



## Kaswell Flooring Systems

NEXT GENERATION FLOORING, LLC

*The wood block flooring specialists*

### **Specification: Mesquite Blocks and Rounds**

Revised 6/7/14

#### **Installation, finishing, and maintenance instructions:**

##### **End-Grain Mesquite Blocks and Rounds**

#### **Please read the entire specification before commencing with the installation.**

Mesquite is one of the most beautiful and enduring hardwoods available. Compared to other “hardwoods” Mesquite is one of the hardest! Mesquite is very stable and has become one of the best choices possible for End-Grain Block Flooring.

The Mesquite tree yields a finished wood with warm red and tan tones and swirling grain, a natural beauty for any room. Our suppliers use Mesquite trees already cut by farmers or ranchers clearing their land. Mesquite trees would rot or be burned if they were not purchased by us or our suppliers. Mesquite is not grown or harvested for commercial use, but rather it grows wild and spreads by animal droppings.

#### **MESQUITE WOOD FACT SHEET**

##### **Color**

Mesquite is available in several distinctly different colors, depending on the region.

##### **Grain**

The pores of Mesquite give it a closed, irregular, swirling grain. Combined with occasional character defects, such as ingrown bark and mineral streaks, the resulting grain is both striking and unpredictable. The end cuts are characterized by small irregular cracks radiating across the grain. Season checks should not be considered defects.

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### **Shrinkage stability**

The Mesquite tree, having survived in desert climates with an unpredictable water supply, does not shrink as it ages. Mesquite's volumetric shrinkage percentage ranks at the lowest among hardwoods. At 4.7%, it compares admirably with the 17% from domestic and imported hard and softwoods. This uncommon hardwood property of even shrinkage enables us to cut to close tolerances at the finished dimensions without worrying about distortion, warping and shrinking from drier conditions. Although it is not recommended, reports have been made that floors of Mesquite wood have been installed using relatively green wood without issue. These floors dried in place over time with little or no usual issues. Because Mesquite is so stable, it is the only specie that we offer using the entire round piece. The effect is dramatic with colored grouts.

### **High surface hardness**

A wood's surface hardness is a measure of its ability to withstand dents when subjected to heavy loads. It represents the resistance of the wood to wear and marring. Mesquite has a surface hardness of 2,336 pounds, which is approximately equal to that of hickory and almost twice that of oak and maple. Mesquite's high surface hardness and minimum oil content make it possible to sand the wood to a lasting natural high polish, and resist high heels.

### **High density**

Density is a general indicator of almost all physical properties of wood, including appearance, moisture content, shrinkage, weight, working qualities, weathering, decay resistance, chemical resistance, and others. Mesquite's high average wood density of 45 pounds per foot is greater than oak, maple, pecan and hickory. This makes Mesquite extremely desirable for block flooring.

### **Supply**

Mesquite trees grow slowly, seldom reaching heights of 35 feet. If damaged when young, it can become a multi-stemmed shrub. If the tree is not disturbed and a single trunk develops, seldom will the resulting tree be capable of producing even one 1" x 8" piece of lumber, eight feet long. As a result, mesquite logs are typically short, from three to six feet, and small in diameter. Straight logs up to four feet long and one foot in diameter may be obtained. However, these sizes are time-consuming and expensive. It is estimated that Mesquite grows in over 60 million acres of Texas. On one acre, it is possible to harvest five to ten cords of Mesquite wood. One cord, 128 cubic feet, produces approximately 400 square feet of flooring, which reflects an unusually high 77% waste factor. However, an immense availability of Mesquite makes milling Mesquite worthwhile.

### **RELATIVE HARDNESS AND SHRINKAGE**

Mesquite is harder than most other commercial species used for flooring. Hardness is an indication of the resistance of wood to wear and marring. For example, Pecan (*Carya illinoensis*), at a moisture content of twelve percent has an end hardness of 1930 psi. and a side hardness of 1820 psi., while mesquite (*Prosopis* spp.) has an end hardness of 2354 psi. and a side hardness of 2336 psi. Hardness would be of value in a wood product such as flooring where wearing ability is important. Mesquite has much lower shrinkage values than other commercial species.

