



Mesquite Blocks



Mesquite Rounds

Revised May 19, 2023

Amazon, Seattle, WA, w/grey tile grout

### INSTALLATION, FINISHING, AND MAINTENANCE INSTRUCTIONS FOR:

End-Grain Mesquite Blocks and Rounds

### PLEASE READ THE ENTIRE SPECIFICATION BEFORE STARTING THE INSTALLATION:

Mesquite is one of the most beautiful and enduring hardwoods available. Mesquite is one of the hardest! Mesquite is very stable and has become one of the best choices possible for End-Grain Block Flooring. Available minimum 1/2" depth in squares, rectangles, and hexagons within 8" x 8". In rounds between 2" and 8" diameter. Because Mesquite is so stable it is the only specie we offer in a round profile. The effect is dramatic with hard colored grouts.

A Mesquite tree yields finished wood with warm red and tan tone, 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 may rot or be burned if 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 trees grow slowly, seldom reaching heights of 35 feet. If damaged when young they can become multi-stemmed shrubs.

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" pieced of lumber, eight feet long. As a result, mesquite logs are typically short from three to six feet, and small in diameter. Because Mesquite trees rarely grow tall and straight, making end grain blocks from Mesquite may just be their best use! Or, put them in the BBQ!

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.

#### Stability

The Mesquite tree does not shrink as it ages, having survived in desert climates with unpredictable water supply. Mesquite's volumetric shrinkage percentage ranks at he lowest among hardwoods. This uncommon hardwood property enables us to fill rounds with tile grout. We can cut blocks to close tolerances at finished dimensions without worrying about later distortion or shrinkage.

## High Surface Hardness

Mesquite has a Janka surface hardness of 2,336 psi, which is approximately equal to that of hickory and almost twice that of Oak and maple. Mesquite is highly resistant to high heels and small steel wheels.

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

	Mesquite	White Oak	Walnut	Cherry
Compression Perpendicular to Grain (psi)	8220	7440	7580	7110
Compression parallel to Grain (psi)	3360	1070	1010	690
Side Harness (lb)	2336	1360	1010	950
Radial Shrinkage (%)	2.2	5.6	5.5	3.7
Tangential Shrinkage (%)	4.7	10.5	7.8	7.1
Volumetric Shrinkage (%)	2.6	16.3	12.8	11.5



*Mesquite Hexagon Exterior Blocks, Circa 1900*

Mesquite was once used as street pavers in Texas. Rumor has it the horses were very happy walking on end grain Mesquite!

## ACCLIMATION FOR ALL KASWELL INTERIOR WOOD FLOORING PRODUCTS

The purpose for acclimating wood flooring is to allow the moisture content of the flooring to adjust to normal conditions; the temperature and humidity that will prevail once the facility is opened, and the permanent heating, ventilating, and air conditioning (HVAC) system is up and running.

Before Mesquite is delivered, the job site must be checked to determine if it is ready. The structure should be fully enclosed, with doors and windows in place, and interior climate controls operational for at least 48 hours to stabilize the moisture conditions of the interior.



*Mesquite Blocks, Bicycle Shop, Cambridge, MA*

*If you can't find a horse and buggy you can always get a bicycle.*

Wood flooring should not be delivered until all wet-work is completed.

In most cases if conditions are not stable, acclimation could be harmful to the installation. Acclimation could dry the blocks too low if the humidity were too low. In so doing, you might install the blocks too dry during the heating season, and have problems during the more humid months. However rarely is this of concern with Mesquite.

If you know the Equilibrium Moisture Content (EMC) of wood in your region, the wood might already be at the proper moisture content, and acclimation for any length of time may not be necessary. The installer should have a clear understanding of the EMC in order to determine the length of acclimation.

This requires knowing and recording the moisture content of the wood at the time of delivery, and what the expected moisture content will be at equilibrium. The flooring is manufactured at 7-9% mc.

At equilibrium the moisture content of wood neither gains nor loses water because it has reached equilibrium with the vapor pressure of the surrounding atmosphere. Changes in relative humidity and temperature of surrounding air cause both seasonal, long term, and daily short-term changes in the moisture content. Long-term changes are gradual as moisture slowly penetrates the wood, while short-term fluctuations influence only the wood surface. Protective coatings slow the changes in moisture content, but ultimately the wood will be in equilibrium.

