation* - Staybull Flooring™ is an eco-friendly product that utilizes by-products from the wood industry. We currently have various species available with 100% recycled status.

Flooring Products Quality Level

• *Eco-Friendly Flooring* - Standard solid hardwood flooring requires wide lumber in which the milling process renders narrow strips of wood that are useless to traditional flooring manufacturers. Our exclusive manufacturing process reclaims these narrow strips of hardwood lumber that other flooring companies leave behind.

• *Superior Strength*- Craftsmen and furniture makers have known for hundreds of years that wide boards tend to cup. Therefore, the most stable table top or other furniture part is one which is glued from numerous narrow boards to eliminate the natural stresses found in lumber. We have taken this simple concept to the next dimension in utilizing fine craftsman concepts to make our flooring a quality work of art. Staybull Flooring™ utilizes up to 98% of the original raw material compared to 50% - 60% that standard hardwood flooring uses.

Earth Thanks You For Choosing Eco-Friendly Flooring

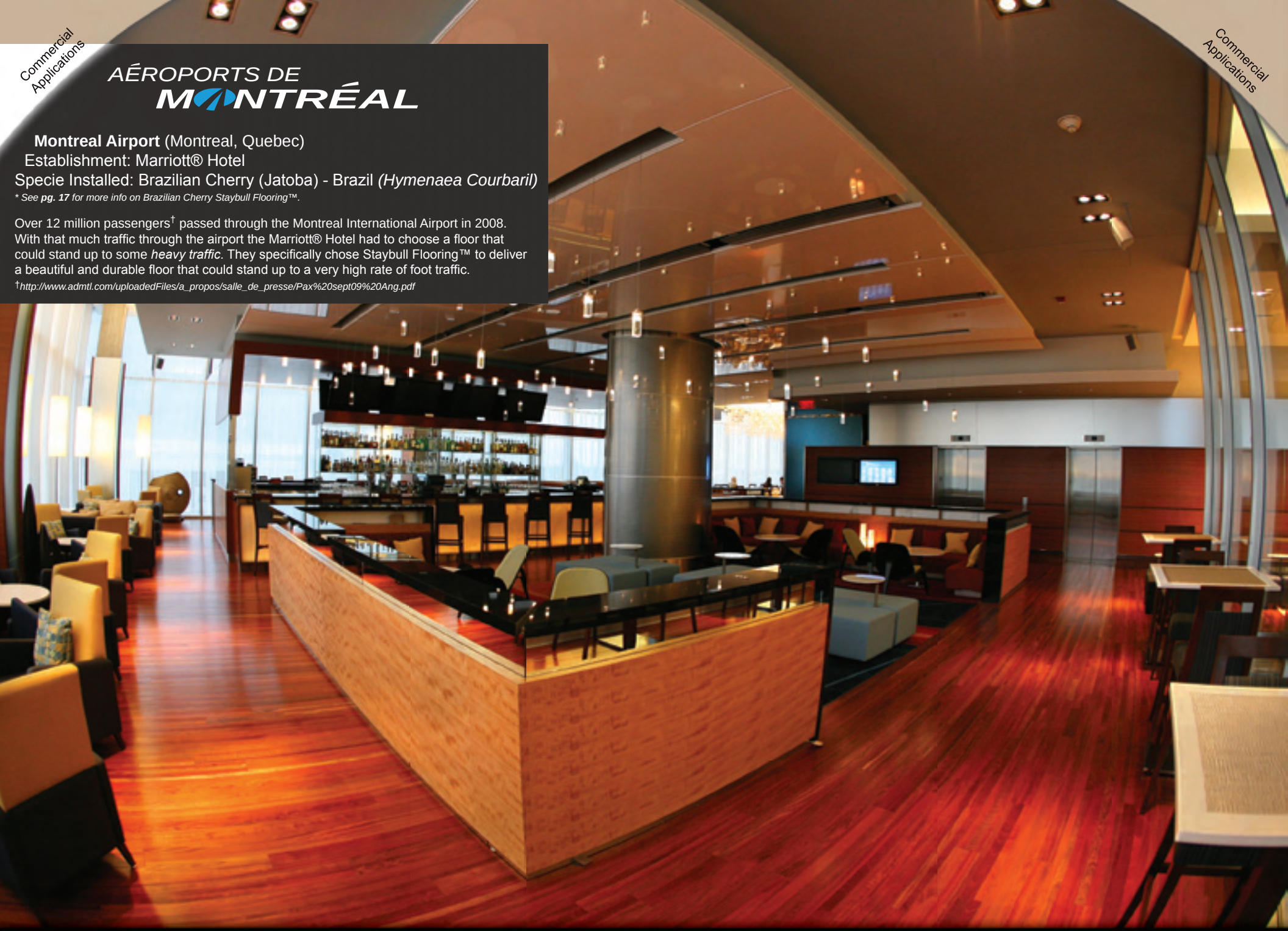
AÉROPORTS DE MONTRÉAL

Montreal Airport (Montreal, Quebec)
Establishment: Marriott® Hotel
Specie Installed: Brazilian Cherry (Jatoba) - Brazil *(Hymenaea Courbaril)*

** See **pg. 17** for more info on Brazilian Cherry Staybull Flooring™.*

Over 12 million passengers† passed through the Montreal International Airport in 2008. With that much traffic through the airport the Marriott® Hotel had to choose a floor that could stand up to some *heavy traffic*. They specifically chose Staybull Flooring™ to deliver a beautiful and durable floor that could stand up to a very high rate of foot traffic.

†*http://www.admtl.com/uploadedFiles/a_propos/salle_de_presse/Pax%20sept09%20Ang.pdf*



Commercial Applications

eXPLORE
ELMWOOD VILLAGE

Elmwood Village Bank - Buffalo, NY (Elmwood Location)
Specie Installed: American Walnut - North America *(Juglans Nigra)*

** See **pg. 14** for more info on American Walnut Staybull Flooring ™.*

There are over a million people within a 30 minute drive of the Elmwood village†, where this bank is located. With that many people located so close to this establishment it is sure to get many visitors. This Bank chose Staybull Flooring™ for its original look and durability.

†http://www.berc.org/pdf/Elmwood.pdf

ALLENTOWN ASSOCIATION
40+ Years of Community Service

Interior Design Showroom - Buffalo, NY (Allentown Location)
Specie Installed: American Cherry - North America *(Prunus Serotina)*

This interior design firm needed a floor that would set their showroom apart from their competition. They turned to Staybull Flooring for a truly unique floor.

Featured Species

American Walnut - *North America*
(Juglans Nigra)

American (Black) Walnut heartwood is rich dark brown to black with a mix of straight grain and wavy/swirly patterns. The sapwood is white to light brown in color. American Walnut is a timeless classic often chosen for high-end furniture, flooring, and cabinetry.

Janka Hardness Comparison*

* See **pg. 28** for more info on Janka Hardness.

Specie	Hardness (lbs.)
scale	0 / 1000 / 2000 / 3000 / 4000
Teak	1000
American Walnut	1010

Featured Species

Santos Mahogany - *Brazil*
(Myroxylon Balsamun)

Santos Mahogany features an exquisite grain pattern. Its deep red to reddish brown tones hold up well in sunlight and other environmental factors. Its hardness makes this wood one of the most sought after varieties of mahogany. Santos Mahogany is a great choice when durability is needed for pets, children, etc.

Janka Hardness Comparison*

* See **pg. 28** for more info on Janka Hardness.

Specie	Hardness (lbs.)
scale	0 / 1000 / 2000 / 3000 / 4000
Red Oak	1290
Santos Mahogany	2200

Featured Species

Andiroba (Royal Mahogany) - *Brazil*
(Carapa Guianensis)

Andiroba (aka Royal Mahogany) sapwood is a pale light brown. The Heartwood of andiroba wood flooring is reddish brown, then fades slightly in color with age. This wood typically has a straight grain pattern with some light swirling patterns.

Janka Hardness Comparison*

* See **pg. 28** for more info on Janka Hardness.

Specie	Hardness (lbs.)
scale	0 | 1000 | 2000 | 3000 | 4000
Red Oak	1290
Andiroba	1400

Featured Species

Brazilian Cherry (Jatoba) - *Brazil*
(Hymenaea Courbaril)

Jatoba heartwood is a salmon red/brown color marked with some darker brown streaks. The grain is often a mix of a straight and swirly pattern. Jatoba is frequently used for flooring and furniture because of its beautiful color and high durability.

Janka Hardness Comparison*

* See **pg. 28** for more info on Janka Hardness.

Specie	Hardness (lbs.)
scale	0 | 1000 | 2000 | 3000 | 4000
Red Oak	1290
Jatoba	2350

African Mahogany - *Africa* (Khaya Ivorensis)
African Mahogany is light brown in color. This lumber is a hardwood that holds up well and becomes a darker shade with age. Grain is straight with occasional swirl often producing a stripe figure.


Janka: 830*

African Padauk - *Africa* (Pterocarpus Soyauxii)
African Padauk heartwood is vivid blood red and darkens over time. Grain is straight to interlocked. Texture is similar to African Mahogany, being slightly open grained.


Janka: 1725*

American Cherry - *North America* (Prunus Serotina)
Cherry heartwood varies from rich red to reddish-brown and darkens over time. The sapwood is white. It has a fine, straight grain with some swirl grain patterns mixed in. It has a smooth texture.


Janka: 950*

Ash - *North America* (Fraxinus Americana)
Ash heartwood is light colored to creamy brown. It is generally straight grained. Similar grain appearance as oak, but lighter in color.


Janka: 1320*

Birch - *North America* (Betula Lutea)
Birch has light yellow sapwood and reddish brown heartwood. It has straight closed grain and a fine even texture.