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The following table is a comparison of hardness and shrinkage values of Mesquite and other common commercial species.

	<b>Mesquite</b>	<b>White Oak</b>	<b>Pecan</b>	<b>Walnut</b>	<b>Cherry</b>
Compression Perpendicular to Grain (p.s.i.)	8220	7440	7850	7580	7110
Compression Parallel to Grain (p.s.i.)	3360	1070	1720	1010	690
Side Harness (lb.)	2336	1360	1820	1010	950
Radial Shrink (%)	2.2	5.6	4.9	5.5	3.7
Tangential Shrink (%)	2.6	10.5	8.9	7.8	7.1
Volumetric Shrink (%)	4.7	16.3	13.6	12.8	11.5

### MESQUITE FLOORING INSTALLATION INSTRUCTIONS

You are about to create one of the most durable, and universally appealing wood floors on earth. Mesquite blocks have a character and attraction like none you have ever installed.

Mesquite Blocks or Rounds will come to you in individual pieces. Do not let this deter you. This floor will lay quickly and be ready to sand before you know it.

All blocks and rounds are installed in mastic (Bostik's Best or other non-water based wood flooring mastic of similar specification), allowed to dry, and then sanded to the desired grit. The finish will be determined by the location, use (be it residential or commercial), and the overall look the customer desires. For a more detailed explanation of the installation procedure, please refer to our specification Master Natural Finish. We also offer the following guide:

1. Is the floor to be installed over concrete or over a plywood sub-floor? If concrete, test a section to make sure it is dry. If not, the mastic will not dry and the wood will absorb moisture. An easy way to check for moisture is to tape down a one-foot square piece of clear plastic, sealing all sides. Wait 24 hours to see if moisture condenses. If it does, the slab is too wet. If you are installing your floor over plywood, follow the plywood manufacturer's guide in the spacing of the sheets. Be sure to install a proper vapor barrier under the plywood. With the sub-floor properly prepared, installation can begin.
2. Make sure the flooring has a chance to acclimate for a few days. Make sure the temperature is not excessively hot or cold. Open all boxes on the job site. The blocks should be in the 8-10% moisture content range. Use a wood probe type moisture meter. We recommend a bond test with your chosen adhesive and our blocks or rounds on the subfloor before installation.

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3. Spread mastic with a 3/16" V notched trowel. Lay blocks against each other. There will be some cracks remaining after. These cracks can be filled before the final application of finish. Leave a ½" expansion space around the room. The space can be covered by the shoe molding or base-board. Lay rounds as close to each other as possible. Drying time for the mastic will vary according to the type of adhesive used and the location. It will usually take 24 hours before sanding can begin. The voids will be filled before final finish is applied.
4. When blocks or rounds are ready to sand, you might need to start with 36 to 40-grit paper to level the floor first, using drum sanders. Then continue to drum sand with 60, 80, and 100-grit drum paper. Disc sand with 100-grit, then screen with 120-grit screens. For sanding rounds, we find it more effective to sand the surface and apply finish for protection before filling and finishing. Filling can be done before sanding for a flatter result.

### FINISHING

There are many quality finishes on the market. One of the easiest and most durable is urethane. We prefer the appearance (and maintenance requirements) of penetrating oil finishes, or oil modified urethane finishes. Our 2-6-1 pigmented oil is very popular for Mesquite blocks because it enhances the beauty of Mesquite without changing its' color. Stains or pigmented oils can be used to change the tone before clear oil is applied. Sanding and finishing sequence may change depending on whether you are installing blocks or rounds.

**For rounds:** Once sanding is complete, apply two coats of oil based polyurethane.

We recommend Bona Woodline Satin applied by lambs-wool applicator. Once the first two coats of urethane are thoroughly dried, then fill the voids with tile grout, color of your choice. Care must be taken to wipe the excess filler from the surface. When the tile filler has dried, screen lightly with the disc machine, tack rag, and apply additional coats of finish. In this sequence, the joints will be lower than the block surface and will add to the authenticity of mesquite rounds. If filling were done before sanding, the final results would be a flat floor, but with less natural appeal.