We are often questioned about the humidity being too high or too low. Humidity maintained above 60-70% at normal residential temperatures can adversely affect wood components. Humidity sustained at or above this level can result in an EMC of 12% or more with associated expansion. Humidity maintained at or below 25-30% can adversely affect wood components and result in an EMC below 6%.

his condition can cause greater than normal shrinkage with associated cracks. (Source: Wood Handbook U.S. Department of Agriculture, Forest Products Laboratory).

Ideal conditions for all wood flooring would be to acclimate and install at the average level of humidity in your particular facility, which should be in 35-55% range. (Source: National Wood Flooring Association Wood Flooring Installation Guidelines and Methods, revised 05/2012, page 10, article B-1 Wood's Comfort Zone. As a general rule, with geographic exceptions, wood flooring will perform best when the interior environment is controlled to stay within a relative humidity range of 30-50%, and a temperature range of 60° to 80° F. In some climates, the ideal humidity range might be higher or lower, for example 25-45% or 45-65%. We would be pleased to discuss with you length of acclimation for your particular installation.

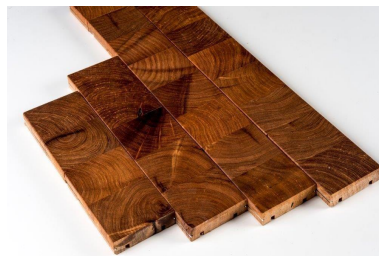
NOTE: For all species including Mesquite we always recommend at least 2 days of acclimation prior to installation. We never deliver and install on the same day.



*Ceiling Mesquite Rounds with no sap wood, no bark, loosely placed above the translucent ceiling panels. Flooring Mesquite Rounds with brown grout  
Roka Akor Restaurant*

## INSTALLATION

All blocks and rounds are to be installed in mastic (Bostik's Best, Mapei 980, or other non-water based wood flooring mastic), sanded to the desired grit and field finished. Mesquite individual blocks and rounds are not available prefinished. Mesquite can be prefinished in our strip block format.



*9/16" depth end grain Mesquite Strip with micro chamfered edges*

The choice of finish should be determined by the type of facility, but most any finish can be used in the field. For a more detailed explanation of the installation, sanding, and finishing procedures,

Please refer to our Master Field Finish Specification pages 3 through 7. In addition, we offer the following installation guide:

Is the floor to be installed over concrete or over a plywood sub-floor? If concrete, test a section to make sure it's dry. If not, the mastic may not bond to the concrete and the wood will absorb the 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 below the plastic.

If it does, the slab moisture content is too high. If you are installing your floor over plywood, follow the plywood manufacturer's guidelines for spacing. Plywood surfaces must be properly supported from below so there is little to no deflection at the surface. Be sure to install a proper vapor barrier under the plywood. With the sub-floor properly prepared, installation can begin.

Make sure the flooring has a chance to acclimate for a few days. Make sure the temperature is not excessively hot or cold. Empty all blocks from boxes and mix them on the job site. The blocks or rounds should be in the 8-10% moisture content range when received. Use a wood probe type moisture meter to measure. We recommend a bond test with your chosen adhesive before installation.

Spread mastic with a 3/16" V notched trowel. Install blocks against each other in mastic. Try not to glue the blocks to each other. There will be some cracks or spaces between some blocks after installation. These cracks can be filled before the final application of finish. Leave a minimum 1/2" expansion space around the room. The space can be filled with pre-molded cork or left open if covered by shoe molding or baseboard. We suggest installing rounds as close to each other as possible, but not a requirement.

## SANDING

When blocks or rounds are ready to be sanded, you may need to start with 36 to 40-grit paper on a drum or belt sander, to level the floor. Continue to drum sand with 60, 80, and 100-grit drum paper. Disc sand with 100-grit disc paper, then screen with 120-grit screens. NOTE: Sanding and finishing sequences may change for blocks and rounds. For sanding rounds, we find it very effective and helpful to sand the surface and apply some finish for rounds protection before filling and making final applications of finish.