Janka: 1260*

Bird's Eye Maple - *North America* (Acer saccharum)
The heartwood has a uniformly light brown color. The sapwood features a white color.The grain is straight but occasionally curly or wavy. Bird's-eye figures are what distinguish this maple from others. The wood is very fine and even textured.


Janka: 1450*

Bubinga - (African Rosewood) - *Africa* (Guibourtia Demeusei)
Bubinga is medium red-brown to pinkish red in color. Grain is a mix of straight and swirly figures.


Janka: 1980*

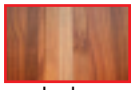
Canarywood - *Bolivia* (Liriodendron Tulipifera)
Heartwood varies from pale yellowish-brown to pale olive-brown streaked with olive green, dark gray, or pinkish-brown. Grain is usually straight with a fine texture.


Janka: 2200*

Iroko (African Teak) - *Africa* (Clorophora Excelsa)
Color varies from a golden to brown. Texture is moderately fine and even. This wood is so durable that it had been traditionally used to construct wooden battle ships in colonial times.


Janka: 1260*

Makore (African Cherry) - *Africa* (Tieghemella Heckelii)
Makore heartwood varies from pinkish-red to blood red and red-brown. Grain is usually straight. Its texture is uniform and fine. The wood is lustrous and a very durable choice for flooring.


Janka: 1100*


Janka: 1450*

Maple, Hard Maple - *North America* (Acer Saccharum)
Maple is creamy white with some brown heartwood mixed in. It usually has a straight grain, although sometimes curly or wavy. Texture is fine and even.


Janka: 950*

Maple, Soft Maple - *North America* (Acer Saccharinum)
Soft maple is creamy white and has a straight grain. It is a bit less lustrous than Hard Maple yet offers some distinct colors mixed throughout the grain.


Janka: 1290*

Oak, Red Oak, plain sawn - *North America* (Quercus Rubra)
Red Oak heartwood is similar to other oaks and coloration runs from a light tan to a reddish tinge. The wood is predominantly straight grained and coarse textured.


Janka: 1290*

Oak, Red Oak, quarter sawn - *North America* (Khaya Ivorensis)
Features a distinctive stripe or 'ray fleck' running across the grain that is the signature of quartersawn red oak. Often used in antique furniture and flooring.


Janka: 1500*

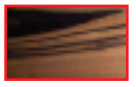
Sapele Mahogany - *Africa* (Entandrophragma Cylindricum)
Sapele is also known as African Mahogany, when in reality it is a different specie all together. Sapele has a reddish-brown color to the wood that in many ways is very similar to South American Mahogany. Sapele is harder and more durable than many other Mahoganies.


Janka: 1360*

Oak, White Oak - *North America* (Quercus Alba)
White Oak varies in color from light tan to pale yellow-brown. It is similar to European Oak. Straight grained with characteristic silver grain in quarter sawn wood. Medium to coarse texture. White Oak is somewhat more figured than Red Oak due to longer rays.


Janka: 1360*

Oak, White Oak, quarter sawn - *North America* (Quercus Alba)
White Oak which has been selected for straight grain patterns with 'ray fleck' figure as seen in traditional antique white oak furniture.


Janka: 1850*

Tigerwood (Brazilian Koa) - *Brazil* (Astronium graveolens)
Tigerwood is reddish-brown in color, richly figured and with dark black streaks and spots similar to Rosewood. Grain is irregular, and interlocked with alternating layers of dark and light grain patterns. Texture is medium.


Janka: 1630*

Wenge - *Africa (Milletia Laurentii)*
The clearly defined heartwood is a very dark brown, which is often nearly black in color. It is fairly straight grained with a coarse texture which is similar to oak.

See www.StaybullFlooring.com for additional photos

* See **pg. 24** for more info on Janka Hardness.

STAYBULL FLOORING VS THE COMPETITION

Staybull Flooring™ has pioneered a new eco-friendly category in the flooring industry. The following section is a comparison between Staybull Flooring™ and "traditional" flooring products. References to these "traditional" flooring products is for comparison purposes only, and are not part of the Staybull Flooring™ product line.

(1)Staybull Flooring™

Staybull Flooring™ is an Eco-Friendly Flooring product that is composed of recycled hardwood lumber strips. These strips are glued together into wide plank flooring. We pledge that our product saves on waste that other flooring companies leave behind. This means that you get an Eco-Friendly Flooring product that is not only a good material choice for your project but also an excellent choice for our environment.

Advantages: Our unique product combines the beauty and refinishing ability of solid hardwood flooring with the functionality, stability, and versatility of an engineered flooring product.

> Read *More* On Page 22-23

Below is a breakdown of our comparison factors.

Installation - We based installation stars on both the ease of installation as well as the range of applications the flooring product can be installed in.

Stability - Ranking for stability is based on how the product performs over time in the recommended installation areas.

Refinishing - This is based on the number of times, if any, the floor can be refinished after the initial installation.

Eco-Friendly - Each flooring product was given stars based on how friendly it is to our environment.

Beauty - All of the flooring products were compared to each other to determine their overall beauty. The originality of the look of the flooring as well as the range of species/colors available were also taken into consideration.

Product Quality - Stars were awarded for overall product quality. We based our rankings on the quality of: the raw materials, the finish, and glues used to manufacture the flooring product.

Table Key: = excellent = good = average = below average = poor = unacceptable or N/A

(2)Bamboo Flooring

Bamboo flooring is typically made in two different ways: Vertically or Horizontally Glued. Either version of bamboo flooring involves joining pieces of bamboo together to make plank flooring. The only difference is the pattern in which the pieces are glued.

Disadvantages: The eco-friendly aspect of bamboo is outweighed by the large percentage of bamboo flooring which is composed of inferior materials and toxic glues.

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(3)Solid Flooring

Solid wood flooring is made from exotic & domestic lumber that is milled into plank flooring boards.

Disadvantages: Wide boards tend to cup and twist over time. Solid flooring is only compatible with a limited number of installation options. This limits its usage to just a small number of installation applications.

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(4)Engineered Flooring

Engineered flooring is made by gluing a thin, typically 1/8" thick, "wear layer" of solid hardwood lumber to the top of plywood to make a flooring board.

Disadvantages: There is a huge difference in the quality of engineered flooring from different manufacturers. So, be careful not to be misled by low prices since this often means a low quality plywood backing and a extremely small "wear layer." This may prevent even a single refinishing. The use of harmful glues and finishes is often an issue.

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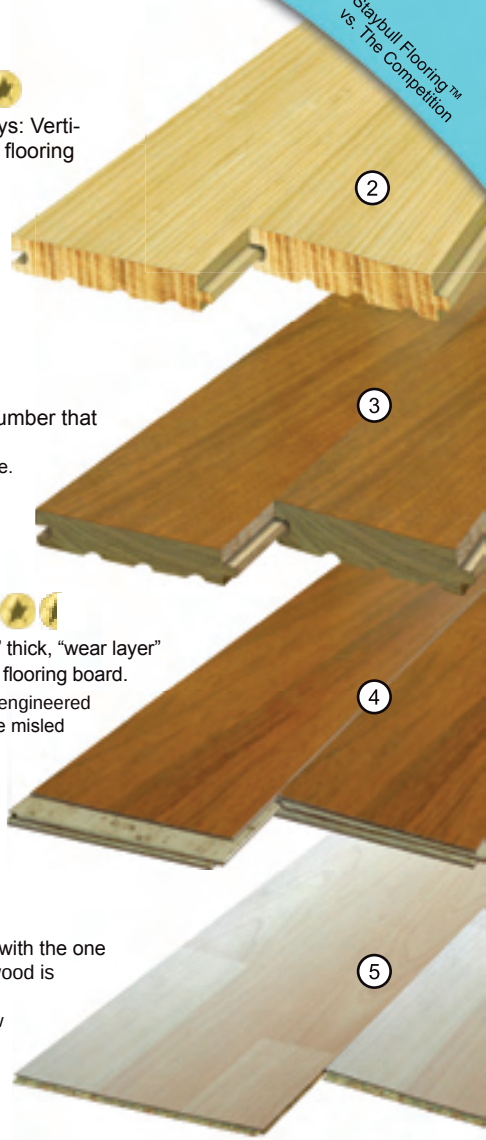
(5)Laminate Flooring

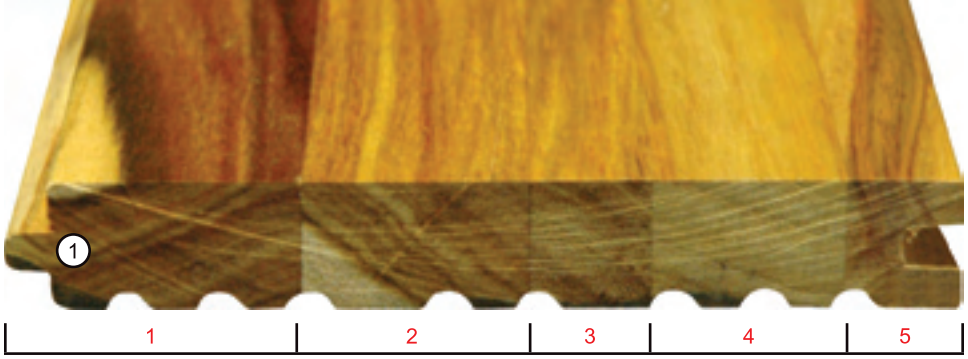
Laminate flooring is made similar to engineered flooring with the one major difference being that the thin "wear layer" of real wood is replaced by a photograph printing of wood on paper.

Disadvantages: Overall a laminate floor provides a very low budget look to the finished project. Even minimal water or moisture exposure can ruin the product.

