



## The Stranded Bamboo Process



Bamboo flooring has become popular because it is harvested as a substitute to many other types of lumber. By using bamboo as an alternate source, woods such as oak and pine are being saved, slowing down the clearing of forests across the world.

Moso Bamboo is among the largest and fastest growing species, about 10 times faster than most trees and is cultivated to a mature age of 5-7 years before being harvested. At this time, the bamboo stalk has a diameter of nearly 12 inches and can reach heights of 100 feet. Only mature Moso Bamboo is used for flooring. The bamboo poles are selected and harvested from bamboo forests carefully monitored by the Chinese Department of Forestry. This ensures the bamboo forests are able to self-regenerate and maintain a natural ecosystem for future harvesting.

Strand woven bamboo is one of the hardest flooring options available, harder than traditional hardwoods such as cherry, oak and hickory. Although it is technically not a type of hardwood, bamboo is a grass and yet it is a strong and durable plant with the same strength-to-weight ratio as steel. Furthermore, strand woven bamboo is manufactured through a special process which uses 100% of the Moso Bamboo tree (from trunk to the top), making it harder and more durable than regular bamboo.



Moso Bamboo Forests

**Harvesting and Splitting the stalks of bamboo.** After harvesting, the bamboo is sorted by size and quality, with only the highest quality material going to floor production. Manufacturers sort bamboo into the following grades:

**Grade A** - Top Quality, used for flooring and weaving material.

**Grade B** - Medium Quality, used for plywood and furniture.

**Grade C** - Lowest Quality, for use in pulp production for bamboo textiles.

**B grades are often sold to discounters who inevitably use it for their low dollar bamboo lines.**



Harvested stalks of Moso Bamboo

Splitting the bamboo cane into usable sections can be done by hand or by machine. High capacity facilities will feed the bamboo through machines that split the bamboo into usable sections. Once the cane has been split, it is then milled to remove the nodes and skin on its outer layer. These planks give bamboo flooring the appearance we are familiar with.



**Bamboo Splitting by hand & machine**



**Split and Stacked Bamboo**

**Boiling and Drying.** The stalks are boiled to remove the sugars from the bamboo because sugar is a termite attractant. Strips are then kiln dried in a conditioning room used to adjust the moisture content of bamboo strips. Without kiln drying, the bamboo can have high moisture content.



**Boiling of Bamboo**



**Stacking and Drying of Bamboo**



**Kiln Drying Bamboo**

**Adhesive and Pressing.** The bamboo strips are soaked in a low VOC adhesive, and then bonded under high pressure by cold pressing with pressure up to 2,000 tons creating solid blocks of strand. Lower grade bamboo floors often use formaldehyde resins in the gluing process because there are no governing organizations in China overseeing production. Better known brands such as Wellmade Bamboo, exceed indoor air quality requirements for formaldehyde emission.



**Soaking in Adhesive**



**Molding the Stranded Bamboo**



**Cold Press**

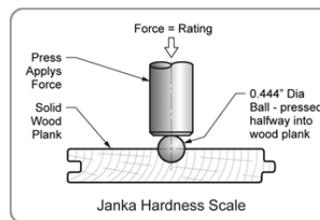


**Blocks of Stranded Bamboo**

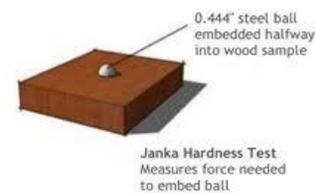
The result is a dense block of bamboo which is nearly twice as dense as normal bamboo. After the bamboo has been compressed it resembles a landscape timber that will be cut into planks, usually 6 feet long and then milled with a tongue and groove or Uniclic locking system.



**Strand Woven Cut into Planks**



**Janka Hardness Test**



**Hardness;** The Janka Hardness Rating system is the flooring industries standard for comparing the hardness of various species of woods. It measures the force required to embed a steel ball (0.444 inches) into the wood to 1/2 the ball's diameter. Some Bamboo flooring companies report misleading Janka test ratings. They get high ratings by performing the test on the 'knuckle' or node of the Bamboo stalk, which occupies only a tiny portion of the floor's surface area and is much harder than most of the floor. Wellmade Strand Woven Bamboo flooring measures 3335 on the Janka Scale, harder than Northern Red Oak, which is rated at 1290. In the United States, the measurement is in pounds-force (lbf). Carbonized Strand Woven has a hardness of 2977, slightly lower because of the carbonized process to change color.