*1/2" depth x 3" wide x Random Length Mesquite,  
Amherst College, Amherst, MA*

## Filling Rounds:

Once sanding is complete, we suggest two applications of urethane or oil finish be applied by lamb's wool applicator or roller. Once the second application of urethane or oil is thoroughly dry, then fill the voids with a tile grout or other hard filler (in your choice of color). Consider creating a texture or an irregular level of filler. Filler used for rounds must be hard enough to support ladies spike high heels. Care must be taken to wipe the excess filler from the surface.

When the filler has dried, screen lightly with 100 grit screens, tack-rag to remove surface dust/filler residue and apply additional applications of finish. In this sequence the joints will be lower than the block surface, and we believe will enhance the appearance of the flooring. If filling was completed before sanding, the results would be a flat floor, with block surface and joint elevation the same.



*Mesquite Rounds with sap wood and bark,  
brown tile grout and urethane finish*

## Filling 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, and 120 to 180 grit screens. Make sure sanding is uniform, with all drum lines and disc lines removed. Vacuum clean. Fill cracks with a stain accepting patch compound to specified color, granulated cork, or a mixture of the wood flour generated with the finish to be used. Filling can be done at any time. Request a copy of our article "Filling Joints and Spaces". After sanding be absolutely sure no liquids (i.e. paint, coffee, water, mud etc) contaminate the floor. Keep everyone out of the room until the surface is well protected with finish or with a suitable covering.

## FINISHING

There are many quality finishes on the market. One of the easiest to apply is urethane, either solvent based or water based.

We prefer the appearance and maintenance requirements of penetrating oil finishes, or oil modified urethane. Our 2-6-1 pigmented oil is very popular on Mesquite because it enhances the beauty of Mesquite without changing its' color. Stains or pigmented oils can be used to change the tone before clear oils are applied

We recommend Woca Oil finishes, Procoat finishes, or another VOC compliant oil finish. See WoodcareUSA.com for more information about Woca. See Procoat.com for more information about Procoat finishes.

If the sanding has been completed and if the filling is left for a later date, then make first application of oil finish by roller or paint pad. The first application is considered the primer coat. Its role is to act as a base for subsequent oil applications. Choose your starting area and pour the oil into a paint tray. Spread the Oil with a 1/4" 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 wood. The oil would be too deep, which could cause later bleed back and prolonged drying. YOU MUST BUFF OFF ALL EXCESS OIL. If you are not sure you have buffed enough, buff again. You cannot over buff.

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

The second application should be made with a mixture of the wood flour and oil finish. 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 Oil should be buffed into the floor with or without Kaswell green patina discs and 3M white pads until an even sheen has been obtained. Without the green discs you will not achieve optimum sheen results. Coverage should be approximately 300 sq. ft. per liter. Let this application dry and harden a minimum of 24 hours.

A fourth application (if needed) may be made with or without green patina discs and 3M white pads.



*Multi thickness Mesquite Blocks, no sanding no finish*

At this point, when finishing blocks we suggest removal of the small center hole of a 3M white pad, pouring a cupful of oil into the hole and then 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. Coverage should approximate 1,250 sq. ft. per liter. Woca Master Oil will usually pre-harden in 6-8 hours. Allow the oil to cure at least 72 hours before placing rugs and furniture on the floor.

A fifth application would repeat the process of the fourth application but without the green patina 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 to bare wood.

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

Environmental Features	Leed Credit	Lead Points
Rapidly Renewable Materials	Materials and Resource (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 email 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 KASWELL MESQUITE BLOCK FLOORING

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 or Pro Coat Cleaner. **DO NOT USE WATER TO CLEAN OR MAINTAIN AN OIL FINISHED FLOOR.** Re-oil, towel off immediately, and buff with standard 3M white pads or other. 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 density the wood. Wax or hard wax oil can be added for higher sheen. Woca cleaning 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, a regular dust mop, or a mist mop. Under no circumstances should water (if used for washing or from spills) be permitted to remain on the flooring more than 10 minutes. 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 is best to "dress up" the surface. To refinish with the same urethane used originally will first require heavy screening by rotary disc type sanding machines.