> Read *More* On Page 27



Product	Installation	Stability	Refinishing	Eco-Friendly	Beauty	Product Quality
(1)Staybull Flooring™						
(2)Bamboo Flooring						VARIES
(3)Solid Flooring						
(4)Engineered Flooring						VARIES
(5)Laminate Flooring						



Staybull Flooring™ is a revolutionary SOLID wood flooring product that is composed of multiple narrow strips of hardwood lumber that are edge glued together to make plank flooring. ***(1)*** *Is a Canarywood Staybull Flooring™ plank that consists of 5 narrow strips of canary wood, with a* ***total thickness of 3/4"****.*

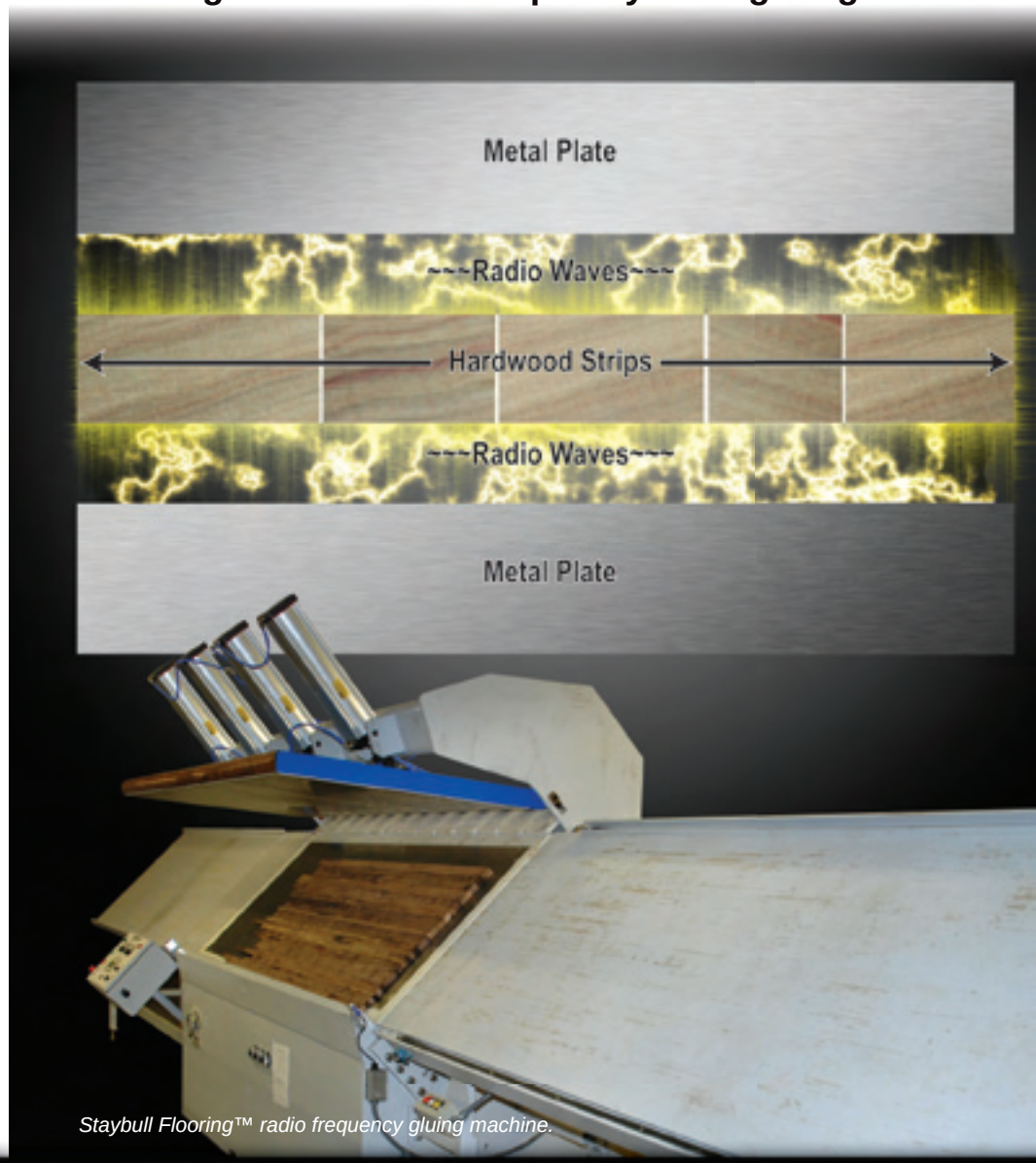
Staybull Flooring™

Staybull Flooring™ is manufactured through an innovative process that creates solid wood flooring with many advantages not offered by any other flooring products in the market today. Staybull Flooring™ gives the exclusive look of a solid wood floor with the added benefits of protecting our environment, increased strength, and outstanding stability. Staybull Flooring™ is fashioned from numerous narrow strips to eliminate the natural stresses found in lumber. The construction of Staybull Flooring™ gives it the versatility to be glued directly to a concrete slab or nailed to a standard plywood subfloor.

Rating Factor	Rating(out of five stars)	Explanation
Installation		Staybull Flooring™ has a wider range of installation options when compared to traditional solid hardwood flooring. Staybull Flooring™ can be glued over an aged concrete slab or nailed to a plywood subfloor.
Stability		The construction of Staybull Flooring™ eliminates the natural stresses found in lumber which decreases the probability of cupping and twisting.
Refinishing		Staybull Flooring™ is made from solid strips of hardwood lumber which allow it to be refinished, if needed, after many years of use.
Eco-Friendly		Staybull Flooring™ utilizes wood strips left over by companies that produce moldings and traditional hardwood flooring. These waste saving efforts conserve resources while at the same time create a product with superior benefits.
Beauty		Unique "one of a kind" designer look.
Product Quality		All Staybull Flooring™ products start with the highest quality exotic and domestic hardwood lumber. Staybull Flooring™ is also free of any harmful glues or toxins.

Radio Frequency Gluing - ***The Superior Gluing Method***
The radio frequency gluing machine we use emits high intensity radio frequency waves. This current fuses the wood together with a bond that is stronger than the natural resin found within the wood itself. This phenomenon is used to make Staybull Flooring™ glue joints as strong as possible.

High-Tech Radio Frequency Gluing Diagram



Staybull Flooring™ radio frequency gluing machine.

Bamboo Flooring: The strength of bamboo flooring should be taken into account before considering it as a flooring alternative. Bamboo flooring products are sometimes made with bamboo that is not allowed to mature properly. The results are a flooring product that has only a fraction of the strength that the bamboo flooring companies advertise. The photos on this page are a perfect example of bamboo flooring that does not have the strength needed to be a flooring product. ***(2)*** *Is a photo of the face of a cracked bamboo flooring.* ***(3)*** *Is an end grain shot of the same flooring board.*

Bamboo Flooring

To form a bamboo flooring plank the bamboo strands are glued together in a vertical or horizontal pattern. Bamboo flooring is advertised as an eco-friendly flooring product but there are many reasons why the exact opposite may actually be true.

A large percentage of bamboo flooring is manufactured outside the United States. Therefore flooring companies do not have to meet the strict U.S. manufacturing standards. Most of the companies that produce bamboo flooring use young plants to create their products. When using these immature stalks, a product is created that is weak and delicate. The glues used to bond the bamboo commonly contain toxic chemicals like formaldehyde which add to the destruction of our environment and can leech out as fumes from the finished product. Another problem with choosing a bamboo product is many of the manufacturers are destroying the integrity of the land throughout Asia. They are clear cutting the natural forests to allow for more room for bamboo plantations. This is causing a major problem with land erosion as well as depleting the natural resources of Asia. By destroying these natural forests they are also destroying the natural habitats of many species of both plants and animals.

Rating Factor	Rating(out of five stars)	Explanation
Installation		Bamboo flooring can be installed in almost any application.
Stability		Bamboo flooring resists cupping but the long term integrity of the flooring is questionable.
Refinishing		Many bamboo flooring manufacturers claim refinishing can be done, but it varies by brand.
Eco-Friendly		Bamboo flooring producers claim their product is eco-friendly but plenty of evidence suggests otherwise.
Beauty		Bamboo flooring looks similar to a veneer or laminate flooring product. Color options are very limited.
Product Quality	**VARIES**	Quality varies by manufacturer

Solid Flooring

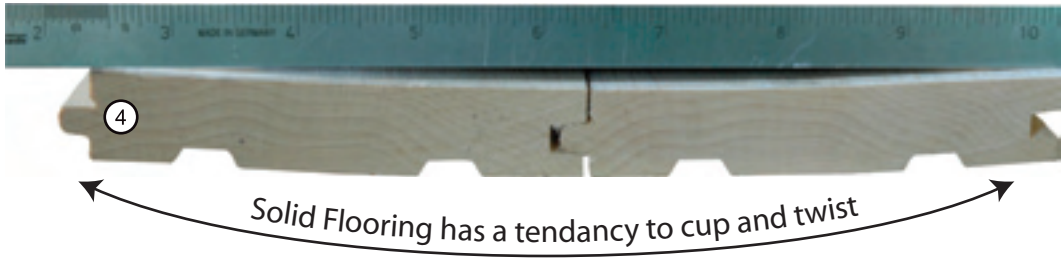
Solid wood flooring has been used for many years and showcases the beauty of natural wood that many homeowners love. The main problem that solid wood flooring presents is the fact that installation options are very limited. Solid wood flooring can only be nailed or stapled directly to a wooden subfloor and can not be installed over a concrete slab. This is because concrete tends to retain moisture and a solid wood floor will cup and twist if installed over concrete. For these reasons a traditional solid wood floor can only be installed in a small number of applications.

Despite the installation limitations solid wood floors give homeowners the option of refinishing after many years of use. The fact that solid wood floors can be refinished extends the overall life of the floor.