**For blocks:** For individual Mesquite blocks use a drum or belt sander, first with 60 grit, then 80, then 100-grit drum paper. **SAVE SAWDUST FOR FILLING.** Disc Sand with 100-grit paper, 120- and 180-grit screens, making sure sanding is uniformly performed, and all drum lines and disc lines are removed. Vacuum clean. Fill cracks with a stain accepting patch compound to specified color, granulated cork, or a mixture of the wood flour generated, and the finish to be used. **\*\*Be absolutely sure no liquids (i.e. paint, coffee, water, mud, etc.) touch the flooring at this point, and keep everyone out of the room until the surface is protected. If there is a time lag between sanding and finishing, resin spots might appear in some species. They will disappear once finished.**

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### APPLY OIL FINISH

We recommend Woca Oil, or another VOC compliant oil finish. See [WoodcareUSA.com](http://WoodcareUSA.com) for more information about Woca. After the flooring has been screened to 180-grit, apply the first coat of oil. The first application should be Woca Master Oil and is considered the primer coat. Its role is to act as a base for the subsequent oil applications. Choose your starting area and pour the oil into a paint tray. Spread the oil with a ¼" nap paint roller and extension pole. Roll the oil as if you are painting the floor. Continue to spread oil until finished. Do not buff the oil into the floor, as this forces too much oil into the floor and the oil will be too deep, which may cause later bleed back and prolonged drying. When finished, rest your roller in the paint tray or on cardboard.

Coverage should approximate 130-170 sq. ft. per liter. It is best to let the primer coat dry and harden a minimum of 48 hours, but 24 hours is acceptable.

The second application is made with Woca High Solid (HS) Master Oil and is mixed with wood flour to fill and oil simultaneously. The Woca HS Master Oil is to be mixed with the sanding dust that you accumulated in the drum sander bag during the drum or disc sanding. This filler mixture can be forced into the voids with a sponge trowel or rags, then buffed clean with a towel to remove excess.

The third application of Woca HS Master Oil should be buffed into the floor with Kaswell green discs and 3M white pads until an even sheen has been obtained. Without the green discs you will not achieve optimum results. Coverage should approximate 300 sq. ft. per liter. Let this application dry and harden a minimum of 24 hours before commencing with the fourth application.

The fourth application (if needed) is made with a Woca Master Oil with 3M white pads under the buffer, without green discs. We suggest removal of the small center hole of a 3M white pad, pour a capful of Woca Master Oil into the hole and buff and polish. Continue to spread and polish as you pass the buffer back and forth across the work area. The floor should appear silky, with an even look, with no oil spray or droplets visible. Pour more oil onto the floor as needed and continue polishing. Overlap work areas to ensure an even finish with no spray residue from previous passes. Repeat the process until the floor is finished. Coverage should approximate 1,250 sq. ft. per liter. The Master Oil will usually pre-harden in 4-6 hours. Allow the oil to cure 72 hours before placing rugs and furniture on the floor.

The fifth application (if needed) repeats the process of the fourth application (no green discs). After oil finish application(s) are complete, the surface can be top coated with Urethane. If urethane is applied, no future oiling can ever be made unless stripping back with sanding machines.

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**Woca Oils** are Volatile Organic Compound FREE. In 2007, new regulations were introduced in the European Union regarding VOC levels in coating materials. All Woca products fulfill these regulations. We feel that this is an important step in the protection of our working and living environment. Woca VOC free oils have the following features:

- Positive influence on the working area and living environment. Improvement of product characteristics and application methods. No effect on indoor-air quality.
- Woca products are certified by independent laboratories, the German Institute for Biological Building Materials, and are in accordance with DIN-Norm 53-160. Woca WoodCare Denmark products meet or exceed the most stringent US standards for volatile organic compounds.

**Woca Leed Rating** Woca is a plant-based non-emitting finish, which complies with South Coast Air Quality Management standards and always qualifies for the following LEED credits.

