

Dimpling Bamboo

Are these bumps from defective flooring?

by Bob Middleton

The Problem

Recently, a frustrated customer who was distraught with her bamboo floor installation reached me for technical support. In tears, she said, "There are tiny bumps and bruises all over my brand-new bamboo floor!"

The Procedure

The home had 5/8-by-3 3/4-inch carbonized strand (or woven) bamboo pneumatically stapled with 15.5-ga wire staples over a single layer of brand-name OSB. The subfloor,

which was over a crawl space, was nailed over a joist span of 20 inches o.c., and a white silicone vapor retarder was used over the entire subfloor.

Immediately after the installation, the homeowner asked the installers if those little bumps would eventually go away. They told her,

"Sure, unless your flooring is defective."

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The Cause

The manufacturer's guidelines for fastening strand bamboo were not followed, but the most glaring issue was an unfortunate combination of poorly educated installers and a challenging floor. The glue ratio or the amount of glue used in the bonding process of woven bamboo fibers not only accounts for its added weight but also greater



board density and, therefore, potential nailing difficulty. Among the most common installation-related causes for surface dimpling in strand bamboo and other types of dense flooring are: poorly seated nailing machines, using incorrect nailers, or using incorrect fastener thickness or

gauge. Because the size of the dimpling found just above the nail is directly related to the fastener gauge, nail gun manufacturers have developed specialized nailing machines to accommodate thinner-gauge fasteners, thereby minimizing or reducing dimpling.

While the traditional 16-ga cleat-type nailers and 15-ga 1/2-inch crown staples have their place, using them is usually the No. 1 cause of surface dimpling in bamboo flooring and other denser wood species. When using nails with strand bamboo, the thinner 18-ga cleat nailing machines are more appropriate. The 15-ga 1/2-inch crown staple machines—pneumatic or manual—are not generally recommended because the drive-bar action that delivers the staple mimics a wood chisel, often snapping or fracturing the bamboo tongues as it seats the staple.

How to Fix the Floor

In addition to the problem of aesthetics, over time surface dimpling in prefinished materials can lead to edge-splitting, chipping and finish spidering. Resanding the floor may remove most of the dimples but would also void the manufacturer's finish warranty and remove an excessive amount of the surface. Sadly, a total replacement of the floor may be necessary in the worst cases, such as this one.

In the Future

Product education is key to successful installations. Most manufacturers are more than willing to assist with product knowledge—some supply written instructions in each box and also post them on their website. Installers should do their homework before installing unfamiliar products. If these installers had, they would have found recommendations to minimize dimpling, like choosing the appropriate nailer, adapter and fastener, or even options to glue the floor down. As a paid professional, you benefit by making it your business to understand the nuances of unfamiliar products ... *before* you commit to the installation. ■

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Checks: What are the Facts?

Understand what causes checking in solid wood floors

By Mike Harde

The age-old misconception is that there are many conditions that can cause wood to check. The fact is that there is primarily only one. Checking in solid wood flooring has been and continues to be a prominent claims concern that all-too-often eludes proper identification, evaluation and resolution. Most folks involved with the wood flooring industry understand that checking is a condition related to moisture content changes in wood that results from drying stresses. Commonly misunderstood, however, is the fact that these stresses cannot and do not *originate* in wood installed within the normal environmental ranges of interior living spaces.

The Importance of Definitions

In order to properly identify checking in wood flooring, its definitions must first be understood. The following definitions were taken from the USDA Forest Products Laboratory's *General Technical Report FPL-AH-188, Dry Kiln Operators Manual, Chapter 8-Drying Defects*:

- **Surface Checks** are failures that usually occur in the wood rays on the flat-sawn faces of boards. They occur because drying stresses exceed the tensile strength of the wood perpendicular to the grain, and they are caused by tension stresses that develop in the outer part, or shell, of boards as they dry. Surface checks can also occur close to a knot, by gum pockets and mineral streaks, and in bacterially infected wood, as such wood is weaker than "normal wood."



- **End Checks**, like surface checks, usually occur in the wood rays but on end-grain surfaces. They also occur during the early stages of drying. End checks occur because moisture moves much faster in the longitudinal direction (along the board's length) than in either transverse direction. Therefore, the ends of boards dry faster and shrink (or try to shrink) sooner than the rest of the lumber; the end result is that stresses develop at the ends.

Hypotheses Through the Years

Various causes have been (and continue to be) offered about why checks develop in wood flooring after installation. The following examples of commonly touted hypotheses for checking in post-installation environments provide useful insight on where we as an industry have traditionally focused:

The wood checked because ...

- it was installed in an uncontrolled environment outside of the 35%-55% industry-accepted relative humidity (RH) range
- it was installed within acceptable moisture con-