When considering solid wood flooring be cautious of lower priced alternatives. The low priced options are generally made from low grade, poorly milled, or inadequately dried material. These low grade flooring products do not provide the same strength or beauty as higher quality flooring. Improper moisture content and poor milling are frequent problems associated with commercially available solid flooring.

Rating Factor	Rating(out of five stars)	Explanation
Installation		Very limited installation options.
Stability		Stability is questionable based on flooring grade and installation location.
Refinishing		Solid flooring can be refinished multiple times.
Eco-Friendly		Solid wood flooring is an all-natural product, but a large quantity of the raw material is typically wasted.
Beauty		Large selection of species are available.
Product Quality		Low grade solid wood flooring has a very low product quality.

Solid Wood Flooring can cup or twist especially if it is installed in an area with a high moisture content. Below is a photo ***(4)*** *of some hickory flooring that needed to be replaced because of extreme cupping. The factor that caused this cupping was a moisture problem in the house it was installed in coupled with the instability of a single solid plank.*



Engineered flooring has only a thin layer of hardwood that is glued to the top of a plywood base. This means that most engineered flooring is unable to be refinished. ***(5)*** *Is an example of a piece of engineered flooring that was sanded down too far when it was being refinished. You can see the scratch penetrated all the way down to the plywood layer. When refinishing was attempted the top wear layer was totally removed by the flooring sander, which exposed the cheap plywood base.*

Engineered Flooring

Although there are many different manufacturers of engineered flooring they are all generally made in the same fashion. All engineered flooring starts with an inexpensive plywood base, commonly bonded together with harmful adhesives. Then a thin piece of hardwood is adhered to the top of the plywood. **(6)** Is a cross section showing the composition of a typical engineered flooring plank . The construction of engineered flooring allows it to be glued to a concrete slab. However, after many years of use the installed flooring may need to be refinished. This is the major drawback of engineered flooring. By only having a small wear layer, refinishing an engineered floor is nearly impossible!

Rating Factor	Rating(out of five stars)	Explanation
Installation	★★★★★	Engineered flooring can be installed in almost any application.
Stability	★★★★★	Engineered flooring resists cupping, but the life of the flooring is relatively short in comparison to other options.
Refinishing	⊘	Many engineered flooring manufacturers claim refinishing can be done, but it varies by brand and the severity of the damage to the wear layer.
Eco-Friendly	★★★	That fact that your flooring may need to be replaced after a short time takes away from any eco-friendly benefits. Harmful glues and finishes are additional negative aspects.
Beauty	★★★★	High quality engineered flooring looks similar to a solid wood floor.
Product Quality	**VARIES**	Quality varies by manufacturer

Laminate Flooring

Laminate flooring consists of an inexpensive particle board covered with a photograph of wood grain. Laminate flooring is often installed as a "floating floor" which is not securely fastened to a subfloor. This "floating floor" has a tendency to shift up and down as you walk across it. The movement in the flooring boards can cause it to become unstable making it a tripping hazard especially for the elderly and disabled. The use of Laminate flooring presents a very "fake" look to the finished project. A "floating floor" can lead to excessive gapping in between floor boards as they shift back and forth. Excessive moisture, water leaks, or even minor water damage can cause the material to delaminate, buckle, and expand rapidly requiring removal and replacement of the product. The cheap laminate that covers the particle base can also chip and scratch easily on the edges, leaving the particle board core exposed as illustrated in **(7)**. To make matters worse, repairs are often not an option as matching the product at a later date can prove impossible. This is because all laminates are NOT real wood. Each production run of a laminate flooring product can vary significantly leaving customers with no acceptable replacement product for any repair areas.

Rating Factor	Rating(out of five stars)	Explanation
Installation	★★★	Wide range of installation options but a "floating floor" installation presents tripping hazards.
Stability	★	Particle board core can retain moisture which leads to numerous problems.
Refinishing	⊘	Top layer consists of just a printing of wood on paper, which makes refinishing impossible.
Eco-Friendly	★★	Foreign manufacturers may use toxic adhesives in laminate flooring products.
Beauty	⊘	Most laminate flooring fails to mimic the look of a real wood floor.
Product Quality	⊘	Unreliable particle board base makes laminate flooring a less than ideal flooring product.

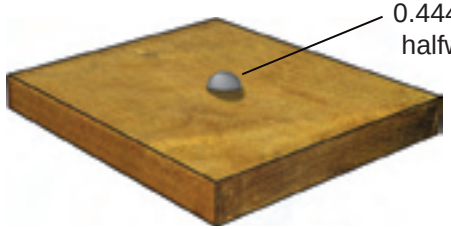
Laminate flooring lacks even a thin "wear layer" of real wood as you can see in ***(8)****. The particle board core makes up the majority of the flooring board. As seen in the example below some laminate flooring products are so thin that they lack a tongue and groove profile opting for a less reliable "snap & click" installation method.*

What is the Janka Hardness Test?

The Janka Hardness Test is a measure of the hardness of wood. The Janka Test was developed as a variation of the Brinell hardness test. The test measures the force required to push a steel ball with a diameter of 11.28 millimeters (0.444 inches) into the wood to a depth of half the ball's diameter. The diameter was chosen to produce a circle with an area of 100 square millimeters. The average Janka Hardness value for each particular specie has been indicated throughout this catalog for your reference.

The Janka Hardness Test should only be used as a general guide when comparing various species of wood flooring. Depending on where the wood is harvested, moisture content, age and the number of growth rings are a few of the factors that may vary the exact results, therefore, the value given is an average. Plank construction and finish are also important factors when determining the durability and ease of maintenance of any wood floor.

Since all Staybull Flooring™ is constructed with the highest quality hand selected materials the Janka hardness should not be the only determining factor when choosing which Staybull Flooring™ specie is right for your particular application. In addition all Staybull Flooring™ is prefinished with the same high quality finish that provides a layer of protection against any damages to the flooring surface.



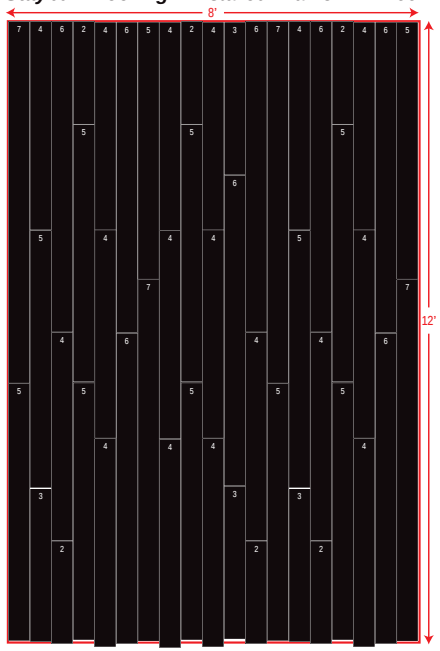
Janka Hardness Test
Measures the force needed to embed the steel ball

What is End Matched Flooring?

All Staybull Flooring™ planks are end matched for a more secure fit during installation. Our end matched flooring is not only easier to install, but also provides a more stable floor. End matching the end grain also helps to further reduce cupping of flooring planks.

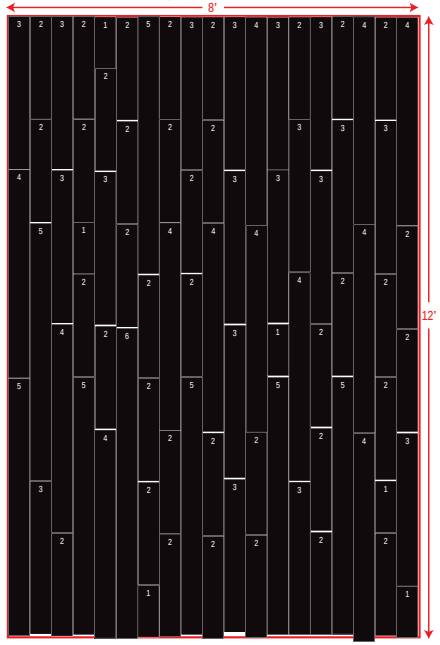
End matched Staybull Flooring™ - Jatoba (Brazilian Cherry)

***Staybull Flooring™** installed in an 8' x 12' room*



2 · 3 · 3 · 3 · 3 · 2 · 2 · 3 · 3 · 3 · 3 · 3 · 2 · 3 · 3 · 3 · 3 · 2 · 2
= 51 Total Pieces

***Standard Flooring™** installed in an 8' x 12' room*



3 · 4 · 4 · 5 · 5 · 4 · 5 · 5 · 4 · 5 · 4 · 4 · 4 · 4 · 5 · 4 · 3 · 6 · 5
= 83 Total Pieces

Why Do Longer Flooring Boards Matter?

Staybull Flooring™ often has an average flooring length of 3.5 feet or *more*. So what does this mean for you? Having a longer average flooring board length has numerous benefits when compared to a flooring product with a shorter average length. One advantage that longer lengths offer is that the final installed look will be a cleaner and more stylish with less seams between individual flooring boards. Another main advantage to having longer flooring boards is that fewer flooring boards will be needed to complete the installation. This makes the overall installation faster, easier and more professional looking.

Here's how the final installation breaks down...

Staybull Flooring™

For an 8' x 12' room only 51 total pieces of Staybull Flooring™ were needed to complete the job. You can see from the diagrams to the left that there are far fewer horizontal breaks between individual boards.

Standard Flooring

For an 8' x 12' room 83 total pieces of standard flooring were needed to complete the job. You can tell from the diagram to the left that there is an abundance of 1' and 2' pieces that leave you with an unattractive floor. These short pieces that are overly common in standard flooring also slow down the installation significantly.