### Annual Maintenance:

For Woca oil finishes, see [WocacareUSA.com](http://WocacareUSA.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 of urethane finish for use of their maintenance products.

## KASWELL FLOORING Top 10 maintenance tips:

1. Maintain proper humidity conditions, ideally in the 35-55% range, but not so important with Mesquite.
2. Vacuum lightly 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. Re-apply finish at the appropriate time.
7. For Urethane finish use mist mops. Damp mops ok, wet mops never!
8. Avoid using wax or oil soap products.
9. Use only maintenance products furnished and recommended by the finish manufacturer.
10. Call or email Kaswell with questions.

## KASWELL END GRAIN BLOCKS GRADING AND SIZE TOLERANCE

The National Wood Flooring Association does not provide grading information/rules or size tolerance requirements for end grain block flooring as they do for conventional hardwood flooring. We offer the following information, and believe it to be an accurate description of our block flooring products.

Wood is a natural product, subject to numerous variations in grain, color, hardness, and dimensional stability. Machine tolerances are measured by us during manufacturing only, with tolerance of +/- .02". Moisture can enter and exit rapidly through the end grain. And so, after manufacturing the blocks can gain or lose moisture, thus changing their measurement. Our blocks, as well as other wood items, change in moisture content and dimension during and after fabrication, while awaiting shipment, in transit, and at the job site. For this reason, as well as others, it is important that the installer measure and record the moisture content of the blocks at time of delivery. Doing so is also necessary to determine the length of acclimation time, if any, for your project. The target moisture content for all our wood flooring products is 8-10%, with a 5% allowance for pieces outside that range up to 13%.

There is a grading allowance for hardwood flooring shipments of not greater than 5% of the pieces mis-graded or off-graded. However, end grain blocks are not graded at all. Therefore, no description that we can make, and no sample that we can make, could encompass all possible variations. However, there is an ASTM specification D1031-86 for industrial pine blocks, which includes block description and size tolerance. The ASTM size tolerance was written as follows: "Permissible variations from the specified dimension shall not exceed 1/16". We recognize that this is for industrial application, and may not be appropriate for high end commercial and residential applications. ASTM does not grade pine blocks but they do describe them in detail, and we have adopted their standard for all of our end grain species for commercial and residential applications as follows: "Blocks should be sound and well manufactured, square butted, and square edged, and shall be free from unsound, loose or hollow knots, knot holes, and other conditions such as shakes and checks that could be detrimental to their performance". In most cases, season checks in end grain blocks are not detrimental to their performance and so we do not consider checks to be a defect.

We can produce blocks in many species that are check-free, sap-free, knot-free, pitch pocket-free, bluing-free, and the number of annual growth rings per inch can even sometimes be part of a specification. These natural conditions should be addressed when ordering. We encourage you to speak with us about your particular project and specie choice.

Although our logs are kiln dried to 8-12% +/-2%, square blocks can go "out of square" after fabrication because radial and tangential expansion and contraction is different. Even rectangular blocks can "go out of rectangle" with a change in moisture content. We recommend our blocks not be installed tightly together side by side. Our installation instructions advise the blocks should be slightly spaced apart to accommodate slight irregularity of size and shape. The space can allow for some growth as well, and the net affect will be that "out of square" or "out of rectangle" blocks can appear below the JND, the "Just Noticeable Difference" (in size and shape). If slightly irregular squares, rectangles, or hexagon blocks are installed tightly together, the blocks might appear slightly above the JND, and you might deem them unuseable or unacceptable for your project.

Running bond patterns of both rectangles and squares can easily be created below the JND. However, due to slight size variation, you should "open an installation of square blocks", even slightly, if a tile pattern is required. The four points of the four blocks must meet. Therefore, square blocks must be carefully placed during installation. All voids created from spacing can be easily filled during the finishing process.

## KASWELL LIMITED WARRANTY

Seller warrants for a period of two years from date of delivery that Kaswell Mesquite flooring is free from defects which would make the flooring unfit 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 Kaswell wood flooring 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.



*Mesquite Rounds at Discovery Centre  
Mt Pleasant, South Carolina*



*Mesquite Rounds*



*Mesquite Blocks,  
Emeril's Restaurant*