Environmental Feature	Leed Credit	Lead Points
Rapidly Renewable Materials	Materials and Resources (MR) Credit 6	1
Low-Emitting Adhesives and Sealants	Indoor Environmental Quality (EQ) Cr. 4.2	1

**Avoid spontaneous combustion** Water-soak all oily cloths after use and place outside of buildings and away from combustible materials.

**If there are any questions or concerns, please do not hesitate to contact us before or during installation and finishing. Call or e-mail for technical support. Kaswell Flooring Systems cannot be responsible for results of installations made by others.**

**We reserve the right to change specifications without notice.**

## **CARE & MAINTENANCE FOR YOUR WOOD BLOCK FLOOR**

To protect your investment, and to ensure that your KASWELL FLOORING SYSTEM maintains its beauty with years of lasting service, we offer the following recommendations for care and maintenance.

**For Oil Finished Flooring:** Lightly clean with Woca Commercial Oil Cleaner. Re-oil by spray, towel off immediately, and buff with standard buffer with soft pads. We can supply 3M pads if needed. Keep the flooring free from dirt and abrasive particles by daily sweeping or vacuuming. Use a treated flat mop or regular dust mop. Soft buffing at will. The resins in the oil will become harder over time, which will densify the wood. Wax can be added for higher gloss. Woca videos are available on request.

**For Urethane Finished Flooring:** Keep the surface free from dirt and abrasive particles by daily sweeping, using a treated flat mop or regular dust mop. Under no circumstances should water be permitted to remain on the flooring more than 10 minutes, either from spills or from washing. Routine cleaning is best accomplished with a damp mop. Be sure no puddles are created or left on the surface. Soft steel wool buffing and waxing can be added. However, if waxes are used, they will make future re-coating with urethane more difficult. An acrylic “after market” product can be used to “dress up” the surface. To refinish with the same urethane used originally will first require screening by rotary disc type sanding machine. Tack-rag dust and recoat.

### **Annual maintenance**

For Woca oil finishes, see WoodcareUSA.com. For other oil finishes after thorough cleaning, apply finishing oil lightly again, being sure penetration is 100%. Buff as usual. Disregard oiling if it does not penetrate. As the oils age, they will harden, and dry buffing will increase luster. Urethanes will require screening before re-application. Check with the chosen manufacturer for maintenance products.

### **AT A GLANCE, KASWELL’S TOP 10 MAINTENANCE STEPS:**

1. Maintain proper humidity conditions, ideally in the 35-50% range.
2. Vacuum or sweep daily to remove sand and grit.
3. Apply carpet or felt protection to chair legs.
4. Wipe spills promptly.
5. Use walk off mats at entrance doors.
6. Reapply finish at the appropriate time.
7. Only use damp mops. Never use wet mops.
8. Avoid using wax or oil soap products.
9. Use only maintenance products furnished and recommended by the finish manufacturer.
10. Call or e-mail Kaswell regarding your flooring.

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### **KASWELL LIMITED WARRANTY**

Seller warrants for a period of two years from date of delivery that Kaswell flooring is free from defects, which makes the flooring not fit for use for which they are normally intended. Seller's only obligation during this warranty period is, at its sole option, to either repair, replace, refund or credit the purchase price of the flooring, or part thereof, found to be so defective. At the conclusion of this warranty period, Seller shall be under no further obligation whatsoever. This warranty is void in the event of negligence, abuse, abnormal usage, misuse, accidents, improper installation, improper maintenance, or any circumstances or conduct beyond the control of the Seller, most particularly job-site conditions. Seller is not liable for consequential damages arising out of or in connection with the sale or use of the blocks, including, but not limited to, all labor and/or material charges or loss of income or profit relating to the goods in any way whatsoever.

### **Conditions of Sale**

All pricing is per sq. ft. or surface measure with no milling or cutting waste figured.

All orders are subject to availability of stock for prompt delivery.

Special orders are non-cancelable and non-refundable.

A 15% restocking and handling charge is applicable on all authorized returns.