For this comparison we compared Staybull Flooring™ (which is available in 3/4" x 5" planks) to standard wood flooring with the same width of 5". The difference would be even more drastic if the compared width was anything less than 5" wide.

Installation Preparation Instructions

Read the entire instructions before starting your project.

1) INSPECT EACH PLANK

(see fig. a)

Wood is a natural product containing natural variations in color, tone and grain. Color variation between planks is to be expected in natural wood flooring. Remove flooring from cardboard boxes and allow flooring to acclimate for a minimum of 7 days in the same area where flooring is to be installed. Use a moisture meter to ensure that wood flooring is properly acclimated to an average 6-8% moisture prior to installation. A dehumidifier placed in the room may aid in achieving these levels.

We urge you to inspect for color, finish and grain BEFORE installation. Care should be taken during the installation process to cut out characteristics that you do not desire. We suggest you use cut planks as pieces to begin each new row and to 'rack' the flooring, staggering joints at a minimum of 6 inches apart to ensure a random appearance.

2) SUB FLOOR PREPARATION

(see fig. b & c)

- Remove any existing floor coverings. Do not apply Staybull Flooring™ over existing floor coverings.
- Make sure subfloor is clean and free of any dust, oil, dirt, grease, wax, sealers, paint, adhesives or any other substance that would hinder adhesion. (See figure b.)
- Make sure subfloor is dry. Using an approved moisture meter, measure the moisture content in the subfloor. For a plywood subfloor it should be between 6% and 10%.
- Make sure subfloor is structurally sound.
    - Concrete should be smooth, crack free, at least 6 months old, and fully cured as to not add moisture to the flooring.
    - Planks may be nailed to a single layer of 3/4" thick tongue and grooved plywood. Plywood should be securely glued and nailed to floor joists on 16" centers.

a. If the underlayment substrate plywood is less than 3/4" thick or is a wood product other than plywood, add a second cross layer for strength and stability not less than 5/16" thick. To prevent squeaking, use ring shank nails, coated nails or coated staples every 6" to secure the second layer. Glue (construction adhesive) and screw down plywood, when installing any added layers of plywood to the subfloor.

Wood product subflooring should be covered with a layer of felt roofing paper or Red Rosin Paper prior to nailing flooring down.

Structurally sound wood floors should not have movement or deflections. Subfloor movement or improper subfloor installation may eventually cause squeaking.

High moisture content of subflooring or concrete slabs may cause cupping, twisting, and other problems in the finished hardwood flooring. Excessive moisture of the subfloor is the leading cause of many wood flooring problems, so be sure to only install wood flooring over adequately dried subflooring and well cured slabs. A dehumidifier used for several days in the installation area prior to bringing flooring in to acclimate will help to remove excess moisture. Ensure that any basement or crawl space under flooring area is adequately dry as not to add moisture issues to the flooring area.

3) BLENDING OF CARTONS

To get a more uniform appearance across the complete floor, it is advised to open several cartons of flooring and stack the planks in the work area so the flooring is blended during installation.

PLEASE NOTE: Staybull Flooring manufacturers, agents, reps, distributors, retailers, and other related parties accept no responsibility for costs incurred when a floor with visible defects has been permanently installed or when installation instructions are not properly followed. Defects should be culled from flooring prior to installation.

Please keep in mind that it is always a good idea to retain a few planks in case a repair is ever required.

Preparing Doorways and Skirting

1. Remove existing base molding, quarter round and doorway thresholds. Save to reinstall later to cover any unattractive edges.

2. Undercut all door casings 3mm (approx. 1/8") higher than the thickness of the flooring to be installed. Put a scrap piece of plank on the substrate as a guide and cut the door casing with a handsaw or power undercut saw set to the correct height.

Installation Instructions - Over Concrete Slab

Read the entire instructions before starting your project.

These instructions cover installation methods for flooring applied over concrete slabs. The recommended application to an aged concrete slab is to glue (Urethane adhesive only) flooring directly to the slab surface.

Adhesive Installation – Over Concrete Slab

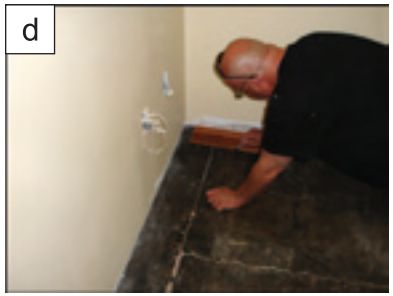
1. Select a starter wall. An outside wall is best; it is more likely to be straight and square with the room.

2. Measure out from the wall the width of 2 planks, plus an allowance of 13 mm (approx ½") gap along the wall for expansion room for the flooring. *(see fig. h for proper gap spacing from walls)* Failure to allow a gap along all walls will result in future buckling of flooring. This gap is intended to be covered with the reapplication of the base and shoe moldings. Expansion room should be allowed along entire perimeter area of the room. *(see fig. d)*

3. Snap a chalk line. *(see fig. e)*

4. Spread Urethane Wood Flooring adhesive from chalk line to wall with a 1/8" x 1/8" square notch trowel. Do not use water based adhesive as it will add moisture to the flooring project, which may cause instability and other flooring issues. *(see fig. f)*

d



e

f

5. Most walls are not straight so set the flooring to the chalk line for straightness, remembering to allow 13mm (approx 1/2") gap along wall for expansion *(see fig. g)*.

6. Install the first row of starter planks (flooring groove should be facing the starter wall) and secure into position. Proper alignment is critical. Misaligned starter rows can ruin your installation. Professional installers sometimes firmly secure a straight edge along the chalk line (2x4's work well), as a guide and to prevent planks from shifting in wet adhesive. Other installers prefer to install a few rows of flooring precisely laid straight. They then allow the flooring to dry for several hours before proceeding. Be sure to scrape excess glue from the subfloor so that excess dried glue doesn't hinder installation of the remaining floor. This method allows for a solid racking of the flooring for tightness without moving your starter rows around.

7. Use a scrap wooden tapping block to tap the planks until the tongue and groove snaps into place.

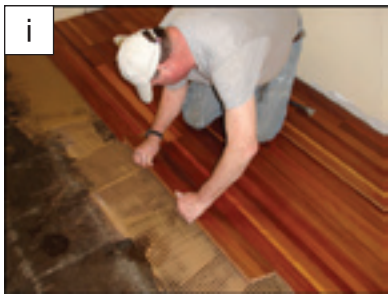
8. When the first 2 starter rows are secure, spread a 2-1/2 to 3 feet wide area of adhesive the length of the room. Avoid clustering end joints. Stagger random lengths so that end joints are no closer than 15 cm (approx 6 inches). (Never lay more adhesive than can be covered in 20 minutes. If the adhesive has set and will not transfer to the back of the plank, scrape up the adhesive and apply a fresh layer.) *(see fig. h)*

9. Place planks into position in wet adhesive and tap into place with a scrap wooden tapping block. *(see fig. i)*

g

h

i



10. After several rows of planks are installed, lay down perpendicular strips of masking tape or blue painters tape to help hold the planks securely while the glue cures. Repeat this process as the installation progresses.

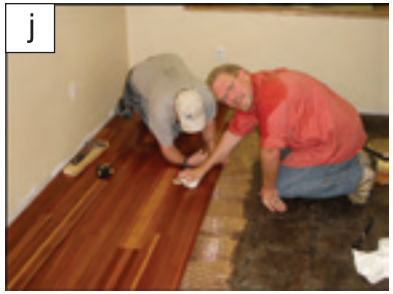
11. Check over installed area every few rows as it may be necessary to push flooring to close gaps. *(see fig. j)*

12. Retain a few planks in case a repair is ever required.

13. After every few rows, clean any adhesive accidently transferred onto the finish surface of flooring planks with mineral spirits while still wet. *(see fig. k)*

14. Peel up masking tape within 24 hours of installation.

j



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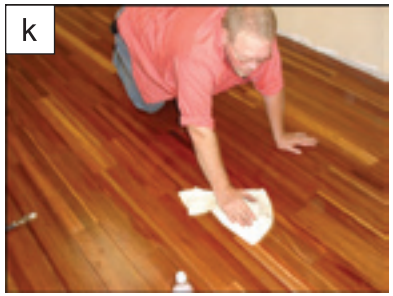

l

Final inspection
After the floor is cleaned, reinspect the floor for imperfections such as nicks, scratches and planks that may have moved during installation. *(see fig. l)* In typical climates, floor can accept foot traffic within 8-12 hours. Arid climates may require more curing time.

Floor protection during construction
To protect the completed floor during construction, lay cloth tarps over the floor and tape them to the skirting boards. Never use plastic or polyethylene to cover the floor since they will trap moisture. Covering materials must allow the floor to breathe.

For Additional Questions / Comments / Concerns

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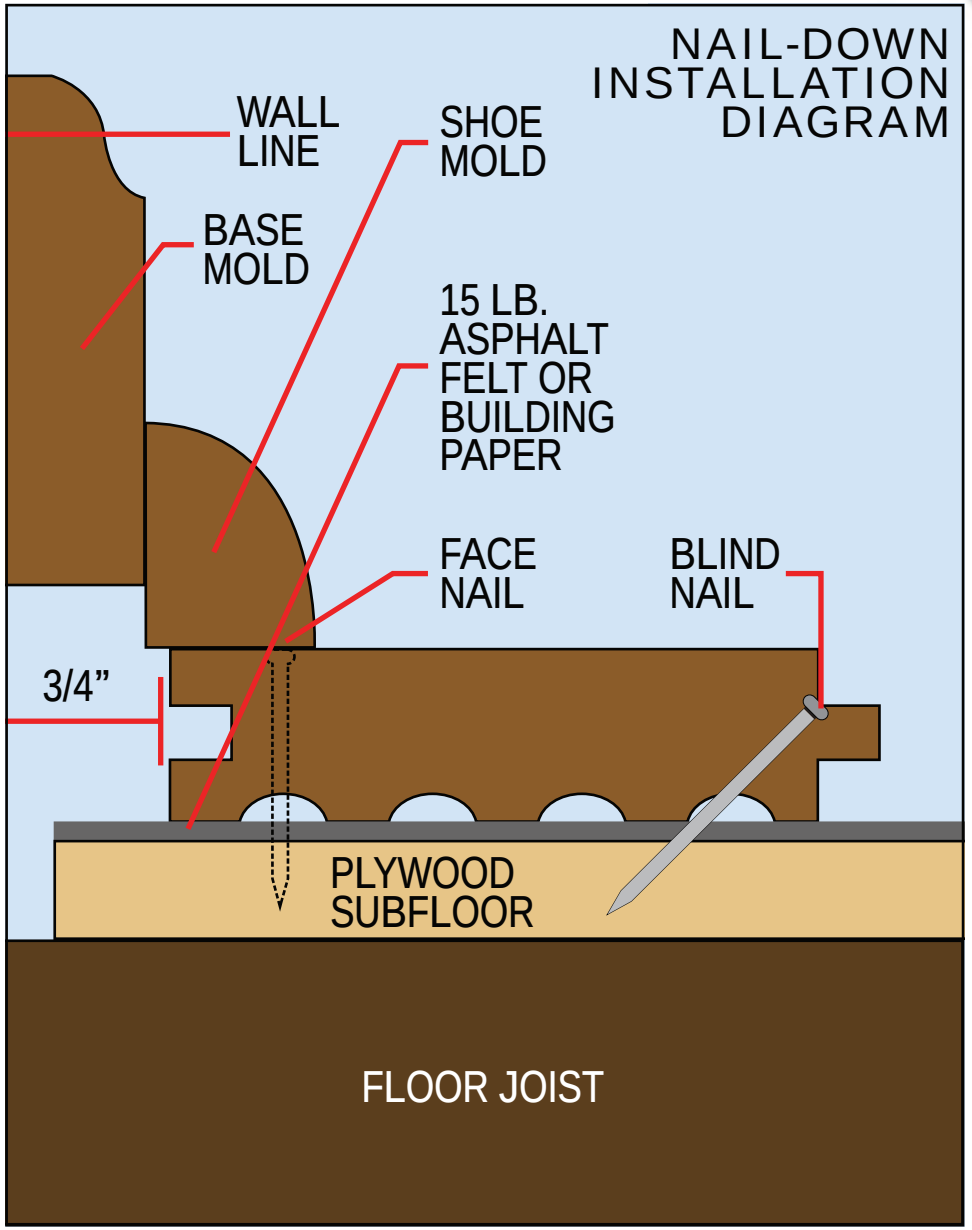


Installation Instructions - Over Plywood Subfloor

Read the entire instructions before starting your project.

These instructions cover installation methods for flooring applied over a plywood subfloor.

Preparing Your Subfloors:
Before installing new hardwood flooring the subfloor should be clean, smooth, level, and structurally sound.

Prior To Installation Steps:
Prior to installing your new hardwood floor you must remove and stack the flooring in the room in which it will be installed. Allow the flooring to acclimate for several days, this will give the wood time to adjust to your home's humidity level.

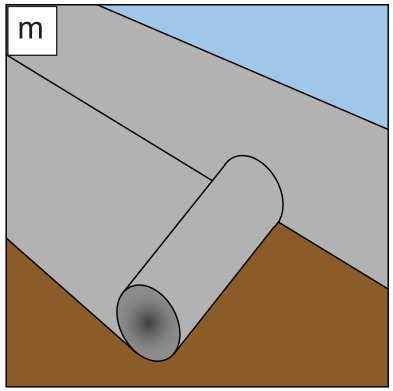
Cover the subfloor with a layer of 15-pound asphalt felt or Red Rosin paper to provide a moisture barrier and minimize squeaks. Mark the centerline of the room

If the room is not square, position the tongue of the first row parallel to the centerline and rip the groove side at an angle parallel to the wall.

Use a radial arm saw or chop saw to cut the boards to length. When blind-nailing with a hammer and finishing nails, do not drive the nails flush with the hammer as this will leave indentations. Instead, leave each nail head projecting up about 1/8 inch, then use a nail set to finish driving the nail so that the nail head is flush with the wood.

Nail Down Installation – Over Plywood Subfloor

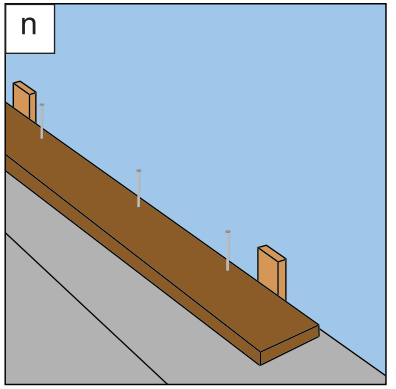
1. Cover the subfloor with a layer of 15-pound asphalt felt, or Red Rosin Paper, overlapping seams by about 3 inches. *(see fig. m)*
Tack down with a staple gun.



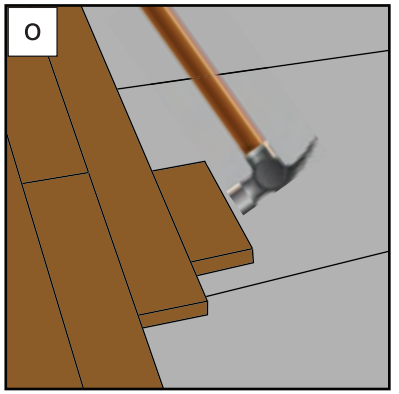
Measure the room's width at two or more points to establish an accurate centerline, then snap a chalk line parallel to your starting wall.

2. To indicate the edge of the first row of flooring, snap another chalk line about 3/4 inch from the starting wall exactly parallel to your centerline. This 3/4 inch gap between the flooring and the wall will allow for expansion; the gap will be covered by the shoe molding or baseboard molding.

3. Choose the longest planks for the first row. Near the wall, where the nail heads will be covered by your shoe molding, drill pilot holes for 1 1/2 inch finishing nails. Then face-nail the first row through the plywood subflooring to the floor joists. Use a nail set to recess the nails below the surface. *(see fig. n)*



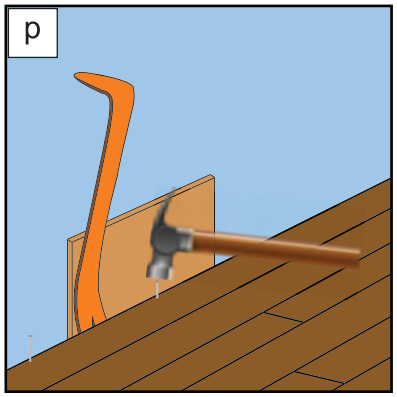
4. Blind-nail this and the next two rows by hand. Drill pilot holes at a 45-to-50-degree angle through the tongues, centered on each joist at every 10 inches along the lengths. Fasten with 1 1/2-inch finishing nails. Use a nail set to finish driving each nail.



5. When installing the second row and every row thereafter, move a short scrap piece of flooring along the edge and give it a firm tap with a mallet or hammer to tighten the new row against the previous row before nailing. *(see fig. o)*

Remember that end joints in two adjacent rows should not be closer than 6 inches (15cm); end joints should also not line up over a joint in the subfloor.

6. If you're installing flooring over a large area, use a flooring nailer once you've installed the first three rows. Set it onto the board's tongue and, using a heavy rubber mallet, strike the plunger to drive 2-inch nails through the tongue into the sub-floor. Be very careful to avoid scratching or otherwise damaging the flooring surface when using a flooring nailer.



7.When you reach the final row, use a block and a pry bar to wedge the last boards tightly into position. Drill holes and face-nail boards where baseboard or baseshoe molding will cover. Set the nail heads below the surface using a hammer and nail set. *(see fig. p)*

Final inspection

After the floor is cleaned, reinspect the floor for imperfections such as nicks, scratches and planks that may have moved during installation. In typical climates, floors can accept foot traffic within 8-12 hours. Arid climates may require more curing time.

Floor protection during construction

To protect the completed floor during construction, lay cloth tarps over the floor and tape them to the skirting boards. Never use plastic or polyethylene to cover the floor since they will trap moisture. Covering materials must allow the floor to breathe.

For Additional Questions / Comments / Concerns

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ECO-SHIELD™
Hardwood Floor Finish

Finishing Process Technical Information

To prolong the life of Staybull Flooring™, we use Eco-Shield™ flooring finish. Perfect for commercial use and for today's modern home, the Eco-Shield™ flooring finish is a ceramic-based finish that needs less coats, but still has all the same qualities as an aluminum oxide finish. The other major advantage to the ceramic-based Eco-Shield™ finish is that it offers even greater abrasion resistance and heightens the performance of each individual plank of Staybull Flooring™.

The Eco-Shield™ eco-friendly finish:

- High abrasion resistance holds up even in the toughest applications
- Enhances and highlights the wood's natural beauty
- Coefficient of friction of 0.5 for high slip resistance
- No Hazardous Chemicals & REACH Compliant
- No VOCs - Toxic-free glues with zero emissions

Product Performance	Test Reference	Specification
Cross Hatch Adhesion	ASTM D3359	> 4B (90%)
Taber Abrasion	ASTM D4060	> 450 – 900 (S-33 Wheel)
Balance Beam Scrape Adhesion	ASTM D2197	> 2000g
3 Cycle Soak Test	ANSI/HPVA-2000-4.6	Pass
Coefficient of Friction	ASTM D2394	> 0.5
Chemical Staining	ASTM D3023	< 3
Gloss Retention	ASTM D2486	+/- 5 points (at 60°)
Scratch Resistance	EN 438 2-25	grade 3
Impact Resistance	EN 438 2-20	> 6N
Scrub Resistance	IHD 445	0-1
Linear Scratch (Coin Test)	TF_01	> 20N
CC Test (accelerated aging)	TF_03	pass

Staybull Flooring™ - Finishing Process

Pre-finished Flooring Process Description

Finish Overview:

Our entire finish process does not emit any Volatile Organic Compounds (VOC's) or harmful emissions. This ensures that no harmful outgassing will occur after installation. Our finishing process also keeps both you and our employees free from exposure to poisonous chemicals used by many other companies. All of our pre-finished flooring has a specially formulated finish applied to it to increase the abrasion resistance of the wear layer. Our finish is superior to the competition's because of its durability and resistance to scratching. Also, our UV cured finish is much harder, more uniform, and more durable than a finish that is applied on the job site.

Step by Step Process:

Our finishing process starts with a series of material inspections to recheck the tongue and groove dimensions, the overall thickness, moisture content and the re-inspection of the milling quality of the flooring. This helps to determine the proper set-up and adjustments to our finishing line equipment.

The first, and arguably most important process, is the sanding operation. This consists of two sanders, a "calibration" sander and "surface polishing" sander. The calibration sander is set-up to remove approximately .010" from the bottom and the surface sander removes about .020" to create flooring that is consistently the same dimensionally and smooth enough to finish. This process removes most variances which could cause finishing materials to be poorly applied on the surface of the flooring. Sanded flooring should then have an overall variance in thickness of .003" or less. A panel cleaning brush removes any dust residue on the surface of the boards as they pass to the next process station, tie coating.

The tie coat station consists of roller coaters, smoothing brushes, and curing ovens. The flooring passes through the curing oven which is also used for the UV stain/tiecoat operation to raise the surface temperature of the wood to create consistency in the finishing process. Water naturally causes the grain of wood to raise causing very tiny "splinters" to rise up from the surface during finishing. A denibbing station, (a brush roller that is used as a sanding device) is used at this point in the operation to remove any "raised grain" caused by the finishing process. UV finishes will be smoothed during the denibbing process. Both waterborne and UV cured finished surfaces will be prepared for the "fill" operation, if necessary.

The "fill" process station may not be necessary on all species offered by Staybull Flooring™. If the surface of the flooring is more "open grained" or slightly rough, (in species such as Red Oak), the fill operation will be used. The material is run through a roll coater that packs a thin coating of UV cured material into the pores of the wood and then passes through several series of high intensity UV lights for curing. Filling creates a smoother, more consistent surface on which to apply the remaining finish coats. Another denibbing station follows the fill operation which smooths the surface for the first of the sealers.

The HA (high abrasion) sealer, a UV cured material which provides the wear resistance properties of our finish, is then applied. The flooring moves through an infrared oven and a UV light curing station. A second sealer is applied and again, UV cured. Then the material passes through a series of denibbing brushes and a panel cleaner which prepares the surface for the top coating operation.

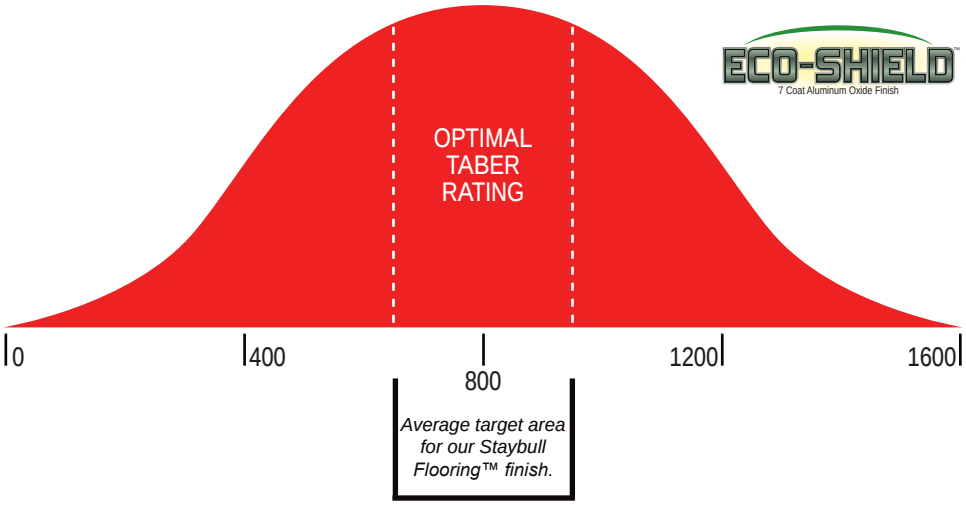
The UV cured topcoat material contains microscopic Ceramic particles for scratch resistance and gloss retention. It is applied with up to three (3) roller coaters for a smooth and even finish. The gloss level is determined with the last topcoat, which is not denibbed. The flooring next passes through a "chilling" unit, which lowers the surface temperature of the pieces so they can be safely handled by the Quality Inspection and Packing Team. This process is repeated until our high-quality standards are met. Each piece of finished flooring is examined for finishing and machining defects. After Staybull Flooring™ is regraded, it is then placed directly into a box and is ready for shipment.

UV lights curing the finish on Staybull Flooring™ planks.

Prefinishing Information

What is the Taber Abrasion Test?

The Taber Abrasion test for hardwood flooring is a durability testing method that was designed to measure the abrasion resistance of protective floor finishes. Results of Taber Abrasion testing for hardwood flooring may vary with the wood specie used. Flooring squares are secured to a turntable and than weighted with sandpaper. The turntable is rotated, causing the sandpaper to wear against the finish. Each full revolution of the turntable is counted as one Taber cycle. The number of rotations it takes the sandpaper to wear through the finish becomes the Taber rating for that finish.



What is the Optimal Taber Abrasion Rating?

Some flooring companies boast and brag about an absurdly high Taber Abrasion Rating... but, does this mean it is the best available finish? Well truth be told an Optimal Taber Rating is somewhere in the middle of the scale. This is because a value around 800 still provides a very tough finish that is far more consistent than a finish that aims for 1600. The super high Taber Abrasion rating is obtained by adding an excessive amount of aluminium oxide abrasion particles to the finish which in turn makes the finish less consistent. Not only will the finish be less consistent but it also may be more opaque than optimal rated finishes. Since the finish is somewhat opaque it appears “cloudy” which hides the natural beauty and grain that is present in the flooring.

We aim for a finish that is right in the middle of the “Optimal Taber Rating” range for the most consistent finish possible. The finish on Staybull Flooring™ will not vary significantly from board to board like the competition. The finish that we apply to Staybull Flooring™ is a very hard and durable finish that allows the natural beauty of the wood to show through.

Prefinishing Coefficient of Friction Information

Coefficient of Friction refers to the slip resistance of a material. Staybull Flooring™ has a finish with an average CoF (Coefficient of Friction) for Eco-Shield™ surfaces that reads ≥ 0.5 N and therefore complies with flooring code requirements for a wide variety of applications.

Please see the following detailed information regarding our test method according to the EN and ASTM Standard.

1. Coefficient of friction according to EN 13893

The gliders on the bottom of the coefficient of friction test equipment (GMG 200) have to be clean and even. To grant that, they have to be sanded with a 320 grit sandpaper before each testing. Any dust has to be removed as well. In order to conduct the test, switch on the device and place it on the test board along the application direction of the coating material. Then pull out the traction cable for at least 33% of its total length and hook it to the foot plate. For a better fixation, place one foot on the plate. The measurement starts automatically after 3 seconds. The result (coefficient of friction) is shown on the display. The test has to be carried out 5 times on the same sample, whereby the glider has to be placed on a new track at all times. The first two measurements are irrelevant as they might not be representative. The average value of measurement is calculated as follows.

Assessment:

$$\mu\,(N) = \frac{M1 + M2 + M3}{3}$$

μ (N) = Coefficient of friction in Newton

M1-M3 = Measurement 1-3

3 = Number of relevant measurements

2. Coefficient of friction according to ASTM D2394

The apparatus shall be an assembly consisting of a weighted sliding unit, cleated bed for holding the specimen, non-stretching flexible cable, pulley and movable unit attached to the weighing mechanism. The cleated bed with the pulley is attached to one platen of a testing machine and shimmed so that it is levelled. The sliding unit shall be a piece of metal . A piece of plywood with a piece of

prime-grade shoe sole leather 4 by 4 ½ inch (102-104 mm) glued to it, is glued to the sliding unit. During the evaluations the surface of the leather is renewed by light sanding with ½ grit sanding paper before each test. The standard distinguishes between the static and the sliding coefficients of friction. Both should be tested on an area of at least 6 inch (152 mm) wide and 9 inch (229 mm) long.

- Static coefficient of friction

The static coefficient of friction is determined by obtaining the force required to move the specimen from a stationary position. To accomplish this, the sliding unit is placed on the specimen and carefully lined up so the line of force coincides with a line through the center of gravity of the mass on the sliding unit. The chain is loaded at a rate of separation of the testing machine heads of 0.05 inch (1.27 mm) per minute. The load required to move the sliding unit divided by the mass of the sliding unit of approximately 25 lb (111 N) expresses the static coefficient of friction.

- Sliding coefficient of friction

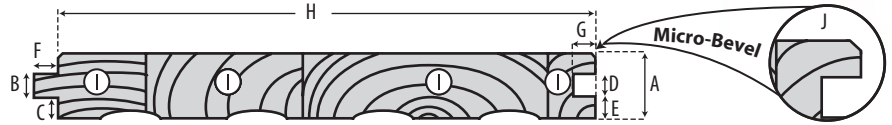
The sliding coefficient of friction is determined by measuring the average force required to maintain movement at a rate of separation of the heads of the testing machine of 2 inch (51 mm) per minute. Average these peaks and valleys to get the mean values and determine the coefficient by dividing the average repeated forces by the weight of the sliding unit.

More Info:
The Occupational Safety and Health Administration recommends that walking surfaces have a static coefficient of friction of 0.5. A research project sponsored by the Architectural and Transportation Barriers Compliance Board (Access Board) conducted tests with persons with disabilities and concluded that a higher coefficient of friction was needed by such persons. A static coefficient of friction of 0.6 is recommended for accessible routes and 0.8 for ramps.

Staybull Flooring™ - Specifications

Staybull Flooring™ products are processed from solid kiln-dried lumber and rips. These flooring materials should be acclimated and installed in accordance with the National Wood Flooring Association recommendations. As each installation is unique, we urge you to contact us and a professional flooring installer for recommendations concerning jobsite evaluation and installation. Please contact your Staybull Flooring™ representative with any questions and view our website for general tips and guidelines on installation.

Staybull Flooring™ Cross Section



Letter	Description	Inches	Millimeters
A	Overall Thickness	.75″	19.5mm
B	Tongue Thickness	.25″	6.40mm
C	Tongue to Back of Board	.19″	4.85mm
D	Groove Thickness	.259″	6.60mm
E	Groove to Back of Board	.187″	4.75mm
F	Length of Tongue	.22″	5.60mm
G	Depth of Groove	.275″	7.00mm
H	Width Of Flooring Face	5″	127mm
I	Width of Lumber Strips Before Milling (Multiple Strips of Lumber)	.75″ - 2.5″	19mm - 63.5mm
J	Micro-Bevel (Before Sanding and Finishing)	.06″	1.5mm

All dimensions/specs are approximate and represent production targets.

General Specifications *(Apply to all Species)*
Product Description: Edge glued plank flooring
Grade: Staybull Flooring™ Select and Better
Knots: Closed pin knots allowed.
Checks/Cracks: Selected for minimal surface checking in up to 5% of pieces allowable.
Standard Dimensions: Thickness: 3/4" (19mm)
Width: 5" Face (127mm)
Length: 1' – 7' (.304 – 2.13 meters), Average lengths are 3.5' (1.06 meters) or longer.
Edges: Tongue & Groove with micro bevel.
Ends: End matched tongue & groove – no micro bevel.
Textures Available: Smooth
Installation: Staybull Flooring™ can be installed on and above grade level. It is not recommended that this flooring be installed below grade. Installation procedures may vary (see installation instructions). Staybull Flooring™ may be installed over plywood subfloor or glued to a well aged concrete slab (12 months or older).
Moisture Content: Shipped at 6%-8.5% average. Moisture content may vary based on the humidity level of the installation site. Therefore, we recommend flooring be acclimated on the job site in the same environment in which it will remain once installed, for a period of 1 to 3 weeks.
Finishes: Pre-finished with Eco-Shield™ finish.
(Coefficient of Friction) for Eco-Shield™ surfaces reads ≥ 0.5 N
Waste: We recommend 5% - 10% cut and waste on traditional sub floor installations.
Samples: Character marks such as knots, checks/cracks, sap, and natural color and grain patterns will vary with each plank. Your floor may vary somewhat from samples and pictures shown.

DISCLAIMER
We are constantly improving our products in the flooring marketplace. We reserve the right to modify, edit, improve, or change any specification at any time. Please contact us if you have any questions, comments, or concerns.

Staybull Flooring™ - Specifications (Cont'd)

*All Weights Are Approximate

Spec Sheets

Specie	Botonical Name	Material Source	Color	Grain Pattern	Sapwood	Stability	Weight*	Janka
African Mahogany	Khaya Ivorensis	Africa	African Mahogany heartwood ranges from light to deep reddish-brown in color.	Grain is often straight with some swirling grain.	Selected for minimal sap, up to 10% allowable.	Will expand and contract slightly less than Red Oak.	2.2 lb/Sq. Ft.	830
African Padauk	Pterocarpus Soyauxii	Africa	The heartwood is bright orange-red to blood red.	Grain is straight to interlocked. Texture is similar to African mahogany, being slightly open grained.	Selected for minimal sap, up to 10% allowable.	Will expand and contract slightly less than Red Oak.	2.8 lb/Sq. Ft.	1725
American Cherry	Prunus Serotina	North America	Cherry heartwood varies from rich red to reddish-brown. The sapwood is white.	It has a fine, straight grain with narrow brown pith flecks and small mineral pockets.	Selected to include some sapwood.	Will expand and contract slightly less than Red Oak.	2.25 lb/Sq.	950
American (Black) Walnut	Juglans Nigra	Central and eastern parts of the United States	There is a distinct difference in color between the nearly white sapwood and the heartwood, which ranges in color from a deep brown to a purplish black.	Mostly straight and open, mixed, occasional swirls and heavy streaks.	Selected to include some sapwood.	Will expand and contract less than Red Oak.	2.5 lb/Sq. Ft.	1010
Andiroba *(Royal Mahogany)*	Carapa Guianensis	Brazil	The heartwood is light salmon to reddish-brown when fresh cut, becoming darker when aged.	The grain is straight to wavy or irregular.	Selected to include some sapwood.	Will expand and contract less than Red Oak.	2.5 lb/Sq. Ft.	1220
Ash	Fraxinus Americana	North America	Sapwood is a creamy white color while the heartwood can range in color from light tan to dark brown.	Open grain that is similar to Oak with occasional wavy figuring.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	2.6 lb/Sq. Ft.	1320
Birch	Betula Lutea	North America	Has a light yellowish sapwood and reddish brown heartwood.	Birch has straight, closed grain and a fine, even texture.	Selected to include a mix of sapwood and heartwood.	Will expand and contract slightly less than Red Oak.	2.75 lb/Sq. Ft.	1260
Brazilian Cherry *(Jatoba)*	Hymenaea Courbaril	West Indies, Central America, South America and Brazil	Contrasting colors and appearance. Some mineral stain. Ranges from a creamy white sapwood to a mix of brown to deep red heartwood.	Open, mixed, occasional swirls and burls and heavy streaks.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	3.5 lb/Sq. Ft.	2350
Bubinga *(African Rosewood)*	Guibourtia Demeusei	Africa	Bubinga is medium red-brown with lighter red to purple veining.	Grain is straight to interlocked.	Selected for minimal sap, up to 10% allowable.	Will expand and contract slightly less than Red Oak.	3.4 lb/Sq. Ft.	1980
Canarywood	Centrolobium spp.	Bolivia	Heartwood varies from pale yellowish-brown to pale olive-brown streaked with olive green, dark gray, or pinkish-brown, and when mineral stained, streaks of steel blue.	Grain is usually straight, regular, fine texture.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	2 lb/Sq. Ft.	1820
Iroko *(African Teak)*	Milicia Excelsa	Africa	Varies in color from light to dark brown.	The grain is moderately interlocked.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	2.5 lb/Sq. Ft.	1260
Makore *(African Cherry)*	Tieghemella Heckelii	Africa	Heartwood varies from pinkish-red to blood red and red-brown.	Grain is usually straight, with an occasional decorative moire pattern, mottled, or dark streaks.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	2.4 lb/Sq. Ft.	1100
Maple, Hard Maple	Acer Saccharum	North America	Hard maple is creamy white.	Mostly straight with some wave patterns.	Selected for majority of sapwood.	Will expand and contract slightly less than Red Oak.	2.8 lb/Sq. Ft.	1450
Maple, Soft Maple	Acer Rubrum	North America	Pale brown or beige-cream, with slight pink or gray hues.	Mostly straight with some wave patterns.	Selected for minimal sap, up to 10% allowable.	Will expand and contract slightly less than Red Oak.	2.4 lb/Sq. Ft.	942
Oak, Red Oak	Quercus Rubra	Mid to Eastern United States	Varies from a light tan to pink with a reddish tinge.	Mostly straight grained.	Selected for minimal sap, up to 10% allowable.	Moderate; less movement than Hard Maple, more movement than Mahogany	3 lb/Sq. Ft.	1290
Oak, White Oak	Quercus Alba	Mid to Eastern United States	Contrasting colors and appearance. Some mineral stain. Ranges from a creamy white sapwood to a darker gray brown heartwood.	Open, mixed, primarily flat with occasional swirls and burls and heavy streaks.	Selected for minimal sap, up to 10% allowable.	Will expand and contract slightly less than Red Oak.	3 lb/Sq. Ft.	1360
Santos Mahogany	Myroxylon Balsamum	Central America, Latin America	Color range between light orange/brown with yellowish overtones to a dark reddish/purplish brown.	The grain is typically interlocked with ripple marks present.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	3.75 lb/Sq. Ft.	2200
Sapele Mahogany	Entandrophragma Cylindricum	Africa	Heartwood is a light red to dark reddish-brown usually with a purplish cast.	Grain is moderately interlocked or wavy.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	2.4 lb/Sq. Ft.	1500
Tigerwood	Astronium Graveolens	Brazil	Light golden-brown to reddish-brown coloring with exotic black and brown streaks.	Grain is irregular, and interlocked with alternating layers of hard and soft wood.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	3.7 lb/Sq. Ft.	2160
Wenge	Millettia Laurentii	Africa	The clearly defined heartwood is dark brown, with very close, fine, nearly black in color veins.	The grain is fairly straight with a coarse texture.	Selected for minimal sap, up to 10% allowable.	Will expand and contract less than Red Oak.	3.4 lb/Sq. Ft.	1630

Contact Us

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